Wagner College

FORUM FOR UNDERGRADUATE RESEARCH

SPRING 2021
Volume 19, Number 2

EDITOR'S INTRODUCTION

The Wagner Forum for Undergraduate Research is an interdisciplinary journal which provides an arena where students can publish their research. Papers are reviewed with respect to their intellectual merit and scope of contribution to a given field. To enhance readability the journal is subdivided into three sections entitled *The Natural Sciences and Quantitative Analysis*, *The Social Sciences,* and *Critical Essays*. The first two of these sections are limited to papers and abstracts dealing with scientific inquiries, business research, clinical investigations and the use of mathematical/statistical modeling. The third section is reserved for speculative papers based on the scholarly review and critical examination of previous works.

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Gregory J. Falabella, Ph.D.
Editor-in-Chief

Section I: The Natural Sciences & Quantitative Analysis

Full Length Papers

Section II: The Social Sciences

Full Length Papers

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Full Length Papers

Section I: The Natural Sciences & Quantitative Analysis

Analysis of the Function of Small Intestinal Aggregates of the *Necturus* Based on Old Classical and Recent Literature Data

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The main focus of this literature analysis is to apply a modern lens of biological techniques and understanding to classical literature for the purpose of updating our understanding of these classical topics. This paper also seeks to review information of whether any cell can dedifferentiate, divide and differentiate during regeneration of an organ, or there are only the stem cells maintained throughout the course of an organism's life that can create new populations of cells. The modern understanding of stem cells can assist in answering an old argument regarding *Necturus* cellular aggregates visualized in intestinal epithelial preparations -- are they glandular in function or proliferative? There are researchers on both sides of the argument, as well as those who stand in the middle. From my modern analysis it would appear that these aggregates are indeed groups of stem cells that act as sites of cellular renewal.

Urodeles & the Necturus

The *Urodele* is a class of amphibious organisms such as newts and salamanders that have long slender bodies, short limbs, and maintain a tail throughout the course of their life. They are typically very lizard-like in appearance, but have moist, porous skin. *Urodeles* range from completely aquatic to completely terrestrial, but the composition of their skin typically requires them to stay near water, or at least in a moist habitat (Beattie et al., 2017). The *Necturus* genus is a subsection of the *Urodele*, and is commonly known throughout North America as the mud puppy. In old times, the *Necturus* used to be a very common experimental organism for labs and anatomy classes, which led to the publication of a robust body of work about the creature. However, due to widespread pollution, and siltation of streams, the *Necturus* population declined and governmental protections were put in place. Because of this, new *Necturus* preparations are few and far between, and to answer questions one must look to old preparation or literature to try and ascertain new information about this species (Beattie et al., 2017). The *Necturus* is characterized most distinctly by the bushy external gills that protrude from either side of its head. This creature goes through paedomorphosis that is it retains certain larval

[1] Written under the direction of Dr. Zoltan Fulop in partial fulfillment of the Senior Program requirements.

anatomical traits, such its external gills, gill slits, and eyelids throughout maturation and adulthood (Safi et al., 2006). This carnivorous animal typically makes its home at the bottom of ponds, steams, and other marshy areas concealed by rocks and weeds, feeding on smaller organisms such as crawfish, small fish, insect larvae, snails, fish eggs, and other foods based on opportunity. While the *Necturus* is largely aquatic, it does have small, yet developed lungs that allow it to spend time in moist terrestrial habitats where it can feed on small insects, and insect larvae (Beattie et al., 2017). The digestive system of the *Necturus* is similar to that of many reptiles and amphibians. The alimentary canal (digestive tract) begins with the mouth, followed by the esophagus, stomach, small intestine, large intestine, and the cloaca which sits just posterior to the hind legs. Since I am interested in the structure and function of the small intestine, I will exclude all the other parts of the GI tract at this time.

Small intestine of the *Necturus*

The small intestine begins at the end of the stomach, where in higher amphibians there would be a pyloric sphincter. While the *Necturus* lacks a pyloric sphincter, the transition from stomach to intestine is still marked through change in epithelial and muscular composition of the wall of the organs. The cellular composition of the stomach's epithelium, while very similar to that of the intestine, lacks the striations of the simple columnar cells that marks movement into the intestine. Both the stomach and the intestine also have goblet cells interspersed throughout the epithelium. This change is accompanied by a stark change in the smooth muscle tone, from the well-developed pylorus of the stomach, to the thinly walled intestine (Kingsbury, 1894). The diameter of the opening also is noticeably reduced when moving into the intestine, and the epithelia becomes single layered columnar (Bates, 1904). The small intestine of the *Necturus*, while being less convoluted than those of higher amphibians, does have the characteristic meandering pathway. From the stomach the intestine turns anteriorly so that the duodenum can receive the bile duct, then turns again to move towards the posterior end of the animal. The main digestive glands along this posterior portion of the intestine are the liver (which takes up a considerable amount of space relative to the size of the animal's abdomen) as well as the pancreas. The small intestine may loop as few as three or four more times in this section before coming to its end (Wonderly, 1963). It should be noted that because the change between the large and small intestine is so imperceptible, a large body of the literature simply refers to the intestines as a single unit rather than trying to distinguish between large and small (Kingsbury, 1894). However, for the purpose of maintaining anatomical terms consistent with those in common use, this paper will refer to the “small” and “large” intestine.

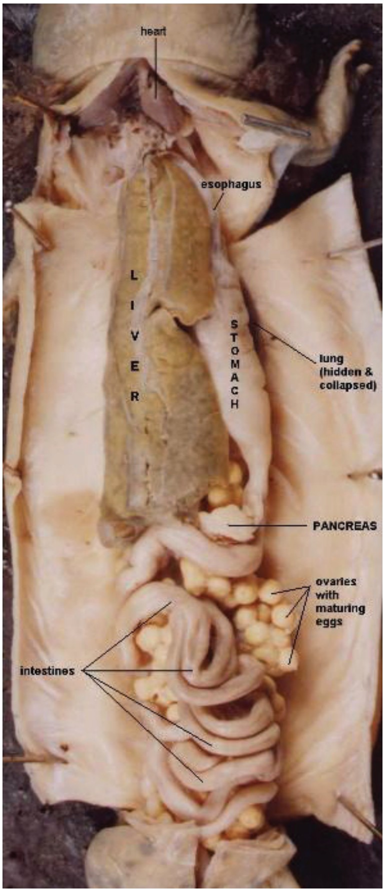


Figure 1: Anatomy of alimentary canal of the *Necturus* (Figure taken from Buffalo.edu, 2019)

The internal structure of the intestines is defined by the large longitudinal folds in the mucosa that manifest in a zig-zag pattern across the inner surface. When the intestine is contracted, the folds are very large, and although they shrink when the intestine is stretched (from the passage of food) they remain clearly visible (Kingsbury, 1894). Kingsbury (1894) also didn’t find villi on the luminal surface of the epithelium, stating that the folds most likely worked analogously to the villi of mammals, increasing the surface area over which absorption can take place, and are further comparable to

Kerckring folds in humans (especially in the duodenum). The cellular composition, as stated before, is largely simple columnar epithelium with goblet cells. The columnar epithelial cells are the more abundant of the two and vary in shape depending on their position. Those at the protruding end of the folds and along falling edges are tall and thin, but those in the depression of the folds are much squatter and broader (Kingsbury, 1894). This difference in height is likely due to the pressure from the existence of circular cellular aggregates that sit at the base of the intestinal folds and can often be visualized in mitosis (Bates, 1906).

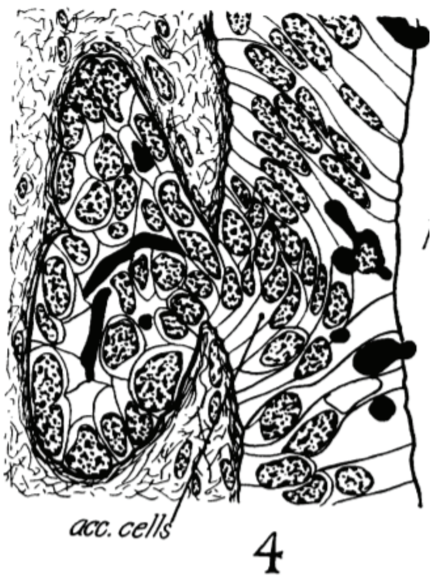
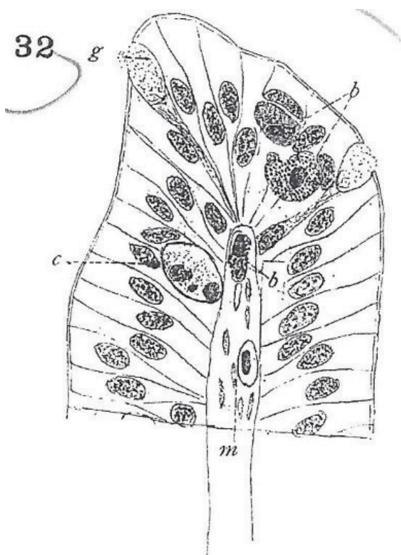


Figure 2: An accumulation of cells due to a higher than average rate of mitosis within the cellular aggregate (Figure taken from Dawson, 1927).

Bates (1906) notes that he could not confidently determine the function of these aggregates, and while he hypothesized that they could be glands, he recognizes the argument for them being proliferative in function. Bates (1904) also notes the shape of the epithelium in a bit more detail, relating that the columnar cells do not stand completely true to their name, but are rather "trapezoid", as they are wider around the free end, taper a bit toward the attached end and says this is likely due to the curvature of the mucosa. These polarized columnar cells are also striped along their free end, with striations oriented with the long axis of the cell (Bates, 1904). While Bates doesn't provide a picture or further description of these stripes, it would be reasonable to hypothesize that they are created by organelles, specifically by the endoplasmic reticulum.

The goblet cells are cup-shaped as their name implies and are much less common than the columnar cells but vary in density depending on the region of the intestine, increasing towards the cloaca (Kingsbury, 1894). They are long and skinny and form a sort of tip where they attach to the basement membrane (Bates, 1904). The goblet cells, like in all species, are required for the secretion of the mucin that lines the intestines to protect the mucosal epithelium, assist in nutrient abortion, and movement of food. Like the columnar cells, the goblet cells are polarized. Their nucleus and organelles tend to be at the base of the cell, creating room for the granules containing mucin at the apical end, since they will be required for the exocytotic secretion of the mucus (Birchenough, 2015). Connected to the mucosa are the circular cellular aggregates, or crypts, whose function is still a topic of debate and of this paper.



<u>Figure 3:</u> Drawing highlighting epithelial layer interspersed with goblet cells (Figure taken from Kingsbury, 1894).

<u>The intestinal Aggregates</u>

The intestinal aggregates have been cause for argument for a long period of time through many pieces of literature up to the recent time, with positions for their function mainly including secretory glands, proliferative cellular aggregates for epithelial renewal, and some researchers even arguing that the aggregates may perform both glandular and proliferative functions at the same time. The structures of interest sit past the invaginated fold of the mucosa and appear to extend from it perpendicular to the direction on the intestine (Mead, 1916). Bates (1904) describes these aggregates as groups of relatively small cells which lie visually in the submucosa, forming a circular appearance with their nuclei and soma but appear to be directly connected to the mucosa. Mead (1916) noted that the distribution of these "protuberances" (as he called them to avoid suggesting a function he had not yet determined) was unequal throughout the intestines, in that he saw a steady decline in the number as he moved towards the cloaca, but made no mention as to what that may mean for the function of these aggregates.

The structure of the protuberances, while maintaining a good deal of variety, had three main identifiable characteristics. The body, or the portion that sits in the furthest from the lumen towards the submucosa, consists of the identifiable rounded cellular structures made from cells that were polygonal in shape, had little cytoplasm, and could often be seen in mitosis. The neck is a short, constricted portion of the crypt that leads to the mucosal portion. Lastly, the mucosal portion is the part that extends into the epithelium. This portion fans out and transitions to the epithelium as the cells move outward and become elongated and arranged into a crescent shape (Mead, 1916). Dawson (1927) who later performed further research explicitly noted that that his findings were extraordinarily similar to those of Mead (1916), and that they even got the same mitotic index of one to forty-one. He then goes on further to point out that the mitotic spindles he observed were present only in the protuberances, and that he failed to find any mitosis in the columnar epithelium that was directly joined with the protuberances- suggesting that these structures are important for cell renewal. Both Mead and Dawson failed to find lumen in the aggregate, however this is contested by other researchers who hypothesized that these aggregates were glands, and specifically by Kingsbury who declared the existence of a lumen in his 1894 publication.

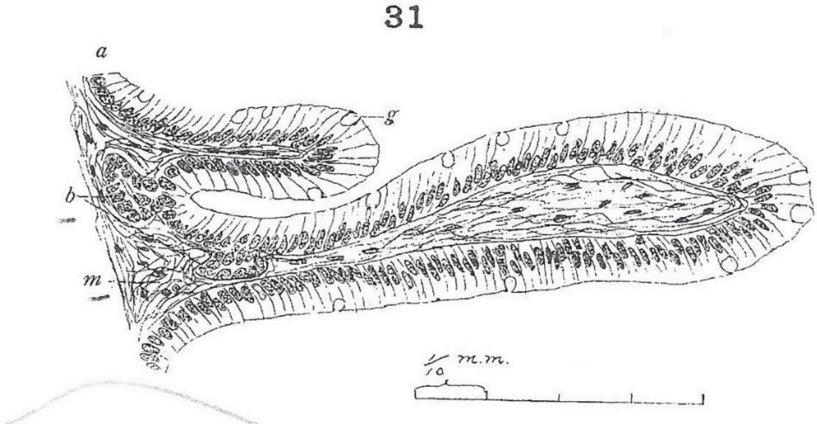


Figure 4: Depiction of mucosal folds and a cellular aggregate marked by "b" with a small yet clearly defined lumen (Figure taken from Kingsbury, 1894).

Submucosal Glands

Several researchers argue that these aggregates are glands that connect to the mucosa to secrete their product into the lumen of the intestine. The first researcher to suggest this was Hoffman (1878), and though the original paper could not be found, he was cited by Kingsbury, Dawson, and Mead as having written that he felt the aggregates were indeed glands, and had observed the ducts through which the product was to be secreted. Kingsbury (1894) argues that they are glands as well but provides a broader argument for his position. He says that the cellular aggregates mimic intestinal glands found in other *Amphibia*, both in their structure and location. He observes that they closely resemble the fundic glands of the pylorus- cuboidal shape, nucleus has little surrounding cytoplasm, and arranged in a circular aggregate. He also notes that it would be strange from a phylogenic perspective to observe crypts in the *Necturus* similar to those in higher *Animalia* (crypts of Lieberkuhn) that aren't present in much more closely related yet higher forms of *Amphibia*. Kingsbury also notes that while he wasn't able to directly observe any ducts, there were several samples where their existence was "quite well indicated" (pg. 35). The final and most controversial of his findings were the lumens of the supposed glands, which he illustrates with great clarity in several of his figures, but which have remained elusive to several of the researchers in the field. There is one direct argument leveled at Kingsbury's observation of a lumen. The idea is that

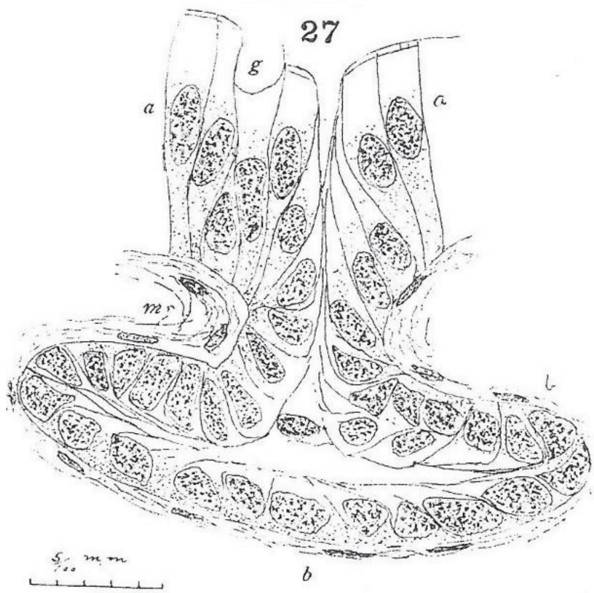


Figure 5: Controversial Kingsbury drawing depicting the existence of a lumen in the aggregate (Figure taken from Kingsbury, 1894).

the aggregates he saw that displayed lumen were actually mucus folds whose orientation and representation on the preparation mimicked the structure of the actual cellular aggregates, tricking him into thinking that he was looking at an aggregate with a lumen when indeed he was actually observing the lumen of the intestine (Bizzozero, as cited in Dawson, 1904).

Bates (1904) in his study of the *Necturus* also hypothesizes the role of the intestinal aggregates to be glandular. While he cites Kingsbury in his work, he makes the claim with much less conviction. He says that while the morphology of the aggregates does lead him to initially believe that they would function as glands, he lacks confidence due to his inability to demonstrate the existence of a lumen within the aggregate.

<u>Summary</u>

The researchers that support the idea that the aggregates are glandular in function are Hoffman, Kingsbury, and Bates, who claim that a lumen and duct can be seen in preparations of these structures, and given what is known about other amphibians say that the role of crypt for proliferation is unlikely. Mead, Patten, and Nicholas support the idea that the aggregates are centers of proliferation based on the levels of mitosis compared to surrounding epithelium and the way in which the cells of these centers appear to migrate out into the epithelium. Oppel, Bizzozero, Sercedotti, Goldsmith, and Dawson all support the idea that the aggregates in question perform both glandular and proliferative functions. The majority of interest appears to be around the beginning of the 1900's, but one can dissect the work by publication date. The bodies of work supporting glandular and dual function were published in the late 1800's through the early 1900's, whereas the work supporting the function as proliferative extends into the mid 1900's. This trend in publication does support the idea that the aggregates function as crypts simply because the latter publication not only had the benefit of having previous work to refer to, but also better technology with which to work before drawing their conclusions. Having analyzed classical *Necturus* preparations preserved at my institution of study for myself, and having read the foundational literature on the topic, I would support the argument for the aggregates being proliferative in function. The inability of researchers (even those who supported the glandular argument) to find the glandular lumen as Kingsbury claimed to, the organization of cells near the aggregates, and the patterns of mitosis observed (especially when considering the cellular turnover rates seen in the intestine), all show support that I find cogent enough to reasonably conclude that these aggregates are sites of proliferation and differentiation for cellular renewal.

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Section II: The Social Sciences

“I Am A Donor”- A Proposal to Increase Organ Donation Rates in New York City

Giavanna Marceante (Nursing), Tinatin Shaorshadze (Nursing), and Ariana Volodarsky (Nursing)[1]

Organ donation, though widely accepted, is still a sensitive subject for many as it is often difficult to comprehend. The process of organ donation is a mentally and physically challenging phenomenon that involves the entire healthcare team, the patient, and the family. Though the majority of Americans support organ donation, there is an incongruity between different regions and their rates of organ donor registrations. New York City, home to over eight million people (Population - Current and Projected Populations, 2019), has the lowest organ donation registration in the United States (Donate Life America, 2018).

Research has shown that people of color and other minority groups have lower rates of donation than Caucasian populations (Office of Minority Health, 2016). As a result, it is being suggested that urban cities with greater immigrant populations, like that of NYC, take an approach that is inclusive to marginalized individuals. With this type of approach, the falling rates of donor registration could be greatly improved. Given that NYC is made up of such a diverse population, why is there a major shortage of organ donors compared to that of other regions? Our solution is the initiation of the “I Am A Donor” program. This program will aim to raise public awareness at points of contact with large populations such as schools and hospitals in NYC, in order to increase rates of organ donation. The program aspires to achieve this by being more culturally, racially, religiously and gender inclusive in all educational and program materials.

New York City is widely known for being one of the most diverse places in the world. New York City’s culture is often pinned down to the famous everything bagel, the St. Patrick’s Day Parade, and Central Park. The true culture that New Yorkers have created is a culture that welcomes those of all backgrounds with open arms. New York’s culture is the fruit of the city’s diverse population, and each ethnic group’s adaptation to New York life. NYC culture cannot be easily defined; it is a melting pot of unique individuals all working to survive another day in the concrete jungle. This culture of diversity, inclusion, and adaptation has largely been the product of different ethnicities

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[1] Written under the direction of Professor Marcantonio and Dr. Korona for NR400: *Nursing Research*.

immigrating to NYC. From the Irish migration in the early 1900s, to the Caribbean migration of the 1980s (Galka, 2017), each immigrant community has changed New York's routine.

Many New Yorkers struggle with the same conditions and diseases that Metropolitan Americans struggle with. According to the Department of Health, in 2016, the top five causes of death in NYC were heart disease, cancer, unintentional injury, pneumonia, influenza and stroke. A great contributor to unintentional injuries is undoubtedly deaths related to motor vehicle accidents. New Yorkers spend an average of forty minutes traveling to work (U.S. Census Bureau, 2017) and over 45% of households in NYC own a car (NYCEDC, 2018). Though, the number of deaths related to motor vehicle accidents continues to decrease (NYC Mayor's Office, 2019), the number of unintentional injuries per year has increased over the last ten years (NYS Department of Health, 2018).

As a response to the above reports, New Yorkers are making a conscious, social change towards making better lifestyle choices. Whereas there are some modifiable factors related to heart disease, stroke, and diabetes, the remaining leading causes of death cannot be resolved with simple lifestyle changes. The growing unintentional injury category is a concern to both health professionals and the city at large. In response, the Department of Motor Vehicles enacted the "Vision Zero" initiative, in which changes to minimize the number of pedestrians killed on the road were made by decreasing city speed limits, installing speed and red-light traffic cameras, and repairing roads (NYC Health, 2019).

New York residents have an abundance of resources at their fingertips, always readily available. From mobile applications that allow patients to video chat with a doctor, to over 50 hospitals with emergency care clinics, most NYC residents can easily access healthcare. New Yorkers who are unaware of the resources available to them, can also call a twenty-four hour helpline for assistance, free of charge (Crisis Services/Mental Health: Mobile Crisis Teams, 2019).

Despite the advantages of accessible healthcare, the pressing issue of extremely low rates of organ donor registration in NYC remains. Research has shown a lack in resources related to organ donation and the promotion of donor registration. While the topic of organ donation is often neglected due to lack of education, the public often fails to realize the importance of becoming a registered organ donor (Feeley et al., 2009). Individuals are generally unaware of the exacerbations that can follow with acute medical conditions, which can subsequently lead to the need for an organ transplant. The number of cases of diabetes, cardiovascular disease and strokes have steadily increased in recent years (Thorp, Owen, Neuhaus, & Dunstan, 2011). According to the article by Gabriella Rusk (2015), New York Ranks Last in Number of Organ Donors, “On average, eighteen people die everyday waiting on an organ transplant. In New York, someone dies every eighteen hours.” This extreme shortage in organ donation has directly resulted in the growing number of fatalities, especially when compared to neighboring states.

In New Jersey, 31% of residents are registered organ donors, compared to the 15% of New York Residents (Need an Organ Transplant? Don't Count on New York, 2011). Despite the technological advancements of today's society, online applications for organ donation registration were not made available to New Yorkers until 2017 (The State University of New York, 2017). Additionally, the Motor Vehicle Commission of New Jersey encourages individuals to register for organ donation, whereas the New York State DMV does not (Need an Organ Transplant? Don't Count on New York, 2011).

Currently in NYC, there are eight hospitals considered Transplant Centers; NY Presbyterian Hospital/Columbia University Medical Center, New York University Medical Center, Montefiore Medical Center, Mount Sinai Medical Center, James J. Peters VA Medical Center, NY Presbyterian Hospital/Weill Cornell Medical Center, and State University of New York – Downstate Medical Center, and St. Luke’s Roosevelt Hospital Center (Transplant Center Search Results, n.d.). Though there are only eight Transplant Centers, there are currently 66 hospitals in New York City (Hospitals by Region/County and Service, n.d.)

Overall, New York has the third lowest rate of organ donation in the country and yet, the third highest number of citizens currently waiting to receive an organ transplant (Need an Organ Transplant? Don't Count on New York, 2011). An average of 22 people die every day in the United States while waiting for an organ transplant. Juxtapositionally, the U.S. Department of Health & Human Services states, “Tissue donated by one person can positively affect the lives of more than 50 other people” (Governor Cuomo Announces Over 5.6 Million New Yorkers Enrolled in State's Donate Life Registry as Organ Donors, 2019). This implies that all 22 people who die everyday for an organ, could have been helped with one tissue donation.

From a global perspective, Spain is currently the leader in organ donation rates, standing at 35.5 donors per million residents, compared to that of New York; 26 donors per million residents. In Spain, individuals are automatically considered registered donors, and have the option to opt-out (Miller, 2014). Austria follows the same opt-out method as Spain ('Opt Out' Policies Increase Organ Donation, n.d.), along with Croatia and Belgium, resulting in a substantial increase in donation rates in these countries, contrary to the United States, where the opt-in method is used (Miller, 2014).

The issue of organ donation cannot be addressed without including marginalized populations in the discussion. In the article, A Peer-to-Peer Campaign to Promote Organ Donation Among Racially Diverse College Students in New York City states:

> Studies have documented reduced rates of organ donor registration among African Americans, and Asian Americans, as compared to Caucasians. Similarly, Hispanics have shown lower overall willingness to donate organs at the time of death as compared to their European American counterparts. (Feeley et al., 2009)

This may indicate that the current lack of organ donors may be partially attributed to the lack of inclusivity and education within the healthcare system. Multiple studies have been conducted and revealed that minority families were less likely than Caucasians to provide consent for organ donation at the time of death (Feeley et al., 2009).

Additional barriers to organ donation include lack of education, lack of knowledge regarding transplantation and cultural incompetency. “Medical Mistrust” has also been determined to be a substantial barrier to organ donation. The term Medical Mistrust refers to the tendency of distrusting the medical system that is represented by the dominant culture. In regards to organ donation, minorities have expressed that the organ distribution system is unethical and biased, further deterring these populations from becoming registered donors (Feeley et al., 2009). As per Perez et al. (1988), “It has been suggested that areas with large inner-city Black and Latino populations have worse organ donation rates than those with large suburban and rural white populations.” This further supports the claim that minorities are not presented with the same opportunities in regard to organ donation as compared to other races.

Various studies have identified the lack of knowledge amongst healthcare providers concerning organ donation such as brain death, transplant waiting lists and organ transplant procedures (Feeley, Anker, Soriano, & Friedman, 2010). This implies that said healthcare professionals are unequipped with the tools necessary to properly educate their patients, which all relays back to the lack of knowledge that patients and family members receive on this topic. The following study confirms that lack of education directly correlates to lack of donor registration. As per Feeley et al. (2010):

> Approximately 9% of [medical] students incorrectly described what would happen in the case of a blank donation statement on the health care proxy form. Rather than recognizing that donation decisions defer to next of kin in the event of a blank form, patients were often incorrectly informed their organs would not be recovered.

This further supports that students and healthcare professionals are unaware of what would normally be considered a standard hospital policy, therefore, hindering students' ability to promote organ donation.

A general lack of awareness regarding transplantation amongst New Yorkers also contributes to the depleted rates of donation. An enlightening study run by Sander & Miller (2005), found that the majority of patients stated that they had been exposed to the topic of organ donation from the DMV, rather than their primary care physician. In that same study, "89% of participants stated they would be more comfortable discussing matters regarding organ donation with their primary physician than with a government employee" (Sander & Miller, 2005). If patients are not continuously and thoroughly educated on organ donation, they are unable to properly make the decision to become a donor.

