UNCONVENTIONAL WISDOM:

University of Montevallo
TRIO McNair Scholars Program
2016 Research Journal
Welcome

As one of the many staff members who supported initiating the Ronald E. McNair Scholars Program at the University of Montevallo almost fourteen years ago, it is with great pride that I write this message for the fourth issue of Unconventional Wisdom: the University of Montevallo McNair Scholars Program Research Journal. Along with being a high impact practice that may lead some students to more successful postsecondary outcomes (Kuh, 2008), undergraduate research provides students with experience and skills valued by many employers (Hart Research Associates, 2013). According to Showman, Cat, Cook, Holloway, and Wittman (2013), the undergraduate research environment also helps cultivate creativity, judgment, communication, organization, and persistence in successful student researchers. Moreover, not only is the act of conducting research beneficial, one of the most meaningful aspects of the undergraduate research experience may be the lasting relationship formed between the faculty mentor and the mentee. Brad Johnson (2016), states, “mentoring experiences contribute in a crucial way to ushering mentees into adulthood, into academe, and into the profession in which they will serve society” (p. 4).

Please join me in congratulating the McNair Scholars Program as they complete another successful year and usher these talented students on to the next chapter in their lives!

Dr. Tammi Dahle
Dean of Students

Hart Research Associates (2013). It takes more than a major: Employer priorities for college learning and student success. An online survey among employers conducted on behalf of the Association of American Colleges and Universities (PDF, 156KB). Washington, D.C.


Due to the efforts of Julia Tutwiler who advocated for the technical training of girls, the University of Montevallo opened in October 1896 as the Alabama Girls’ Industrial School (AGIS), a women-only technical school that also offered high school-level courses. AGIS became the Alabama Girls’ Technical Institute in 1911, further adding "and College for Women" in 1919. The school gradually phased into being a traditional degree-granting institution, becoming Alabama College, State College for Women in 1923.

The school's supporters lobbied the Alabama Legislature which passed a bill on January 15, 1956 that dropped the designation "State College for Women", effectively making the school coeducational. The first men entered the school that same month. In 1965, the board of trustees authorized President D. P. Culp to sign the Certificates of Assurance of Compliance with the Civil Rights Act of 1964. In the fall of 1968, three African American women, Carolyn Buprop, Ruby Kennbrew, and Dorothy (Lilly) Turner, enrolled in the university. On September 1, 1969, Alabama College was renamed the University of Montevallo. Today, the University of Montevallo is the only public liberal arts college in Alabama and is a member of the prestigious Council of Public Liberal Arts Colleges (COPLAC).

Montevallo is located in the geographic center of the state of Alabama in an area rich with Civil War history. With slightly over 3,000 students, the university generates a significant economic impact on the surrounding communities in Shelby County.

Many of the buildings on campus predate the founding of the college, including King House and Reynolds Hall. The King House is reserved for special guests of the campus, and Reynolds Hall is still used by the Theater Department and alumni relations. King House was reportedly the first home in Alabama to receive pane glass windows.

Montevallo's campus is considered an architectural jewel. Its appearance is more in line with private, elite institutions. The central part of campus is a National Historic District, listed on the National Register of Historic Places. The Olmsted Brothers’ firm, who also designed the grounds for the Biltmore House in North Carolina, designed the main portion of the campus. Frederick Law Olmsted designed Central Park in New York.
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Acknowledgements

This issue of *Unconventional Wisdom: University of Montevallo McNair Scholars Research Journal* became a reality through the conscientious efforts of a devoted group of scholars, faculty mentors, and McNair staff. We are particularly indebted to the support provided by UM administration, faculty, and staff.

With immense appreciation we salute our scholars and faculty mentors for their individual contributions to this journal:

**UM Scholars**

- Dhakir Abdullah
- Sylvan Baker
- Reggie Holifield
- Zeb Lee
- Keshia McClantoc
- Briana McDade
- Kimberly McDade
- Paris Nelson
- Morgan Pennington
- Nicholas Preston
- Jordan Romine
- Xavier Scruggs
- Jalen Thompson
- Jordan Wilson

**Faculty Mentors**

- Virginia Bare, Ph.D.
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- Charlotte Daughhetee, Ph.D.
- Paul Mahaffey, Ph.D.
- Glenda Conway, Ph.D. and Jim Murphy, Ph.D.
- Carolyn Miller-Kirby, Ph.D.
- Tiffany Wang, Ph.D.
- Susan Caplow, Ph.D.
- TyAnn Lindell, Ph.D.
- Karli Morris, Ph.D.
- Alvin Tillery, Ph.D. Northwestern University
- Deborah Lowry, Ph.D.
- Dalila Mathews, Ph.D.

The McNair Scholars Program staff plays a significant role in the production of this journal and the program’s operations. We appreciate their continued dedication and acknowledge their valuable contributions.

- Tonya, Giddens, MSHI Program Coordinator
- Taylor Teems Program Secretary

This third edition of the McNair Research Journal embodies the proceedings of the 13th Annual McNair Scholars Program Research Presentations held on June 28, 2016 and/or presentations at the 2nd Annual 3-Minute Thesis on September 16, 2016. Many of these projects have been presented at national conferences in Niagara Falls, NY; Baltimore, MD; and Kansas City, MO.

- Roberta Leichnitz, Ph.D. Project Director
- McNair Scholars Program
About TRIO

The Federal TRIO Programs were established by Congress to provide educational assistance and opportunities for all Americans regardless of ethnic/racial backgrounds or economic status. TRIO encompassing Talent Search, Upward Bound, Student Support Services, Educational Opportunities Program, and the Ronald E. McNair Post-baccalaureate Achievements programs reflect our country’s commitment to diversity and equality in education. These programs, funded by the Title IV Higher Education Act of 1965, generally serve first generation low-income students, students with disabilities and students from groups underrepresented in higher education.

About Ronald E. McNair, Ph.D.

Ronald Erwin McNair was born October 21, 1950 in Lake City, South Carolina. McNair’s thirst for scientific knowledge led him to a Bachelor of Science degree in Physics from North Carolina A&T State University, graduating magna cum laude. Earning a Ph.D. in Physics from Massachusetts Institute of Technology in 1976, he became a widely recognized expert in laser physics while working with the Hughes Research Laboratory.

Further distinguishing his career, he was chosen from a pool of ten thousand applicants for the NASA Space Shuttle Program. In 1986, Dr. McNair was a mission specialist aboard his second Challenger flight when the shuttle was tragically lost in an accident that claimed the lives of the entire crew. To honor the memory of Dr. McNair, Congress allocated funding for the Ronald E. McNair Postbaccalaureate Achievement Program.

The University of Montevallo TRIO McNair Scholars Program

The University of Montevallo is committed to the legacy and memory of Dr. Ronald E. McNair. Our scholars, representing a diverse background, look forward to continuing their educational endeavors in graduate and doctoral programs. The program facilitates educational and academic growth through research opportunities, faculty mentoring relationships, and related services. The scholars attend and present their research at national conferences and network with professionals in their fields of study.
Charisma and its Magnetism

Dhakir Mubarak Abdullah

Virginia Bare, Ph.D. and John Burling, Ph.D.

Abstract

The idea of charisma has been considered when describing the exploits of the great leaders of the past and present. What galvanizes a multitude of people into wanting to alter the status quo, and what special characteristics are these extraordinary leaders usually in possession of that attracts such a following? Many disciplines have studied charisma, often altering slightly the meaning in the process. Originally the idea of charisma was associated only with those who seem to have been ordained by God with some type of otherworldly attribute that attracted people and inspired them to follow the endowed. However, we have moved from a more religious connotation to a more secular one, of a compelling attractiveness that inspires devotion in others. It has been shown that the charismatic leadership relationship creates an intense emotional bond between leaders and followers. The result is complete loyalty and trust in the leader and emulation of the leader. Followers are inspired to implement the leader’s vision (Nahavandi, 1997). However, the charismatic leader does not attain his/her charisma solely through the virtue of his/her own character, but dispositional traits are contributed by both parties. Moreover, the situation in which he/she emerges is integral to the manifestation of charisma. We are hoping to explore the idea of charisma and how it relates to human behavior in a leadership context with regards to a follower’s perception of certain political candidates’ charismatic appeal. Said research procedure is a correlational study that seeks to assess whether there is a correlation between certain candidates being perceived as charismatic, and those who are doing the perceiving, their levels of private self-consciousness, self-esteem, and anxiety levels. We had 78 students who took part in our survey all from a small liberal arts university in the south, and we hypothesize that students with higher levels of private self-consciousness, higher levels of anxiety, and lower levels of self-esteem would tend to perceive certain political candidates as more charismatic.

Introduction

Problem Statement

As human beings we are all interdependent and the actions of those close to us as well as far away, can affect us in ways that are not immediately salient. We may not understand the subtly in which we are affected by charismatic leaders or their influence on a small, as well as a global scale. Political leaders can galvanize an entire group of people to do something radically beneficial or radically horrendous. On, a smaller scale there may be neighborhood leaders who have charmed the younger generation into following them. In fact, studies have shown that it has often been the young who have served as the vanguard in most revolutionary movements.
**Purpose of the Study**

This research focuses on the idea of charisma and its relationship to human behavior and how a follower’s perception of a leader’s charisma is correlated with the follower’s level of private self-consciousness, self-esteem, and anxiety level. Approaching this objective, the research begins initially by identifying the characteristics that charismatic leaders usually possess and then looks at charisma in different contexts. Also the researcher looks at what type of personality traits that their followers are usually in possession of. Moreover, the researcher explores the idea of leadership emerging from evolutionary factors.

**Research Questions**

Why are we as a people drawn to charismatic leaders? How will a participant’s level of private self-consciousness, self-esteem, and anxiety levels correlate with how they perceive certain candidate's charismatic appeal? Did charismatic leadership arise from evolutionary factors? What types of traits do the followers of charismatic leaders possess? Will those with higher levels of private self-consciousness view Donald Trump as more charismatic?

**Significance of the Study**

It is expected to find out that charismatic leadership, or leader and follower relationships in general, have had beneficial evolutionary implications. If so, this would illustrate why followers are drawn to charismatic figures on the conscious and subconscious planes. Also we expect to find that charisma is not a mystical phenomenon but one that can be studied under scientific scrutiny.


**Literature Review**

**The Importance of Studying Leadership**

History is replete with charismatic figures who have galvanized an entire population and led it, frequently against the odds, to safety or prosperity. It is the dynamics that exist between these types of leaders and their followers that so captivate us and lead us to explore the factors that contribute to these significant occurrences. However, before we explore the construct of charismatic leadership, it will help to briefly mention leadership and its importance in general. Though a completely comprehensive discussion involving this phenomenon is beyond the scope of this literature review, we will attempt to show its import. The literature abounds with different definitions of leadership, but I will utilize Vugt’s (2006) definition, “Leadership is conceptualized in terms of the outcome of strategic interactions among individuals who are following different, yet complementary, decision rules to solve recurrent coordination problems” (p. 354).

The importance of studying the leadership phenomenon is attested to by the voluminous studies on leadership and furthermore by its prevalence in our everyday lives. For example, in regards to the prevalence of the leadership construct, Popper (2005) mentions in his book:

> In politics, in the work place, in the community, the street gang, the military, in schools, youth movements, even in kindergartens, leadership is a phenomenon that can be identified and described and attributed to certain individuals whose influence is palatable. (p. 13)

Moreover, leadership is an inevitable motif in society and it can be argued that it is the most important problem in the social sciences (Vugt, Hogan, & Kaiser, 2008).

Furthermore, Boehm (1999, cited in Vugt, 2006) reported that the evidence presented in the anthropological literature suggests that there are no known human societies without some form of leadership. Humankind’s tendency to form leader and follower relationships
unconsciously happens even when such a relationship is not sought after. In fact, Bass (1954, cited in Vugt, 2006) observed that, “Social psychological research reveals that a leader-follower structure emerges spontaneously even when groups set out to be leaderless” (p. 354). So it is easy to see how important the study of leadership is within society. The ubiquity of the leadership phenomenon evokes the notion that an evolutionary basis for leadership exists. In order for this to be possible there had to be an evolutionary basis for both followership and leadership, because leadership is a group phenomenon; there are no leaders without followers (Nahavandi, 1997).

During their qualitative experiment on the evolution of followership and leadership, Vugt et al. (2008) would mention findings that would shed some light on our inquiry about the evolutionary origins of this social phenomenon; they reported, “Leading and following are strategies that evolved for solving social coordination problems in ancestral environments, including in particular the problems of group movement, intragroup peacekeeping, and intergroup competition” (p. 182). Moreover, it is almost unconscious to delegate certain individuals with certain types of personalities to lead certain groups in life, in order for this to be so effortless humans would have to innately possess schemas psychologically with regards to potential leaders. In fact, upon review of the literature we discovered corroboration for this proposition, Vugt et al. (2008) mentions that, “Specialized mechanisms for planning, communication, group decision making, competence recognition, social learning, and conflict management would have contributed to the emergence of a specific leadership and followership psychology in humans” (p. 184). Leadership and followership is intrinsic within our society and the very nature of human kind, its study is paramount and can be attested to a degree by what is mentioned above.
Charisma and the Evolution of its Definition

The preceding account attempts to expound upon the significance in the studying of leadership, although ineptly; it brings to the forefront some examples in its attempt. In order for us to explore the idea of charismatic leadership it will help to define the mystical construct of charisma and tell how it has evolved over time. Originally the idea of charisma was associated only with those who were thought to have been ordained by God with some type of otherworldly attribute that attracted people and inspired them to follow the endowed. Moreover, this mystical quality was thought to be unique to the individual. To illustrate, the forbear in the conceptualization of charisma, Weber (1947, cited in Bowden, 2010) defines charisma as:

A certain quality of an individual personality, by virtue of which he is set apart from ordinary men and treated as endowed with supernatural, superhuman, or at least specifically exceptional powers or qualities. These are such as are not accessible to the ordinary person, but are regarded as of divine origin or as exemplary, and on the basis of them the individual concerned is treated as a leader. (p. 176)

When pondering the source of such atrocious acts as the Holocaust, many cannot help but attribute a mystical aura to this leader; what type of person can impel such a multitude to commit such unspeakable acts, and what type of people will be so enraptured by said leader? However, contemporary notions of charisma have departed from the original conceptualization, and do not classify charisma as a rare and unusual quality (cf. Beyer, 1999 as cited in Antonakis, Fenly, & Liecht, 2011). As the concept of charisma evolved many different disciplines would adopt the construct and apply their own denotation. For simplicity’s sake we will use the definition of the Merriam-Webster dictionary, “a special magnetic charm, or inspirational quality that inspires devotion within followers” (2015).
Examples of Charismatic Leaders

After defining the idea of charisma and its subsequent evolution, it would help to list a few examples to provide this psychological construct with a physical personification. Dr. Martin Luther King, Jr., Mahatma Gandhi, and John F. Kennedy are leaders who exude confidence and engender extreme emotional responses in their followers. They have special relationships with their followers and are described as charismatic (Nahavandi, 1997). Also consider, Fidel Castro, who championed the Cuban Revolution along with his brother in arms, Che Guevara. Charisma in itself is not inherently good or bad, but it proceeds from the orientation of the individual.

The aforementioned individuals occupy generally, a positive sphere within the public psyche, but those that we list now are considered more negative. On a darker note, we have Adolf Hitler who was able to rally a defeated German people and instill within them a new national pride, as well as a superiority complex that would lead to the mass murdering of millions. On smaller scales we have gurus, often considered messianic figures, who have led certain social movements, people such as Charles Manson and Jim Jones. The descriptions that Jones’s followers attribute to him convey the notion of a savior coming to rescue the downtrodden. For example, Popper (2005) remarks, “Jones was perceived by his followers (most of whom he knew from a distance) as a sacred and loving being whom they described in truly messianic terms” (p. 58). Both Jones and Manson, through their influence, manipulated their followers and developed their own nebulous mystique, which gave them the wherewithal that would lead to many people being killed. Manson would acquire his fame after murdering a group of people at a party in Los Angeles, while Jones was responsible for the largest mass suicide in history; over 900 people, including scores of children, took their own lives (Popper, 2005). Occurrences such as these, continue to baffle society and spark deeper inquisitiveness.
towards a possible reason why these followers would carry out such horrendous deeds at the behest of a leader.

Contrary to the idea that this list evokes, which is that charismatic leaders only exist on the national scale, charismatic leaders exist on all stratifications of life. As quoted above, charismatic leaders exist in all aspects of life: whether it is a CEO of an illustrious firm, a school teacher, a friend, parent, politics, and street gang youth movement, etc. These leaders exist and are important influencers of society.

**What is Charismatic Leadership?**

Now that we have defined charisma, and have given a brief list of charismatic figures, it is a bit easier to explore the phenomenon of charismatic leadership. Like all forms of leadership, there are certain aspects that overlap, however there are certain facets, which are specific to charismatic leadership which separates it in the literature. Charismatic leaders differ from other leaders by their ability to formulate and articulate an inspirational vision and by behaviors and actions that foster an impression that they and their mission are extraordinary (Conger, Kanungo & Menon, 2000). Furthermore, Nahavandi (1997) states, “charismatic leaders are defined as leaders who have a profound emotional effect on their followers: they are perceived not simply as bosses, but rather as role models and heroes who are larger than life” (p. 184). First and foremost, the leadership construct particularly described as charismatic, is an emotional phenomenon (Popper, 2005). Although this statement speaks to us intuitively, Zajonc, as cited by Popper (2005), summarizes many studies on the classic controversy between cognition and emotion. He argues:

People do not risk their lives for freedom because of a precise cognitive analysis of pros and cons and they certainly do not do so in matters of preference. Preference is a matter of emotions (and the explanations and assessments come later). (p. 4)
Charismatic leadership involves an inspirational leader who exceeds other types of leaders in devotion from their followers, and is also revered as more than a simple leader. The result is complete loyalty and trust in the leader, emulation of the leader, and followers are inspired to implement the leader’s vision (Nahavandi, 1997).

**Changes in the Conceptualization of Charismatic Leadership**

The concept of charisma in leadership was introduced by Weber in the early 1920s. Charisma, since it is by definition an inspired and divine gift, was assumed to be beyond the realm of scientific study (Nahavandi, 1997). However, the emergence of different theories attests to the importance of the concept’s utility in different fields. Moreover, the idea of what charisma was would begin to change. Originally it was thought to only be a phenomenon of the individual, and all of the research regarding the leadership phenomenon was leader oriented. Thus emerged the “trait approach.” On a different note, scholars would learn to regard charismatic leadership as a dynamic relationship between the leader and followers. The benefits of regarding the charismatic leadership construct as a relationship are highlighted by Popper (2005):

> The conceptualization of leadership as a relationship allows us to see not only the action itself, but also the movements in the background and the circumstances in which the relationship exists (and changes). It permits analysis of specific cases of leadership along with integrative-comparative analysis. (p. 6)

Furthermore, in the relationship both parties contribute peculiarities and researchers would begin to note this. For instance, Nahavandi (1997) reports:

> One of our bases of our current approaches to charismatic leadership is the analysis of the concept as a relationship between the leader and his or her follower rather than a simple description of traits and personal characteristics of the leader. (p.184)

Both parties bring certain traits to the relationship that contribute to the leader’s charismatic air.