In order to improve the current status of New York's plummeting organ donation rates, the pinnacles of the healthcare team must initiate a change in donor awareness programs. Though many programs include organ donation in their curriculum, a significant number of schools failed to provide information regarding the exact process of organ donation, including consent forms and discussing organ donation at regular well-visits (Anker, Feeley, Friedman, & Kruegler, 2009). Healthcare professionals play a vital role in increasing the amount of organ donors within the community. Healthcare workers must be properly trained and prepared to answer questions from families, other healthcare team members and patients themselves (Anker et al., 2009). Based on the evidence, when healthcare professionals are adequately trained to debunk myths, patients and families are more likely to provide consent.

Educating healthcare students may positively influence donor rates, as many families decline due to myths that surround organ donation. With the proper education, healthcare professionals would be prepared to address families' concerns, directly after entering the field. It has been reported that a common misconception of organ donation concerns the funeral arrangements following the death of the patient. Families often believe that their loved one will not be able to have an open-casket funeral if they consent for donation (Organ Donation Myths, Debunked – Penn Medicine, 2019). On the contrary, "Organ and tissue donation doesn't interfere with having an open-casket funeral" (Organ Donation Myths, Debunked – Penn Medicine, 2019). Families should be educated that throughout the donation and harvesting process, the body is treated with the utmost respect and care.

Another major concern individuals have reported as being a deterrent from becoming a registered donor, is that they will not receive the best possible care for their health issues; doctors and healthcare team members will not do everything in their power to save their life (Organ Donation Myths, Debunked – Penn Medicine, 2019). This is the primary reason that individuals will decline becoming a donor on their license form. However, according to the Gift of Life Donor Program, “An individual must be in a hospital, on a ventilator and pronounced brain dead in order to donate organs” (Organ Donation Myths, Debunked – Penn Medicine, 2019). In actuality, the transplant team is notified when all life-saving efforts have failed (Organ Donation Myths, Debunked – Penn Medicine, 2019).

When healthcare professionals are able to accurately inform their patients, it builds rapport and trust between the patient, family and provider, further increasing the likelihood of donation and/or registration. Receiving this health education on a regular and repeated basis has been shown to raise awareness and knowledge of the transplantation process as well as the registration process (Feeley et al., 2010). While the public often focuses on the care provided by their physicians, the art of nursing lies untapped. A major responsibility belonging to nurses is the continuous educating of patients, providing resources, and evaluating that education with return demonstration. In a 2019 poll, “Nurses were again ranked the most-trusted profession in the United States for the 20th year” (Stone, 2019). Nurses should be trained to address the sensitive and complex topic of organ donation. Nurses provide their patients and the public with trusted health education. This relationship provides the perfect opportunity to open up discussions about organ donation.

Nurses are entirely responsible for the safety and well-being of their patients and consistently collaborate with all members of the healthcare team, including the patient and family, to provide the best possible plan of care. By including nurses in the solution to depleted organ donor rates, there is a huge opportunity for increased education to the public. When applying this theory to practice, it ensures that care is family and patient focused and includes cultural competency; an important aspect of healthcare. This is further supported by Anker et al. (2009), “Both medical and nursing students have been documented as having generally positive attitudes toward donation…Unfortunately, such positive attitudes toward donation have generally been accompanied by low levels of knowledge on the topic.” The combination of positive attitudes amongst nurses and an increase in education in nursing schools, will undoubtedly result in a better overall patient experience regarding organ donation.

Currently, the task of increasing donor rates falls not only on undergraduate medical programs, but in-hospital programs that would continue to raise awareness and provide teaching to patients and employees. By initiating a program that includes

Hendersen's principles of patient and family focused care, we can ensure that the message will reach as many community members as possible. With the initiation of our "I Am A Donor" program, we aim to increase awareness and increase public knowledge by debunking myths that surround organ donation. Nurses, providers, and all healthcare workers should be active members of the program in order to share their learned information with patients and the community at large. Monthly meetings located on hospital premises will be held, where participants may analyze the current status of organ donor rates and discuss tactics to improve them. Promotional posters will be distributed by hospital volunteers throughout medical settings, as well as the community, that depict New Yorkers of every age, ethnicity, and body type. This alone will raise awareness with four simple words; "I Am A Donor." By including marginalized populations in our promotional advertisements, these groups may feel seen, heard, and represented in the healthcare system, further promoting registration. It is imperative that the "I Am A Donor" program is made inclusive to all socioeconomic classes, ethnicities, genders, sexual orientations, and to the mentally and physically disabled.

Appointed at the head of the program will be a group of culturally competent organ transplant specialists who are qualified to educate the members of "I Am A Donor." All members of the healthcare team will be encouraged to get involved in the program, which will grant them the tools they need to properly educate their patients. Guaranteeing culturally competent care will improve the rates of donor registration amongst minority populations within the community, and will break down barriers caused by medical mistrust. Our program is unique in that the focus is on inclusivity. If populations like the disabled and elderly knew that they are fully capable of becoming registered donors, perhaps they would consider saving a life.

The long-term goal for New York City's community is increased access to accurate information, inclusive education, and an overall increase in organ registration rates. The learning objectives for our proposed program for the NYC population are as follows:

- NYC Healthcare workers will be prepared to discuss the topic of organ donation with their patients, the community, and other healthcare professionals by receiving proper training and education through the "I Am A Donor" program.
- The population will be provided with resources such as posters and informative pamphlets that are culturally inclusive and will provide accurate information regarding organ donation.

- The public will be able to accurately identify the myths of organ donation and rebuke them with newly gained information.

Evidently, the topic of organ donation is a complex and grey area of the healthcare field. New York City is currently presented with the life-threatening issue of extremely low donor rates. While NYC is flourishing in culture, media, and technology, the city is lacking in a critical area of the healthcare system. With the initiation of the "I Am A Donor" program, along with in-school education programs targeting medical professions, New York City has the potential to exponentially improve the current epidemic.

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Environmental Investment in the ACA's Preventative Public Health Initiatives

Gabriella Walker (Government & Politics)[1]

The Patient Protection and Affordable Care Act of 2010 (ACA) seeks to reform the United States health care system. Though its efforts are expansive, its success has been disputed. We predict that by using funding allocated to the Prevention and Public Health Fund to increase community environmental infrastructure, sustainable mitigation of leading chronic illnesses may be accomplished. We compiled raw data from the Center for Disease Control and Prevention and local government statistics to evaluate such theories in Philadelphia, Pennsylvania. This data was compared to scholarly sources dedicated to the intersection of public and environmental health to determine efficiency of both public and private funding utilization within the city. Based on these findings, we found that green initiatives may parallel decreased chronic disease on a community level.

Environmental Investment in the ACA's Preventative Public Health Initiatives

The Patient Protection and Affordable Care Act of 2010 (ACA) has a goal that is trifold; this includes expanding coverage and reforming the individual health insurance market, slowing health care spending and securing a sustainable rate, and improving the quality of clinical care (Wilensky, 2015, para. 1). Under Section 4002, the Prevention and Public Health Fund (PPHF) was established as a mechanism to fulfill these promises. The PPHF was created as the "nation's first mandatory funding stream dedicated to improving our nation's public health system" (Center for Disease Control and Prevention [CDC], 2018, para. 1). Funded through the Department of Health and Human Services (HHS), the appropriation has focused on evidence-based activities, community and clinical prevention initiatives, public education, immunizations, screenings, tobacco prevention, and public health infrastructure (Department of Health and Human Services [HHS], 2012). Ideally, the PPHF would operate as a health care safety net, slowing spending via early detection at the benefit of both the individual and the system. Not only would this prevent deaths but minimize cost of care and treatment.

The ACA is modeled to prioritize American health, as a majority of the country's top causes of death can be prevented by implementing public health

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[1] Written under the direction of Dr. Abraham Unger for GOV211: *Public Administration*.

interventions. Supplying such expansive preventative measures has high demand within the American market. PPHF services promised to help up to half of the American population who are statistically impacted by chronic diseases and their underlying causes. Accounting for 70 percent of deaths and 75 percent of healthcare spending, the PPHF targeted the largest proponents of medical disparities. Racial and ethnic minority communities, as well as children, were identified to be particularly vulnerable groups to such disparities. They experience higher rates of obesity, diabetes, HIV/AIDS, and cancer. Therefore, by expanding and sustaining early detection and necessary public health infrastructure on the state and community level, the country's most impacted populations would be supported (HHS, 2012, pp. 1-2).

The PPHF, while disputed within Congress, has shown success (House of Representatives, 2011). Despite triumphs, the ACA has not decreased health care spending. In fact, the U.S. spent nearly double as much on health care in 2018 as any of the 36 Organisation for Economic Co-operation and Development (OECD) countries (Roosa & Abhrams, 2020). Subsequent to the Obama administration, the ACA's multi-billion-dollar allotment did shrink. In fiscal year 2016, PPHF received $932 million, a reduction from its original $1 billion (HHS, 2012). In contrast, the Trump administration proposed a $824 million budget for the PPHF in fiscal year 2020, $20 million greater than the previous year (CDC, 2019, p.3).

Uneven distribution of success within the ACA proves necessity for reevaluation. While the PPHF focuses most closely on improving quality and access to care, we argue that a more calculated approach could classify the fund as a stakeholder in reducing spending and chronic disease altogether. The COVID-19 pandemic proved that funding within the public health force is a necessity; this is not contested. However, while measures taken to ensure the early detection and prevention of specified diseases may be beneficial, such efforts cannot forgo preceding care or public initiatives.

One way that this may be achieved is by the expansion of the PPHF's commitment to transforming the common denominators in high-risk communities through programs like Community Transformation Grants (CTG). The CTG aimed for maximum outreach, being awarded to agencies or community-based organizations with the capacity to develop public health over a five-year period (42 U.S. § 300u–13). Use of funding was largely at the discretion of the awardee, with little restrictions outside of encouragement to "implement broad, sustainable strategies to reduce health disparities and expand clinical and community preventive services" (CDC, 2012, p.9; Lister, 2017). In turn, many CTG initiatives operated with a focus on creating education programs and expanding care capacity to address potential health threats and treating those already affected (HHS, 2012). Many CTG programs have shown positive results. However, instigating proactive change rather than simply responding to the common factors of the top causes of death can optimize the success of the ACA. This would offer substantial strides towards slowing health care spending and securing a sustainable rate.

In order to slow spending, expand coverage, and improve care, we suggest that the administration encourages the HHS to consider natural environmental health as a variable within the national public health system. As research has shown a significant relationship between the green spaces and public health, this paper evaluates their respective impact on communities within Philadelphia, comparing this to the usage and efficiency of PPHF funding within the city. Attempts to eradicate American health care disparities on a national level must seek to identify and respond to risk factors that perpetuate such diseases. Necessary reevaluation of the Patient Protection and Affordable Care Act demands classification of environmental investment as a form of public health investment in order to achieve its goals.

Literature Review

Green Public Health

To best understand the ways in which green space may stimulate health, there have been interdisciplinary investigations dedicated to expanding the subject area. Until the recent decade, "research has focused mainly on showing the relation between exposure to green environments and wellbeing. There are only a few epidemiological studies on the relation between nature and health" (Maas et al., 2006, p. 587). The reconstruction of this topic began by recognizing the historical links between urban planning and public health as a tool to both promote wellbeing and prevent illness (Rideout et al., 2016).

Rideout, et al. (2016) used British Columbia and New York City to model environmental health and public health, evaluating the role of environmental public health (EPH) professionals locally, and how it may be expanded internationally to promote healthy lifestyles. As defined by the American Public Health Association, EPH work to advance both policies and programs that reduce harmful exposure, protect the population, and provide a healthier environment within communities (American Public Health Association [APHA], 2020).

Initiatives in both British Columbia and New York City were classified as successful. The Canadian AirCare vehicle emission control program showed substantial decreases in cardiovascular-related hospital admissions and traffic pollution. Likewise, public smoking bans throughout North America have lowered exposure to environmental tobacco smoke. By engaging the community in what Rideout et al. (2016) refer to as ‘big-picture interventions,’ “healthy behaviours not just an easier choice, but the default choice” (p.127). This evolving co-dependency between environment and health was once used to be strictly preventative, which both cities proved impactful. However, scholars have also acknowledged its enriching potential for community development.

Socioeconomic Variables

While Rideout et al. (2016) suggests that EPH initiatives and programs are key, closely paralleling the incentive of the ACA, there are hurdles that many populations face with such community initiatives. For example, non-Hispanic white Americans have been proven to benefit disproportionately from air quality, despite their higher rates of consumption. Fine particulate matter exposure is a major health risk factor, responsible for 63% of deaths from environmental causes and 3% all deaths. This exposure is distributed inequitably among various demographics, primarily due to location of residence (Tessum et al., 2019).

Data showed that black Americans are exposed to 21% more pollution than the rest of the population, despite their consumption causing 23% less exposure than the average. Hispanics are exposed to 12% more than average but cause 31% less exposure than the average. White Americans, however, are exposed to 7% less while their consumption causes 21% more exposure (Tessum et al., 2019). Therefore, “Blacks and Hispanics on average bear a “pollution burden” of 56% and 63% excess exposure, respectively, relative to the exposure caused by their consumption” (p.6002).

Environmental socioeconomic inequalities are not exclusive to the United States, nor are their impacts on public health (Hajat, 2015; Bentley, 2015). Research on the socioeconomic relationship between surrounding green environments and life expectancy has been done internationally. Within the Netherlands, Jonker et al. (2014) collected data from 1190 neighborhoods, measuring “the quantity of green as well as the perceived quality and average distance to public green” (p.1002). These figures were then compared to the healthy life expectancy (HLE) and life expectancy (LE) of each neighborhood.

Socioeconomic status within each neighborhood showed differences between LE in the highest and lowest earners to be 2.5-3 years; the HLE range is 7.5-8.5 years. Despite this, the percentage of green space is only interpreted to be statistically significant to LE. One additional square diameter in the percentage of urban green space yields an increase of 0.10-0.14 years. In contrast, the quality of green space showed an increased 0.28-0.29-year LE and 0.26-0.33-year HLE. Based on their data, Jonker et al.

(2014) suggest that “not only the quantity but also the quality of urban green should be considered in future interventions” (p.1002).

Additional studies within the Netherlands came to similar conclusions. The Netherlands Institute for Health Services Research asked 250,782 residents with 104 general practices to fill out a self-administered form on sociodemographic background, economic status, and perceived general health. Maas et al. (2006) found that the most apparent link between green space and perceived health was seen in the elderly, housewives, and residents of lower socioeconomic status. To account for urbanization, the study also measured the influence green space had when compared to urbanity, as “more people face the prospect of living in residential environments with fewer green resources” (p. 587). While data showed that urbanity also impacted perceived health, green space was a more impactful variable. In fact, all green space was shown to contribute to health at all levels of urbanity. This also determined that the size of green space also contributed to the perceived health of residents (Maas et al., 2006).

The relationship between quality and size of green space in relation to public health has been explored within the United States by The Trust for Public Land (2016), environmental nonprofit. Data collected on heat mitigation and emissions reduction showed that, while air conditioning is the principle for reducing heat exposure, it is far from sustainable. Chiefly, it disregards the “energy consumption for cooling and is directly associated with greenhouse gas emissions such as carbon dioxide” (p. 8). In order to offer long term solutions, the Trust has begun to recommend green infrastructure, primarily including park tree preservation, as older trees have been proven to cool temperatures, reduce air pollution, and manage stormwater.

While this would most directly benefit the immediate area, further research (Trust for Public Land, 2020) explored evapotranspiration, “the phenomenon by which trees pull moisture from the soil and release it through leaves” cooling the air anywhere from two to nine degrees Fahrenheit (pp. 5-6). This means that even surrounding neighborhoods are influenced by the presence of trees. However, the size of the park remains the largest variable. In agreement with Jonker et al. (2014) and Maas et al. (2006): “The tiny neighborhood park or pocket park will have some benefits, but they are going to be a lot less significant than those larger, high-quality parks” (Trust for Public Land, 2020, p. 6).

As paralleled by previous scholars, the quality and quantity of green resources is often not equitable. Data shows that one in three Americans do not have a park within a ten-minute walking distance. Moreover, the size of public parks is disproportionate, with parks that serve nonwhite communities being half the size of those serving majority-white communities – on average, 45 acres compared to 87 acres (Trust for Public Land, 2020). Both direct and indirect mechanism, such as health and income, influence the favorability of one's chosen environment, and their access to these spaces thereafter (Maas et al., 2006). Data that shows "consistency of greater temperature in formerly redlined areas across the vast majority (94%) of the cities included in this study indicates that current maps of intra-urban heat echo the legacy of past planning policies" reiterates historical relevance (Hoffman et al., 2020, p. 9).

While their research areas are expansive, Hoffman et al. (2020), Tessum et al. (2019), and the Trust for Public Land (2020) all collectively distinguish lower air quality, higher temperatures, and green space coinciding with one another. As lower air quality has often been found to be synonymous with socioeconomic status, all factors intersect within the arenas of green space and community health. This research seeks to fill the lack of literature concerning the relationship between environmental public health and preventative care within the American health care system through the Prevention and Public Health Fund of the Affordable Care Act.

Case Study: Philadelphia, Pennsylvania

In order to evaluate what benefits environmental investments yield in public health, we have identified the impacts of sustainable action in Philadelphia. One example looks at ACA-granted funding and its use; the other looks at community-initiated projects.

Community Transformation Grant Usage

In 2011, the PPHF rewarded Philadelphia Department of Health Services a CTG of $1,547,297. This grant, in the form of an implementation award, "helps communities plan and carry out proven programs and strategies" (CDC, 2015). Concern for local dietary health raised a "citywide healthy corner store effort that came about when school leadership expressed concerns that healthy food policies in schools might drive students to purchase less healthy snacks at nearby corner stores" (CDC, 2013). The movement quickly grew from 10 to 600 participating corner stores in low-income Philadelphia (2013).

From 2011 to 2013, adult obesity in Philadelphia declined slowly from 30% to 29%. Although a 4% increase was seen in 2014, numbers dropped back to 27% and 28% in 2015 and 2016, respectively (City of Philadelphia Department of Public Health [PDPH], 2018, p.8). While data suggests that the rate of childhood obesity was shrinking regardless, the impact of the corner store initiative is not minimized (Robbins et al., 2015). This hypothesis is backed by the rapid increase in adult obesity rates to 35% in 2017, when funds were reduced, and is worsening (PDPH, 2018). However, the percent of adults and teens drinking one or more sweetened beverages daily has continued to decrease steadily from 31.1% in 2007 to 17.6% in 2017 of teens, and 37.4% in 2010 to 31.6% in 2015 in adults. This is not likely a direct link to the corner store initiative, but rather the Philadelphia Beverage Tax implemented in 2017 echoed by the most drastic decrease of 4% in teens compared of the following year (p.28).

Community Initiatives

Despite fiscal redistribution, the city's Office of Sustainability (OOS) has powered an environmental initiative, Greenworks Philadelphia. Greenworks has 8 visions: accessible food and drinking water, healthy outdoor and indoor air, clean and efficient energy, climate-prepared and carbon-neutral communities, quality natural resources, accessible, affordable, and safe transportation, zero waste, and engaged students, stewards, and workers ("Office of Sustainability," n.d.). Since its formulation in 2009, Greenworks has reported improved air quality, diverted 70% of solid waste from landfills, managed stormwater, and reduced vehicle miles traveled by 10% (Greenworks Philadelphia, 2015). More recently, the city announced plans to increase the tree canopy in 2014. By 2025, the city hopes to have 30% of each neighborhood covered by trees. While a study published in the Lancet Planetary Health journal indicated the impact Greenworks' tree canopy could have on the city's mortality rate, we sought to identify other statistical factors related to the initiative (Kondo et al., 2020).

Using the Philadelphia Department of Public Health statistics (2018), we discovered childhood asthma hospitalizations decreased between 2012 and 2014 a significant amount – 97.1 to 71 per 100,000. Figures continued to drop until 2016, settling at 58.8 per 100,000. Black and Hispanic children are disproportionately represented, with hospitalizations for 74.8 per 100,000 and 67.8 per 100,000, respectively. This is five to six times higher than non-Hispanic white and Asian children (PDPH, 2018, p.9).

While population contributes greatly to hospitalization numbers, a clear relationship can be seen between childhood asthma hospitalizations and the tree canopy. Figure 1 shows tree coverage in Philadelphia in 2014; comparison to figure 2 shows areas with little coverage as asthma hospitalization hot spots. To account for density, reference Figure 3 for the under-18 population. More recent data of the canopy and hospitalizations is shown in Figure 4 and Figure 5. Hospitalization statistics dropped drastically, changing incremental percentages used between Figure 2 and Figure 5.

Some zip codes that experienced greater tree coverage, as represented figure 6, also experienced lower childhood asthma hospitalizations. Finally, figure 7 references poverty-filled areas. By evaluating this data, we see that densely populated areas with high concentrations of poverty saw a decrease of childhood asthma hospitalizations with increased tree coverage. As canopy coverage increased more prominently in low-income areas, data is inconclusive on the impacts it may have had on the health of affluent children.

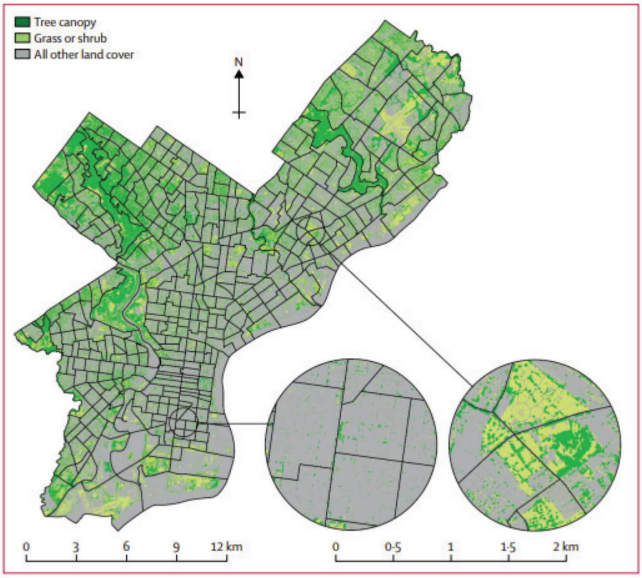

Figure 1: Tree Canopy Cover by Census Tract, 2014

From "Health impact assessment of Philadelphia's 2025 tree canopy cover goals," by Kondo et al., 2015, *Lancet Planet Health, 4*, p.151.

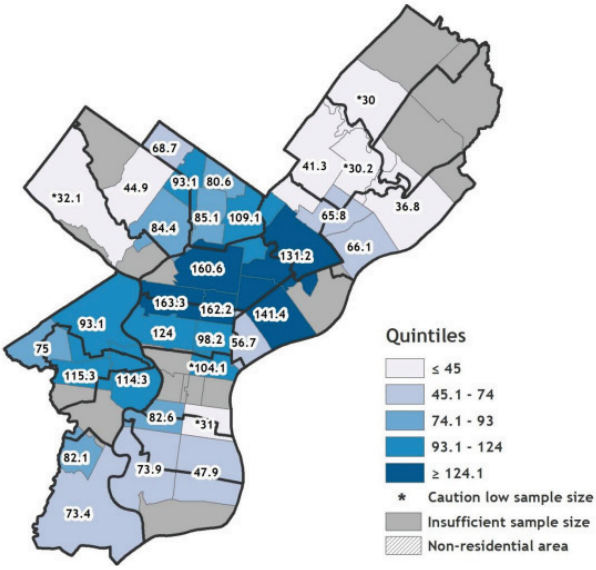

Figure 2: Asthma Hospitalizations per 10,000 Children from 2012-2014

From "2016 Community Health Assessment (CHA) Philadelphia, PA," by Philadelphia Department of Public Health's Health Care Cost Containment Council, 2016, p.125.

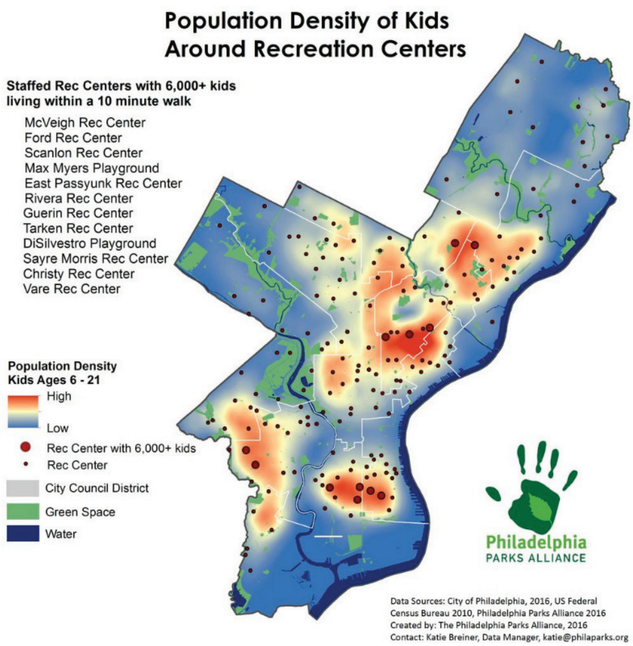

Figure 3: Childhood Population Density, 2016

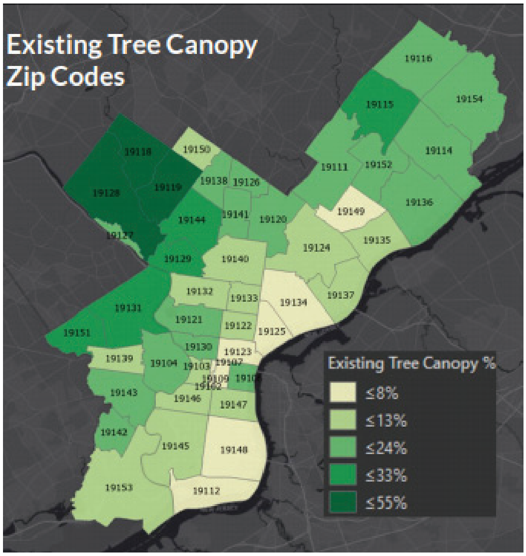

Figure 4: Existing Tree Canopy by Zip Code, 2018

From "Tree canopy assessment," by Jarlath O'Neil-Dunne, 2019, p.9

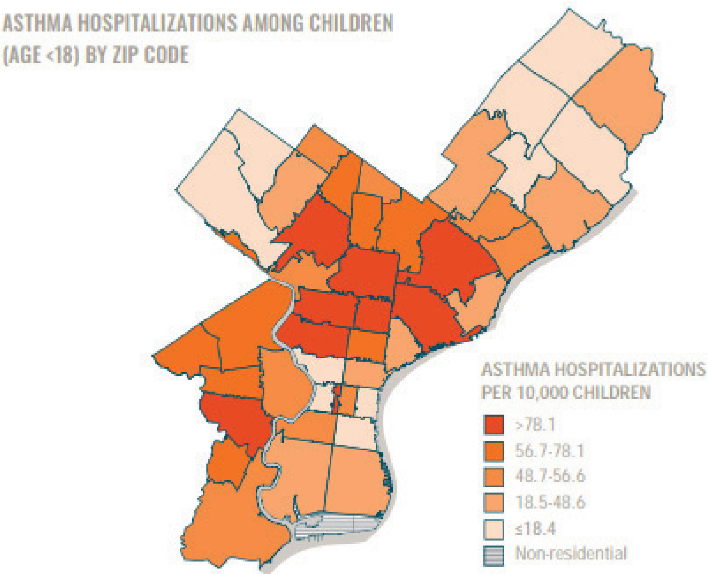

Figure 5: Asthma Hospitalizations per 100,000 Children from 2016-2018

From "Philadelphia's community health assessment: health of the city," by Philadelphia Department of Public Health, 2019, p.11.