Before we continue it will be beneficial to add to the comprehension of the construct by listing some of the traits that the leaders and the followers contribute to the relationship.
Although some of these traits may overlap with another form of leadership, some of these exist in degrees that characterize charismatic leadership specifically. The list includes: a high degree of self-confidence, strong conviction in the correctness of their ideas, high level of enthusiasm, high degree of expressiveness, excellent communication and articulation skills, active role modeling and image building, etc. (Nahavandi, 1997, p. 184). Here I will elucidate the utility of certain traits with regards to captivating followers and state what researchers report about some of these traits. High self-confidence attracts us intuitively, and it is associated with a lack of internal conflict; whereas non-charismatic leaders doubt themselves in the face of failure and criticism, the charismatic leader knows he or she is right (Nahavandi, 1997). Again because the charismatic leadership relationship is one of emotion, the enthusiasm can be contagious; they are highly expressive and their nonverbal cues lend dramatic support to their verbal message that they deliver with considerable skill (Nahavandi, 1997). In leaders, we want to follow people who practice what they promulgate, not a person who instructs one to follow some credo that the leader does not follow.

Since charismatic leadership is dynamism between leaders and followers, followers of such leaders have certain characteristics; without both the leader and the follower characteristics, there cannot be a charismatic relationship (Nahavandi, 2007). With regards to the followers and their characteristics, they touch on more emotionally invested levels than the average leader followership. To illustrate, traits of the followers include: a high degree of respect and esteem for the leader, great loyalty and devotion, genuine affection towards their leader, and unquestioning obedience (Nahavandi, 2007). The traits evoke the notion of an intimate relationship between individuals. Some of these characteristics have aided leaders in the past with changing a nation
for the better (Martin Luther King’s followers) but unquestioning obedience can lead to very destructive outcomes as we have seen with Charles Mansion, Jim Jones, and Adolf Hitler.

Another imperative in regards to the emergence of charismatic leadership is the situational requirement; scientists recognized this fact and have postulated that certain situational factors are more conducive to the emergence of charismatic leadership. Essentially, certain situations, compounded with the traits of the followers and leaders help to increase the leader’s charismatic aura. Situational characteristics that are more conducive to the emergence of charismatic leadership are: a sense of distress or crisis, a perceived need for change, an opportunity to articulate an ideological goal, and the opportunity to clearly articulate the followers’ role (Nahavandi, 1997). In this small section we attempted, although not comprehensively, to conceptualize how the charismatic leadership phenomena was studied by scientists.

The Fortuitous Nature of a Crisis or Charged Situation

When studying the charismatic leadership phenomenon, a consistent theme repeated itself throughout the literature and that is the propitious nature of a crisis. According to Popper (2005):

Social psychologists, who performed research manipulations of crisis situations in groups, found that leaders possess much greater influence in crisis periods than at other times, and groups tend to replace their leader with a new one if the former does not have a clear solution to the problem. (p. 19)

Moreover, it is not only a situation of crisis per se that is necessarily imperative, a charged situation can achieve the same consequence; Pastor, Mayo, and Shamir (2007) corroborate the former statement:

Crises and other emotionally laden organizational events connected to charismatic leadership, such as downsizing, rapid growth, or reorganizations, are highly arousing contexts, and the emotional arousal experienced by followers may increase not only their search for a charismatic leader but also their tendency to view existing leaders as charismatic. (p. 1585)
Moreover, several studies on arousal and liking focused on the role of arousal in interpersonal attraction (Allen, Kenrich, Linder, & McCall, 1989; Bershield & Walster, 1974; Riordan & Tedeschi, 1983, as cited by Pastor et al., 2007). For instance, Jacobs, Bershield, and Walster (1971, as cited by Pastor et al., 2007), found that women who met an attractive man after they had an unrelated upsetting experience were more attracted to him. To give an example, I will mention the research of Pastor et al., (2007) and how they tested the effects of arousal on the ratings of a leader’s charisma.

The researchers conducted an experimental laboratory study and a longitudinal field study to investigate the impact of followers’ arousal on ratings of charisma. Both studies examined two contrasting hypotheses: (a) the misattribution hypothesis, and, (b) the response-facilitation hypotheses. The misattribution theory suggests that when people are highly aroused they feel more attracted to another person because they erroneously attribute the source of their arousal to the presence of this other person (Pastor et al., 2007). In contrast to the misattribution theory, the basic argument of response-facilitation theory is that general arousal facilitates the dominant response (Allen et al., 1989; Foster et al., 1998; Reiswnzein, 1983; Zajonc, 1965, as cited by Pastor et al. 2007). In the laboratory experiment they increased arousal of their participants through riding a stationary bicycle at high speed (high arousal) or one with low speed, which served for low arousal. Then they asked them to rate a business leader via watching a video. The results did not support the misattribution of arousal hypothesis.

The longitudinal study was conducted inside an educational environment, where they examined the influence of arousal on a leader’s charisma via a university’s students. These students were asked to identify a close charismatic leader and many students chose professors. Two professors with different charismatic reputations were selected to participate in the study,
one with a high charismatic reputation, the other was described as being a good instructor but was not described in charismatic terms by students. The level of arousal was measured with the 12-item Activation Scale of the Self-Report Affect Circumflex (Larsen & Diener, 1992; Russell, 1980; Watson & Tellegen, 1985 as cited by Pastor et al., 2007). Charisma ratings were measured with the Charisma Scale from Bass and Avolio’s (1993 as cited by Pastor et al., 2007) MLQ form 5X Rater plus a general item of charisma. This experiment proved to correlate with their second hypothesis; they concluded that, as predicted by response-facilitation theory, levels of follower’s arousal were associated with ratings of charisma only if the leader was somewhat charismatic to begin with (Pastor et al., 2007).

In this research endeavor, they demonstrated that leader’s charisma ratings are affected by their followers’ arousal in the manner suggested by response-facilitation theory rather than general misattribution model (Pastor et al., 2007). This discovery also lends credence to the contemporary scientific approaches that choose to operationalize the study of charisma, by focusing on the value of the leader, the followers, and the social circumstances that lead to the overall emergence of charisma.

**Charismatic Leadership and Empowerment**

One of the most distinguishing factors that contributes to the uniqueness of the charismatic phenomenon is the ability to empower followers. By empowering followers, charismatic leaders have profound effects on followers’ self-concepts (Bass, 1985; House, 1977, as cited by Sosik, Chun, & Zhu, 2012). Shamir et al. (1993, as cited by Sosik et al. 2012) suggest that a charismatic leader influences the moral values of followers by aligning the personal interests, values and identities of followers with the leader’s “morally justified” goals, attitudes, and ideology, and by behaving in ways that are self-expressive of these personal attributes (p.
Specifically, charismatic leaders challenge followers to become important contributors to collective efforts by communicating confidence and high expectations through the articulation of an exciting vision that is framed as being socially approved, beneficial, and morally defensible (Sosik et al., 2012). This section was not intended to be a fully comprehensive treatise of the psychological empowerment of followers by charismatic leaders, but just to provide a glimpse into the empowerment phenomenon.

**Gaining Immortality by Aligning oneself with a Charismatic figure in a Crisis Situation**

Given the present chaotic political climate, the situation is right for a captivating figure to emerge and be the object on to which everyone projects their hope. America has been in substantive state of tension since 911, and the situation is further exacerbated daily given the constant propagation of anti-Islamic rhetoric. So called “terrorists attacks” abound in our different forms of media, in conjunction with the feeling that all our resources are being consumed at alarming rates by the “other.” One cannot even look at one’s phone, or turn one’s television on without being reminded of our state of crises as well as our approaching death.

According to Terror Management Theory (TMT), a theory that was inspired by Ernest Becker and created by Tom Psyczynski, Sheldon Solomon, and Jeff Greenberg, reminders our inevitable death can have disastrous effects on people and those around them. The theory posits that:

The juxtaposition of a biological predisposition toward self-preservation that human beings share with all forms of life with the uniquely human awareness of the inevitability of death gives rise to a potentially overwhelming terror (Psyczynski, Solomon, & Greenberg 2002 p. 27).

Consequently, to alleviate this primal dread, humans have to form ways to evade death either literally or figuratively. Terror Management Theory says people do this in two ways:

On the one hand, some try to achieve literal immortality through things like prayer,
religious ritual and cryogenic freezing. On the other hand, nearly everyone aims to achieve symbolic immortality through fame, lasting accomplishments or progeny who will carry on their name. People can also achieve a measure of symbolic immortality by dedicating themselves to a grand cause, such as a political movement (Sirota, 2016).

As a result, our particularly charge political climate is right for the electorate to project their hopes and dreams on a larger than life figure who will rescue “us” from the dark times we had descended into and grant us a symbolic escape from death. However, our “escape” may produce detrimental consequences. For example, Sirota (2016) states:

Becoming a part of something greater than one’s self can be perfectly benign or even noble. But it also has a dark side. In times of political instability or economic distress, people are drawn to charismatic nationalists who offer them protection and vicarious immortality. (p. 1)

This has had disastrous outcomes in the past when you consider individuals like Hitler. For instance, Sirota (2016) states “Adolf Hitler was one such giver of collective immortality; Nazism, came to power in Germany while the country was weathering a severe economic depression” (p. 1). Given this information, our current political candidates and the upcoming election could produce some “interesting” results to say the least. Given this information a study of the different correlations between private self-consciousness, anxiety, self-esteem levels in university students and their perception of the charismatic appeal of the four leading presidential candidates should produce notable results.