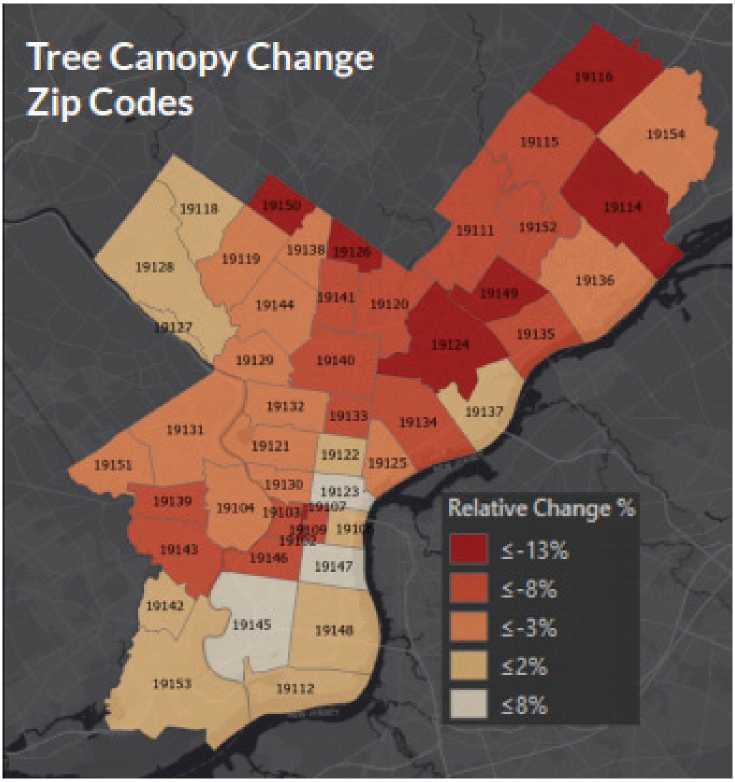

Figure 6: Tree Canopy Change by Zip Code, 2018

From "Tree Canopy Assessment," by Jarlath O'Neil-Dunne, 2019, p.9.

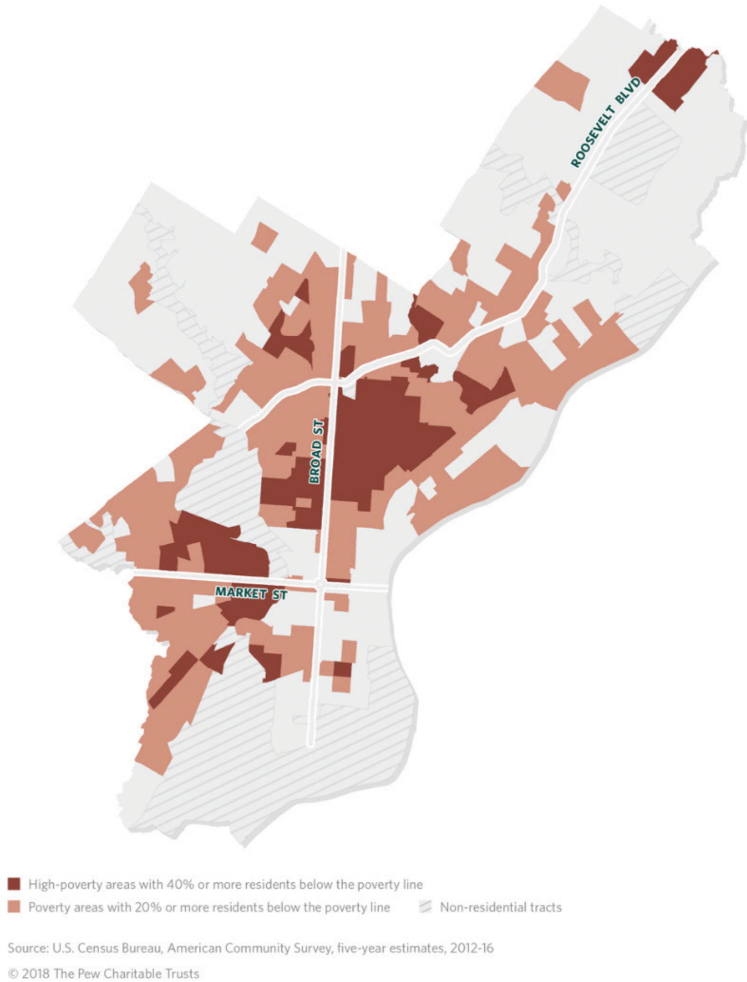

Figure 7: Poverty Concentration, 2012-2016
From "Philadelphia's poor: experiences from below the poverty line," by PEW Research Center, 2018.

Discussion

Socioeconomic status and lack of natural, green space have historically been closely related. This phenomenon of environmental inequality is seldom identified within the public health sector. While the Affordable Care Act had intentions to mitigate health disparities through chiefly medical examination, education, and care, the PPHF fell short of its potential. As seen in Philadelphia, environmental initiatives offer great returns on investment.

The Obama administration's approach to limit health care spending relied heavily on consistent execution and enforcement. Obtaining prospective multilateral solutions was within reach, as the ACA implemented field research, prevention strategies, and health tracking (CDC, 2019). The objective to "manage conditions before they become severe" is not foundationally impactful (CDC, 2012). Even so, saving in hopes of decreasing health care spending through such measures would unlikely equate to the savings of green infrastructure. In 2017, Pennsylvania urban forestry programs spent approximately $5.21 per person on urban green management. The Philadelphia public health department spent approximately $84.10 per person (Kondo et al., 2020). Environmental benefit is not idealistic, either. A study from the National Institute of Health monetized the worth of green infrastructure: ". . .total air pollution removal by urban trees and shrubs across 55 U.S. cities at 711,000 metric tons, estimating the removal value at $3.8 billion in annual public value" (Wolf & Robbins, 2015, p. 392).

Philadelphia's tree canopy is just one example of the endless possibilities of urban green development and infrastructure. Studying Australia's urban green landscape, Michael Bentley (2015) stated that a community's physical and social resources form a framework of systems and processes that influence every level of livability. Philadelphia has proven that great possibilities can come from a broadened scope for environmental health:

> 1) Create BEs with fewer acute health hazards, decreasing the need for conventional health protection
> 2) Impact a wider range of population-wide behaviors needed to prevent and control the current chronic disease epidemics, thus realizing multiple health benefits with modest resource additions
> 3) Increase access to resources for EPH through collaboration (Rideout et al., 2016, p. 127).

The ACA has shown its ability to have positively impacted American health care through care regulation and insurance distribution. However, to truly rehabilitate the system, environmental investment must be seen as a tangible option within its approaches to preventative health. EPH practitioners could realistically operationalize their skills through inspections, oversight of land use planning, health hazard legislation, and collaboration and advocacy (Rideout et al., 2016). In doing so, they may establish many high-quality green initiatives, further contributing to the betterment of community health (Jonkers et al., 2014; Maas et al., 2006).

Mobilization of public administration via health care reform holds a great deal of salience, which has recently been highlighted amidst the COVID-19 pandemic. Evidence from Harvard University stated that "people who live in places with poor air quality are more likely to die from COVID-19 even when accounting for other factors that may influence risk of death such as pre-existing medical conditions, socioeconomic status, and access to healthcare" (Wu et al., 2020). Across continents, the most disadvantaged populations suffer from greater health disparities, especially chronic illnesses and treatable diseases (Tessum et al., 2019; Bentley, 2015). Separating the socioeconomic factors that influence public and environmental health is neither a realistic nor sustainable approach to change. These issues must be amalgamated.

Conclusion

Environmental investment is the future of slowing health care spending. Inequality between various socioeconomic statuses and racial groups have created chasms of uninsured Americans. By exploring the untapped potential of green infrastructure, the Patient Protection and Affordable Care Act of 2010 can be upheld to achieve its full potential.

As demonstrated in the international community, access and quality to green spaces is correlated to life expectancy and general health. Philadelphia's Greenworks project proved that the same is true within the United States. While transcontinental comparisons do present numerous variables, it is incontestable that no population is immune to environmental impact (Hajat et al., 2015). Data from across the globe proves the consistency among green accessibility and public health. Close examination of the effects of tree coverage, proven to serve as a multifaceted solution within urban natural environments (Kondo et al., 2020), offered insight on the symbiotic relationship between citizens and their green surroundings within a single community.

Studies found that the most apparent link between green space and perceived health was seen in the elderly, housewives, and residents of lower socioeconomic status (Maas et al., 2006). This was consistent in Philadelphia. As outlined by the ACA, high-risk populations present the highest demand of preventative services due to a lack of accessibility (CDC, 2012). In the age of the Coronavirus and climate change surfacing as two political priorities, environmental investment can assist in an equitable and sustainable transformation of the American health care system.

In order to execute these improvements, we recommend reevaluation of the PPHF's fund distribution to incentivize long lasting green infrastructure. Such evolutions are not likely to require extensive change, as the necessary preventative measures have been at the discretion of CTG awardees. While CTGs were formulated to carry out local programs to prevent top chronic diseases, we encourage more specified coordination with local governments and organizations. Additionally, we suggest reviewing historical health records in geographic areas with majority marginalized groups in order to identify the specific locations with high-risk populations that are in need of environmental infrastructure, which can be made evident by this data. Expanding funds allocated for these areas with the intent to mitigate the common denominators among prominent diseases is the only ensured sustainable reform is attained through the ACA.

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The Impacts of Gender on Women in High-Level Leadership

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Gender is a social construct referring to the characteristics of men, women, boys, and girls. This social dimension includes social norms, behaviors, and roles connected with being a woman, man, girl, or boy, and impacts how one interacts with peers and forms relationships. This idea created by society has negatively affected both males and females limiting them to the socially acceptable behaviors of their gender. Despite decades of apparent equality in the workplace, women are still underrepresented in senior management and leadership positions throughout the world. This article examines how gender impacts leadership in terms of transformational and transactional leadership styles and how gender roles and culture have affected women seeking high-level leadership positions.

I. Introduction

For many centuries now, gender roles have played a huge part in society limiting opportunities for both genders. Due to these gender roles being heavily and sometimes unknowingly ingrained in us by society, leadership has primarily been a male prerogative in political, corporate, military, and many other sectors of the world (Eagly and Karau 2002). With that being said, more and more women are entering middle management and other lower-level leadership roles, with women making up 46% of managers and administrators in the United States (U.S. Bureau of Labor Statistics, 2002). However, in high-level leadership roles, women remain a rarity, with females accounting for 7.4% of Fortune 500 CEOs (*The Number of Women Running Fortune 500 Companies Hits an All-Time Record*, n.d.). This is surprising as in all OECD countries young women are proportionally more educated than their male counterparts. Because of this, public and scientific discussion has focused on the idea of "the glass ceiling". The glass ceiling phenomenon is an unacknowledged barrier to advancement in a profession, specifically affecting women and other minorities (Eagly and Karau, 2002). Previously, explanations for this inadequate representation of women in higher-level leadership positions traditionally has focused on the idea that women aren't qualified for these positions, or that women are obligated to stay at home or take time off work for family responsibilities. However, when you look at the facts on average, across OECD countries, "about 32% of

[1] Written under the direction of Dr. Shani Carter in partial fulfillment of the Senior Program requirements.

45-54 year-old men and almost 36% of 45-54 year-old women hold a tertiary qualification. For 25-34 year-olds, these rates increase to 39% and 51%, respectively" (OECD, n.d). So, if more women are qualified than men and more and more women are choosing to work, rather than stay at home, how can this be a valid reason as to why men control these positions. Because of this data, it is vital to evaluate whether gender bias is one of the reasons why we lack female representation in elite leadership positions.

II. Literature review

Gender Socialization

Socialization is the process of transferring norms, values, beliefs, and behaviors to group members. Therefore, gender socialization is the process by which individuals are informed about the social norms, values, and beliefs of males and females and are taught how to socially behave according to their assigned gender (Chattopadhyay, 2017). In many cultures, gender socialization begins from the moment we are born and is normalized throughout our entire lives. Baby girls are identified with the color pink and baby boys are identified with the color blue. This so-called gender socialization continues throughout childhood, where boys are given cars and trucks to play with, and girls are given dolls and kitchenware (Chattopadhyay, 2017). When growing up, girls are encouraged by their families and society to acquire feminine characteristics such as compassion, sacrifice, softness, righteousness, and self-effacement, whereas boys are encouraged to internalize their feelings and to develop masculine qualities such as aggression, physical strength, dominance, ambitiousness, and public appearance (Chattopadhyay, 2017). Adding to this, adults tend to comment on the appearance of girls saying things such as "you look so pretty" or "that's a nice dress you have on," whereas with boys they are more likely to hear comments on their abilities, for example, "you're so strong", "you're so brave" or "you're such a fast runner." Due to these social norms and gender expectations that we sometimes unknowingly impose upon our children, the potential abilities of young boys and girls are unfortunately narrowed, reduced, and limited. By treating our children differently based on their gender, we are contributing to gender inequalities they will experience later on in life in education, employment, income, empowerment, and others.

Gender Stereotypes

Gender stereotypes can be a result of gender socialization. Society teaches us what gender is and how we should act based upon these assumptions and stereotypes built on gender are formed because of this socialization. These gender roles and stereotypes that are defined by our culture are some of the strongest social norms in our society (Kreuzer, 1992). As children, we are socialized in these norms and values, and we increasingly internalize these stereotypes and use them to judge others, to choose friends and those we develop relationships with, and to construct expectations of them. This continues through adolescence and is made obvious when people who do not conform to the gender stereotypes are ostracized by peers or by society for being different.

Leadership Role Stereotypes

Due to the social construct of gender, women are generally expected to have stronger communal traits than men, such as care, helpfulness, sympathy, and gentleness (Wang et al., 2019). Because of these expectations, women are stereotyped to comply with behaviors that are less aggressive, less competitive, and less risky. In contrast, men are conditioned to uphold more agentic traits, such as dominance, ambition, independence, and aggression (Wang et al., 2019). These socially conditioned behaviors and expectations of men and women are the reason why women are perceived as less "fit" than men for leadership positions.

Typically, leadership is a role constructed of masculine qualities. A leader is expected to be influential, dominant, competitive, and ambitious, all of which are qualities that line up with traditional male characteristics rather than female (Wang et al., 2019). For instance, leadership positions hold power that often involve tasks and responsibilities that require behaviors that are congruent with traditional male characteristics (Wang et al., 2019). Behaviors of a traditional male leader happen to be the opposite of qualities that a woman is expected to uphold. Such contradictions affect the perceptions of a woman's suitability for any leadership role. (Wang et al., 2019).

Glass Escalator

In recent decades there have been significant improvements in gender equality. These advances include numerous laws and regulations that seek to promote equal opportunities for men and women such as the Equal Pay Act, Title VII of the Civil Rights Act, and the Pregnancy Discrimination Action of 1978. However, significant gender inequality still exists in crucial areas, particularly positions of power. Arguably, this could be because of the deep-rooted problem of gender socialization and gender stereotyping.

The career choices we make have been linked to the type of social training children are exposed to in early childhood, particularly gender role training (Kreuzer, 1992). Therefore, if society depicts women to be more nurturing, compassionate, and sympathetic than their male counterparts, they will be more likely to choose a job that would include those skills, such as nursing or teaching. Due to this gender socialization, women are encouraged to enter these "pink-collar" professions, and men are discouraged from these occupations. Men in these fields are often viewed as laughable because they are doing a "women's" job, which is indicative of how ingrained some gender roles still are. Only a few decades ago, a girl who expressed the desire to work in a STEM field would have been explicitly discouraged, and although this is unlikely to happen today, a boy with a similar goal would probably encounter more support and encouragement than a girl entering this field simply because of his gender.

Interestingly, men who work in stereotypical feminine professions advance in their careers faster than do women because the men are often perceived as more qualified for leadership than are women. When looking at senior management in these pink collar professions, one tends to see men disproportionally represented. So while men may account for less than 5% of all nurses, a much larger percentage of men will occupy senior-level positions such as hospital administrators (Yadav & Khanna, 2015). This disproportionately high percentage of men in leadership positions is known as the "glass escalator" effect. The "glass escalator" refers to the way men who enter female-dominated professions tend to be put on a glass escalator enabling them to glide past women and to receive promotions, shooting the men straight to the top of the corporate ladder. This is just another obstacle that women have to face in the workplace.

Additionally, women in the workplace have to deal with what is called the "glass ceiling." This phenomenon refers to a barrier of prejudice and discrimination that excludes women from higher-level leadership positions (Eagly & Karau, 2002). Women are excluded from authority positions, and not just in male-dominated professions. Women also experience this pushback in the so-called "pink collar" fields. It is often argued that the reason there are so few women in positions of authority is not due to male bias, but rather that women have not obtained the qualification to hold these elite leadership positions. (Fishel & Pottker, 1973). Although it is sometimes claimed that women lack the credentials to be leaders, data shows that in the education field, women do have the credentials, and are simply just not promoted. Research shows that women receive 46 percent of all master's degrees and 20 percent of all doctoral degrees in education, yet women hold nowhere near that percentage of leadership positions (Fishel & Pottker, 1973). It has been argued that the low rate of women in leadership positions is due to women not wanting to advance their careers because of family reasons. While it is true that some studies have found that women teachers have less desire to acquire administrative positions than their male counterparts (Fishel & Pottker, 1973); it has also been shown that women who have just started out teaching are far more likely to aspire to become principals than women who have been teaching for years (Fishel & Pottker, 1973). This is likely because women who have been teaching for a long time have seen how difficult it is for female teachers to obtain an administrative position and as a result have given up trying to do so (Fishel & Pottker, 1973). It is only when social prejudices against women in positions of power are overcome that women will be able to occupy positions that align with their abilities and qualifications (Fishel & Pottker, 1973).

Leadership Styles

Transformational Leadership

Transformational leadership is a leadership style that can inspire positive change in those who follow, through motivation and enthusiasm. Transformational leaders create a vision for the future, exhibit higher levels of social influence, and provide their followers with the self-confidence and self-belief to perform beyond expectations (Ivan 2012). Transformational leaders are generally energetic, enthusiastic, and passionate; they use empowerment and mentorship to guide their followers (Ivan, 2012). Not only are these types of leaders concerned and involved in the process, but they are also focused on helping every member of the group succeed.

Antonakis et al. (2003) has theorized the transformational leadership style using five dimensions. (1) *Idealized influence (attributed)* refers to the socialized charisma of the leader, whether the leader is perceived as being confident and powerful, and whether they are viewed as focusing on higher-order ideals and ethics; (2) *Idealized influence (behavior)* refers to the charismatic actions of the leader that are centered on values, beliefs, and a sense of mission; *(3) Inspirational motivation* refers to the way that leaders motivate their followers with optimistic views of the future and the importance of ambitious yet reasonable goals; (4) *Intellectual stimulation* refers to the way a leader's actions appeal to their followers, by challenging them to think creatively and find solutions to difficult problems; and (5) *individualized consideration* refers to the leader's behavior that contributes to follower satisfaction by paying attention to the need of each follower and advising, supporting, and allowing them to develop and self-actualize (Antonakis et al. 2003).

Transactional Leadership

Transactional leadership is a leadership style based on command and control. It is predicated on the fulfillment of contractual obligations and is typically represented by setting objectives and monitoring and controlling the outcomes of these objectives. Antonakis et al. (2003) has theorized transactional leadership using the following three dimensions. (1) *Contingent reward leadership* refers to a leader that focuses on clarifying role and task requirements and provides followers with material or psychological rewards associated with fulfilling those tasks; (2) *Management-by-exception (active)* refers to a leader's active vigilance to ensure that standards are met; and (3) *Management-by-*

exception (passive) refers to leaders who only intervene after noncompliance has occurred or when it is too late and mistakes have already happened (Antonakis et al., 2003).

III. Hypotheses

H1: Gender impacts leadership style - because of societal norms females in leadership/management positions tend to have a more transformational and ethical leadership style, while their male counterparts tend to have a more transactional leadership approach.

H2: Because of gender stereotypes and what society has taught us about gender roles, women are less likely to achieve top leadership/management positions

H3: Countries with high levels of masculinity and power distance will have low political parity scores.

IV. Method

Subjects

Several studies were used as sources of data for the thesis, and the majority of the subjects were adults. One set of subjects was a randomly selected national sample of 1,026 adults, 18 years and older, who were surveyed by a Gallup Poll on December 2-4 in the year 2000 (Eagly & Karau, 2002).

The second set of subjects were college faculty from the 1988-2004 National Study of Postsecondary Faculty, U.S. Department of Education as cited in Carter (2010). This sample consisted of 1,581,000 male and female professors of all ranks in the United States and consisted of the number and percentage of U.S. professors by rank.

The third set of subjects were drawn from the Hofstede Insights website which compares countries on Power Distance, Masculinity, Uncertainty Avoidance, and Long-Term Orientation. This data was used to compare various countries and their cultures, especially towards females.

The fourth set of subjects used was the percentage of CEO's of Fortune 500 Companies who were female, as measured by Fortune from 1998 to 2020. This data was used alongside the fifth set of subjects consisting of the percentage of female college presidents in the US to show that there are significantly fewer women in high-level leadership positions.

The sixth set of subjects used in this study were the Political Parity Scores of numerous countries. These scores were used in line with the Hofstede Cultural Dimensions to show the representation of women in government in the selected countries.

The last set of subjects used was transformational and transactional leadership styles amongst males and females. The study measured the following variables: transformational leadership (Charisma, Idealized Influence (attribute), Idealized Influence (behavior), Inspirational Motivation, and Intellectual Stimulation; and transactional leadership (contingent reward, Management by Exception (active), Management by Exception (passive).

Table 1: Components of Study							
	Variables						
Data	Percentage of Women as Faculty	Power Distance, Uncertainty, Masculinity, Long term Orientation	Transformational vs Transactional	Preferences for Leader by Gender	Political Parity Score	Female CEO's of Fortune 500 Companies	Female College Presidents
Instrument	National study of postsecondary faculty	Hofstede Cultural Dimensions	Meta-analysis	Survey	Women's Power Index	Fortune 500 list	Survey
Data Source	(Carter, 2010)	https://www.hofstede-insights.com/product/compare-countries/	(Eagly, Johannsen-Schmidt, and Van Engen, 2003) (Ivan, 2012)	Gallup Poll	https://www.cfr.org/article/womens-power-index	https://fortune.com/2020/05/18/women-ceos-fortune-500-2020/ https://www.catalyst.org/wp-content/uploads/2019/06/Catalyst_Women_Fortune_CEOs_1972-2020_Historical_List_5.28.2020.pdf	https://www.aceacps.org/women-presidents/
Type of data gathered	Quantitative	Quantitative	Quantitative	Quantitative	Quantitative	Quantitative	Quantitative
Types of scores produced	Percentages	0-100	Differences in means	Percentages	Percentages	Number	Number & Percentage

Adapted from: Rudestam, K.E. & Newton, R.R. (1992). Surviving Your Dissertation. Newbury Park, California: Sage Publications, Inc. page 140.

Measures

The measures used were as follows. Because the effects of gender on leadership are not concrete, it is important to understand gender roles and how they affect men and women in general, as well as in the workforce, particularly in positions of leadership. To prove whether or not gender impacts leadership style, this paper analyzed several peer-reviewed journal articles all relevant to gender and how it impacts leadership. The papers that were chosen for analysis used terminology that helps understand the social construct of gender. For example, gender socialization, gender role, role congruity theory, and gender stereotypes.

Surveys

Gallup Poll of Opinions

The survey conducted by Gallup Poll measured the public's opinions by asking men and women whether or not they agreed with the following statements "Women should take care of running their homes and leave running the country up to men" and "Most men are better suited emotionally for politics than are most women". The participants were also asked, "If your party nominated a woman for president, would you vote for her if she were qualified for the job?". Responses were also collected on whether they preferred a man or a woman as their boss.

Female CEO's

To determine the percentage of women as CEOs in Fortune 500 companies, all CEOs were taken from the Fortune 500 list and the number of males and females were recorded and the percentage was calculated from there.

Faculty and College Presidents by Gender

Similarly, with the number of female college presidents, all college presidents were in the study conducted by Eagly, Johannesen-Schmidt, and Van Engen, (2003) transformational and transactional leadership was broken down into leadership measures. Men and women participating in this study were asked questions using the multilevel leadership questionnaire (MLQ) and were scored based on these leadership measures. The study carried out by Carter, (2010) used data from the National study of postsecondary faculty to calculate the proportion of business faculty members in various ranks, by gender. Specific data was used and compared from the years 1988 and 2004.

National Cultures

The Hofstede Cultural Dimensions were used in this paper to see whether there is a relationship between the power distance, Uncertainty, Masculinity, Long term Orientation of countries that have prominent female leaders versus those who do not.

V. Procedure

Article Searches

To collect ideal data, all published articles were searched through electronic research databases such as Business Source Premier, One Search, JSTOR, and EBSCOHost from a university library system. Keywords such as "gender and leadership," "gender stereotypes," "role congruity theory," and "gender role stereotypes" were used to search these databases for relevant sources. These keywords helped find a selection of related peer-reviewed articles that presented relevant data and results regarding how gender impacts leadership. The data used in this paper came from studies that used keywords including "role congruity theory," "social role theory," "glass ceiling," "leadership," "prejudice," and "gender equality". The above methodology produced positive results and is an important topic in the 21st century. Numerous studies have been conducted in this field by business schools, psychology departments, and other professionals to grasp more knowledge of the topic and how we can combat this issue.

Statistical Methods to Analyze Data

The data supporting the hypothesis that women in leadership/managerial roles tend to have a more transformational leadership style, while their male counterparts tend to have a more transactional leadership approach was analyzed by comparing the means of men and women. For each subscale of transformational and transactional leadership, the means were calculated and a positive score indicated that men had higher scores than women and a negative score indicated that women had higher scores than men. The data to support the hypothesis that women are less likely to achieve top leadership/management positions was analyzed by calculating the total number of female CEO's in the Fortune 500, the total number of female college presidents in the U.S., the percentage of women as faculty in the US, and the percentages of people's preferences of a leader by gender. The data for the last hypothesis was analyzed by comparing the Hofstede Insights Power Distance scores and Masculinity scores alongside the Women's Power index Political Parity Score. Countries with high Power Distance and Masculinity were researched further to look at the relationship between these scores and their Political Parity Score.

Table 2 Hypothesis, Instruments, and Statistical Analysis

Hypothesis	Instrument							Variable Relationships	Statistical Test
	Percentage of women as faculty	Power Distance, Uncertainty, Masculinity, Long term Orientation	Transformational vs transactional	Preferences for leader by gender	Female CEO's of Fortune 500 Companies	Political Parity Score	Female college presidents		
H1		Hofstede Cultural Dimensions	Transformational vs transactional					Hofstede > Transformational; or Transactional	Tables showing differences in means
H2	Percentage of women as faculty			Preferences for leader by gender	Female CEO's of fortune 500		Female college presidents	P > (WF+CEO+CP)	Bar graphs, Line charts, and tables
H3		Hofstede Cultural Dimensions				Women's Power Index		HM+HPD=LPPS	Bar Graphs

Adapted from: Rudestam, K.E. & Newton, R.R. (1992). Surviving Your Dissertation. Newbury Park, California: Sage Publications, Inc. page 138.

VI. Results

H1: Gender impacts leadership style - because of societal norms females in leadership/management positions tend to have a more transformational and ethical leadership style, while their male counterparts tend to have a more transactional leadership approach.

H2: Because of gender stereotypes and what society has taught us about gender roles, women are less likely to achieve top leadership/management positions

H3: Countries with high levels of masculinity and power distance will have low political parity scores.

The results from the National Opinion Research Center 1998 shown in Figures 1, 2, and 3, indicate that gender stereotypes and gender roles negatively affect women's desire to pursue high-level leadership roles. These gender roles are so heavily ingrained in society that even women believe they should not be allowed to enter into these elite positions.

Figure 1 shows that from 1974 to 1998, there were similar percentages of men and women responding "yes" to the question "Women should take care of running their homes and leave running the country up to men." but the percentage declined from approximately 35% to 15%.

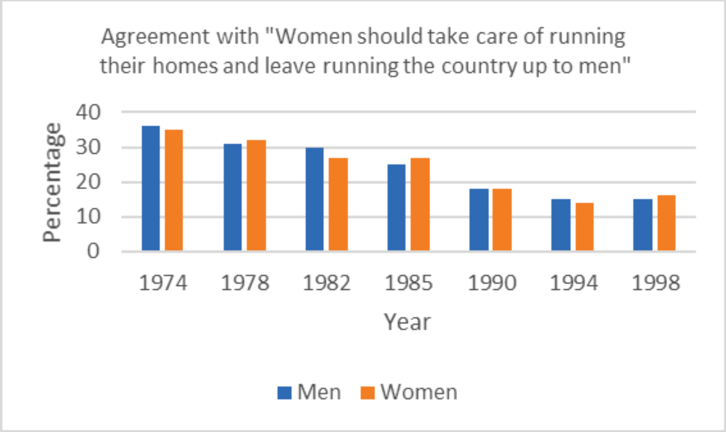

Figure 1. Responses by men and women in selected years to general social survey items about political leadership. Source: National Opinion Research Center, 1998.

Figure 2, shows data for 1978, 1985, and 1998 for the question "Most men are better suited emotionally for politics than are most women". The percentage of men and women responding "yes" declined over time, and the percentage of men and women responding yes was similar over time. This evidence suggests that women, too, believe in the societal construct of gender roles and that women are supposed to stay at home, and men are supposed to be the breadwinners. Figure 3, indicates that for all the years between 1974 and 1998, more men than women would vote for a woman president than women would vote for a woman president.

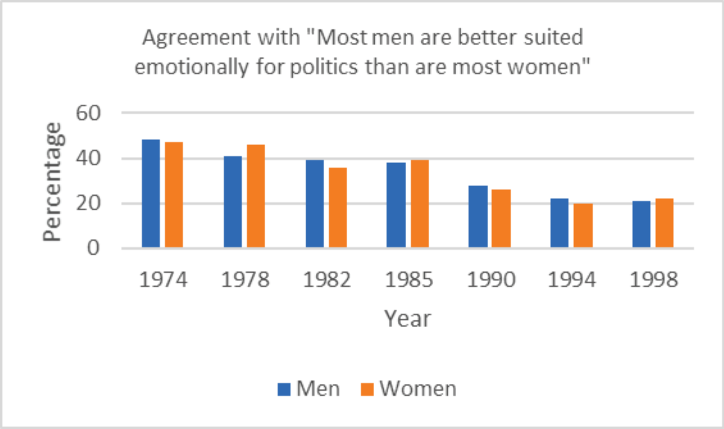

Figure 2. Responses by men and women in selected years to general social survey items about political leadership. Source: National Opinion Research Center, 1998.

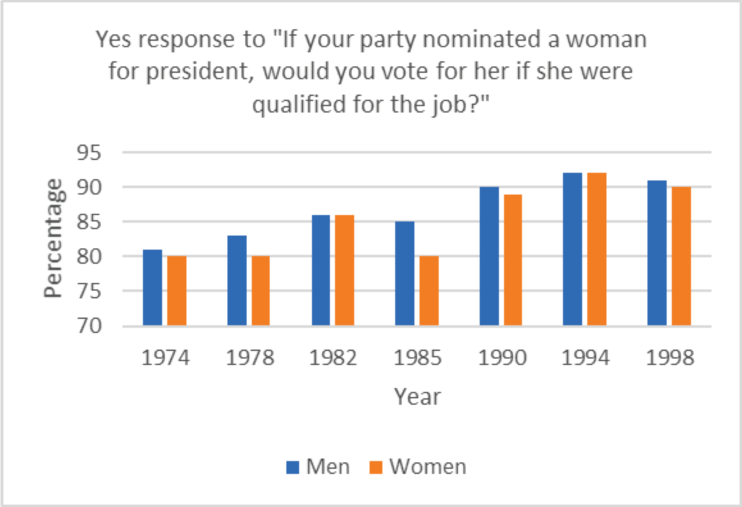

Figure 3. Responses by men and women in selected years to general social survey items about political leadership. Source: National Opinion Research Center, 1998.

The first-ever female CEO of a Fortune 500 company was Katharine Graham, who became CEO of the Washington Post in 1972 and held that position until 1991. Katharine's father owned the paper and made Katharine's husband CEO, and only after their separation and his subsequent death was Katharine made CEO. Since then, there has been a very slow increase in female CEOs in the Fortune 500. As seen in figure 4, there was a relatively steady increase in the number of female CEO's from 2010 to 2020, with 2020 hitting a record high of 37. While this may be a significant milestone for women, this number only represents 7.4% of the fortune 500 ("Historical List of Women CEOs of the Fortune Lists," n.d.).

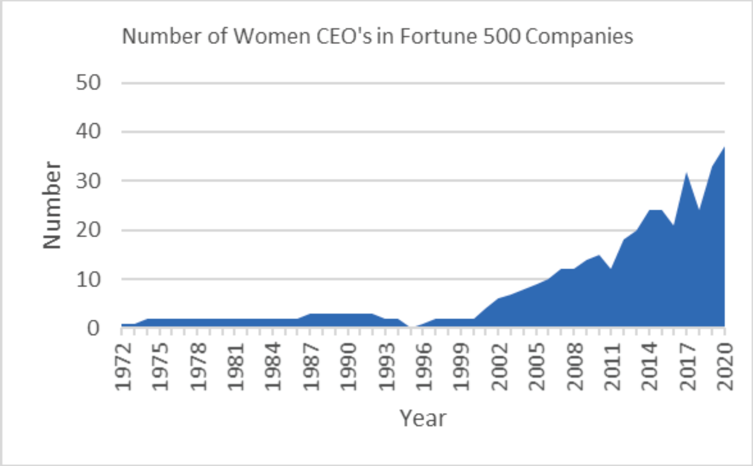

Figure 4. Number of Female CEO's in Fortune 500 Companies from 1972-2020
Source: Fortune 500 and ("Historical List of Women CEOs of the Fortune Lists," n.d.)

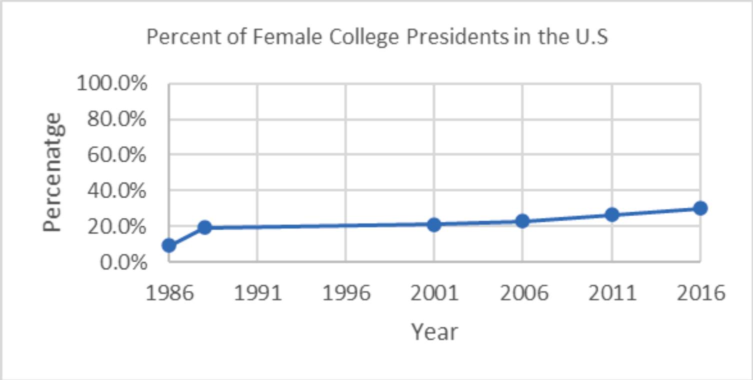

Figure 5. Percent of Female College Presidents in the United States from 1986-2016
Source: Pew Social Trends

As demonstrated in Figure 5, in 1986, 9.5% of all college presidents were female, just two years later this figure more than doubled to 19.3% and since then has been on a slow but steady incline to 30.1% in 2016.

When referring to Figure 6, both male and female participants were asked the question “If you were taking a new job and had your choice of a boss, would you prefer to work for a man or a woman?”. From 1953 to 2000, responses showed both genders preferred a male boss. In 1953 the preference for a male boss is very clear with 75% of men and 57% of women showing they would prefer for a male boss and only 2% of men and 8% of women wanting to work for a female boss. In 1982, 1993, 1995,1999, and 2000 more females preferred a male boss than males did.

Table 3 shows that from 1998 to 2004, the number of male professors increased by 19.30%, whereas, the number of female professors only increased by 7.40%. In both 1998 and 2004 the data shows there are more females employed in lower-level positions (lecturers and instructors) than males. In 2004 there were roughly 30% more female instructors than males. This information also indicates that females dominate the lower-level positions (Lecturers and Instructors), males and females are roughly similar in mid-level positions (Assistant Professor and Associate Professor), and in higher-level positions (Professor) males tend to dominate the occupation.

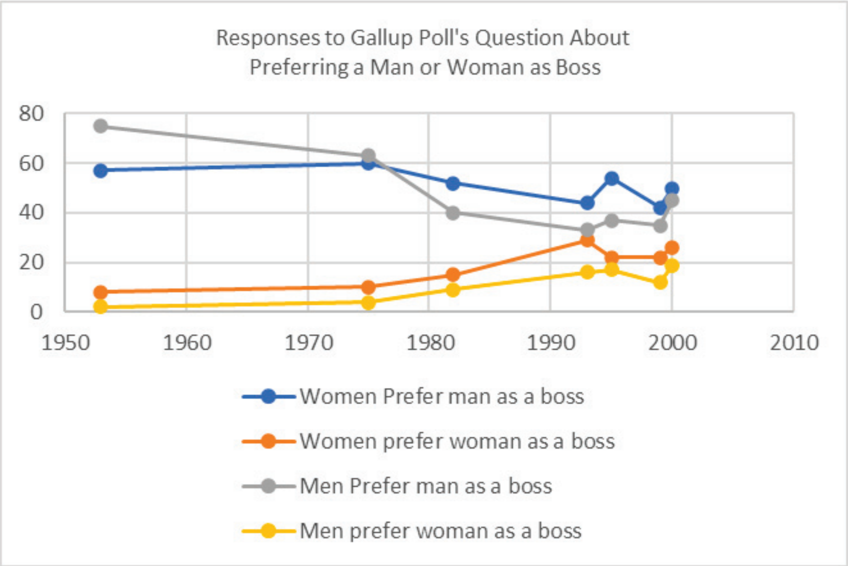

Figure 6. Responses to the question “If you were taking a new job and had your choice of a boss, would you prefer to work for a man or a woman?” Source: Gallup Poll
Percentages do not add up to 100 because “no opinion” and “no difference” are not shown.

Rank	Professor	Associate Professor	Assistant Professor	Instructor	Lecturer
2004					
Female	13.8%	15.4%	20.4%	40.7%	9.7%
Male	38.2%	23.2%	24.5%	10.5%	3.7%
1988					
Female	6.4%	8.3%	16.7%	57.6%	11.0%
Male	18.9%	15.0%	19.2%	39.8%	7.2%

Table 3. The Proportion of Business Faculty Members in Various Ranks, by Gender

Figure 7 shows the political parity score of numerous countries, which measures the representation of women in a country's government. A score of 100 represents women having at least 50 percent representation in all levels of government with available data. Costa Rica has the highest Political Parity Score (74) out of all countries measured by the Women's Power Index. This means that Costa Rica has the largest representation of women in government of all countries. Despite this, women only account for 37% of Costa Rica's government. Sweden is a close second with a political parity score of 69, the third-highest score of all countries. New Zealand and Germany obtained scores of 51 and 43 respectively. The United States has a political parity score of 17 giving it a ranking of 128 out of a total of 173 countries. Brazil has a score of 19 and China has a score of 13.

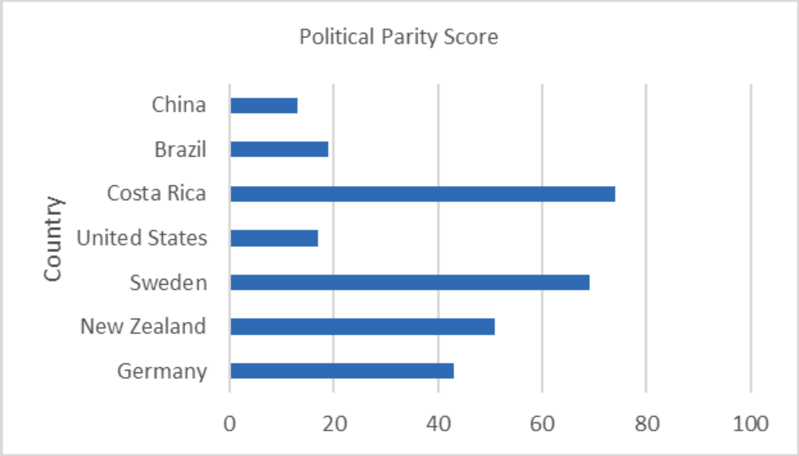

Figure 7. Political Parity Score. Source: Women's Power Index, Council on Foreign Relations

The countries used for comparison in this study were chosen for many reasons. New Zealand and Germany were chosen because of their female leadership, Costa Rica was chosen because it has the highest Political Parity Score, and Sweden was chosen because it is a country well known for women's rights and gender equality. The United States was, of course, chosen for its leadership role in the world and China and Russia were chosen because they are very large countries known for their masculine traits and have particularly low Political Parity Scores as expected.

Masculinity and femininity of a country are measured by Hofstede insights with a high score being considered as masculine and a low score being considered as feminine. A masculine score on this dimension suggests that the society will be driven by competition, achievement, and success (Hofstede Insights, n.d). A feminine score on this dimension indicates that the society values caring for others and quality of life (Hofstede Insights, n.d). Figure 9 shows a very low score for Sweden and is therefore considered a feminine society. It is vital to keep the work/life balance, people value equality, solidarity, and quality in their working lives (Hofstede Insights, n.d). This was expected as Sweden is known to be a feminine society that values gender equality and women's rights.

Power distance is a measure by Hofstede's insights that deals with the equality of individuals in society. Power Distance is defined as "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally" (Hofstede Insights, n.d). China and Brazil score very high on the power distance scale showing that the culture of these countries believe that inequalities amongst people are acceptable. New Zealand on the other hand scores very low on this

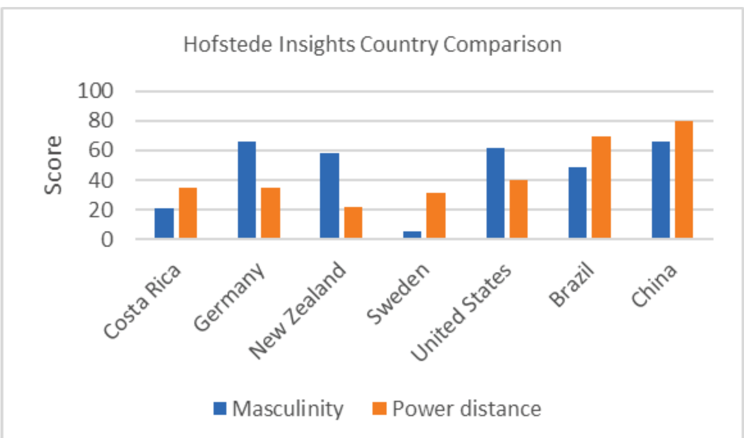

Figure 8. Hofstede Insights Country Comparison of Masculinity and Power Distance
Source: Hofstede Insights

MLQ* scales and subscales	Description	Item sample
Transformational		
Idealized influence (attributed)	Demonstrates attributes that motivate respect and pride by association with him or her	Makes personal sacrifices for the benefit of others
Idealized influence (behavior)	Communicates values, purpose, and importance of the mission	Talks enthusiastically about what needs to be accomplished
Inspirational motivation	Exhibits optimism and excitement about goals and future states	Uses symbols and images to focus our efforts
Intellectual stimulation	Examines new perspectives on problem-solving and task completion	Enables me to think about old problems in new ways
Individualized consideration	Focuses on the development and mentoring of followers and attends to individual needs	Delegates responsibilities to me to provide me with learning opportunities
Transactional		
Contingent reward	Exchanges rewards for satisfactory performance by followers	Tells me what I have to know to perform my job
Active management by exception	Attends to followers' mistakes and failures to meet standards	Monitors my performance for deviations from standards
Passive management by exception	Waits until problems become severe before attending and intervening	Takes action only when a mistake has occurred
Laissez-faire	Exhibits widespread absence and lack of involvement during critical junctures	Doesn't tell me where he or she stands on issues

Table 4. Transformational, transactional, and laissez-faire leadership style definitions Source: (Ivan, 2012)

dimension (22). Within organizations in New Zealand, hierarchy is established for convenience rather than for control, superiors are always accessible to employees and managers rely on individuals and teams for their expertise (Hofstede Insights, n.d). Similar to New Zealand, Sweden uses a hierarchy for convenience only, power is decentralized and managers count on the experience of their employees, control is disliked and attitudes towards managers are informal and on a first name basis (Hofstede Insights, n.d).

As seen in Table 5, the data shows that men and women had very similar scores for transactional leadership with a mean of 21.8 for men and 21.13 for women, showing no significant difference between the two genders. The mean scores for transformational leadership showed more of a difference with women having a higher score of 57.08 compared to men with 55.8. This data shows that although very close, men have a more transactional leadership style and women have a more transformational leadership style, thus proving the initial hypothesis of this study to be correct.

	Sex	N	Mean	St. Deviation
Transactional leadership score	Men	41	21.8	3.69
	Women	89	21.13	3.46
Transformational leadership score	Men	41	55.8	9.33
	Women	89	57.08	6.86

Table 5. Sex differences in self-ratings for transformation, transactional, and passive-avoidant leadership behavior **Source:** (Ivan, 2012)

Leadership Measure	k	d+
Transformational	44	-0.1
Charisma	25	-0.09
Idealized Influence (attribute)	10	-0.12
Idealized Influence (behavior)	15	-0.02
Inspirational Motivation	29	-0.05
Intellectual Stimulation	35	-0.05
Individualized Consideration	28	-0.19
Transactional		
Contingent Reward	21	-0.13
Management by Exception (active)	12	0.12
Management by Exception (passive)	18	0.27
Laissez-Faire	16	0.16

Table 6. Study-Level Effect Sizes for Differences between Women and Men in Transformational, Transactional, and Laissez-Faire Leadership Styles

As shown in Table 6. women had higher scores on all fronts when looking at transformational leadership styles, proving that, from this data set, there was an overall female advantage on the transformational subscale. When looking at the transactional leadership style, women leaders scored higher than their male counterparts on the contingent reward subscale. However, male leaders scored higher on both the other subscales, indicating that male leaders are more transactional than female leaders. This data proves the initial hypothesis of this study to be correct. Although one could argue that the data from the transactional subscale is too close between both genders to fairly say that the male leadership style is more transactional than the females.

VII. Discussion

The thesis examines the relationship between leadership, gender roles, and the influence of stereotyping, specifically how the social construct of gender impacts leadership style and whether there is a difference between male and female leadership styles. The thesis also investigates why there are fewer women in higher-level leadership positions than there are men, and whether the country culture fosters prejudice against women in higher-level leadership positions.

Leadership styles

The data on leadership styles found that women are more likely to be transformational leaders than are men, meaning that women are more likely to establish themselves as role models by gaining the trust and confidence of their followers and by encouraging their followers to develop to their full potential by mentoring and empowering them.

Within the transformational leader construct, the results showed that women scored significantly higher than men on all aspects of transformational leadership except for the Idealized Influence (behavior) subscale, thus supporting the hypothesis that women are overall more transformational leaders than men (H1: Gender impacts leadership style - because of societal norms females in leadership/management positions tend to have a more transformational and ethical leadership style, while their male counterparts tend to have a more transactional leadership approach).

Regarding transactional leadership, men obtained significantly higher scores than women obtained on the Management by Exception (active) and Management by Exception (passive) subscales, but, on the Contingent Reward subscale, women scored higher. These results indicate men and women are transactional leaders, but that men engage in transactional leadership in more ways than women do, and a greater percentage of men are transactional leaders than the percentage of women.

Gender Stereotypes

Data from this study indicates that not only do many men believe in the social construct of gender but so do many females. The Research found that men and women agreed with statements limiting females to stay at home wives, in fact in 1974, 36% of men and 35% of women agreed with the statement “Women should take care of running their homes and leave running the country up to men". When asked if in agreeance with the statement “most men are better suited emotionally for politics than are most women” both genders scored very similar results with 48% of men and 47% of women agreeing with this statement in 1974. This research indicates that the gender stereotypes society has created about men and women, has an impact on women seeking positions in politics. The data with a yes response to the question “If your party nominated a woman for president, would you vote for her if she were qualified for the job?” shows fewer women responded yes than men showing that many women themselves believe that men are more suitable in positions of power such as President. Last, when asked about their preference of gender as a boss, the data shows that from 1982 to 2000 more women preferred a male boss than men themselves preferred a male boss.

Women in Leadership

The information shown in Table 3 indicates that females account for far more lower-level positions than men do and, the higher up the ladder you go the fewer women there are, showing that men dominate the higher-level positions. The data from the Fortune 500 list of CEOs shows that today there are 37 female CEOs, which accounts for 7.4% of all Fortune 500 CEOs. This data along with the data from the Percentage of Female College Presidents in the US showing that today women only account for 30% of all US college presidents. This information tied in with the gender stereotyping data from above shows support for the hypothesis that because of gender stereotypes and what society has taught us about gender roles, women are less likely to achieve top leadership/management positions.

Hofstede Insights

The thesis also examined some aspects of different countries’ and cultures using the Hofstede taxonomy (i.e., Masculinity or Femininity, Power Distance) and compared the countries’ cultures to their Political Parity Scores. As predicted countries with very high levels of Power Distance (i.e., China and Brazil), scored high on Masculinity and low on Political Parity, indicating that these countries are far less likely to have equal representation of women in their government. Countries with low Power Distance and low Masculinity (i.e., high Femininity) scored high Political Parity Scores (i.e., Sweden and Costa Rica). indicating that these countries are more inclusive of women in their government.

VIII. Conclusions

General Conclusions

Although women are equally, if not more, educated than men, their access to high-level leadership positions is rather limited. For many years now, leadership positions in the business world have been dominated by males, making it difficult for women to even get their foot in the door. Scholars have argued that the biological differences between males and females are the reason for inequality in leadership positions. Others have argued that it is the cultural and societal stereotyping that inhibits women's leadership potential (Gannouni & Ramboarison-Lalao, 2019). Stereotypically, women tend to be more nurturing, supportive, and cooperative with others than men. These traits are more in line with the transformational leadership style than men who are stereotyped to be independent, powerful, and assertive. These masculine characteristics are consistent with the transformational leadership style. In the past, men have always been considered more dominant in leadership positions because of their masculine traits and how these traits align with the way we believe a leader should lead. However, in today's less hierarchical society a women's more transformational approach might be more effective. This study found support for the hypothesis that females in leadership/management positions tend to have a more transformational and ethical leadership style. Evidence from this study shows that women were more transformational leaders on every subscale that was measured. Although these male-female differences were small they support generalizations that women's typical leadership styles tend to be more transformational when compared to men. In terms of transactional leadership, the study found that women were more likely than men to exchange rewards for satisfactory performance. However, men proved to be more transactional leaders on the other two subscales. This data shows that transactional leadership tends to be more common in the male population, although it is less certain that men are more transactional leaders because there was less information available.

This study found similar results amongst men and women when asked questions regarding their preferred gender in leadership roles. Both sexes indicated they prefer men in leadership positions to women. This evidence indicates that there are men and women out there that believe that just because of their gender women are less capable than men when it comes to leadership. This information along with the data showing there are significantly fewer women as Fortune 500 CEOs, US College Presidents, and College Professors shows that because of gender socialization women are less likely to achieve high-level leadership/management positions. Over time the data shows a downward trend with fewer males and females believing women aren't capable of leadership positions in politics. This shows how society is becoming more accepting of women in leadership roles. If we, as a society, can accept women as equals in high-level leadership roles it would increase the number of potential candidates for these roles and would also increase the proportion of candidates with superior leadership skills and be more inclusive of everyone in society.

This analysis also shows that as per hypothesis 3; countries with high levels of masculinity and power distance will have low political parity scores. As predicted, China and Brazil are countries with very high Power Distance with scores of 80 and 69 respectively. These two countries also achieved high masculinity scores and low political parity scores, which indicates that these countries are far less likely to have equal representation of women in their government. One can also infer from this data that countries with low Power Distance and low Masculinity (i.e., high Femininity) scored high Political Parity Scores (i.e., Sweden and Costa Rica) indicating that these countries are more inclusive of women in their government. This is shown in the data with Costa Rica and Sweden being ranked in the top 3 highest countries in terms of representation of women in government. This data indicates that a countries culture can affect the number of women in high-level leadership positions, particularly in government.

In an ideal world, gender wouldn't matter, this is something we need to strive for. Organizations around the world need to ensure there are sufficient rungs on the ladder to help women climb into management and leadership positions. Organizations that prioritize a diverse and inclusive culture will be in a better position to solve the problems of the ever-evolving future.

Implications for Practice

These findings may offer important implications for organizations looking to expand their leadership teams. These findings are also important for people to be aware of gender stereotypes and how they affect men and women in society, particularly women in the workplace. If more people are aware of these stereotypes, it will be easier to avoid them when recruiting new leaders.

Limitations

Two limitations should be noted in this study; the sample size and the sampling method. When looking at the data used to compare Power Distance, Masculinity, and Political Parity Scores, a sample of only seven different countries were used. To ensure more accurate results a much larger sample size would need to be used, it would be best if every country in the world was included. Secondly, a convenience sampling method was used. The countries used in this sample were countries known to be particularly masculine or feminine. This may have resulted in the data being biased to the hypothesis. These limitations are mainly due to the limited access to information and the fact that this research requires time and more resources.

Implications for Research

There are often misconceptions as to why there are such few women in higher-level leadership positions. Often it is argued that it is because women aren't qualified for these positions or that women do not want jobs in elite leadership positions because they cannot fulfill these positions due to the pressures of having children. Further research could include examining this topic to see the different reasons why women are less likely to achieve higher-level leadership positions. Future research could also look at which leadership style (transformational or transactional) is considered to be better for the world we live in today, and which leadership style followers respond better towards.