Predictions

We predicted that that those with lower levels of self-esteem would tend to view their particular candidate as higher on the like/charismatic scales respectively. Also, we expected to find that those who scored higher of the Public/Private Self-Consciousness Measure and the Speilberger State-Trait Anxiety Measure respectively, would score higher on the charismatic/like subscales with regards to their favored candidate(s). We expected to find a significant,
correlation between those perceiving Trump as charismatic and those perceiving Ted Cruz as charismatic. Also, we expected that those who score lower on the private self-consciousness subscale would tend to view Donald Trump as more charismatic. Moreover, we predicted that there would be significant correlations among the personality variables and the “liking” and “charismatic” subscales for each candidate, but the only personality dimension that yielded any significant correlations was the private self-consciousness subscale of the Fenigstein scale. We also predicted that there would be some similarity of responses to candidates within their respective parties. We expected significant correlations between private self-consciousness subscale and the like Bernie Sanders subscale. We also expected that women would see Hillary Clinton as more charismatic as compared to the male candidates.

Methodology

Participants

The sample in this study consisted of 74 University of Montevallo students enrolled in disparate classes in the Summer I semester of 2016. The participants' ages ranged from 18-49. There were 56 females and 18 males in this sample. Of the students sampled, 4 were freshmen, 4 were sophomores, 12 were juniors, 24 were seniors, 25 were graduate students, 2 listed that they had “middle” class standing (maybe interpreting the blank labeled “class standing” as economic standing) as opposed to academic class standing, and 1 left the blank vacant.

Procedure

Subjects were given an informed consent form separate from the rest of the other items. After they signed the consent forms making manifest their consent, they were issued a demographic survey to assess the students’ age, major, minor, sex, class standing, religious
background, marital status, whether or not they smoked or drank, their living situation, as well as three personality premeasures and one additional measure that sought to assess their perception of the charismatic appeal for our four political candidates. All responses were completely anonymous, and students were instructed repeatedly not to place their names on the demographic sheet or any other measures. Once participants completed the packet they were told to raise their hands and the items were taken up, placed face down, and put in a large envelope to insure anonymity.

**Materials**

In order to assess the correlations between a student’s level of private self-consciousness, self-esteem levels, anxiety and their perception of charismatic appeal regarding the four selected candidates, three personality premeasures were used in conjunction with a self-developed charismatic questionnaire. In each packet all of the premeasures were presented in the same order, but the order of the candidates along with their ancillary charismatic appeal scales varied in four different orders.

The 23-item Public/Private Self-Consciousness Measure (Fenigstein, Scheier, & Buss, 1975 as cited in Scheier & Carver, 1985) offer items on a range from 0-4 and participants were asked to indicate to what extent each item applies to them (0=extremely uncharacteristic to 4=extremely characteristic). Examples include: “I am always trying to figure myself out” and “One of the last things I do before I leave my house is look in the mirror.”

The 20-item Spielberger State-Trait Anxiety Measure (STAI) (1983) offered items on a range from 1-5 (1=strongly disagree to 5=strongly agree) and partipant students indicated to what degree each statement applied to them by checking boxes that read things like “I feel comfortable” or “I feel over-excited and rattled.”
The Eagly Self-Esteem Scale (Eagly, 1967) is a 15-item scale in which participants were asked to answer on dimensions such as (1 = very often to 5 = practically never) to items such as “How often do you feel inferior to everyone you know?” and “How often do you feel confident that someday people you know will look up to you and respect you?”

Following these three personality premeasures, volunteers completed 4 duplicate questionnaires after viewing the corresponding political candidate in an attempt to assess their perception of the candidates’ charismatic appeal. The questionnaires were presented in four different prearranged orders and the four political candidates included: Bernie Sanders, Donald Trump, Ted Cruz, and Hillary Clinton. As was mentioned, each questionnaire was the same for each candidate only the order and the picture of the candidate itself differed. The statements were on a frequency from 1-5 (1=strongly agree to 5=strongly disagree) and examples of the questions that arose are, “To what extent do you feel that Hillary Clinton is a source of inspiration” or “To what extent do you feel that Donald Trump will rescue our nation from the dark times that America has fallen into?”

**Results**

We created subscales for each candidate assessing liking and "charismatic" characteristics by selecting items that clearly described either having positive affect for a candidate, or believing they might have some destiny and/or “magical” traits that made them unlike most people, respectively. We then assessed all correlations; and found several interesting significant results. There was a significant positive correlation between the charismatic subscale for Ted Cruz and the like subscale for Donald Trump ($r = .410$, $p < .001$). There was a moderate negative correlation between the private self-consciousness scale and the Donald Trump charismatic subscale ($r = -.263$, $p < .039$). The finding that there was a positive
correlation between the private self-consciousness subscale and the Bernie Sanders subscale was unexpected ($r = .314, p < .003$). As expected there was moderate significant negative correlation between the Bernie Sanders charismatic subscale and the Donald Trump charismatic subscale ($r = -.444, p < 0.00$). On another note, there was a positive correlation between the Bernie Sanders charismatic subscale and the Hillary Clinton charismatic subscale ($r = .387, p < .002$).

**Discussion**

The purpose of our study was to examine the different correlations among private self-consciousness, anxiety, self-esteem levels in university students and their perception of the charismatic appeal of our four candidates. The data confirms the majority of our predictions. The data demonstrates that our hypotheses regarding the positive correlation between those perceiving Trump as charismatic and those perceiving Ted Cruz as charismatic was correct. Intuitively, one can come to the conclusion because these two candidates share similar facets. They both belong to the Republican party, and hence share similar values and philosophies. Moreover, there oratory is generally along lines of hate rhetoric and blatant demagoguery. This in turn makes them more favorable given TMT findings, “According to Terror Management Theory, fear of death can help strengthen cultural prejudices as people flee deeper into the belief networks that promise them symbolic immortality” (Sirota, 2016). The data confirmed that there is a significant correlation between the private self-consciousness (PSC) subscale and Donald Trump charisma subscale. Those who tended to score lower of the PSC subscale tended to view Donald Trump as more charismatic. Given TMT findings, one could expect that people who were socially anxious, low on private self-consciousness, or high on the Speilberger measure of anxiety would be more supportive of Donald Trump. In this turbulent time in history, people who tend to be less introspective and more anxious tend to favor Donald Trump, he seems to
offer a sense of escape from harm by explicitly-stated methods, often aggressive, that could eliminate perceived threats. Moreover, we expected that there would be a significant negative correlation between private self-consciousness subscale and the like Bernie Sanders subscale. Findings suggest the reverse of predicted relationships. After the fact, these findings make sense because Bernie is a more methodical, as well as, diplomatic candidate who seeks to address issues in a less arbitrary manner compared to Trump. People, who seem to support a candidate like Sanders, are probably more introspective and tend to think a lot of things through a number of times before deciding on the decisions they should make in everyday life. With the forbearing statement of Bernie Sanders in mind, it followed that we would hypothesize that those who score high on the charismatic subscale for Bernie would view Donald Trump as less charismatic and vice versa; the results reflected this, a negative correlation exists between these two factors. In fact, the people who were LOW on PSC liked Donald Trump and thought him more charismatic while people HIGH on PSC felt that way about Bernie Sanders. This may be indicative of why we are seeing certain trends of support in the news for these two candidates.

As with the positive correlation that exists between the perception Trump as charismatic and Ted Cruz as charismatic, the positive correlation between the Bernie Sanders charismatic subscale and the Hillary Clinton charismatic subscale was as expected for similar reasons. The statements that I use in no way attempt to be comprehensive, but seek to illustrate why there may be a reason to suspect such an outcome. Both Hillary and Bernie belong to the Democratic Party, and consequently hold similar ideals and are influence by a similar political culture. Also, they advocate similar political practices and seek similar goals. This is a presidential election of firsts, and so some of their similar charismatic appeal may come from the fact that there could be a first women president in history, or on the other hand, a first Jewish president. Surprisingly, the data
did not confirm our prediction that our female participants would tend to find Hillary more likeable/charismatic compared to our male participants. This is especially interesting given the fact that the vast majority of our participants were female (56); there were 18 males who participated. This intriguing occurrence may have come about due to fact that our participants were among the educated few in our society; individuals who may not be as learned may tend to be more biased when it comes to leaders of their own sex.

**Limitations of Our Study**

Regarding all of these correlations, the population was a part of the educated class of society and so tend to have a deeper understating of political mechanisms, and a more punctilious eye for political workings that the general public. So, they have a lesser proclivity to view individuals as mystical or ordained by providence to carry the nation out of a malevolent abyss. Also, the relatively small sample size we were able to work with automatically dismisses our findings as having general implications. In addition, all of the participants were a part of a relatively liberal university and so by consequence are influenced by many of the same mores and values of the institution’s culture. Also time came in to play, because as McNair Scholars we are constantly juggling data collection research, GRE workshops, and University visits as we attempted to finish our undertakings in a summer semester time frame.

**Ideas for Future Research**

I would like to look at a more evolutionary perspective compounded with a social psychological approach with regards to charismatic leadership; there is not much research out there that merges these two disciplines. For example, Vugt (2006), reports, “There is very little cross-fertilization of ideas about leadership between social and organizational psychology, and other behavior sciences such as anthropology, political science, economics, zoology, and
evolutionary biology” (p. 354). The benefits of compounding the social psychology and evolutionary biology disciplines would provide a more overarching framework in order to explain such phenomena. For instance, any psychological theories of leadership must ultimately turn to evolutionary theory to explain its assumptions (Vugt, 2006). Also I would like to explore narcissism in regards to leadership attainment. Furthermore, I would like to explore the idea of the beneficial nature of distance in magnifying charisma. For example, in general it was found that the distant leaders were perceived in a much more stereotyped manner as figures larger than life possessing characteristics different from those of close leaders. The general conclusion is that close contact with the leader turns him into a creature of flesh and blood with vices and virtues rather than stereotyped attribution (Popper, 2005). In fact, some of the most charismatic leaders in history saw the propitious nature of social distance in interacting with their followers. These include Jim Jones, the leader of a sect whose charismatic influence resulted in the largest mass suicide in history, or Hitler, who swept millions along with him and who intuitively sensed the psychological effects of distance (Popper, 2005).