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Section III: Critical Essays

The Detriments of Democratic Laboratories: How Devolution Could Negatively Impact Minority Groups

James Hagenberg (English)[1]

This paper analyzes policy diffusion and devolution in America and their impact on marginalized groups. While there are proven cases in which using states as “democratic laboratories” has positively impacted Americans, is it possible that giving states too much power could be detrimental to lower income and minority citizens? This paper attempts to prove that giving states too much power is detrimental to marginalized groups such as low-income families, people of color, and LGBT people. This hypothesis is tested through the analysis of theoretical scholarship on devolution, case studies that analyze the trends of policy diffusion, and by taking note of the 2005 School Textbook Marriage Protection Act of Arkansas. The study concluded that giving state lawmakers too much power has proven to be detrimental to marginalized groups. However, the federal government rarely addresses smaller scale issues that plague these people. In order to address these issues a three-point policy adjustment is suggested.

I. Introduction

In America, because states can adopt unique policies that do not directly affect the rest of the nation, they are often referred to as “laboratories” of democracy. These “democratic laboratories” are unique to federalism, and can experiment with new and sometimes divisive policies that may not be on the federal government’s agenda. Some believe that this empowerment of states’ law-making ability, or “devolution” allows state lawmakers to implement more effective policy for their state. Furthermore, if a state creates a new policy that is successful in achieving its goal, lawmakers in other states are then able to decide if they want to implement a similar policy into their own laws. Many believe that this method of “policy diffusion” is a faster way of implementing innovative ideas nationally, whereas depending on the federal government can be a slow and tedious process. While there are proven cases in which using states as “democratic laboratories” has led to successful policy creation and diffusion, is it possible that giving states too much power could be detrimental to lower income and minority citizens?

[1] Written under the direction of Dr. Abraham Unger for GOV103: *American Government & Politics Administration*.

This paper will test the true efficacy of devolution and policy diffusion by asking how lawmakers' personal ideologies and special interest groups play a role in local policy creation. Referencing four articles of scholarship and three case studies on policy diffusion and devolution, as well as the 2005 Arkansas School Textbook Marriage Protection Act, the paper will analyze the impact democratic laboratories have had on people of color, LGBT citizens, and low-income families. In asking the question of how these marginalized groups are affected by states' freedom in policy making, this paper will determine if policy diffusion and devolution actually achieve their goals of being a faster more effective method of law making that equally protects all Americans.

II. Literature Review

Karch (2007) believes the empowerment of state governments, or "devolution", allows for a more efficient method of policy creation (p. 116). This idea of diffusion, which is unique to federalism, is praised as a way of allowing lawmakers to adapt each other's policies in order to best fit the citizens and the unique issues of their state. Karch's (2007) biggest claim is that by using states as democratic laboratories, more unique and effective policies are able to be implemented gradually throughout the nation while avoiding federal sluggishness. Karch (2007) is a proponent of the "devolution revolution", with his theories on policy diffusion supporting the idea that local lawmakers are more capable of providing help for their citizens than the federal government (p. 116). Yet, Super (2008) is in almost direct disagreement with Karch (2007) over the efficacy of policy diffusion and devolution; Super (2008) believes that a decentralized approach is actually slower and less effective.

Although states can work faster than the federal government, Super (2008) claims that the time it takes for the policy to be implemented from state to state winds up taking much longer than simply creating a national policy. This is then detrimental to people who need immediate action, whereas federal policy could at least offer a general solution. Super (2008) looks at the economic impact of Hurricane Katrina and claims that the people who were least helped by the government were low-income black Americans. Super (2008) claims the lack of centralized government efforts leads to poor black people being ostracized from government aid efforts, claiming that, "the absence of any meaningful assault on poverty in the wake of Katrina suggests a more fundamental, structural problem with the dominant model of anti-poverty lawmaking" (p. 545). Super (2008) believes that the federal government's reliance on state and private aid results in subpar benefit programs that only provide enough assistance for people who are not dangerously in need.

Shipan and Volden (2008) do not think of policy diffusion as being inherently good or bad, instead they claim that the different methods of policy diffusion are what make the system productive or counterintuitive. They claim that the mechanisms of policy diffusion, “learning, competition, imitating, and coercion” , play a crucial role in its efficacy (p. 840). Shipan and Volden (2008) recognize the major peril of granting states increased power is that local “governments may advance their own interests at the expense of others” (p. 840). Garett and Jansa (2015) provide a similarly moderate opinion to Shipan and Volden (2008), but identify one of the largest detriments to policy diffusion as special interest groups. Garett and Jansa (2015) claim that lawmakers will “emulate model legislation from interest groups” instead of looking at policy “enacted by other states” (391). This increases the efficacy of policy diffusion in the sense that special interest group inspired policy will undoubtedly spread quickly, but does not address the specific concerns of people in that state.

Karch (2007) identifies how a lack of a “comprehensible national healthcare reform” has forced state officials to “regularly take independent action” in order to achieve any results (p. 119). Karch (2007) also recognizes The Personal Responsibility and Work Opportunity Reconciliation Act as a policy that empowered states’ individual rights and has seen years of noted progress in welfare policy. Shipan and Volden (2008) claim that when policy diffusion is an act of “learning” and not “imitation” or “competition,” it typically yields positive results (p. 840). Inarguably, using states as democratic laboratories has resulted in positive outcomes, however in order to truly debate the efficacy of policy diffusion one must analyze who is benefitting from these policies.

Garrett and Jansa (2015) identify the role of special interest groups in policy creation and diffusion, claiming that they “foster communication between states in policy diffusion networks” (p. 391). This means that special interest groups have a direct influence on state policies, and the ways in which state lawmakers share policy ideas. In turn, special interest groups’ interference then limits state lawmakers' attention towards individuals in need of policy adjustment, furthering Super’s (2008) claims that those who are most in need of policy adjustment and creation, such as low-income and marginalized groups, are rarely heard. Karch (2007), claims that devolution allows for state lawmakers to create policy to help these people, but fails to recognize the ways in which lawmakers abuse their power to further their own personal agendas. Meanwhile, Shipan and Volden (2008) once again offer a moderate opinion, where they believe that policy diffusion has the power to help marginalized citizens more directly than federal intervention, solely in the case that local governments work bipartisanly and effectively learn from one another.

While some of these scholars do consider the ways in which marginalized groups are often affected by policy diffusion, many are hasty to label the system as either totally good or totally bad. Instead, this paper will contribute to the literature on policy diffusion by highlighting the shortcomings of both state and federal governments in terms of protecting and aiding marginalized groups. This then allows for unique and objective policy suggestions, as well as a compilation of relevant and contemporary perspectives on policy diffusion.

III. Data

Lowery, Gray, and Baumgartner (2011) conducted a study analyzing whether or not policy agendas on the state level affect agenda setting on the federal level. Lowery, Gray, and Baumgartner (2011) conclude that there is "little evidence that changes in state policy agendas in the aggregate influence patterns of national patterns of policy attention" (p. 286). The research notes that while there is some overlap in the state and federal policy agenda, it is well within the margin of coincidence, and certainly not enough to conclude that state policy affects national agenda setting.

Butler, Volden, Dynes, and Shor (2017) used experimental research in order to study how political ideologies affect the willingness of lawmakers to learn from one another and share ideas. Conclusively it was discovered that "policymakers who are ideologically predisposed" against a suggested policy are "relatively unwilling to learn from others" (p. 38). However, Butler, Volden, Dynes, and Shor (2017) also discover that a lawmaker's "ideological biases can be overcome" when the policy is very successful and/or when members of the lawmaker's party adopt the policy (p. 38). Finally, it is discovered that there is an unwillingness among all lawmakers to learn from members of the opposing political party (p. 38).

Barth and Parry (2009) analyze policy in Arkansas during 2005 as well as a state survey that gauged local opinion on gay rights and the ethics of banning gay marriage. The data concluded that the state's citizens were "deeply uncomfortable with same-sex relations", with 64.7% of participants being directly opposed to gay relationships and 53.8% believed the government should not legally recognize gay couples' relationships (p. 313). Barth and Parry (2009) conclude that this influenced the 2005 School Textbook Marriage Protection Act, as well as other anti-LGBT policies, being put on the agenda. The 2005 Arkansas School Textbook Marriage Protection Act sought to define marriage as strictly between a man and a woman. It intended to eliminate discussion of gay relationships in schools and to exclude the idea of gay people from education. The bill was four votes shy of being passed.

IV. Discussion

This paper explored the ways in which using the states as "democratic laboratories" to test new policies could possibly work to the detriment of minority groups such as low-income workers, LGBT citizens, and people of color. By analyzing theoretical ideas and case studies the paper hoped to prove that although devolution has had success in the past, it is not a reliable system of lawmaking that effectively addresses the needs of all citizens regardless of socio-economic status, sexuality, or race.

The research does not entirely eliminate the supporting theories behind devolution and policy diffusion. As Karch (2007) claims, the federal government is very slow and can often lead to congressional stalemates. Furthermore, Lowery, Gray, and Baumgartner (2011) prove that state level issues are often not considered issues on the federal level. This means that although overpowering states' rights would have a negative impact on minority groups, it is still necessary to afford states the agency to tackle issues they feel affect their people the most. Again, as Shipan and Volden (2008) claim, if the mechanism of policy diffusion is not corrupt in of itself, then the policy it yields tends to positively benefit its citizens.

The research does however prove that marginalized groups are often left behind or negatively impacted by the effects of devolution and policy diffusion. Barth and Parry's (2009) data shows how LGBT citizens were not only publicly scrutinized, but they were also the victims of multiple anti-LGBT policies that were almost put into effect. If the anti-LGBT laws were passed, such as The Textbook Marriage Protection Act (2005), it is not unrealistic to think other conservative and religious lawmakers would follow suit once Arkansas had set the precedent. Furthermore, Barth and Parry (2009) reported that 64.7% of participants directly opposed gay relationships, yet the state of Arkansas posed no policy to protect these citizens from hate or harassment. This also proved Super's (2008) point about policy diffusion, that those who truly need help are rarely heard. In this situation it becomes incredibly clear that state legislators' ideological beliefs played a large role in their policy creation, which was intentionally detrimental to the safety and civil liberties of members LGBT people in Arkansas. Furthermore, Super's (2008) claims about poor black Americans during the aftermath of Hurricane Katrina further shows how devolution fails to provide help to marginalized groups. As Super (2008) points out, without a federal budget, states are forced to rely on the private sector to help those who are in the most danger. In the case of Hurricane Katrina, the predominantly black, low-income victims were given little to no assistance and state lawmakers did not see it as their immediate concern to provide lasting assistance. Both

Super (2008) and Barth and Parry (2009) make it incredibly clear how devolution and policy diffusion ostracize minority groups from policy creation, thus limiting these people's civil liberties and quality of life.

Definitively, the research also concluded that policy diffusion is not an effective method of law making because lawmakers are very often swayed by special interest groups and/or personal ideological beliefs. Garett and Jansa (2015) show that special interest groups work efficiently to spread their own ideas and convince lawmakers nationally to implement policy that positively impacts their group's cause. Garett and Jansa's (2015) research also showed evidence that lawmakers often use policy models provided by the special interest groups. This means that the policies implemented do not actually best suit their citizens and instead work most ideally for the special interest groups. As Shipan and Volden (2008) claim, the biggest problem with giving states increased freedom is the risk that lawmakers will work with their own interest in mind, and disregard the concerns of their citizens. Barth and Parry's (2009) research proves this to be true, as does Garrett and Jansa's (2015) evidence that lawmakers often work closely with special interest groups, as well as Butler, Volden, Dynes and Shor's (2017) proof that lawmakers prefer to only listen to members of their party.

V. Conclusion

Although policy diffusion and democratic experimentalism are not flawed concepts in theory, in practice these methods of law making often harm marginalized groups such as low-income workers, people of color, and LGBT citizens. My research concluded that far too often policy diffusion works as a means for those already in power to spread ideas that benefit them, which works directly to the detriment of marginalized communities. Furthermore, special interest groups and personal bias inhibit lawmakers' abilities to create fair and just laws that equally protect and help these minority groups. Ideological biases and special interest groups sometimes work directly against marginalized groups, as in the case with the 2005 Arkansas anti-LGBT policy proposals.

These issues are not easily solved, and would realistically require a drastic change in the way policy is created, as well as how people communicate with their state officials. While relying solely on the federal government to solve local issues is not feasible, it is also unrealistic to expect state governments to consistently work together in a non-partisan manner in order to best adapt policies to their unique issues. Therefore, there needs to be more diversity among lawmakers, and there needs to be a new system to hold lawmakers more accountable to all of their citizens regardless of socioeconomic status. In addition to this, the role of special interest groups in policy creation needs to be either removed or limited. In order to address the concerns to such a complex issue, the following three-part policy adjustment is suggested.

First, because many marginalized people do not see themselves adequately represented in government, their voices often go unheard and their problems unsolved. One clear solution is to fund better education programs in low-income, highly diverse areas as well as promoting government involvement to students in these areas. A well-educated student from an impoverished background is better suited to create effective policy that will help their community more than someone who does not personally know the unique struggles of these marginalized people. Despite the notion that the 2016 presidential election was a major loss for civil liberties of minorities, it did inspire a strong effort by marginalized groups to elect members of their community to local government positions. Alexandria Ocasio-Cortez, Jared Polis, and Ilhan Omar are among the 411 women, people of color, and LGBT citizens who ran for government positions in the 2018 midterm elections (Rebecca 2018). This diversity among candidates resulted in a higher voter turnout among the marginalized communities those people were "representing." This means that by advocating for more diversity among candidates, democracy would be strengthened and the civil liberties of these groups would be further protected.

Second, state officials should be required to communicate with and listen to their citizens more often. At least five times a year, state officials should be mandated to host town halls. These town halls should take place in the heart of different communities every time, in an attempt to draw in diverse crowds. It has been noted by many political theorists that state lawmakers are predominantly interested in reelection. If this is true, these lawmakers will find it in their best interest to, at the very least, appear to be listening to their constituents. Government officials who publicly align themselves with marginalized groups, even if it is in a small manner, will realistically find that those groups will actively vote for them. This is shown in the case of Joe Biden's Super Tuesday win in South Carolina. As someone who was vice president for the first black president, black voters felt a sort of allegiance to the presidential nominee. Furthermore, by establishing an effective method of communication between state and citizen, people previously discouraged by the lack of government acknowledgement will be more apt to actively participate in democracy. This is a method of both holding state officials more accountable to all of their citizens, as well as a way for citizens to voice their concerns.

Finally, special interest groups should be restricted from having such a direct role in policy creation. As shown, special interest groups draft policy that gets implemented, they control the situations in which lawmakers share policy with one another, and these groups use their vast resources to pass legislation that best benefits their cause. By stopping these groups' interference with local policy creation, the people who need to be helped by the government will have a chance to have their voice heard. This would also help eliminate some of the issues of corruption associated with policy diffusion.

The implementation of these ideas would allow for more equal representation in government, the spread of effective policy across America, and result in a stronger democracy with an invigorated voter turnout.

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Umbrellas, Youthful Love, and Brilliant Colors: Films as Representations of How to Cope with the War

Julia Francis (Theatre/Speech)[1]

Jacques Demy's 1964 *Umbrellas of Cherbourg* is a dream-like film in technicolor abundance that tells an idealized love story in the midst of war. While one of the main characters in this film is drafted into the war, beyond that, it largely glosses over the reality of war rhetoric and experience. Films largely ignoring the wars at hand, only briefly touching on them, were a widespread trend throughout the cinematic world. Instead of diving into the nitty gritty of such a turbulent time, it was popular for films to shift gears into what one could refer to as "post war optimism" reminding ordinary people that joy, wonderment, and hopefulness were still attainable in such dark times. At the time that *The Umbrellas of Cherbourg* was released, France was engaged in the Algerian War. As can be imagined, this was a topic largely ignored in the entertainment media, and Demy's iconic film, more so gravitated towards tones of that post-war optimism. *The Umbrellas of Cherbourg* was a French film that encapsulated this, but American films such as *Singin' in the Rain* (1952) and *Bye Bye Birdie* (1963) illustrated this phenomenon as well.

All three movies have similar plots, costume designs, and cinematic elements that mirror one another and serve to illustrate this post war optimism that was greedily absorbed by the general public. *The Umbrellas of Cherbourg* in particular utilizes an extremely unorthodox color palette in conjunction with a highly romanticized, idealistic love story symbolic of the youth. Maxwell Ryan, an apartment therapist who specializes in the study of color theory, agrees with the sentiment that *Umbrella's* color palette comes across as its own "language that exaggerates the storybook quality of this romantic fantasy" (2). From the opening scene, the viewer is greeted with a beautifully choreographed dance of brightly colored pastel umbrellas juxtaposed against a dismal downpour of rain. Because the umbrellas are not the expected black, but rather an array of bright hues, it foreshadows the idea that this movie will explore the concept of joy being able to still be found even in unpredictable, dreary circumstances. The fun, pastel-colored umbrellas even go as far as to suggest "that a whimsical narrative is about to

[1] Written under the direction of Dr. Dane Stalcup for FR/EN356 *French Cinema: Retrogrades, Rebels & Realists*.

unfold. These umbrellas are bright accents (just as our young lovers are) set against a rainy seaport” (2).

This idea is directly mirrored in what is arguably the most iconic scene in *Singin’ in the Rain,* when Gene Kelly himself is quite literally singing in the rain. There is an absolute downpour, and instead of being bogged down by the foul weather, he joyfully prances around, singing his heart out, having the time of his life. Not to mention that Gene Kelly had a 101-degree fever during the scene, but sang and danced on anyways. He truly symbolizes a sense of joy and abandonment in that iconic scene that serves to remind viewers of their own childhood wonder. At the end of the sequence, Kelly starts splashing in giant puddles (3:40-4:00), something all of us can easily relate to doing as children. Within that scene, Kelly reminds the audience of what it’s like to have joy and childhood wonderment even in the face of dark and dismal days, something that was necessary in the postwar era. *Umbrellas of Cherbourg,* through its opening scene, but also through many more moments in the movie, embodies this as well.

Immediately upon meeting the two main characters, Guy and Genevive, it is glaringly obvious that they are meant to be the epitome of what it means to be young and in love. Guy has a modest job in a car repair shop, and Genevive helps her mother in their umbrella shop. Neither expects to make much of any money in the future, but in their state of naïveté, they believe their love is enough to make up for what they lack. It is a sickly, sweet romance that is extremely passionate and idealized. Genevive herself is arguably the personification of pure innocence and beauty. She is a wide, doe-eyed teenager with blond hair and a demure voice that lends itself to a lovely soprano sound. She intensely mirrors Kim McAfee from *Bye Bye Birdie.* Both girls are hopelessly in love with their respective boyfriends, and represent a transition between what it means to be a young girl versus what it means to start becoming a woman. This concept is epitomized in Kim’s iconic solo *How Lovely to Be a Woman*-sung at the ripe age of 16 chock full of young teenage naivete. Both girls also have extremely colorful wardrobes set against extremely colorful atmospheres.

At the beginning of the film, Genevieve is donned in either white or lively pinks that serve to represent both her innocence and femininity. Kim is dressed similarly. She is outfitted in beautiful pink and yellow dresses extremely representative of the time period that make her stand out against the film. In both films the female leads are tied very closely to the color of their clothes. In *Umbrellas*, however, this is not exclusive to Genevive. Guy, her love interest, has a bright blue shirt that he wears beneath his work uniform that, by the time the film has concluded, becomes a staple of his character. This detail is part of why it is all the more devastating at the end when he is no longer outfitted in such a striking blue, but instead in dark suits due to how he has become disillusioned with his life after having been betrayed by his love.

While Kathy Seldon, Debbie Reynolds' romantic lead in *Singin' in the Rain,* is a good deal more fiery and opinionated than Kim or Genevive, she still fits much of the same formula. Kathy too is a beautiful ingenue enamored by a man, in her case a celebrity man, and is chasing her dreams of performing. She too frequently dons bright colors-in one of the most iconic scenes of the movie, *Good Mornin',* Reynolds dons a baby blue dress, (the exact same shade as a dress that Genevieve wears). Later in the musical number, she and her scene partners are decked out in fluorescent yellow raincoats. This is where the similarities with Reynolds' character ends, and her character proves to be a bit more progressive in regards to ideas of feminism and women having power as well as ambition. To focus on those concepts, however, would ignore what all three films are ultimately working to convey through their beautiful female leads: hope, joy, and whimsy childhood-like wonder combined with fun and conveyed through ridiculously bright colors.

Extremely bright colors may seem like an odd choice when dealing with movies that make vague commentaries on the war. But it's these types of movies, with color palettes that were the exact opposite of subtle, that served to bring joy and optimism to tv sets across the country, and the world. *The Umbrellas of Cherbourg* utilizes such a striking and intense color palette that the viewer can't help but feel what they are watching is not only an idealized version of events, but is bordering along the line of being a complete dream world in full color gaudiness. Marjorie Baumgarten, a film critic and contributing writer to *The Austin Chronicle,* feels that because the colors are so vibrant, ebullient and "saturated to their richest and most eye-captivating hues, with backdrops and sets that are bathed in unearthly colors that stimulate the senses but defy all logic...never for a second does the movie let you forget that you are in a fabricated and artificial movie universe" (1). For lack of a better explanation, the colors essentially embody cinematic escapism with its bold choices. There are very few moments that the war is actually discussed in the movie, and when it is, it is to explain the plot. In layman terms, the war is used to explain that Guy is being drafted, and essentially nothing more. The film cannot afford to give any more commentary, otherwise it would negate the idealized world that Demy has worked to create.

Bye Bye Birdie has a similar effect due to how it almost turns the war into a satirical commentary. Its plot centralizes around a celebrity named Conrad Birdie who is meant to imitate Elvis Presley being drafted. Understandably, the general public is devastated, thus he decides to choose a random girl from the United States to give "one last kiss to" on national television on the Ed Sullivan show to bid farewell before he is drafted. This is where Kim McAfee comes in, as she is chosen as the young girl to receive the last kiss. The entire plot of *Bye Bye Birdie* is ridiculous, but much like *Umbrellas,* it is an idealized, fictionalized version of events in a world that is better than what actually exists. Both Kim and Genevive were universally relatable to so many girls that had to bid their sweethearts farewell because of the war-and both girls represent a sort of blind optimism regarding the doleful situations at hand that are comforting to see.

Genevive is utterly convinced that her and Guy's relationship will be able to withstand the two years that he is away at war. She is blinded by her undying love, often getting into arguments with her mother surrounding the situation, swearing that their love is true, that it will last. While Kim is not dating Conrad Birdie in the movie and actually has a separate boyfriend, her entire world is overtaken by the celebrity once she gets the opportunity to receive his last kiss. The opening scene of the movie is a striking image of Kim singing in a bright yellow dress against an almost electric blue background belting out her heartbreak at Birdie having to go. Kim's dress in the scene is exactly the sort of outfit one would expect to see Genevive in, and that blue background with the yellow garment is exactly the sort of strange, technicolor, "Willy Wonkian" combination that Demy would utilize.

Kim and Genevive are also both sopranos with soft, lilting voices with a breathy quality that exemplify their femininity, as well as their innocence. One cannot help but see the two girls on screen and automatically empathize, and feel for them. Kim and Genevive are the young teenage girls hopelessly in love with their sweethearts. They serve to remind viewers of their first loves and what it felt to be so infatuated with your honey that nothing else mattered; and you truly felt it could go the distance. While Kathy is not necessarily the poster child for young love, in many ways she did still provide the American public, particularly women, with an idealized persona. She represented a beautiful woman chasing after her ambition who was ultimately rewarded for it. At the time, this could have been seen as revolutionary, and utterly inspiring. When you combine the rest of *Singin' in the Rain* with such a strong and glamorous female lead, it ultimately achieves the same effect as *Birdie* and *Umbrellas* in a slightly different way all whilst giving the happy ending audiences craved.

By the end of *Umbrellas,* however, the disenchantment arrives, but the film still provides happy endings for the two main characters, even if they are bittersweet endings rooted in reality. This is an element in which the movies differ greatly, as *Bye Bye Birdie* and *Singin' in the Rain* both have quintessential happy, Hollywood endings. *Bye Bye Birdie* even has more than one love story that it follows, as opposed to just the young teens. *Umbrellas of Cherbourg,* while it does imitate much of its predecessor, does not take after this plot point. Unsurprisingly, "Hollywood endings", if the title is any indication, are unique to Hollywood. Those types of movies epitomized feel good sentiment spread throughout the general public, which, in the postwar era, can be argued was necessary. Nonetheless, all three women served as integral reminders to the American public of what it was like to be so in love, and also to be in pursuit of more than just love.

Kathy Seldon reminds American women that they are still able to dream, and dream big. They are able to still pursue ambition and success, even when the going has gotten hard. She reminds women that having a bit of spunk and fire, as well as beauty, is a wonderful combination. Beauty and a little bit of personality can aid as opposed to harm. Most importantly, however, Kathy reminds women that it is possible to chase love and success, and to achieve both in the end. Kathy is able to encapsulate due to how she is a couple years older than both Kim and Genevieve, thus she has a more established plotline in that regard due to how she is actually a woman. While Kim and Genevieve more so catered to the young, teenage girls hopelessly in love, Kathy was able to cater to the women trying to navigate love and a career due to how it became necessary for them to be able to do both.

In circling back to Kim, however, she reminded Americans what it meant to be a young girl on the precipice of becoming a woman, hopelessly in love with her high school sweetheart, whilst simultaneously getting the once in a lifetime chance to kiss her biggest celebrity crush. The exact sentiment is expressed in her comically ridiculous song *How Lovely to Be a Woman* wherein Kim expresses how wonderful she feels being a woman now that she is 16. Her clear naivete in that song, the belief that she is a woman because she is 16, is something most teenage girls can relate to as they get more and more anxious to grow up. The second aspect of the above reminder is essentially recreated in the satirical scene *Sincerely* when Conrad Birdie sings to the general public, resulting in all of the girls fainting due to how madly in love they are with him. If that doesn't essentially describe the fantasy of every young American teenager, especially in an era desperate for hope, it's hard to say what does.

The Umbrellas of Cherbourg arguably takes the concepts of *Bye Bye Birdie* a bit further. The colors are bolder, the musical choices are bolder, and the plot has more melancholy tones riding beneath the surface. Within the film, Demy frequently combines colors into one visual that would not normally go together. He uses "green and purple-usually paired together-as the movie's most common background colors, but so much so that a solid red is perceived by the eye as a soothing relief" (1). This is intriguing because all three of those colors are extremely powerful colors, but as has already been established, that was the point, and Demy's vision. Because he put so much time, attention, and detail into the color scheme, it's almost as if the color palette is its own individual character in the movie. Demy frequently combines colors not necessarily meant to go together, and even if he does utilize conventionally normal color combinations, he compensates by cranking the saturation to the highest level thereby making every single color choice a bold one. His color choices are so intentional they almost become meaningless leaving this idea of the color palette being a separate character all its own abstract and arguably reflective of the public's need to make everything in their post war, mid war world momentus. Demy's color palette, however, was not the only bold choice he utilized.

His formula of the traditional musical movie was yet another extremely audacious choice. By the time *Umbrellas* is made, the world is no stranger to movie musicals. Both *Singin' in the Rain* and *Bye Bye Birdie* are movie musicals that were adored by the general public produced before *Umbrellas*. What makes *Umbrellas* different is that every single moment is sung. There is no spoken dialogue. This had not been done before in cinema, and in America, it wasn't until Andrew Lloyd Webber came around with productions like *Jesus Christ Superstar, Phantom of the Opera, Evita, and Cats,* that this happened for Americans. Before, movie musicals only utilized music when there was an impulse to convey something that otherwise could not be conveyed through just the spoken word. Whatever message was about to be relayed needed something stronger and more impactful, thus a song was written.

However, as mentioned earlier, every single moment of Demy's film is sung. When asked about that element in particular, Demy had explained that he wanted to create a film that was seamless in its execution. He felt that in American movie musicals, the music and singing interrupted the flow of the film as opposed to being integrated seamlessly. He wanted to try his hand at creating something that was seamless, that flowed perfectly. Having everything sung, though, definitely adds to the dream-like, escapism qualities of *Umbrellas.* Because life would never imitate such a novel concept, it adds to the magic of the story. Not only are these young characters the personification of tragic lovers with a color palette nothing short of bold, but they also sing anything and everything they do. Because of these factors combined, the characters almost become elevated versions of what people wish they could be. These characters allowed normal people to dream of living that protected existence whilst simultaneously being wrapped and covered in layers of shiny candy-colored hues that only intensified that dream world.

The music adds a whole new element to the movie because along with dramatic, emotionally charged moments being sung, so too are the mundane conversations. Genevieve and her mother frequently engage in duets about topics of conversation that are otherwise boring and unimportant, but because everything is sung, suddenly everything becomes simultaneously important and unimportant, much like every color choice; which only adds to the nuanced magic of the film. Even if not being instructed to fully analyze such a film, one cannot help but be an active viewer due to how intricate and detailed the entire film is as a whole. It’s striking to see and notice the musical choices utilized by Demy for the moments that are so ordinary and not normally thought of as being worthy to sing.

The decision to make everything sung, as previously discussed, was an intentional choice on Demy’s end. He had wanted to create a seamless picture, something he felt had never quite been achieved in movie musicals. The choice of making everything sung was arguably a tactic that also provided feel good emotions to the audiences viewing the musical. Having everything sung adds to the concept that this world is an extremely idealized version that is ultimately unattainable. Much like how Demy utilized his color choice to showcase different emotions and themes throughout the film, this too was done by the composer of its music, Michel Legrand. In an article written for *The Guardian* by seasoned music and theatre writer Maddy Costa, she explores how even with the most mundane of tasks, “Legrand makes it sound urgent. Sometimes lithe and jazzy, sometimes shiveringly plangent, his score is as vibrantly colored as Demy's cinematography, unabashed in its emotions” (1). Legrand helps to bring this vibrant, technicolor world to life with his score-cranking up the saturation of emotions with his music just as Demy does with the colors. They are a duo that operate on the same wavelength, consistently trying to heighten the intensity of the film with their respective areas of expertise.

Legrand’s score makes its audience *feel* and experience what the characters do on screen, lending itself to the idea that “the score is basically indestructible: a sequence of yearning, complex melodies that make you sympathize not only with the lovers but everyone who comes between them. Because what Legrand's themes make clear – more so even than Demy's understated dialogue – is that each of these auxiliary characters carries in their heart love's disappointment” (Costa, 1). The music in this film is what gives the musical somewhat of a grounding in reality, for as Costa illustrates, it's the score that serves to carry the ultimately bittersweet endings both characters experience after failing to keep their love alive. This, too, is an element that the public could relate to-lost, forgotten love; the ultimate disappointments of love. Even though the ending of the film proves to not fulfill the sugary sweet "Hollywood Ending" that *Birdie* and *Rain* have; the type of ending one might expect from *Umbrellas* due to its sugary sweet color scheme, that of Guy and Genevieve ending up happily married with their child, it still serves to provide hope and optimism. While the initial love story did not work out, both characters were still able to find their alternate happy endings illustrating to the public that more than one love story and more than one happy ending is possible, and is often still in the cards.

Ultimately, *The Umbrellas of Cherbourg, Singin' in the Rain,* and *Bye Bye Birdie* were all extremely important films within the postwar area in reminding people of so many reasons to hope and continue on. They encouraged people to dream big, pursue love, and experience joy in the mundane. They all illustrated the concept that a happy ending is always possible even if your heart gets broken along the way, and your happy ending doesn't happen the way you initially thought it would. While these films were pivotal in boosting morale in the postwar era, all three are still extremely relevant to the modern day and are still providing such important lessons. Without movie musicals, the world would certainly be a little duller, a little sadder, and certainly less colorful.

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Proust Was Not a Neuroscientist: On the Importance of Interdisciplinary Exchange

Caecilia V. Thuermer (Psychology and Chemistry)[1]

Marcel Proust lived in a time of many scientific breakthroughs, and it has been already shown that this knowledge significantly influenced him and his work. Proust's *In Search of Lost Time* is an example of impressionist literature. It describes how outer circumstances evoke memory and trigger certain emotions in the narrator. Most frequently the Madeleine episode in Swann's Way is related to as an example of the power of taste and smell to evoke involuntary autobiographical memories. This is named in today's neuroscience the 'Proust effect' or 'Proust phenomenon', and it has been suggested that Marcel Proust might be called a neuroscientist. It is shown in the presented work that the novel is an observation and description of personal – possibly fictional - perceptions. Proust described individual impressions; he did not acquire objective knowledge as claimed by science. This makes him a prominent impressionist artist in literature, but not a scientist. The reflected impressions described by Proust have served as hypotheses for scientific work. However, it requires scientific methods to prove them, to transfer a personal observation or experience into reliable knowledge, and to explain the why and the how. Nevertheless, Proust's work and its meaning stresses the importance and value of interdisciplinary exchange. It emphasizes the benefit of broad education and knowledge – not instead of, but – in addition to expert knowledge.

Marcel Proust - Representative of French Impressionism

Marcel Proust (1871 – 1922) was a French writer and social critic. He is certainly best known for his infamous work *In Search of Lost Time*. This unfinished seven-volume novel was published between 1913 and 1927; the last volume appeared posthumously edited by the author's brother.

Proust can undoubtedly be classified as one of the most important representatives of French Impressionism. In literature, the term Impressionism stands for a style that emphasizes subjective, transient impressions and sensations of a writer or their characters. In Impressionism, the momentary perception of what is depicted, which is

[1] Written under the direction of Dr. Laura Morowitz and Dr. Katica Urbanc for EN 310: *Cities and Perversities*.

influenced by transient conditions, determines the way in which it is presented. For Impressionists, the reality is determined by subjective feelings. Reality is therefore not the outer world itself, but the outer world as it is perceived by the respective viewer through the filter of their inner experience. It is the *impression* of a certain moment that is important, the imprint, or rather the resonance of that moment leaves in an individual.

Proust is known as one of the most influential authors of the 20th century. He lived in a time of great scientific breakthroughs, as seen through the work of Albert Einstein in theoretical physics and Henri Bergson in philosophy (see Figure 1). This knowledge significantly influenced Proust himself and consequently, traces were left in his work. Still, up until today Proust's observations on involuntary memory as reported in *Swann's Way* are frequently referenced in neuroscientific publications. Author Jonah Lehrer even goes so far as to call Proust a neuroscientist. This idea will be examined in detail with regard to Proust's observations on involuntary memory, as the paper will ultimately question whether he was indeed a neuroscientist or an artist proposing an exchange between art and science.

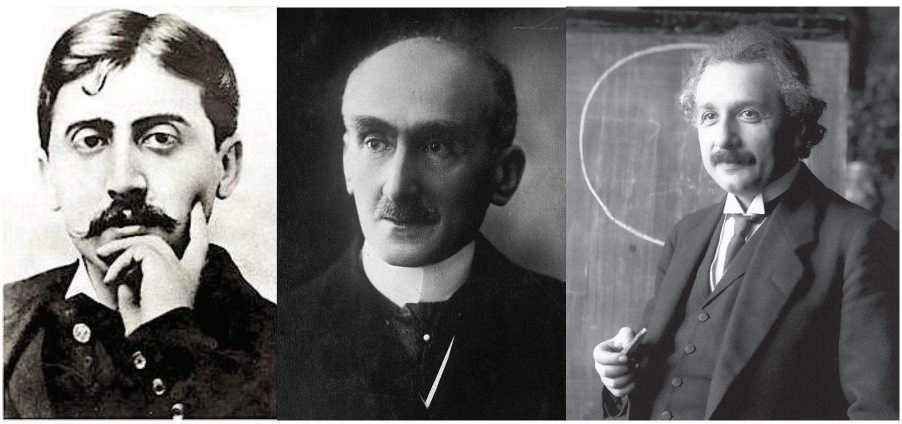

Figure 1: Writer Marcel Proust (1871-1922), philosopher Henri-Louis Bergson (1859-1941), and physicist Albert Einstein (1879-1955), from left to right (Wegener; Manuel; Schmutzer).

<u>In Search of Lost Time - Swann's Way</u>

In Search of Lost Time (also translated as *Remembrance of Things Past*) is a novel in seven volumes that presents a fictional autobiography (see Figure 2). A largely anonymous male first-person narrator - who may be called 'Marcel Proust' or just 'the narrator' - reports of his attempts to remember his childhood and adolescence.

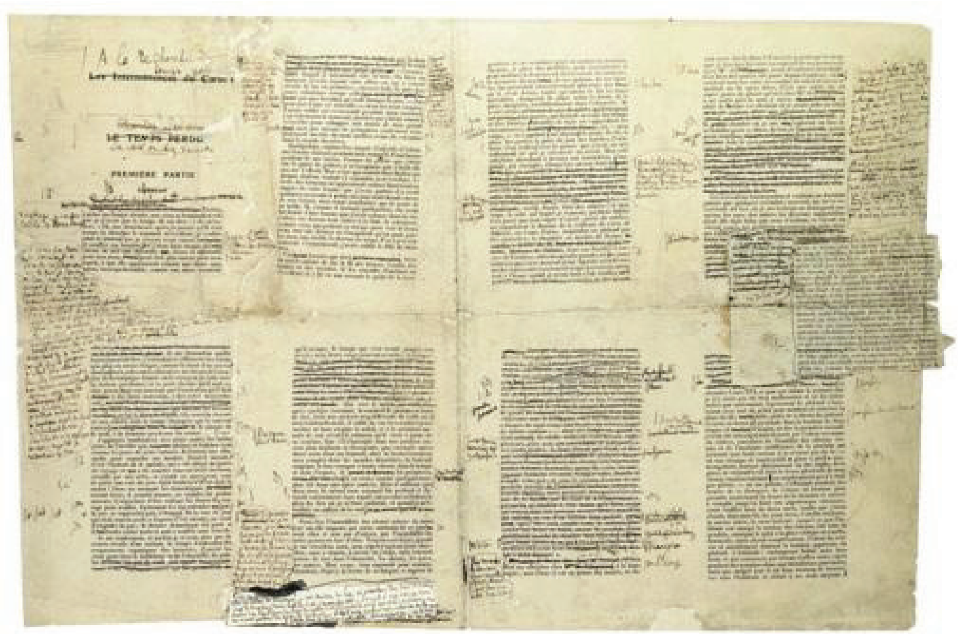

Figure 2: First galley proof of In Search of Lost Time (A la recherche du temps perdu) with handwritten revision notes by Marcel Proust *(In Search of Lost Time)*.

The central themes of this novel are time and memory. The title *In Search of Lost Time* implies directly that it investigates the past. In the human mind, the past – or lost time - is kept in the form of memories. Clearly memory is merely possible if time passes, since a memory constitutes a reference to a person's experience in the past. In the novel, memories become past time stored, and time is then shaped/created into one's memory (Álvaro). Time and memory have also been investigated by Proust's contemporaries Albert Einstein and Henri Bergson, respectively.

Einstein's theory of general relativity describes the universe of three spatial dimensions and one-time dimension, whereby time extends across the universe to form the fourth dimension. This understanding was picked up by Proust and is explicitly expressed in the passage on the medieval cathedral at Combray: *"..., so to speak, four dimensions of space - the name of the fourth being Time - which had sailed the centuries with that old nave...*" (Proust 91). These four dimensions - space and time - form a single reality in *Swann's Way* that merges into memory (Álvaro).

Moreover, general relativity allows configurations of space and time in which forward or backward time travel is possible. This allows a two-way flow of time -

forward and backward - and all events are situated along this path. Proust understands the past as if it were galleries that one can stroll through, with memories being the exhibits: *"... as though one's life were a series of galleries in which all the portraits of any one period had a marked family likeness, the same (so to speak) tonality...*" (Proust 27).

As previously pointed out by Álvaro, Proust's underlying conception of time as duration and its transformation into memory was strongly influenced by Henri Bergson. According to Bergson and later described in Proust's work, memory is not only an accumulation of stored recollections but rather connected to an individual's whole personality. To summarize, memory is not only the recollections of something but also the recollections of someone (Worms). Therefore, memory is not just a collection of stored facts, but also a collection of individual perceptions, reflections, and emotions. An example of this is Proust's description of the famous Madeleine moment. This gives memory a fundamental meaning: Memory holds the history of a person together, possibly even their entire life.

Moreover, Bergson distinguished between two types of memory*: behavioral memory* and *pure memory* (Worms). Specifically, Bergson's concept of *pure memory* which can also be understood as spontaneous memory storing up perceptions and impressions is closely related to Proust's understanding of *involuntary memory*, as shown below.

In the novel's first volume, *Swann's Way,* Proust introduces a distinction of memory: he differentiates between *voluntary memory* and *involuntary memory*. Voluntary memory is invoked at will. It is also called intellectual memory by Proust and can be seen as memory controlled by intelligence. However, it is insufficient to recover the past: *"But since the facts which I should then have recalled would have been prompted only by an exercise of the will, by my intellectual memory, and since the pictures which that kind of memory shews us of the past preserve nothing of the past itself, I should never have had any wish to ponder over this residue of Combray."* (Proust 65)

Proust distrusts voluntary memory: one can remember something voluntarily, but everything that is remembered voluntarily is just some sort of falsified memory. According to Proust, the true memory, the sensation associated to the way in which something was really experienced, can only be provided by involuntary memory: *"And so it is with our own past. It is a labor in vain to attempt to recapture it: all the efforts of our intellect must prove futile. The past is hidden somewhere outside the realm, beyond the reach of intellect, in some material object (in the sensation which that material object will give us) which we do not suspect. And as for that object, it depends on chance whether we come upon it or not before we ourselves must die."* (Proust 66)

Involuntary memory – or more precisely in the given context involuntary autobiographical memory – emerges in the absence of conscious effort. It is a recollection that is spontaneously, unintentionally, and automatically evoked by cues encountered in everyday life. According to Proust, involuntary memory enables the past to persist and remain as a personal creation (Álvaro).

Although the notion of involuntary memory in its origin is commonly referred to *In Search of Lost Time*, it had been already recognized before and was reported by German psychologist Hermann Ebbinghaus in 1885 (Ebbinghaus). Ebbinghaus (1850-1909) is known as a pioneer of the experimental study of memory. His work was originally published in German and was first translated into English in 1913. It is unknown whether Proust knew about Ebbinghaus' findings.

Involuntary Autobiographical Memory – The Proust Phenomenon

Certainly, the most frequently quoted passage of Proust's work associated with the field of neuroscience is the *Madeleine moment*: The narrator sips on lime blossom tea with crumbs from a madeleine cake, and suddenly childhood memories come flooding back.

"No sooner had the warm liquid, and the crumbs with it, touched my palate than a shudder ran through my whole body, and I stopped, intent upon the extraordinary changes that were taking place. An exquisite pleasure had invaded my senses, but individual, detached, with no suggestion of its origin." (Proust 66)

The act of tasting a madeleine as an adult reawakens the narrator's childhood. This is called in neuroscientific work the *Proust phenomenon* – sometimes also referred to as a *Proustian Moment* or a *Proustian Effect*. It describes a moment of sudden involuntary and intense autobiographical remembering, including a range of related sensorial and emotional expressions, triggered by a smell, a taste, or a texture (APA Dictionary of Psychology: Proust Phenomenon).

Since Proust's characterization of involuntary memory, there have been several research projects investigating this topic. For example, the types of cues most likely to induce involuntary autobiographical memory were examined (Mace). The results showed that more memories were triggered by abstract verbal/linguistic cues – e.g. thought and language-based cues - (68%) than by sensory/perceptual cues (30%). The findings do not support Proust's view that involuntary autobiographical memories are predominantly triggered by smell, taste, or texture. They show that many more are triggered by verbal cues and by the other senses.

However, another study observed that olfactory cues lead to an increase in the emotional intensity of autobiographical recollections relative to verbal or visual cues

(Herz and Schooler). Participants tended to feel more 'brought back' to the original event by odor-evoked memories. This supports Proust description of this experience through scientific results: it matches the narrator's description of how tasting the madeleine triggered an "all-powerful joy" (Proust 67).

Proust – Neuroscientist or Artist

In *Proust Was a Neuroscientist*, as the title clearly suggests, Lehrer classifies Proust as a neuroscientist. He states that Proust – among other artists of his time - anticipated the discovery of neuroscience and "*discovered truth about the human mind that science is now rediscovering*" (Lehrer ix).

Neuroscience encompasses all sciences that deal with the nervous system. It involves various scientific disciplines dealing with the anatomy, physiology, biochemistry, and molecular biology of nerves as well as nervous tissue. It has been of great interest to link these underlying biological mechanisms to behavior and learning, thus providing a fuller understanding of these processes. A neuroscientist is a researcher in the field of neuroscience who investigates neural and brain-related phenomena.

In general, the goal of any natural science is to acquire objective knowledge, to figure out how things work, and to prove findings. Science demands that experiments and proofs be repeatable to objectify results. In contrast, art expresses knowledge – this also includes perception or experience – most often in the form of subjective representation. More specifically, Impressionism aims to capture the impression of the moment by a certain individual. This personal observation is real and true for this person. However, from a scientific viewpoint, such personal findings must be verified experimentally and take into account a greater number of subjects. In the case of Proust, it would be necessary to find out whether memory works in the same way for all or most people. Additionally, neuroscience aims to verify how memory actually works in our brain, in the physical sense; that is, what structures are involved and how they interact with each other, as well as the underlying mechanisms occurring on a molecular level in the nervous system.

In Search of Lost Time is an outstanding example of impressionist literature. It describes how outer circumstances evoke memory and trigger strong emotions in the narrator. The novel is an observation and a beautiful description of personal perceptions rather than a scientific analysis or a reproducible experiment. The basic goal of the impressionist movement was not to acquire objective knowledge; rather, it was their fundamental aim to describe individual impressions.

Proust was a very thorough observer of his perceptions and experiences. This characteristic makes his work valuable for neuroscientific research as a detailed personal observation. When defining literature as art made up of words, Proust can be classified as an artist with a broad knowledge of the scientific breakthroughs of his time. This knowledge guided him through his search for explanations of his observations and put them in the context of the knowledge of his time (Álvaro). However, he did not go further by trying to prove or verify his explanations.

To generalize the above reasoning, Impressionism and Science can be identified as two contradictory terms: an impressionist conveys subjective impressions while a scientist seeks objective knowledge. The work of an impressionist can be used as evidence to understand how a particular individual's mind perceives a given moment. For a neuroscientist, this description of a mental process might be of interest as a subjective individual observation or experience, even when it is conveyed in a fictional work. Nevertheless, a single individual observation is not enough to deduce objective knowledge, which is the primary interest of science.

In summary, Proust's work can provide interesting indications on how memory is perceived by an individual and may, in turn, help scientific projects explain how such mental processes work. However, this does not qualify Proust as a neuroscientist or as a scientist in general. It requires scientific method to prove or disprove Proust's findings in order to transfer personal observations and experiences into reliable knowledge and explain the specific mechanisms and reasons for a complex process such as memory.

Exchange between Art and Science

Even though the objectives of artists and scientists appear to be different, art and science have and always will influence each other. In each individual human being, the sum of the physical conditions of their mind coined by genetic disposition as well as personal experiences lead to knowledge and form memory, constituting a personal filter and mirror: they influence how the world is perceived and how it is personally reflected. Consequently, each person, and therefore also each artist and scientist, is influenced by their time, the environment they live in, and their acquired knowledge. Each individual will undoubtedly be touched by art, science, technology, philosophy, literature, and more during their lifetime. All these experiences settle in the person's mind, thus influencing their reasoning and decisions later in life, and hence also serve to shape the person's interaction with the outer world and, consequently, their impact on the world.

In the past, a scholar was referred to as a *homo universalis* and was defined as being knowledgeable in many if not all major fields of their time, for example, in philosophy as well as in math, art, and the natural sciences. The breakdown of knowledge and specialization in certain fields took place during the nineteenth century with the rise of modern universities (Burke and Trosciank). Since then, knowledge in basically all fields has broadened and grows exponentially, and the thought of uniting the knowledge stemming from so many different areas in one mind is daunting. Today's "experts" have broad and deep knowledge, skill, and experience in a particular field, but we have also become more and more aware that it is necessary to integrate science, art and the humanities. We understand that expert knowledge alone leaves gaps or misses interconnections necessary to take full advantage of our current knowledge and to explore our world to the fullest. This has led to new interdisciplinary studies between science, art and the humanities that link these fields and overcome the gaps between them. Examples of such new emerging fields of research related to neuroscience are *cognitive literary science* and *neuroaesthetics*.

While *cognitive science* itself is already considered interdisciplinary since it deals with cognition and includes parts of cognitive psychology, linguistics, computer science, cognitive neuroscience, and philosophy of mind, *cognitive literary science* addresses the exchange between literary studies and cognitive science specifically (Burke and Trosciank).

Neuroaesthetics is a rather new discipline that links neuroscience and art. It is dedicated to exploring the neural processes underlying our experience and production of art. This includes perception, interpretation, emotion, and action (Chatterjee). The basic question of neuroaesthetics can be roughly summarized as the effort to understand how art interacts with the human brain. The approaches taken in neuroaesthetics have been often criticized as reducing art, and with it, the concept of beauty to a few biological principles. This criticism was responded to as follows: "*Science is reductionist by its nature. It cannot study a complex system as a whole; rather, it isolates its constituents first and tries to build a picture of the whole from studying its parts.*" (Zeki). In this sense, neuroaesthetics is currently still collecting parts of a very complex puzzle. As it should be the case of any scientific discipline, the reduction into parts can only be an intermediate step. At some point in time, it will be necessary to evaluate the entire complex picture as a whole.

But there is not simply a 'mental exchange' or an 'exchange by knowledge' between the different disciplines. For example, art is frequently directly influenced by scientific progress, thus leading to new technologies. Such novel technologies can provide new tools or media for artists to express themselves. A recent example is the arising field of *digital art* that applies digital technology as part of the creative or presentation process. This new field of art opens entirely new opportunities.

To generalize the reasoning above, perhaps the greatest interest of humankind is to gain full understanding of the world with all its social, artistic, and scientific phenomenon. Then the subdivision in disciplines like the humanities, natural science, and art, which each examine a certain aspect of our perception on the world surrounding us, can be understood as equivalent to applying a *divide-and-conquer strategy* to the original task. With this divide-and-conquer strategy, a problem is solved by splitting it into several less complex sub-problems, solving them independently, and finally merging their solutions into one answer for the whole problem. The merging step requires an interdisciplinary exchange and combines several disciplines through a fusion of knowledge, thus enabling the deduction of new apprehensions. Today this fusion step has become more current than ever with the many new arising interdisciplinary research fields.

Conclusions

It was shown in the presented work that the novel Swann's Way is an observation and description of personal – possibly fictional - perceptions. Proust beautifully describes individual impressions but he did not acquire objective knowledge as required by science. This makes him a prominent artist of Impressionism in literature, but not a scientist. The reflected impressions described by Proust have been used as hypotheses for scientific work. However, it requires scientific method to prove them, successfully transfer a personal observation or experience into reliable knowledge, and finally, to explain the detailed mechanisms and relevance for such processes.

Proust was undoubtedly an open-minded and inquisitive person with a broad education and a financial background that enabled him to deepen and widen his knowledge according to his interests. As he lived during a time of exciting scientific breakthroughs, he was certainly influenced by the changing world around him. In many ways, Proust is a perfect example of how knowledge of different disciplines is essential. As shown above, Proust's Swann's Way was influenced by the work of the philosopher Henri Bergson and the physicist Albert Einstein. In turn, Proust's work still has an impressive impact on today's neuroscientific work.

Art, and science, as well as the humanities, are part of the same world, and each of these disciplines aims to contribute to the understanding of our world. They do so by each following a unique perspective, nevertheless, they live in close interaction with each other. Swann's Way is an example of how knowledge of science and philosophy found its way into a work of art, and how in turn this art had an impact on neuroscientific work.

These interchanges between the humanities, art, and science demonstrate how meaningful it is to be open-minded to different fields. It stresses the importance and significance of interdisciplinary work and the value of broad education and knowledge – not instead of, but – in addition to expert knowledge.

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The Male Gaze in Art and Life: Why are Artistic Women Overlooked?

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Women have long been the objects of men's sexual fantasies and gazes. The male gaze, a term coined by feminist Laura Mulvey in 1975, explains the phenomenon that women have been experiencing historically. The male gaze is not only prevalent in life; it is ever present in art, especially in cinema. Film is a powerful artistic tool that mirrors life in many ways and can help people empathize with characters; but historically those characters have been men. Representation in film matters, but when the people making those films are mostly men, stories about women are often overlooked. Many films directed or written by males do not have female characters (and rarely are three dimensional) and are often only objects in a male driven story. In the last few decades, female directors and writers have made incredible progress in creating films that showcase female characters that have depth; however most prestigious film awards overlook female stories, especially those told by women. In 92 years of the Academy Awards, only 5 women have ever been nominated for Best Director, and only one has won (Dockterman). The male gaze is ever present in the film industry; behind the camera, in front of the camera, and in the audience. To understand why female stories should be elevated, we must analyze films created by men and how they portray women versus the way films created by women portray women. As Simone de Beauvoir chronicles in the beginning of her 1949 book, *The Second Sex*, women have had a treacherous history of oppression by men; to ensure that the future does not oppress women, the film industry must change the way they illustrate women, because art matters.

In *The Second Sex,* Beauvoir asks the question: "What is a woman?" (5). Beauvoir discusses many interpretations people have given throughout history; from Adam and Eve to biological essentialism to Freudian psychoanalysis to history itself. However, much of the history of women has been written by men, who have labeled her as the 'Other.' From a young age, girls are taught that they exist solely to please men and that she "must make herself object; she must therefore renounce her autonomy. She is treated like a living doll, and freedom is denied her" (Beauvoir 295). Much like history

[1] Written under the direction of Dr. Patricia Moynagh for GOV374: *Feminist Film*.

itself, film history is dominated by stories about men and told by men. American Film Institute's list of the Top 100 films of the 20th century include no films directed by women and only 3 films written by women (2 of which were co-authored alongside men) (*American Film Institute*). Furthermore, the American Film Institute's top lists of Films "deemed culturally and artistically significant" every year since 2000 only showcase 20 films directed by women (5 of which were co-directed with men) out of the 208 films that have made the cut. It is as if films told through the female gaze are not considered as important as films told through the male gaze but does the male gaze affect the way women are portrayed on screen? In her 1976 essay *The Laugh of the Medusa,* Helene Cixous says, "Woman must write herself: must write about women and bring women to writing, from which they have been driven away as violently as from their bodies" (875). Cixous states that it is imperative that women write for two reasons: 1) by writing about herself, women can take back their bodies and voices that have been taken from her and 2) creating a new history for other women (880). The same can be said about filmmaking. It is important to have women behind the camera, telling their stories, and changing history.