I think the study of distance in this type of relationship has great implications for us in this day and age. The world is connected like never before via the internet and our interdependence is more salient. Furthermore, with all of the chaos and tragedy we are saturated with, we appear to be in a constant state of crises foundationally. Messianic charlatans can easily connect with the younger or more impressionable citizens of our society and have them committing all types of radical acts (race wars, cult activity, theft, the list is endless). As a consequence, I feel that it is paramount to study the charismatic leadership phenomenon and to discover what implications distance as well as a sense of crises has. On another note, I would like to explore the idea of follower projection and transference, for a lot of the charismatic
leadership dynamic is subjective attribution from their followers. I would also like to research the implications of a perceivers’ religiosity with regards to their perception of a certain figure as charismatic.

References


The Cataclysmic Eye: Ecocritical Readings of *Jane Eyre, The Hobbit, and The Hunger Games*

Sylvan Baker

Lee Rozelle, Ph.D.

**Abstract**

“We build a bridge between the past and the present, bringing to life the literature we teach” when we analyze texts through critical theories of close reading (Hitt 125). “The Cataclysmic Eye: Ecocritical Readings” is a study of *Jane Eyre, The Hobbit, and The Hunger Games* using the theories ecocriticism and ocularcentrism to show the importance of understanding novels on a deeper sociological and ecological level. These theories provide ways in which to interpret the texts in relation to nature and how we perceive the environment as it was, is, and will be. I show the emergence of a break in nature, the split mankind takes from the environment, and the consequences of those separating paths by pinpointing passages in each text from the 19th, 20th, and 21st century consecutively. In this way, the paths can be grasped, as can the link through each of the works to segue up to the current time frame. The importance of this study is to give credence to the growing interest in environmental concerns, which are becoming more pronounced every passing day; however, it is also to show that, though reading and writing literature may not seem to be an active participation in environmental issues, the texts provide relevance through analysis intertwined with ethics.

The need for studying literature is pivotal, for the sake of a “preservation of the environment” and the specific aims of the authors through “creation of sustainable fictions for the literary creation of a Secondary World to mirror, interrogate, and perhaps improve” our own views as readers and as active members of society (Habermann 272). Through studying literary texts spanning the 19th, 20th, and 21st centuries, I show the emergence of a break in nature, the paths mankind takes against the environment, and the consequences of those paths, using ecocritical analysis and the sub-theoretical paradigm of ocularism. I use the ocular sense prevalent in *Jane Eyre, The Hobbit, and The Hunger Games* to approach how nature is perceived and reacted to in each text. In this way, the paths can be grasped, as can the link through each of the consecutive works up until the current time frame. The importance of this study is to give credence to the growing interest in environmental concerns which are becoming more pronounced every passing day; however, it is also to show that, though reading and writing
literature may not seem to be an active participation in environmental issues, the texts provide relevance through analysis intertwined with ethics, where “we build a bridge between the past and the present, bringing to life the literature we teach” (Hitt 125). In *Jane Eyre*, I would like to use the lightning-struck orchard tree and Rochester’s eventual blindness to show the emergence of the split between humanity and nature during the Industrial Revolution. *The Hobbit* then takes this idea and shows a continuation of a rift in ecology through the influence of the “all-seeing eye” during Smaug’s control and an initial enforcement of Foucault’s theory of Panopticon. Lastly, *The Hunger Games* takes the Panopticon to a new level in the Gamemaker’s arena where the true power of governmental authority is held over the environment and the individual.

*Jane Eyre* is the first of the three novels I analyze, and it brings the key materialization of an initial break between mankind and the environment. Because of the historical events wrapped in around the same time that Charlotte Brontë wrote this piece, significantly in the full impact of the Industrial Revolution, the progress of society approaches a new level of dominance over nature. This dominance is asserted in the text consistently through presenting Jane as the “fairy” daughter of Mother Nature and showing mankind’s treatment of her. Rochester is the main figure in showing the attitude of man—there is a struggle in his words towards Jane where “nature is presented both as an attractive, sublime sanctuary and as an object of conquest” (Hitt 128). Jane being referred to as the fairy being, or a caged bird, puts her in the position of being dominated as he holds on to her and captures those elements of confining wild landscape. Rochester’s degradation into blindness at the end of the novel shows that the control he required of Jane and of nature adversely affected his life, where “the blindman comes to internalize various ocularcentric beliefs, the result being an existential emptiness in relation to which the lives of the sighted characters appear full” (271). As Rochester represents humanity in this case,
it can be said that this emptiness reflects the negative role societal dominance plays when nature is no longer an equal counterpart.

For Jane to ease her restless soul, questing for answers about her role in humanity and in nature, she cannot help but note the rugged beauty of nature that beckons her through her travels to institutions and polite societies. Lowood Institution was the first place it can be seen that Jane, though human like the rest, did not fit into the society. While the “spike-guarded walls” confine her from escaping into nature or even seeing beyond the mechanic routine of the inhabitants of the system, it becomes apparent that Lowood is encased in mankind’s rules and becomes a prison instead of a haven. Jane actually describes it as just that when she says, “my eye passed all other objects to rest on those most remote: the blue peaks. It was those I longed to surmount; all within their boundary of rock and heath seemed prison ground, exile limits” (Brontë 90-91). This is the first “conceptual link with Jeremy Bentham’s Panopticon, the central idea that control can be effected by the very notion of an unseen seer” (Hitt 276). It is not only Jane, however, who has to worry about the imprisonment by authoritarian dominance and an all-seeing “seer” of society; it is the individuals of that very society who must face the consequences of blindness and ignorance of the developing power of governmental Panoptic behavior over nature in the name of “progress.” Bentham’s Panopticon, first created as a form of surveillance in a school in Saint Petersburg, Russia, was then built into a prison and theorized by Foucault as a power tool for governmental control (Dobson and Fisher 5). By the government holding control and becoming the unseen seer, the prisoners—those solitary characters in society including Rochester—lose themselves and the individual thought needed to have and maintain a natural self.
In Charlotte Brontë’s novel, Jane is represented as the catalyst of the impending breach of humanity and wildlife—she is the changeling orphan who is called to by the forces of essentiality—Mother Nature in this novel’s case; she draws her connection to nature, and also finds herself drawn to it in Thornfield’s orchards and trails. It is in natural landscape where she first encounters Rochester. His character, so used to the demands of society, is off-put by the naturalness and by this young “fairy” he calls Jane. He says she must surely have been waiting for her people, because she seemed so at ease. The fascination between the two is instantaneous. Jane tries to connect and conform to Rochester’s deeply set social behaviors, thus unknowingly denying herself freedom and quenching the flame of wild carnality that burns within her, to fit in with the social structure. On the other hand, Rochester is subconsciously attracted to Jane, not because she is beautiful for she is quite plain, but for her personality. This personality represents the embers that are left of raw sensuality deep inside of Jane. Rochester is enthralled by it, especially during the disagreements the two have when Jane’s spritely individual self flares up, in which Rochester states that he has “seen what a fire-spirit” she can be and how she “mutinied against fate” and declared herself his equal (Brontë 303). Yet, though he sees her as his equal, he still tries to control her and bury her individuality in satins and pearls. This shows that he cannot accept who she really is. While he grows more adamant on conforming her, Jane is less capable of doing as he wishes.

Instead of giving in to conformity, Jane comes to rely on her deeper connection to the environment to give insight to the calamities that lay in front of her path. Her paintings are meant to give focal access for humanity to understand that the sublime of nature is not something to fear necessarily, or ignore as if one were blinded. “These eyes in the Evening Star you must have seen in a dream,” Rochester concludes to Jane and continues by asking, “how could you
make them so clear, and yet not at all brilliant? For the planet above quells their rays. And what meaning is that in their solemn depth?” (Brontë 136). As one who follows her own path outside of materialistic society, Jane’s paintings are successful in momentarily promoting thought beyond that of Rochester’s strict role as personification of humanity’s larger picture: he questions that very role he is cast into. Unfortunately, Rochester and the majority of the rest of the characters continue to let his or her eye wander. “‘Such is the imperfect nature of man.’ Such spots are there on the disc of the clearest planet; and eyes like Miss Scatcherd’s (and Mr. Mason’s) can only see those minute defects, and are blind to the full brightness of the orb” (70).

Probably the most prominent omen of an emergence of societal break from the environment in the story is the lightning-struck chestnut tree. This happens just as Jane and Mr. Rochester proclaim their love for one another. There is a fateful moment of innocent love before natural disaster hits. A storm rolls in, whipping around nature’s unhappiness and striking the very place in which Jane and Rochester proposed their union only hours before. The occurrence is a well-known omen in this literary classic, and it is examined broadly. However, the tree seems to also become a symbol of the harsh split between humanity and nature. It was intended to be an eye-opener for Jane against the danger of her human self. She still denies her changeling self outwardly, however the lightning strike ignites the burning embers of her soul. Slowly, the cloud of film washes from her eyes. When she visits the chestnut tree, she has truer thoughts than ever before when she inwardly comments that it “gasped ghastly” and that the “community of vitality was destroyed— the sap could flow no more: their great boughs on each side were dead…as yet, however, they might be said to form one tree” (Brontë 318). Inside, Jane realizes the catastrophe of the clash of her two sides; it is the ultimate struggle. Humanity and nature cannot both live in the same way that life has been progressing, just at the turn of the
Industrial Revolution with its destruction on the land. The fear is set into motion so that the progression for the industries can continue on without the moral awareness that the environment is withering at its stump because of the effects. Ultimately one will die, or both will. Unless both man and land can bond and provide for each other to survive, the two will disintegrate. The metaphorical tempests are the severest battles yet to come. This epiphany is Jane’s pivotal moment where her perception broadens further than trying to merely fit in with mankind.