Often (but not always) when men are behind the camera, female characters suffer from being one-dimensional and only present as an object for the main (male) characters. One example of this is the 2012 'comedy' film *The Hangover* (this was 1 of 10 films chosen by AFI for their 2009 film list). Todd Phillipss' film is a perfect example of a classic 'buddy-comedy' written, created and watched by men. The few female characters present are stereotypes: "Man projects all females at once onto woman. And the fact is that she is a female" (Beauvoir 21). In *The Hangover*'s case, there are only a few types of women. There is Tracy, Doug's fiancé, who is only the object of a wedding; she only exists as someone for Doug to marry. Phil's wife (who has no name) is only brought up in conversation when Phil wants to complain about his life but when she appears at the end of the film, they seem in love and happy (and she seems unconcerned that he abandoned her). Melissa, Stu's girlfriend, is the nagging mother who ruins the fun for the boys, and Stu breaks up with her in the end of the film because he believes that men should be able to do whatever they want in a relationship. Jade is the sex object; she is a stripper who Stu is able to sleep with (and marry) in one night. Jade is a mother, but she leaves her baby with four strange men. Her character being a mother is seemingly only a plot device so there is an excuse for the men to gawk at her breast feeding her child. The women in *The Hangover* only exist as sexual objects for the men in the story.

Although the main characters in Harmony Korine's *Spring Breakers* are mostly women, they still fall victim to a lack of character development and purpose. The women in *Spring Breakers,* like in the *Hangover,* exist only to satisfy the men; however, *Spring Breakers* is a film to satisfy the men watching the film. *Spring Breakers* only takes 1 minute and 48 seconds of their opening bikini montage to show a woman's breasts fully exposed, and throughout the entire film, the four main characters are almost always in bikinis (even in court). The women are constantly sexualized, using guns as phallic objects and even having a threesome. *Spring Breakers* is Mulvey's theory in effect, "she holds the look, plays to and signifies male desire" (837). The women in Korine's film exist to "live out his fantasies and obsessions… by imposing them on the silent image of woman" (Mulvey 834). As Mulvey theorizes, women are punished in films directed with the male gaze because they are not seen as humans, they are objects existing solely for the men watching. While *Spring Breakers* might be about women, it is clearly a film made with the male gaze in mind. Both these films are "those kinds of books and comic books and movies (that) exist in abundance to cater to the male imagination" (Solnit 142-143). As Solnit explains, this type of content is only geared towards men and projecting their sexual fantasies onto women.

While many films like *Spring Breakers* and *The Hangover* are written and directed by men, constantly objectifying women, there are films created by men that do the opposite. For example, John Cassavetes 1974 film *A Woman Under the Influence* creates a complex female character, Mabel, that is struggling with mental illness and being a mother. Her husband, Nick, wants Mabel to be the perfect mother and wife, but she is struggling so much that she cannot be that for him. Cassavetes creates a film that seemingly avoids the male gaze because the woman does not fit into a stock character or binary stereotype of a woman; however, even then, Mabel is still abused by her husband. Another film directed by a man that avoids the male gaze is Claude Charbol's 1988 French film *Story of Women*. Charbol co-wrote this film with Claudine "Colo" Tavernier, so this film had the brainpower of both a man and a woman. *Story of Women* is another film that has an imperfect woman at the forefront; Marie is a struggling mother performing abortions under the table. Marie is a mother, but it is clear that she does not always want to be one; at the end of the film, before being put to death she says "Hail, Mary, full of shit. Rotten is the fruit of your womb." This film perfectly encapsulates Beauvoir's chapter on Motherhood and abortion: "Pregnancy and motherhood are experienced in very different ways depending on whether they take place in revolt, resignation, satisfaction, or enthusiasm" (Beauvoir 533). Marie and the women in the film have a sisterhood where they understand that being pregnant is not always a blessing when you are not financially or emotionally prepared. Both *A Woman Under the*

Influence and *Story of Women* are both films that were created by men, but do not employ the male gaze by sexualizing the women in it.

Some films even directly oppose the male gaze such as Jonathan Dayton and Valerie Faris's 2012 film, *Ruby Sparks.* Written by Zoe Kazan who also plays the titular character, *Ruby Sparks* takes on the romantic-comedy stereotype of a man projecting what he wants from a woman with a character that he can literally modify to fit his own needs. Calvin's ego blinds him from seeing that no one is perfect, even his brother Harry tells him, "quirky, messy women whose problems only make them endearing are not real." Women do not exist just to conform to men's wishes, and *Ruby Sparks* makes this clear because even Ruby, someone that was literally created by Calvin, has her own personality. Ruby does not just "perform within the narrative" (Mulvey 838). She has her own hopes, dreams and desires. Yet, she is oppressed by her creator and even when Ruby stands up for herself, she is not free until Calvin releases her. As Cixous argues, a woman's way to create a new history is to write herself. Kazan wrote for herself and many women have written and directed powerful stories.

Two powerful films directed and written by women are *A Question of Silence* and *Jeanne Dielman.* Marleen Gorris's 1982 film *A Question of Silence* tells the story of the three women that kill a store owner together without having ever met previously. The viewers of the film are taught to empathize with the women. Although they are strangers, the women are bonded by the universal female experience as seen by the contagious laughter between the women and the fact that the bystanders did not tell the police they witnessed the murder and even came to support the women in court. All of the women have been controlled by their given circumstances and the men in their lives; they were constantly underestimated by their bosses and husbands until they finally broke. *Jeanne Dielman,* directed and written by Chantal Akerman in 1975, shows the reality of being a housewife and mother. The three-hour slow burn gives an intimate look into the dull routine of housework and how it can cause someone to break. *Jeanne Deilman* illustrates how confining being a woman, especially a mother and housekeeper, can be. This film avoids romanticizing motherhood and being a wife as many films do. Jeanne Deilman and the women of *A Question of Silence* are complex characters that illustrate what being a woman is really like, because they were created by women who understand what women's lived reality can be like. Both *A Question of Silence* and *Jeanne Dielman* show how difficult it is to live in a world as a woman in a patriarchy, much like how being a female director and writer in Hollywood is difficult to get critical acclaim.

Some may ask why it is so important to have female directors and writers in the media. The reason it is important not only to have representation in front and behind the camera is because art can affect future generations of women and how they see themselves. In her 2015 essay "Men Explain *Lolita* to Me", Rebecca Solnit explains why books that demonize women can hurt the female psyche: "You read enough books in which people like you are disposable, or are dirt, or are silent, absent, or worthless, and it makes an impact on you. Because art makes the world, because it matters, because it makes us. Or breaks us" (149). Just like with books, films are a powerful cultural tool that affect human behavior. For example, Solnit explains that a convicted serial rapist admitted that he had begun having terrible sexual fantasies after watching Princess Leia kidnapped and enslaved in *Star Wars* (142-143). When films historically paint women as objects in a man's story, women watching begin to internalize this ideology into their own lives. As Beauvoir says, "If the little girl reads the newspapers, if she listens to adult conversation, she notices that today, as in the past, men lead the world" (Beauvoir 303). Like life itself, popular culture has an effect on young girls and how they perceive themselves. That's why films like *A Question of Silence* and *Jeanne Dielman* are so important, not just as feminist films, but as films; they are films that show women refusing to be quiet and changing their stories from the passive to the active. When all society is exposed to heterosexual white male stories, society has evidence that anyone else is less than. Yet, why do high film awards not reflect this need for diverse stories?

Consider this: Since 1927, 563 films have been nominated for Best Picture by the Academy Awards, only 16 (1 of which was a male and female team) were directed by women. Since 1943, 365 films have been nominated for Best Picture-Drama at the Golden Globes, and only 5 of those films were directed by women; since 1951, the Golden Globes have nominated 353 films for the Comedy category and only 16 (2 male and female teams) have been directed by women. The Best Director category is even more dismal; only 7 of 357 Golden Globes Best Director nominees have been women, and only 5 of 452 Academy Awards Best Director have been women. Kathryn Bigelow is the only female winner of the Academy's Best Director, in 2009 for *The Hurt Locker,* a film about war and the male psyche (ironically, her film does not pass the Bechdel Test) and Barbara Streinsand is the only woman to win the Golden Globes award for Best Director, in 1983 for *Yentl* (Rao). In 2019, 10.6% of the top-100 highest grossing films were directed by women (a new high), but only Greta Gerwig's *Little Women* was nominated for Best Picture, yet she was snubbed in the Directing category. Furthermore, no films by women were nominated at the Golden Globes in either Drama or Comedy (2 of the Foreign Language films were directed by women, although Lulu Wang's US film *The Farewell* is a bilingual film in English and Mandarian) (Dockterman). Ironically, female-directed films that were snubbed in Best Picture garnered Best Actress nominations at the Golden Globes including Cynthia Erivo for *Harriet* (directed by Kasi Lemmons), Saoirse Ronan for *Little Women* (directed by Greta Gerwig), Awkwafina who won for *The Farewell* (directed by Lulu Wang), Beanie Feldstein for *Booksmart* (directed by Olivia Wilde), and Emma Thompson for *Late Night* (directed by Nisha Ganatra) and garnered a Best Supporting Actress nomination of Jennifer Lopez in *Hustlers* (directed by Lorene Scafaria). Furthermore, 21.22% of the films eligible to be nominated at the Academy Awards in 2019 were directed by women (Malkin). The issue is not that women are not making films or that they are not making *good* films. The issue is that women are not being taken seriously in the film industry. According to research compiled by Martha M. Lauzen, many large studios do not want to 'risk' their budgets on female directors, especially those with less than one credit on their filmography. The main issue with this however is that 82.6% of female directors only have the one credit because studios will not take chances on them in the first place (Dockterman). One example is that the first *Twilight* film was directed by Cathereine Hardwicke and made 70 million dollars on opening weekend, but the studio replaced her for the sequels with a male director (Lauzen). Without taking a chance on female directors, the film industry will not grow into embracing diverse stories. However, the film industry is not the only artistic field that overlooks female artists except for when they are used to elevate a man.

In 1989, the anonymous female art group the Guerrilla Girls released a photo that circulated on New York City buses that said "Do women have to be naked to get into the Met. Museum?" and offered the statistics that 85% of the nudes that are in the Modern Art section at the Metropolitan Museum are women while less than 5% of the artists are women. This poster pointed out that art overtly sexualizes women but does not take them seriously when they are behind the paint brush. After 30 years, the art world has not made much improvement: "between 2008 and 2018 only 11% of art acquired by the country's top museums for their permanent collections was by women," and only 3% were from African-American women (Jacobs). Furthermore, only 2% of market shares of the global auction market were from female artists. Similarly with film, it seems that the male gaze drives men to see films that objectify women rather than films made by women or about women. In 2011, the comedy film *Bridesmaids* made 288.4 million USD while 2009's *The Hangover*'s box office totaled 467.5 million USD (and the sequel made 586.8 million USD) (*Box Office Mojo*). *Bridesmaids* is often compared as the 'female version' of *The Hangover* and is considered one of the most popular comedic films of the 21st century, yet it made significantly less in the box office. Both films are very similar; the one stark difference is that the leads of *Bridesmaids* are women (directed by Paul Feig and written by Kristen Wiig and Annie Mumolo). It is evident that people are more interested in seeing a film that objectifies women as the 'other' instead of where they take the lead.

The male gaze is ever present in life and in art. There is no way to escape the confines of the male gaze; Mark Zuckerberg created FaceBook so he and his college friends could upload photos of girls to rate them, Evan Spiegel, a known critic of women, created SnapChat so that messages will not be recorded, so men like him would not get caught for commenting on women's looks and even popular hook-up app Tinder allows men (and women) to judge who they would like to date by looks alone (Oliver 454). With the creation and rise of social media, the male gaze has taken on another life, "the male gaze born out of Hollywood film and nourished by social media has blurred the distinction between fantasy and reality to the point that men want to control women" (455). The history of Hollywood objectifying, sexualizing, and degrading women for the pleasure of the male gaze has caused society to internalize this thinking into reality. For example, many rapists (including the Stanford rapist Brock Turner who sent photos of his victim to his swim team) take 'creepshots' of the women they rape in order to be "the directors and producers of their own moving pictures… wherein feminine passivity is taken to the extreme" (455). When people are exposed to media that paints women as only passive objects, many men watching believe that this translates to real life, so they create their own version of Hollywood. It is evident that Mulvey's analysis of the male gaze has only been increased with the sexualization of women in Hollywood and more recently, social media.

While the male gaze is "more relevant, and more dangerous, than ever" (Oliver 455), we must not give up hope that female artists and female stories will not be forgotten among the millions of male stories. Feminist film movements are growing in the United States and beyond. In Iran, films must follow strict rules to ensure that they are not "morally corrupt," and many of these rules concern the way women dress and behave (Whatley 30). Since scripts must be approved, screenwriters use symbolism to tell stories in a subtle way. Women are drawn to filmmaking in Iran because it is "an important tool in their process of social transformation and political growth" (31). Many Iranian filmmakers such as Tahmineeh Milani push political boundaries in their films and are often arrested or sentenced to death. In South Korea (another country that censors films) filmmaking has been traditionally dominated by men due to the tradition of gender segregation; however, in the past few decades, female directors and writers have created films in order to create a new view of cultural tradition (Howson and Yecies 20). One example of a female director is Jeong-hyang Lee with her film *A Reason to Live* that discusses the stories of women trying to forgive the men that abused them, directly analyzing Confucian values (19). In the United States, female filmmakers have grown in numbers; from 2018 to 2019 the number of female directors grew 4.5% (Dockterman). While many award ceremonies snubbed female directors in the 2019 awards season, many female directed films consistently ranked high in critical acclaim such as *Portrait of a Lady on Fire* (Celine Sciamma), *Honey Boy* (Alma Har'el), *The Souvenir* (Joanna Hogg), and *The Farewell* (Lulu Wang) and many female directed films performed in the top 100 most grossing films of 2019, such as *Captain Marvel* (Anna Boden and Ryan Fleck), *Hustlers* (Lorene Scafaria), *A Beautiful Day in the Neighborhood* (Marielle Heller), *Harriet* (Kasi Lemmons), *Queen & Slim* (Melina Matsouka), and *Little Women* (Greta Gerwig) (*Box Office Mojo*). While it sometimes seems dismal, women are making strides in the film industry.

In the concluding lines of *The Second Sex,* Beauvoir tells her readers, "men and women must, among other things and beyond their natural differentiations, unequivocally affirm their brotherhood" (766). For women to be liberated in life and art, especially the film industry, the men that currently control the industry must embrace their female peers and elevate their stories. Film, literature, and art directly influence people's perceptions of society and the people in it. As Solnit argues, "there is a canonical body of literature in which women's stories are taken away from them, in which all we get are men's stories" (147). It is essential that women, the LGBTQ+ community, and people of color tell their stories in order to elevate others; for so long these marginalized groups have been silenced. The film industry needs new, diverse stories that will broaden popular culture to include more than heterosexual white men. There is progress: South Korea's *Parasite* (directed by Bong Joon Ho) made history at the 92nd Oscars by being the first film in a language other than English to win Best Picture, beating out films directed by Quentin Tarantino and Martin Scorsese (Buchanan and Barnes). Watching the audience of the Oscars burst into applause and given a standing ovation to the cast was a monumental moment for the film industry. In the words of Cixous, "Write! And your self-seeking text will know itself better than flesh and blood" (889). To liberate women, women must write, direct and create films that inspire other women to create art and we must work with our male brothers to attempt to move past the constraints of the male gaze.

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The Elemental Rock, Paper, Scissors of William Shakespeare's *Richard II*

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Rock. Paper. Scissors. Shoot! Simple in direction, yet intricate in constituent relationships, this cyclical game elicits concepts of hierarchy, order, and elemental properties. Rock beats scissors, scissors beat paper, paper beats rock, and the cycle continues. The specific composition of each component allows it to affect another, dominate another, but not destroy another because each piece of the game cannot function without the other. The individual constituents are linked, but discrete, integral to the whole unit, functioning in a manner that enables the constant continuation and existence of the game. These same principles can be applied to Medieval and Renaissance philosophy comprising Elizabethan literature. Deriving from The Great Chain of Being, order, hierarchy, and rank consumed the forefront of place identification during the Elizabethan Era (Tillyard, 2000). Divinely ordered by God, every primate, every extremity, and every other being had a place in the well-ordered cosmos. Consequently, the elements, fire, air, water, and earth, in that descending order, had their own hierarchical linkage. However, despite the power each element possessed over the one below it, they were all consequential, in proper balance, to uphold the health of the individual, and most significantly, the community (Harris 1970; Tillyard, 2000). This contrariety between the elements, as distinguished through The Great Chain of Being and their evolutionary philosophical properties, accentuates the roles of order, hierarchy, and rank depicted in Elizabethan literature. As a cardinal example of this literature, William Shakespeare's *Richard II* manifests the elements and their contextualized conventions to illuminate the characterization of and dichotomy between Richard and Bullingbrook as well as to perpetuate the potent concepts of hierarchy, order, and divine right in the Elizabethan Era.

Before the Elizabethan Era and early Renaissance, there were philosophers who conceptualized the elements and their properties in relation to science. Empedocles, a Greek pre-Socratic philosopher, proposed the cosmogonic theory of the four classical elements: earth, wind, fire, and air. Although he did not originate the word "element," as

[1] Written under the direction of Dr. Ann Hurley for EN330: *Shakespeare Survey*.

Plato did, Empedocles reasoned that Love and Strife cause the variance between elements, their aggregation and segregation, and that all matter is created or changed from these elements (Aristotle and Joachim, 2001). Hence the elements were all equal. Empedocles' ideas were evolved and reinvisioned by the Greek philosopher Aristotle who divided the universe into terrestrial spheres composed of the four elements. He is also accredited for the weightless and incorruptible fifth element, aether, which was depicted as heavenly; an innovation worth noting as a shift began to occur from scientific matter to religious matters. Through Aristotelian physics, the elements began to establish the first sense of order or precedence. His Theory of Motion described earth and water as falling and air and fire as rising. The elements also had special properties, hot/cold - wet/dry, which allowed them to undergo transmutation. Aristotle stated stars were not made of the elements but rather of a divine substance (Aristotle and Joachim, 2001). Philosophy of The Middle Ages explored alchemy and matter but focused more on the elements as constituents of the cosmos. Concepts of hierarchy and elemental properties taken from Aristotle were manifested in the formulation of Elizabethan and Renaissance elemental philosophy. Secular thought vanished and the Christian religion became law. Everything in nature was a microcosm living in God's macrocosm. And it is during this time period God was thought to be ruler of all, creator of everything. Through divine order, hierarchy was established, and a chain followed. "This chain stretched from the foot of god's throne to the meanest of inanimate objects" (Tillyard, 2000, p. 23). The elements were ordered toward the bottom of the chain, but still important to the harmony of the rest of the chain, as every being was linked together.

Reevaluating the parallel between rock, paper, scissors and the historical elemental philosophy allows the Elizabethan conceptualization to be reasoned, extrapolated, and recognizable in *Richard II.* While all three elements are present, and significant, fire, water, and earth remain the most dynamic elements in the text; and therefore, will be the focus of this analysis. The game of rock paper scissors is cyclical, and so are they elements in their function and properties. Each of the four elements has a season associated with it; and through this imagery, elements are established as cyclical conventions. Rock, paper, and scissors have unique compositions which enable their powers over the others. Similarly, the elements of fire, water, and earth, despite their divine ordering, yield compositions characteristic of natural phenomena. Aristotle depicts fire and air as ascending elements and water and earth as descending elements (Aristotle and Joachim, 2001). Fire can boil water. Water can put out fire. Water can flood the earth. Fire can scorch the earth. Earth, heavy, dry, and cold, does not hold any special force over the other two elements; however, earth is the foundational element of the universe. Without earth, there would be no purpose for fire and water. All of these conventions form the basis for extrapolating and tracking the dichotomy between Richard and Bullingbrook throughout the play as well as illustrate the chain of being.

The element fire plays a consequential role in *Richard II.* Fire is divinely ordered as first on the chain of being in the realm of elements. Fire is related to summer, heat, sun, dryness, and the transition to the realm of planets. Meteors assemble through this element. Characters with fire imagery are typically choleric, a type of personality ordered above other elemental personalities. In the Elizabethan Era, people characterized in fire imagery are depicted as ambitious, natural born leaders, dominant, and can be violent (Samuel, 1948). At the beginning of the play King Richard proclaims, "High stomach'd are they both and full of ire/ In rage, deaf as the sea, hasty as fire" (I.i.18-19). This is the first occurrence of elemental imagery where fire and water are introduced. Shakespeare's description of their animosity utilizes fire and water to foreshadow the opposition between Richard and Bullingbrook, but in this passage it is Mowbray who assumes the position of fire while Bullingbrook begins his role as the water. The elements are personified and given characteristics much like the hierarchical personality traits of the elements (Tillyard, 2000). In a later passage, greatly significant in the play's entirety, John of Gaunt reasons on his death-bed, "His rash fierce blaze of riot cannot last,/ For violent fires soon burn out themselves;/ Small showers last long, but sudden storms are short" (II.i.33-35). Here the elements remain separate from one another. The fire putting itself out is symbolic of Richard's ineptitude as king, and how this inability will lead to his descension and usurpation. The choleric personality trait adjacent to fire is present in this passage and depicts Richard's potential downfall in a place of dominance for an overexerting ambition. Despite its higher position on the chain, the element of fire is not indomitable. It cannot be, or else the elements on the great chain of being would be out of balance, and negatively impact the community. Later in Act II, Salisbury prophecies, "Ah, Richard! With the eyes of heavy mind/ I see thy glory like a shooting star/ Fall to the base earth from the firmament./ The sun sets weeping in the lowly west/ Witnessing storms to come, woe, and unrest" (II.iv.18-22). Here Richard is compared to a shooting star. These meteors exist as conventions on the elemental plane of fire, where the bright burning star resembles that of Richard the divinely appointed king. Seemingly complementary, the contrary is soon unraveled, and Richard is called a shooting star for a reason. As a star goes up, so it must come down. The star is shooting down towards earth, the lowest element on the chain, foreshadowing Richard's fall as king and death (Harris, 1970). The next line relates Richard to a setting sun watching the storms, or Bullingbrook, approach his kingdom. He fears the ability of the water to suppress his fire, but once again the word "watching" is an acute action calling out the inaction of Richard to stop Bullingbrook.

In Act III, the roles are reassigned to Richard and Bullingbrook and the great chain of being starts to get disrupted. Richard states, "Let them hence away/ From Richard's night to Bullingbrook's fair day" (III.ii.217-218). This is the first moment of realization and true recognition from Richard where he saw Bullingbrook as a worthy opponent, one capable and in the works of usurpation. Richard's night, despite the moon exhibiting illuminative qualities, still receives its light from the sun, and ultimately, this convention helps aid Richard's hopelessness for power. Also in Act III, Bullingbrook proclaims, "See, see, King Richard doth himself appear/ As doth the blushing discontented sun/ From out the fiery portal of the east/ When he perceives the envious clouds are bent/ To dim his glory and to stain the track/ Of his bright passage to the occident" (III.iii.62-67). The sun and its movement in this passage serves to function as "an eclipse, the coming of night, and the cold, sunless climate" (Kliger, 1948, p. 197). Richard is a disconnected son. Through the sun as an image of fire and hierarchy on the great chain of being, the disconnection in the passage refers to Richard's problematic role as the divinely appointed king through God's providence as his role as ruler. Until his death, Richard remained the highest Godly figure on earth; however, his inability to fulfil his role as a good leader allowed other elements, like water, to infiltrate the divine order. The act of the sun moving from east signifies Richard's dissension and the movement of day into a cloudless night, coldness being an elemental property of water. The dimming of the sun by envious clouds elicits eclipse images and reinforces Kliger's analysis of the roles of the sun in *Richard II.* The setting of the sun also reflects a cyclical movement as the elements function through cyclical interactions with one another.

Conjoining to the previous passage, the fire imagery continues to characterize Richard and his relationship with Bullingbrook. When Richard is sought out by the enemy he states, "Down, down I come, like glist'ring Phaëton" (III.iii.178). Phaëton is the son of Apollo, the Sun God. He attempted to drive his father's chariot across the sky and was hurled down to his death because of an inability to control the chariot. This alludes to Richard's inability to fulfill his role as king and also foreshadows his death. After dissecting the fire element and water's ability to overpower it, the last passage of analysis reinforces the underlying principles of Elizabethan elemental philosophy. In Richard's final moments, he tells Bullingbrook, "That hand shall burn in never-quenching fire" (V.v.108). The purpose of this line is to signify the power of fire even when it has been relinquished. Fire is hierarchically ordered by God above water; and therefore, will always assert dominance even in death. This line is also most consequential to the fact that a formal abdication never occurred and Bullingbrook will never truly assume the divine appointment to the throne. He will never quench Richard's fire.

The element of water remains another convention used by Shakespeare to accentuate the great chain of being and the dichotomy between Richard and Bullingbrook. As seen in almost all of the above passages, where there is sun, there is water. Bullingbrook fluctuates between fire imagery and water imagery; however, he is predominately and hierarchically associated with the convention of water. From floods, tides, storms, and rain, water encompasses a variety of elemental forms and transmutations. Its attributed traits align with phlegmatic characteristics and depict people of this element to be unemotional and stolidly calm (Aristotle and Joachim, 2001). For the majority of the play, Bullingbrook remains calm, cool, and collected, which is fitting considering that coolness is an elemental property of water. He is rather diplomatic in his usurping affairs and echoes the unemotional personality trait, convincing the people he is doing what must be done for the betterment and health of the community. As water, he must be the one to nourish the earth, or the common folk hierarchically ranked below him.

At the beginning of the play water is presented as a protective element. Gaunt describes, "This happy breed of men, this little world/ This precious stone set in the silver sea/ Which serves it in the office of a wall/ Or as a moat defensive to a house/ Against the envy of less happier lands" (II.i.45-49). The Elizabethan lands are nourished from water, protected in the form of a moat. In the same speech Gaunt asserts, "England, bound in with the triumphant sea/ Whose rocky shore beats back the envious siege/ Of wat'ry Neptune, is now bound in with shame" (II.i.61-63). There is an ambivalence between these texts because water is used in two forms, two conventions, moving from protective in the first passage to dangerous and threatening in the second (Harris, 1970). The Elizabethan lands are visualized as an Eden-like place or demi-paradise flourishing under the balance of the elements, but when Richard takes root in the land, the sea becomes enraged. Consequently, Bullingbrook becomes enraged. The rocky shore elicits elemental strengths of earth in 'beating back' the sea. Bullingbrook, although not yet asserted as the primitive character of water, is compared to Neptune, god of water and the seas. This God-like depiction fuels his character's ambition to usurp the throne and clarifies his ascension and fluctuation on the chain of being occurring as if God had ordained it himself.

Later in Act III, King Richard states, "Not all the water in the rough rude sea/ Can wash the balm off from an anointed king" (III.ii.54-55). Bullingbrook, as the element of water, is trying to usurp the throne but cannot successfully do so unless there is a formal abdication which would allow the nature of God to continue to exist in harmony. The "balm" is a water element but is associated with the kingly image and is an integral part of the coronation ceremony. Richard, as the element fire, possesses the hierarchically placed balm as opposed to the sea which is possessed by Bullingbrook. Once again, divine right and order rules all social constructs of the Elizabethan Era.

Another passage highlighting the imagery of water is narrated by Bullingbrook:

Methinks King Richard and myself should meet
With no less terror than the elements
Of fire and water when their thund'ring shock
At meeting tears the cloudy cheeks of heaven.
Be he the fire, I'll be the yielding water;
The rage be his, whilst on the earth I rain
My waters: on the earth, and not on him. (III.iii.54-60)

The passage highlights an irony in one of the elemental properties of water. The image of rain in opposition to the raging fire at first appears to realize the phlegmatic characterization of a calm, unemotional Bullingbrook. However, the choice of "rain" and the word "yielding" are deceptive (Harris, 1970). Bullingbrook does not let up on his quest for usurpation. He does not undertake a submissive, docile position in Richard's world. He wants to be the fire. Aristotelian physics plays an integral part in the comprehension of elements either rising and falling due to their composition and place in the terrestrial spheres (Tillyard, 2000). The following passage illustrates a similar compilation of elemental philosophies:

> Now is this golden crown like a deep well
> That owes two buckets, filling one another,
> The emptier ever dancing in the air,
> The other down, unseen, and full of water:
> That bucket down and full of tears am I,
> Drinking my griefs, whilst you mount up on high. (IV.i.184-189)

First and foremost, the divine crown being compared to a deep well is a juxtaposition that is suggestive of the "hollow crown." This is a symbol of kingship, divine right, and only one person may wear it at a time. The fact both fire imagery, as innately depicted through Richard, and water imagery, as denoted by Bullingbrook, exist in the crown together violates God's ordained chain of being and the community. This image is close to an attack on God. In the text, the crown does align itself to Bullingbrook in the validation Richard is not a good leader and Bullingbrook is; therefore, it is not unreasonable to also affiliate Bullingbrook with the crown. However, the cyclical nature of these analyses brings the conversation right back to the very beginning: God. No matter the circumstances, Richard is the true king appointed by God and abdication must occur in order for elemental balance to occur. Water is cold and heavy, weighing down one bucket more than the other, and at this point, it is Richard who exudes more water imagery than Bullingbrook. The Aristotelian physics of ascension and descension reappear here and illuminate the evolving dichotomy between Richard and Bullingbrook.

The last passage detailing water imagery is found at the very end of the play where Bullingbrook proclaims, “I'll make a voyage to the Holy Land/ To wash this blood off from my guilty hand” (V.vi.49-50). This passage alludes to an earlier passage spoken by Richard where he asserted his everlasting dominance over Bullingbrook stating “that hand shall burn in never quenching fire” (V.v.109). Blood, an instance of water, serves the purpose of demonstrating elements as cyclical conventions and ordained inanimate extremities. Similar to most of the play where Richard was his own worst enemy, Bullingbrook, due to a consequence of informal abdication, will be damaged by his own element. He will carry the blood of Richard on his hand forever, unable to be washed off because the ordained fixation of fire has hierarchical placement and properties over water.

The final element completing the rock, paper, scissors of *Richard II* is earth. Ranked lowest in the elemental realm on the great chain of being, earth does not hold the same level of power as do the elements above it; however, it possesses the foundational quality adherent to the existence and purpose of the other elements. The Duchess echoes this position by stating “Or seven fair branches springing from one root” (I.ii.13). Aristotle depicted earth to be a falling element, a dry, cold, heavy substance (Aristotle and Joachim, 2001). In Elizabethan literature, earth imagery is most commonly manifested in the form of gardens, forests, and orchards. These places encompass the hierarchical principles of Elizabethan philosophy from the plants to the animals and so on. Religion is evoked through garden images as symbols of Eden. In John of Gaunt’s famous speech about England he states, “This earth of majesty, this seat of Mars/ This other Eden, demi-paradise” (II.i.41-42). Here England is compared to Eden. The English lands reign supreme over the others as Eden is the primate of the earth elements. It is God’s garden, majestic, beautiful, and superior. Later in this same speech, Gaunt compares the English lands under Richard to a “tenement or pelting farm” (II.i.60). Richard has disrupted the elemental harmony, detrimenting the English lands’ ability to hold stature as a divinely ordered Eden-like mnemonic. The battle between Richard and Bullingbrook, fire and water, is warned in Gaunt’s juxtaposition of the lands and underscores the importance of elemental concord, for the earth, despite its unique foundational properties, is at the mercy of the elements ordered above it.

"Gardens and orchards (the words can be synonymous) can, however, have a wider symbolic resonance as secluded places feeding insight and understanding" (Condren, 2016, p. 625). This idea is extrapolated in the famous Garden Scene where earthly symbols define the realm of England in its religious and political vicissitudes. As explained by Condren, [gardens] "are microcosms for civilization and its fragility" (p. 625). The gardener, ranked in the lower class, assumes his role of attendant to the garden, and demonstrably so, succeeds in his position. This is quite the contrary to Richard as he fails to effectuate his role as king. Richard's garden, the English lands, is full of "weeds" (III.iv.36-39); the weeds being the forces of Bullingbrook in their quest for usurpation. The Gardener reasons that Richard, had he embodied his kingly providence without disregard for his leadership role as king, would have a healthy garden, or England, just like his. Consequently, civilization would continue, evolve, and fluctuate with the cyclical patterns of the elements.

The Elizabethan philosophy of divine hierarchy, depicted through the chain of being, continues to be portrayed in the garden scene. The Gardener symbolizes God himself for he was the first true gardener (Condren, 2016). The apricots hang low in the garden due to their "prodigal weight" (III.iv.29-31) is a direct extrapolation of rank, order, and hierarchy mandated through the chain of being. The fruit trees themselves are examples of the leadership of kings. "The skin of our fruit trees/ lest being over-proud in sap and blood" (III.iv.58-59) depicts how each king makes the progression of the kingdom stronger. This foundational imagery reflects that of the elemental property of earth. Once again, evolution, cycles, the effectual elements coexisting, order, and providence encapsulate the way in which the cosmos can exist and England can thrive. As the earth provides kings with a realm to divinely rule, it also holds the eminent body deceased. Earth, closest to hell, the lowest ranked element, and a cyclical image captures the death and descent of Richard and the sickly kingdom. But once the elements are restored, ordered in divine place, a new, providential king will emerge, and England will exist in all of Earth's grace.

It would be an understatement to suggest the elements form the composition of Shakespeare's *Richard II.* Through an evolving lineage the historical philosophy of the elements translates into an effectual convention for detailing the history play Shakespeare created. Exploited through the imagery of fire and water, the dichotomy of Richard and Bullingbrook is manifested. The relationship of the elements in adherence to their respective order on the chain of being epitomizes the hierarchical and providential concepts of Elizabethan philosophy placed throughout the text. Modern treatment of the elements in literature can be comprehended and applied in other realms through the dyad and assimilation of Elizabethan elemental philosophy compared to our own. In appropriate fashion, utilize a property of the elemental relationship one last time and *cycle* back to the beginning of the essay. Here lies the future format for classroom conversation in the first attempt to extrapolate the significance of the elements in Shakespeare's *Richard II.* And let the cycle continue …

Rock. Paper. Scissors. Shoot!

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Debating for Democracy: Letter to an Elected Official

Hailey Delaney (Theatre Design, Technology, and Management)
and Braith Dicker (Theatre Design, Technology, and Management)[1,2]

Representative-Elect Nicole Malliotakis
2300 Richmond Road
Staten Island, NY 10306

Dear Representative-Elect Malliotakis,

We write to you today in regards to supporting the Gender Inclusive Passport Act (H.R.5962), an actively disputed bill within the United States Congress. As of 2015, only 11% of transgender, including non-binary and intersex, people in America have their preferred name and gender marker on all IDs and official records (Scheim et. al, 2020, p. e196). The percentage is still relatively low today, which can lead to transgender people having conflicting forms of identification, which would cause legal issues, and have negative effects on their mental health.

Throughout this letter, we will use transgender and non-binary as umbrella terms to refer to female to male and male to female transgender people, non-binary people, intersex people, and any other underrepresented genders. According to McCarey (2019), transgender can be defined as, "someone's innate, internal sense of their own gender doesn't match the gender they were assigned at birth" (para. 7). In addition, intersex people often face the same discrimination as transgender people. Intersex is defined as, "people who are born with hormonal, physiological, or chromosome characteristics that do not correspond to Western medical definitions of binary sex" (Davis, 2014, p. 47). For the purposes of this letter, we will use transgender and non-binary to indicate all people who do not identify with their birth sex and do not conform to the binary gender spectrum.

The lack of sufficient gender markers disproportionately affects non-binary people (Scheim et al., 2020, p. e201). For example, Scheim et al. (2020) found that 40.3% of people gave "lack of suitable gender markers (beyond male or female)" (pp. e201-202), as the reason for not changing their gender marker. For non-binary and intersex people, particularly in New York, this issue is pertinent. Currently, people living

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[1] Written under the direction of Dr. Bernadette Ludwig for SO320: *Sociology of Gender*.
[2] This letter was part of Projects Pericles' Debating for Democracy initiatives.

in New York City can only change their gender marker to ‘X’ on their birth certificate and on their IDNYC (McCarey, 2019). Having IDs where the gender markers reflect one’s gender identity correlated with positive effects for trans individuals (Restar et. al, 2020, pp. 6-7). As constituents of New York’s 11th Congressional District, we interact with many non-binary people who experience gender discrimination and lack of gender affirmation, who feel misrepresented by their ID within the district’s space. Supporting the Gender Inclusive Passport Act (H.R.5962) would greatly benefit the non-binary members of our community, both locally and federally.

Without the Gender Inclusive Passport Act (H.R.5962), the effects could be detrimental to the mental health of non-binary and intersex people. Allowing the gender marker “X” on passports would create a greater sense of gender affirmation for transgender constituents. Gender affirmation can be defined as a process of support and assertion by a transgender or non-binary person and the people surrounding them, either politically, socially, or psychologically (Restar et. al., 2020, p. 2; Scheim et al., 2020, p. e197). The passing of this Act would promote positive mental health for non-binary people in the United States as a whole. If the Gender Inclusive Passport Act (H.R.5962) is not supported, non-binary and intersex people will continue to face gender dysphoria on the legal level (McCarey, 2019; Pilkington, 2015; Restar et al., 2020; Scheim et al., 2020). Among the transgender community, the prevalence of suicide attempts is 41% in comparison to 4.6% for the total US population (Pilkington, 2015, p. 391). In addition, the prevalence of clinical depression among transgender adults is 50%, which is 20% higher than the general United States population (Scheim et al., 2020, p. e197). The mental health of transgender people and being able to change their gender marker on forms of identification have a direct correlation. Restar et. al. (2020) found that transgender people who had at least one gender marker that corresponded correctly to their identity on an official identification document had reduced suicide attempts and ideation (p. e197). Hence, this shows that having the correct gender marker, such as “X,” improves a transgender individual’s mental health through legal gender affirmation. This also positively affects their social gender affirmation, which aids them in dealing with gender discrimination.

Overall, transgender individuals who were able to change their gender marker on multiple official documents had significantly lower odds of having a negative emotional response to gender-based discrimination (Restar et. al, 2020, p. 6). Conflicting gender markers on forms of identification, as noted with IDNYC and New York State driver’s licenses, contribute to higher chances of gender discrimination. For example, if a non-binary or intersex person was pulled over in Staten Island when the officer asks them to present their driver's license, the gender marker may not correlate to their gender presentation in the officer's eyes. In cases such as this, "their ID [would] out them as trans, which puts them at risk for anti-trans violence" (McCarey, 2019, para. 8). For non-binary people, the option of having a gender marker "X" can only benefit them, both inwardly and in others' perceptions of them.

On the federal level, it is vital for the gender marker "X" to become an option. The potential positive outcomes of supporting and passing the Gender Inclusive Passport Act (H.R.59602), are revealed through at least nineteen states that have passed similar legislation. This has only been beneficial to non-binary and intersex people living in these states. According to Movement Advancement Projects (n.d.), currently, nineteen states allow the gender marker "X" on driver's licenses, and thirteen states allow the gender marker "X" on birth certificates. While these numbers are good, less than half of states allow for the gender marker "X" on official identification. The passing of the Gender Inclusive Passport Act (H.R.59602) would allow non-binary people, in our district and across the United States, to have a federal form of identification that adheres to their gender identity regardless of which state they reside in. This would be evident as they travel outside the United States as well, and would create a global conversation about the United States' positive perspective on inclusivity. If passports have the option for gender marker "X," they would serve as a gateway for other states to include "X" on their birth certificates and driver's licenses.

We hope with this letter you are now convinced to support the Gender Inclusive Passport Act (H.R.59602). This letter can be used as a means to sway your colleagues to reconsider their stance in favor of the diverse population of our great nation. Supporting this act would mean a great deal to the citizens of the United States as a whole, but most importantly to your non-binary constituents that reside in New York's 11th Congressional District. Telling non-binary Americans to pick between the male or female gender on their passports, is akin to telling U.S. citizens to lie on official government documents. We firmly believe that with your support the Gender Inclusive Passport Act (H.R.59602) will be passed, and allow transgender Americans to prosper in ways they were unable to before.

Sincerely,
Hailey Delaney and Braith Dicker
Wagner College

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Star Wars Episode V: The Empire Strikes Back
Darth Vader's Cue

Julia Searle (Business Administration)[1]

The movie *The Empire Strikes Back* is a "rousing adventure story that is also genuinely disturbing."[2] The film is the sequel to *Star Wars Episode IV: A New Hope* and is the fifth episode in the acclaimed *Star Wars* series. Despite the enterprise's raging success, the *Star Wars* films were very risky at first. The first *Star Wars* film, *A New Hope*, came out in 1977. According to Emilio Audissino, a film historian and film musicologist at the University of Southampton, "The main doubt about the commercial result of the project was that the sci-fi genre was out of fashion in 1970s cinema."[3] As Charles Lippincott, a colleague of George Lucas, recalled, "Kubrick's *2001* didn't break until late 1975 – and that was the most successful science-fiction film of all time… You had to be crazy to make a science-fiction film when we wanted to."[4] The *Star Wars* films were a very expensive risk at the time. However, the first film was a hit and its successor would shock audiences even more. *The Empire Strikes Back* was released on May 21, 1980 and became one of the most profitable films of that year, making over $440 million.[5] The director of this film is Irvin Kershner, who took a very different path from Lucas with *A New Hope* and chose to make *Empire* more sinister. *The Empire Strikes Back* brings the audience's anxieties closer to the surface "without satisfactorily resolving them."[6] In order to make the overall film more intense for the audience, the music needed an upgrade. John Williams, the composer of all the *Star Wars* films, took on this task. Kershner had Williams expand the orchestra to feature 129 musicians and three new

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[1] Written under the direction of Dr. David Schulenberg for RFT-LC 5.

[2] Andrew Gordon, "The Empire Strikes Back: Deeper and Darker," in *Sex, Politics, and Religion in Star Wars: An Anthology*, edited by Douglas Brode and Leah Deyneka (Lanham, Md.: Scarecrow Press, 2012), 166.

[3] Emilio Audissino. *John Williams's Film Music: Jaws, Star Wars, Raiders of the Lost Ark, and the Return of the Classical Hollywood Music Style* (Madison: University of Wisconsin Press, 2014), 69.

[4] Audissino, *John Williams's Film Music, 70.*

[5] *The Numbers.* <https://www.the-numbers.com/movies/franchise/Star-Wars#tab=summary>. Accessed Jan. 21, 2014.

[6] Gordon, "The Empire Strikes Back," 171.

memorable cues or leitmotifs for Princess Leia and Han Solo, Yoda and Darth Vader.[7] Williams, a highly talented composer, used a full symphony orchestra and composed in the late-romantic style for this movie.[8] The grand, inspiring music in this film has become iconic and inseparable from the films themselves.

What made this particular episode so successful was Kershner's new vision accompanied by Williams' brilliant music. George Lucas, the originator of the franchise, the producer of the films and former student of Kershner, "left Kershner to produce something darker than he would or could have done himself."[9] In order to prepare, Kershner read a multitude of fairy tales because the "victory in fairy tales is not over others, but over oneself and over villainy." In *Empire*, the ending is not satisfactory for the audience. The "Dark Side, the Empire, predominates" and the audience's "unease is tempered only by the awareness that fairy tales have happy endings."[10] Kershner took this chapter in a new direction, as compared to Lucas. In order to convey those escalating anxieties, the music had to adapt and John Williams was the one to make that happen. According to Daniel Thornton, "Williams' themes are arguably the most identifiable of any composer in history."[11] Williams produced music for iconic films including *Jaws* (1975), *Jurassic Park* (1993-2018), *E.T.* (1982) and the first three Harry Potter films (2001-2004), making him extremely successful and famous.[12] As of 2016, Williams had won five Academy Awards, was nominated fifty times and had thirty combined Grammy nominations and awards.[13] According to *Grove Music Online*, John Williams has "the ability to express the dramatic essence of a film in memorable music ideas… he is able to shape each score to build climaxes that mirror a particular narrative structure." For example, "The score to *Close Encounters* is built upon a small range of related motivic fragments: a 5-note 'aliens' theme, the first four notes of the Dies irae, an ascending tritone, and a related, disguised kernel from the Disney standard, 'When you wish upon a star.'"[14]

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[7] Audissino, *John Williams's Film Music*, 78.
[8] Ibid., 77.
[9] "Irvin Kershner," *The Times (United Kingdom)*, Dec. 1, 2010, p. 67.
[10] Gordon, "The Empire Strikes Back," 168.
[11] Daniel Thornton, "Star Wars Soundtracks: The Worship Music of John Williams." *Journal of Religion and Popular Culture* 31 (2019): 87-100.
[12] Thornton, ""Star Wars Soundtracks," 88.
[13] Christopher Palmer and Martin Marks, "Williams, John," in *Grove Music Online* <oxfordmusiconline.com), accessed Oct. 27, 2020.
[14] Palmer and Martin, "Williams, John."

In "Star Wars Soundtracks: The Worship Music of John Williams," Daniel Thornton argues,

> Williams' skills and techniques allowed him to make *Empire* an iconic and dark film, just as Kershner intended. His iconic compositions help the audience make an emotional connection with the films because the music is so powerful and effective on their overall experience. Williams adopts and adapts Richard Wagner's leitmotif concept particularly in *Empire* to represent the tension between good and evil, the Rebels and the Empire. His simple and repetitive construction makes his melodies memorable and the repetition of such leitmotifs throughout the films, as in *Empire*, puts them in the audience's memories and constructs their symbolic significance.[15]

Williams's method makes full use of the London Symphony Orchestra and his scores are orchestrated himself. His score for *Empire* includes "expressive use of melody" and "exploits the effects of instrumentation." Its tonal harmony, especially triadic harmony, and its use of a large-scale symphony orchestra are what make the music in *Empire* so effective on the audience's overall experience.[16] For example, the iconic main theme for the *Star Wars* films, "with its dramatic upward fifths, tonal harmony, brass instrumentation, and rhythmic underpinning" interconnects this film with *A New Hope* and creates a sentimental association with the audience.[17] The musical strategies Williams employs are a key component for establishing a connection between the audience, the characters and the story.

The Empire Strikes Back follows the story of Luke Skywalker, a young Jedi-in-training and a rebel pilot against the Empire, played by Mark Hamill. Darth Vader, the antagonist, played by David Prowse and voiced by James Earl Jones, is trying to capture Luke and get him to join the Dark Side. Luke's friends, Chewbacca, a Wookiee played by Peter Mayhew, Han Solo, Captain of the *Millennium Falcon*, played by Harrison Ford and Princess Leia, a leader for the Rebel Alliance, played by Carrie Fisher, also find themselves trying to fight and escape capture from Darth Vader. The film takes place in a futuristic galaxy where the Empire represents evil and the Dark Side and the Rebels and Luke Skywalker represent the Light Side, the good side.

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[15] Thornton, "Star Wars Soundtracks," 89.
[16] Kalinak, *Settling the Score: Music and the Classical Hollywood Film* (Madison: University of Wisconsin Press, 1992), 198.
[17] Ibid., 195.

In *The Empire Strikes Back*, Darth Vader plays a more considerable role than he had in the previous film so Williams composed an entire theme for him. This theme is Darth Vader's cue and is known as "The Imperial March" theme; it is "an extended and richly orchestrated march which activates not only musical conventions for suspense but those for evil as well."[18] Darth Vader is the malicious villain in the futuristic space society and his sole mission is to lure Luke Skywalker to join the Dark Side. Thus, his cue must represent his wickedness and immense power. The first time "The Imperial March" theme, also known as Vader's cue, is heard is at 0:19:45 in the film. Darth Vader's cue, consists of "a short passage in chordal harmony accompanied by various combinations of timpani, celli, trombones, bassoons, and basses playing low in their register."[19] The cue also contains a "hint of dissonance in the accompaniment which is a kind of ostinato… driven by triplets with a distinctive descending major third at the end of some phrases."[20] The theme plays from 0:19:45 to 0:20:30 as the Imperial fleet, made up of colossal spaceships known as Star Destroyers, come onto the screen; the meter of the theme is quadruple.

As Kathryn Kalinak explains,

> The prelude to Vader's theme is heard here: a series of ascending intervals consisting of two minor sixths and two major sevenths. Each of these intervals creates tension through its instability in the tonal system, especially the seventh which beckons the tonic note which begins Vader's leitmotif.[21]

At 0:20:15 we see the back of Darth Vader and the music comes to a heightened volume, fortissimo, and then fades at 0:20:30 for dialogue. Vader's cue is played as Vader's starship comes onto the screen and then Darth Vader himself is revealed. The music is very loud and powerful as we are shown the Imperial fleet and Darth Vader to exemplify the strength of the Dark Side; specifically, the power Darth Vader possesses. The diegetic noises of the TIE fighters flying around the fleet are also heard in this scene. The theme continues, but the volume has decreased and the music is now underscoring dialogue. The tempo of the theme also decreases to andante so that the dialogue is audible to the audience, this occurs from minute 0:20:30 to 0:20:55. Darth Vader and the Empire are in search of Luke Skywalker and the Rebels; Imperial soldiers find something on a planet

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[18] Ibid., 194.
[19] Ibid., 193.
[20] Ibid., 194.
[21] Kalinak, *Settling the Score: Music and the Classical Hollywood Film*, 197.

called Hoth, but they're not sure if they should bring the entire fleet there just based on a lead. However, as Darth Vader approaches, he is confident that Luke and the Rebels are on that planet. To convey his authority over the soldiers, Darth Vader's cue, the ostinato, plays again at minute 0:20:56. As soon as Darth Vader starts speaking, the volume and the tempo of "The Imperial March" theme both increase. At 0:21:13, the beginning of Vader's cue, the ostinato, is once again played as Darth Vader instructs his general in command to prepare his men for battle to attack planet Hoth. The scene comes to an abrupt stop as does the music. At 0:21:21 a quick sequence of bass drums is quickly played to end the scene on a powerful note. The scene then transitions to the Rebel base and the diegetic noises and dialogue of the Rebels is heard.

Cue Sheet for this scene:

0:19:45 "The Imperial March" theme — full symphony orchestra — plays at forte as the Imperial fleet come onto the screen.

0:19:54 The dynamic increases to fortissimo as the loud brass trumpets are heard, diegetic noises of the TIE fighters are also heard.

0:20:15 As the back of Darth Vader is shown, Vader's orchestral cue plays — quadruple meter — and we hear him breathing.

0:20:29 The theme fades and the dynamics decrease to pianissimo as dialogue starts.

0:20:35 The orchestral theme is now underscoring the dialogue — the tempo slows to andante.

0:20:58 The ostinato of the theme is played as Darth Vader approaches his soldiers.

0:21:13 Vader's cue starts over again as he tells his general to prepare for battle — the tempo resumes to allegro.

0:21:21 A sequence of drums is played at vivace and the scene ends.

Another scene where Darth Vader's cue is heard is in the chase scene where the giant Star Destroyer with Darth Vader is chasing after the miniscule *Millennium Falcon* containing the Rebels: Han Solo, Princess Leia, C-3PO and Chewbacca. Darth Vader's powerful orchestral cue is played at minute 0:36:51. The volume of the cue is very loud, fortissimo, to represent the supremacy Darth Vader and the Empire have over the *Millennium Falcon* and the Rebels. The audience is confronted with the loud brass instruments, including trumpets and trombones that make up "The Imperial March" theme. Then as the scene shifts to the *Millennium Falcon* at minute 0:37:00, the music fades into string and woodwind music that is a part of Leia and Han's cue, as they are shown trying to escape Darth Vader and the Imperial fleet. At minute 0:37:13, the beginning of Darth Vader's cue, a few notes are played at forte as the audience sees one of the large Star Destroyers about to crash into another Star Destroyer. Then at minute 0:37:21, the cue ends for dialogue and for diegetic sounds as the two ships collide. At minute 0:37:26, Vader's cue resumes, the forte ostinatos of the theme are heard as the Imperial fighters are released to chase after the *Millennium Falcon* at 0:37:32. The music, "The Imperial March" theme, Vader's cue, begins to fade and the audience hears new music, in the major mode, that underscores the scene as the audience's view shifts to what's going on in the *Millennium Falcon*. The music reverts back into parts of Han and Leia's cue as the scene shifts to them to communicate to the audience that these people work for the Light Side.

At the end of the film, Luke finally confronts Darth Vader. Luke's hand is sliced off and as he is crawling away, Darth Vader confesses that *he* is Luke's Father. Previously, Luke had been told that Darth Vader had killed his father. At 1:51:18, Darth Vader's orchestral cue, with ominous strings and brass instruments returns and underscores the scene. However, the dynamic of the cue is now forte rather than fortissimo and the tempo slows to andante to represent that even though Darth Vader is incredibly powerful, he has just revealed very sensitive information that puts him in a vulnerable position; the music must express this by decreasing its volume and tempo. The brass instruments drag out their notes to convey the drama of the scene to the audience. The cue continues to underscore the scene but loud wind and the dialogue between Darth Vader and Luke is also heard. At 1:51:39, as Luke is processing this shocking information, the tempo remains andante and the dynamics of the music vary to create tension. Then at 1:51:45, Vader's cue fades into another part of "The Imperial March" theme and the iconic ostinato is heard as Darth Vader explains to Luke that he has the power to destroy the Emperor, the main leader of the Dark Side and the Empire. Vader's cue then begins to fade at 1:51:54 into string music in the major mode as Luke is about to jump off and escape. The music is a part of Luke's cue and is played as he falls and escapes Darth Vader. Once again, Williams changes the music throughout scenes to reflect what is happening in them. Since Luke has escaped Darth Vader, major music is played to represent the Light Side and Luke's triumph over the Dark Side and Darth Vader.

The implementation of "The Imperial March" theme, Darth Vader's own unique cue, is crucial throughout the film in capturing the evil and the overwhelming power of Darth Vader and the Dark Side. Why did Williams choose to compose this theme as a march though? Marches are normally played to inspire and unite groups, usually military troops. However, using one in this context was brilliant of Williams. The “Imperial March” is not a melody intended to unite a group of people, instead it instills fear and represents the power of evil. The different variations of the cue throughout the film, including mixed tempos and dynamics, help convey the tone of specific scenes to the audience. Williams knew exactly what kind of music would shock audiences and how to create an emotional connection with the film through the music; specifically, in *Empire,* to make audiences comprehend the true strength and power of Darth Vader and the Dark Side.

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