With this discovery, Jane escapes the confines of a polite society and reaches towards her other natural side. However, the love she has for the human side— Rochester— still haunts her and in the end, she goes back and searches for him at Thornfield. Only a blackened ruin of her previous home stands, mirroring the idea of a blackened chestnut tree. The battle between man and nature devastated the land and left only charred fragments from the destruction. Little patches of green in the rubble give a small hope that Jane’s wishes might still be fulfilled. She continues in her quest to find Rochester, but instead she encounters what is left of him—a blinded man. It is ironic that he now cannot see when all along he seemed to be blinded by the rules of the conventional world. The realization of society’s true nature in progress then comes into focus, for “the Panopticon should be taken not literally but as a metaphor for surveillance of all types, with emphasis on power relationships” (Dobson and Fisher 2). Rochester’s physical blindness is only a small representation of a larger grasp into what comes from the results of the cloven tree. “The existence of a person without vision is, by definition, no more dark than it is light,” so therefore it is simply ignorance (Bolt 284). The physical blindness enhances the notion that the human race is ignorant to the destruction wreaked by the Revolution through its need for natural resources and the pollution emitted after; this ignorance only causes weakness to the
individual within societal demand. Rochester is maimed, literally, by his industrious ways just as the human world unknowingly maims itself when it rejects a balance with nature.

It is not too late, however, in Brontë’s writings. Jane has come at the right time; she is now needed by both sides of her life to heal this ruin and save both nature and mankind. When Rochester feels he cannot go on as the maimed half of humanity, he remarks “‘I am no better than the old lightning-struck chestnut-tree… what right would that ruin have to bid a budding woodbine cover its decay with freshness?’” (Brontë 512). Jane provides the truth for Rochester, stripping away his ignorance completely, and becomes the sight that he needs. She tells him, “‘You are no ruin, sir—no lightning-struck tree: you are green and vigorous. Plants will grow about your roots… as they grow they will lean towards you, and wind round you, because your strength offers them so safe a prop’” (512). In this way, Jane introduces hope for equality to him so that he can understand the much needed balance of the two worlds, where only fear lay before him when he stood alone. Jane represents not only a unity of both sides of the tree, while Rochester is only one dying side, but a form of control over herself with the ability to stay out of the influential gaze of an industrialized authority.

The balance of mankind and nature in Jane Eyre is lost in J. R. R. Tolkien’s The Hobbit. The emergence of the split in the “orchard tree” and the hopes of growing into one again that Brontë writes about is slowly dissolving into desolation in the 20th century text; only a small light is left in order to find the fading hope for ecological equality. Bilbo Baggins, the great barrel-rider andburglar, is set upon a journey to take back the mountain that the fierce dragon Smaug has laid claim to. Bilbo is told that he “must go on and find out about that light, and if all is perfectly safe and canny” (Tolkien 34). The novel becomes a depiction of the continuing progress of man. Lance Michael Sacknoff digs up the true meaning behind that progress in his
work “Fantastic Ecosystems: An Analysis of Fantasy as Nature-Text in *Lord of the Rings*.” He discusses many variations in which to study the trilogy as a whole, but it is when he points out the parallel of the fantasy fiction to our own world that his message brandishes significance. “The culprit for the destruction is clear enough: images of human cultural interests supplant images of a thriving natural environment. The environment appears in a tortured, maltreated state, and the horror echoes Tolkien’s own feelings on human treatment of the environment” (78). In this, the negative influence of the progression and control in authority figures is evident. Both *Jane Eyre* and *The Hobbit* incorporate this behavior by showing the surroundings maltreated and ignored by the regime and therefore by the people under the control of the jurisdiction.

*The Hobbit*, though not so descriptive in the burning and torturing of the environment as the sequel trilogy, hints at the beginnings of that destruction. The ruination comes from the panoptic authority of characters such as Smaug, who guards over his monetary hoard and controls the land. Smaug is the authoritative figure in the novel, where the name Smaug is a play on the word “smog.” The control and detrimental impact of Smaug, and the hazy smog around him, is a result from the Industrial Revolution brought about in the previous era. This era leads the readers into the aftermath of World War I and an establishment of the Depression. Bilbo, however, is the key with his clear visibility to a hopeful tone set apart from the depression evoked in *The Hobbit*. With the discovery and use of the ring, the Panopticon becomes useless. The individual—or inhabitant of the societal prison— who is to be watched normally, can no longer be seen in Bilbo’s case. The unseen seer hidden in the peak of the mountain can then be sighted without detriment to the individual. The hobbit, rightfully becoming the name of the novel, is Tolkien’s way of bringing a “resacralization of life” which is an ethic that “values basic
necessities such as good earth and clean water” (Brawley 3). There is also the subtle sublime technique of a “sense of wonder at the world Tolkien describes as enchantment, and this enchantment can help us revise our ways of viewing the world around us,” all thanks to the unassuming Mr. Baggins (3). However, it will take the breaking free of Smaug’s sway in order to relieve Middle Earth and its people of the disastrous control and to even see if the land can be healed as Brontë had hopes for in her novel.

Middle Earth is only just being introduced in The Hobbit, but already it can be seen that from the Shire to the Lonely Mountain is a wide range of landscapes, each growing more grim as the journey continues. Where the Shire has rolling green hills and a pastoral tranquility, and Rivendell hides away in a picturesque hidden valley in the mountains, Mirkwood forest’s spiders and the wood elves that reside in it cast the second half of the novel in shadows. The darkness is what hovers authoritatively over the dwarves and hobbit and imprisons them within fear: “they tried lighting watch-fires at night, but they soon gave that up. It seemed to bring hundreds of eyes all round them, though the creatures, whatever they were, were careful never to let their bodies show in the little flicker of flames” (141). By not having defined bodies, the creatures are able to invite horrible pictures in the minds of the party and make the party feel as if one can never escape the all-seeing eyes. Simply lighting a fire casts more shadow than light in this case and causes even more fear to erupt in the minds of the individuals. Only Bilbo can relieve that fear by attacking the creatures in the light of day with his own invisibility. As Gollum says of Bilbo through agony of his own emptiness of sight and individuality, “no one will see him. He’ll be there but not seen. Not even our clever eyeses will notice him; and he’ll come creepsy and tricksy and catch us” (85). The dark and depressive tone comes from Gollum’s words and presence in the crevices of a ruined land. Gollum, “as dark as darkness, except for two big round
pale eyes in his thin face,” is a failed attempt at redemption of the ill-effects from the Panopticon (71). He was possessor of the ring of invisibility and could use it just as Bilbo does later in the text. His eventual outcome, unfortunately, was only a further loss of a self in the eyes of society. He may have “clever” and “bright” eyes, and he may be able to go unseen by wearing it, but instead of using it to reverse the negative impact of an unseen authority figure, he goes into hiding in the mountains where his individuality is wiped from existence and the power of the ring is lost (85). Therefore, the ring is inherited by a more pure character already traveling on a mission to take back power from authority. By the ring slipping away from its possessor in the depths of the mountain, nature itself is in control of the will of the object and on its own journey to be seen and be able to see once more, through Bilbo.

Smaug, as the major authority figure of the novel, becomes the single inspector who “could observe every occupant simultaneously” (Dobson and Fisher 4). It does not directly discuss what he perceives through his fierce eyes, but his influence itself in the Lonely Mountain— which looks over Dale and Esgaroth and all the land surrounding— is an apparent Panopticon that is used as “‘a new mode of obtaining power of mind over mind’” (4). The dwarves and Bilbo know this and, as they edge closer from all the obstacles in a deadening land, the stakes grow higher for demise. “The land about them grew bleak and barren, though once, as Thorin told them, it had been green and fair” (Tolkien 203). There is clear evidence of the influence of not only Smaug, but the Master and the Elvenking with his elven workers. These human and elven workers, later in the novel, chop down trees of the forest to build more homes and industrial structures after the decimation of their towns by Smaug’s wrath (256). The same passage continues with, “there was little grass, and before long there was neither bush nor tree, and only broken and blackened stumps to speak of ones long vanished” (203). The destruction is
complete, and hope is stripped at the sight of the black stumps of what used to be. The ultimate fear of mankind’s power is unveiled—fear of what man’s gaze will strip from the environment in its progression of dominance and conquest.

This particular passage brings back a link to *Jane Eyre* and the blackened ruins of Thornfield and its orchard tree. Where Jane was able to spot a few green buds appearing on the stump of the tree, not even remnants beyond dead roots are left for Bilbo and the others to hold any hope of a future bonding. Tolkien’s text reaches towards that fear—only “when the thrush knocks,” described by the Moon-letters on the map of the Lonely Mountain, is there any hope to grasp onto (53). And, sure enough, the thrush does indeed knock. When the hobbit and dwarves search for the secret passage to Smaug’s layer and fail at first, it is only when the small bird pounds a snail into the ground at the doorway that they look up: “a red ray of the sun escaped like a finger through a rent in the cloud. A gleam of light came straight through the opening into the bay and fell on the smooth rock-face.” There was the hidden keyhole to the stone door, revealed only through nature itself. After the one hopeful moment, “the gleam went out, the sun sank, the moon was gone, and evening sprang into the sky” (210). Shadows overtake the land once more. The personification of the sun as a finger pointing shows that hope is still present but only in the form of a small “rent” or glimmering. The strength of nature itself is failing under the power of Smaug and the Lonely Mountain. Yet, because the hobbit has made it so far and is determined in clearing the skies from the pollution of Smaug, strength in the land can be recaptured for just a moment.

From *Jane Eyre* to *The Hobbit* is a big gap in a hope for binding humanity and nature. Yet, both still have an essence of what Tolkien states as a theory of recovery. The highlighted attitude in the works is that “we possess a thing and then cease to look at it,” and so the beauty
The respect of nature is lost once we dominate over its wilderness. The theory of recovery is the idea that there is a chance of “regaining a clear view of things” so that there is no more ignorance of the object. This clear view would be a reverse of Foucault’s theoretical Panopticon and constant surveillance, if we could escape from becoming objectified in the process. In accepting to understand and live with nature instead of conquering over it, this would be possible. The “all-seeing eye” developed in The Hobbit presents the characters as prisoners of the Panopticon, and with being watched constantly, they all start to have a loss of self just as the landscape around them becomes lost as well.

The Hunger Games is the result of the fears of the destruction and manipulation of environment and the complete loss of self in the progression of the society that The Hobbit introduces. This is the full Panopticon in the form of the great Capitol and the far-reaching Panem, “the country that rose up out of the ashes of a place that was once call North America” that resulted from “the disasters, the droughts, the storms, the fires, the encroaching seas that swallowed up so much of the land, the brutal war for what little sustenance remained” (Collins 18). All of the above are the aftermath of the blindness continuing on without breaking free. The fast-track progress into a dystopia is led on by a continuation from the “gleam” of vision having gone out, like in The Hobbit, before anyone can notice what is being illuminated. While the dwarves, and especially Bilbo, are able to recover from falling into the routine of societal progress, The Hunger Games jumps into the possible future when there is no break from the imprisonment of the surveillance of the Panopticon.

Katniss Everdeen and Peeta Mellark, the two tributes of District 12, reveal the treacherous treatment by the Capitol and the Gamemakers towards Panem by surviving through the obstacles of the man-made arena in the hunger games. The arena is set up as a technique to
force 24 teenagers to kill one another in order to survive in the environment provided by the
Gamemakers. The environment inside of the arena is a construction by the government, a
contortion of what was once natural, which forces a negative opinion of the natural landscape so
that the districts would not risk escaping into its freedom at any point in time, nor would the
tributes in the games get comfortable in any one place. Katniss is the exception to the fear laid
out by the Capitol because she must hunt to survive in not only the games but in her day-to-day
life as well. She says that, though she was once afraid like the rest of her district to step beyond
the fences and into the wild, “the woods became our savior, and each day I went a bit further into
its arms” (51). To have Katniss of all people in the arena— the manmade distortion of her safe
haven— gives the ability to show the perception that societies like the Capitol put on the
environment and the reality that it is in itself a marginalization only because of this harsh view.

The clear contrast between the nutrition that Katniss’s nature provides versus the
destruction that the arena wreaks hints that the events leading to a creation of Panem were not so
natural after all. She says at one point during one of the many obstacles, “the flames that bear
down on me have an unnatural height, a uniformity that makes them as human-made, machine-
made, Gamemaker-made. Things have been too quiet today. No deaths, perhaps no fights at all.
The audience will be getting bored” (173). The arena is overtly stated as a mechanical
construction to the will of the authority figures behind the screens of the hunger games. Even the
most natural elements beyond the forest become surreal to Katniss: “I can’t decide if the moon is
real or merely a projection of the Gamemakers. I know it was full shortly before I left home,”
but here in the games “the authenticity of everything is to be doubted” (310). People of the
districts, the tributes, and the general public even of the Capitol having nothing to do with
President Snow’s instruction can only see what is being shown to them by the authority behind
the screen. Nature has become only an image of reality, and a grotesque vision at that, to be feared by the public. This tactic is again through the Panopticon in which the arena perfectly embodies; there is “absolute control over human actions” which is an “express purpose of the proposed surveillance…designed solely as instruments of government of commerce that required total submission to absolute authority” (Dobson and Fisher 4). President Snow is not only using the tributes killing one another as a way to keep the districts subdued, but also a terror tactic against any ecological freedom in the end. Forcing everyone from Panem to watch these events creates a worldwide Panopticon beyond the arena. Though they can see and are forced to see death after death of the tributes in a monstrous and destructive green-world, the inhabitants are still further blinded in the authoritarian Capitol government’s own surveillance system.

Readers of The Hunger Games are informed of the false resemblance, and that the fear should not be held on the illusory impression but on what one is blinded from— the caster of the image. One is shown the rare but authentic images of the benefits and need for a sustainability given by the nutrients found in the environment through names like Katniss, Primrose, and Rue— “‘Katniss,’ I said aloud. It’s the plant I was named for. And I could hear my father’s voice joking, ‘As long as you can find yourself, you’ll never starve’” (Collins 52). Primrose is of similar effect, and “Rue is a small yellow flower that grows in the Meadow. Rue. Primrose”; these are all the most important essences in Katniss’s life which she depends on for survival (99). Without the fundamental qualities provided in the text by Rue and Prim and herself, Katniss would not truly exist. She must always be able to find her substance in order to keep her individual self in the games.

Unfortunately, here is where the hopeful tone found in the previous two texts ends. The hunger games are designed to eat away at the authenticity of the self, along with the image of
nature mentioned before. Peeta Mellark sends on the first wave of fear of losing oneself with his words: “‘I don’t want them to change me in there. Turn me into some kind of monster that I’m not’” where he begins to struggle to hold on to his identity, “his purity of self” (141). Katniss realizes this fear, having not previously thought about it— this in itself shows the subtleties of the dominion of the Capitol— and her immediate thoughts are that he will “probably turn into one of those raging beasts, the kind who tries to eat someone’s heart after they’ve killed them” (143). She is aware of the loss of identity, but this particular phrase in its pessimism shows that trying to hold on to a self in the arena is futile. The author, Suzanne Collins, takes the loss of self and the morphing into monsters to a whole new level when she introduces the “muttations” at the end of the novel, only further clarifying the acts and mutilations against the laws of nature to in fact destroy the authenticity of an individual. The control of the government of the Capitol is complete at this stage, and Katniss knows that— when taking away the search for food and acts of survival, she says, “I am not really sure who I am, what my identity is. The idea scares me some” (311), as it seems to do to all of Panem behind the lens of the Capitol. She herself is morphed into a Capitol creature “where skin shimmers and eyes flash and apparently they make their clothes from jewels” for her dress “is entirely covered in reflective precious gems” (120). From the moment she left District 12 and the natural wilderness that she felt kept her safe, Katniss began to fall back into the blinded imprisonment with the society she managed to escape from before.

The performance aspect of The Hunger Games is the key turning point of that loss of self and the loss of hope for the break from the Panopticon. Katniss, the only one who could have broken free just as protagonists Bilbo and Jane did in their own tales, succumbs to the performance in order to survive the monstrous and unnatural machine-made land. The cameras
are always watching, the actions and tribulations of thetributes constantly featured to the authority figures and misconstrued onwards to Panem. In order to get any sort of help from the public or to convince the Gamemakers of any thought processes to seek control, Katniss knows she has to give them all a show. She does so with the lover-act between her and Peeta: “I’m about to leave when I remember the importance of sustaining the star-crossed lover routine and I lean over and give Peeta a long, lingering kiss. I imagine the teary sighs emanating from the Capitol and pretend to brush away a tear of my own” (281). She becomes engulfed in identifying herself as the perceived, relying on a production of character in order to survive.

David Rosen and Aaron Santesso write in their article on a review of the Panopticon, “the more people are watched, the more they tend to perform according to the expectations of their viewers. The more individual behavior, as a result is perceived as performance, the greater social anxiety about individual authenticity” (1042). Once Katniss starts her performance within the arena, it becomes impossible to tell her authenticity anymore, and therefore she loses herself and the battle to rise against the unseen authority.

_The Hunger Games_ ends the hope for any revival of balance that the texts from the 19th and 20th centuries, during the industrial and modern eras, inferred might have eventually happened with an understanding of the ecology and maintaining of a naturally sublime wilderness. Without the ability to break free and see for oneself to hold onto individuality, the connection of humans and the earth is severed. _The Hunger Games_ and its dystopia is needed in order to let fear of what could happen from the continual progression of the post-modern surveillance era bubble to the surface. With reading and interpreting the texts through an eco-ocularism in order to embrace a better understanding of nature, we are approaching what is known as a third wave of ecocriticism, according to Scott Slovic. This means that there is an
opportunity with “scholars and teachers finding new and old ways to connect their work to social transformation,” including ways in which literature can illustrate sustainable lifestyles— in this particular case, the texts are illustrating un-conserving lifestyles and how one must break free into ecological balance without the sense of overarching destructive authority. This third wave of ecocriticism embraces a “‘polymorphously activist’” behavior, so that reading and writing becomes an active involvement in the social transformation towards a more environmentally caring society just as much as any other approach (6). When Amber Simmons writes that one “cannot just read about human misfortune and social calamity, lament its existence, and hope for a change” and that one “must act, or their hope is in vain,” it can be conveyed that surface-level reading alone cannot unearth the environmental issues and concerns for humanity (11). Literature is a form of acting on the concerns, but it must be analyzed on a deeper level to understand the exact syntax and find the activism lying in the layers across the pages.

These three centuries of literary texts we find relating and connecting to one another in more ways than just being a part of the genre called “fiction.” From the midst of industrialization in Jane Eyre and an initial fear formed in the eyes of government against the land, progress becomes the act of destroying the union of land and man needed for surviving. The modern and ultimately post-modern power of progress, inventions, and technology that The Hobbit embodies shows the influence of that fear and begins to form an attitude of depression and need for a change. By the end, the texts have worked themselves into a “post” post-modern attitude, where The Hunger Games is a dystopia developed from what turned into chaos out of inequality. The blame falls in the cracks between loss of nature and a progress that has taken a mind of its own and created an authority that covers the tracks by blinding its people. Instead of letting this happen, as is the case with The Hunger Games, the pinpoint of light is still just visible
and action can be made in order not to succumb to the blindness against ecological equality; A
dystopia is yet to be, if texts can be studied, analyzed, and found that the secrets to succeeding
are bound between the line

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TGFβ/TGFβR3 Signaling Pathways in Autoimmune Disease

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Abstract

This research project focuses on the effect that the TGFβ/TGFβR3 immune cell signaling pathway has on antibody production in mice immunized with a T cell-independent antigen. Sera were collected from two groups of mice immunized with a trinitrophenyl (TNP) antigen: a transgenic group lacking the TGFβ/TGFβR3 signaling pathway and a littermate control group with an intact signaling pathway. Sera were collected 0-42 days following immunization. The indirect enzyme-linked immunosorbent assay (ELISA) was utilized to detect different subclasses of anti-TNP antibodies (IgM, IgG1, IgG2b, IgG2c, and IgG3). This project contributes to investigating whether variations in the TGFβ/TGFβR3 cell signaling pathway affect antibody production associated with certain types of autoimmune disease and the potential for therapies targeting this pathway as treatment for such diseases.

Introduction

Autoimmune diseases arise when cells of the immune system attack and destroy components of the self. Characterizing signaling pathways among cells of the immune system that are commonly implicated in autoimmune diseases may be helpful in understanding how these diseases arise and in identifying potential treatments. This research project explores the unique area of cell signaling that involves a signal protein known as transforming growth factor beta (TGFβ) and a receptor that detects it called transforming growth factor beta receptor 3 (TGFβR3). TGFβ has emerged in recent years as an ideal target for autoimmune therapies, as it is believed that a loss of this signal protein’s ability to bind to its receptors leads to many of the symptoms associated with select autoimmune diseases. Routinely in immunological research, mice that have been transgenically modified to exhibit aberrations in cell signaling pathways are used as “models” that may be manipulated to gain a better understanding of these types of pathways. For this project, transgenic mice that do not possess TGFβR3 on specific immune cells (designated as dLCK CRE mice) and littermate control mice with an intact TGFβ/TGFβR3
signaling pathway (designated as CRE NEG mice) were used. These mice were immunized with a trinitrophenyl (TNP) antigen to evaluate T cell-independent antibody production. Anti-TNP antibodies were detected via an Indirect Enzyme-Linked Immunosorbent Assay (ELISA). An ELISA is a rapid test used for detecting and quantifying antibodies or antigens against viruses, bacteria, and other foreign materials. Five categories of anti-TNP antibodies (IgM, IgG1, IgG2b, IgG2c, IgG3) produced during the primary and secondary immune response were evaluated in this study. Immunoglobulins can be divided into five different subclasses (IgG, IgM, IgA, IgD, IgE). These differences can be detected by sequence studies or more commonly by the directed use of antibodies. IgM antibodies are the structurally largest antibody. They are found in blood and lymph fluid and are the first type of antibody produced in response to an infection, the primary response antibody. They also cause other immune system cells to destroy foreign substances. IgM antibodies are about 5% to 10% of all the antibodies in the body and are frequently used to diagnose acute exposure to an immunogen or pathogen. IgG antibodies are found in all body fluids. They are the smallest, but most abundant antibody (75% to 80%) of all the antibodies in the body. In mice, IgG immoglobulins are divided into subcategories based on structural and effector differences: IgG1, IgG2, IgG3, and IgG4. IgG2 is further subgrouped into IgG2a, IgG2b, and IgG2c. IgG antibodies are very important in fighting bacterial and viral infections. IgG is the most versatile immunoglobulin because it is capable of carrying out all of the functions of immunoglobulin molecules. Respectively, each of these immunoglobulins act as primary contributors in the immune response. IgG antibodies contribute directly to a secondary immune response including neutralization of toxins and viruses. IgM antibodies more commonly dominate the primary response. Overall, the aim was to determine if the
TGFβ/TGFβR3 cell signaling pathway impacts the production of the different immunoglobulins that were examined.

**Materials and Methods**

Two groups of mice were used for this study: transgenically modified mice with no TGFβR3 on the surfaces of their T cells that lacked complete TGFβ/TGFβR3 signaling (designated dLCK CRE mice), and littermate control mice with TGFβR3 on the surfaces of their T cells and an intact TGFβ/TGFβR3 signaling pathway (designated as CRE NEG mice). Prior to this project, three dLCK CRE mice and four CRE NEG mice were immunized with a trinitrophenyl (TNP) antigen to evaluate antibody production and primary and secondary immune response profile. Mice were immunized on Day 0 and Day 21 of a 42-day time course. Over the span of 6 weeks, sera were collected from the mice post-immunization. Sera were stored at -80°C until they were utilized for this study.

Figure 1 summarizes the steps of the indirect ELISA procedure employed for this project. To assess anti-TNP antibody presence in sera, the capture antigen trinitrophenyl-bovine serum albumin (High-Affinity= TNP (4), TNP (21) for normal) was diluted in a carbonate-bicarbonate coating buffer (pH 9.6) to 10µg/ml. The wells of a 96 well EIA/RIA clear flat bottom polystyrene high bind microplate (Corning; Corning NY) were coated with the antigen by pipetting 100µl into each well. The plate was then incubated overnight at 4°C. The plate was then washed three times with 0.05% Tween 20 diluted in phosphate buffered saline (PBS-T), allowing 30s-2min between washes. A squirt bottle was used to fill wells. Once the wells were filled, the plate was turned over the sink and flicked to decant the wash solution in one motion. Then the overturned plate was blotted on a paper towel to wick away remaining moisture. To block wells to prevent nonspecific antibody binding, 200µl of a 5% bovine serum albumin
(BSA) solution (in 1x PBS) was added to each well. The plate was covered with an adhesive plastic and incubated at room temp for 2 hrs or overnight at 4°C. Following the incubation, the plate was washed as previously described.

Serum samples were diluted in 2% BSA (in 1x PBS). For IgM detection during the primary response (Day 0-21), serum samples were diluted 1: 4000. For IgG detection during the primary response, serum samples were diluted 1:1000. For IgG detection during the secondary response (Day 28-42), serum samples were diluted 1:8000. Diluted samples were added in triplicate at 100µl/well. The plate was then incubated for 2hrs at room temp or overnight at 4°C. Following the previously-described plate washing procedure, 100 µl of a 1:8000 dilution of the desired Horseradish peroxidase-labeled goat anti-mouse IgM, IgG1, IgG2b, IgG2c, or IgG3 antibody (Sigma-Aldrich; St. Louis, MO) was added to the wells for specific antibody class detection. Following a 1 h incubation at room temperature, the plate was again washed three times with 0.05% PBS-T and 100 µl of tetramethylbenzidine (TMB) ELISA substrate (Biolegend; San Diego, CA) was added to each well. The plate was stored in a dark place and the reaction was checked periodically for color change. Following color change, 50µl of a 2N H₂SO₄ stop solution was added to the wells. Finally, the absorbance values for the color changes in the sample wells were assessed at 450 nm using a Synergy HTX Multi-Mode Plate Reader (BioTek; Winooski, VT).
FIGURE 1. Depicts the methods used in an Indirect Enzyme Linked Immunosorbent Assay\(^5\).

Results

FIGURE 2. Graphs depicting the detectable amounts of five different categories of anti-TNP antibodies over an extended time period. Error bars depict the standard deviations of the data.
Data were collected from 4 littermate control (CRE NEG) mice and 3 transgenic (dLCK CRE) mice. All samples were run in triplicate.

**Discussion**

Based on the data collected during this project, the indirect ELISA indicates that an increase in select anti-TNP antibody production is exhibited by transgenic mice during the secondary immune response (days 28-42 post-immunization), to the TNP antigen. The secondary response is dominated by IgG production. No dramatic difference was observed during the primary immune response (days 0-21 post-immunization), when IgM production occurs. The varying levels of detection suggest that throughout the time course, the concentrations of the different subclasses of immunoglobulins (IgM, IgG1, IgG2b, IgG2c, and IgG3) varied as the immune response to the TNP antigen progressed. Elevated levels in the transgenic mice suggest that the TGFβ/TGFβR3 signaling pathway plays a role in mediating T cell-independent antibody production that warrants further investigation.

Signaling pathways in autoimmune disease are just one component of research stemmed in investigating potential avenues for symptom treatment and prevention, but understanding these pathways are essential. This project provides support for ongoing investigation into the TGFβ/TGFβR3 signaling pathway as a candidate treatment target. Such studies are conducted with the goal of learning more about cell signaling pathways that will potentially lead to autoimmune disease prevention, optimized treatments, and cures. Future work with more detailed models for studying components of this pathway will expand our knowledge and help in this effort.
References


Synthesis of Chloramphenicol Derivatives via γ-alkylation of Silyl Dienol Ethers

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Abstract

Organic synthesis reactions may occur at the α- and β-carbons of α, β unsaturated carbonyls (or enone) systems. The α- and β locations of enones may be substituted quite easily by engaging a polarized alkene in a conjugate addition. Substitution of the more remote γ-carbon of an enone has proven to be substantially more challenging. This project is focused on the more challenging γ-carbon alkylation of an enone system by utilizing silyl dienol ethers that were synthesized from simple enone systems using mild reaction conditions. Substituted silyl dienol ethers are synthesized by treating readily available enones with LiHMDS (Lithium HexaMethylDiSilazane), HMPA (HexaMethylPhosphorAmide), THF (TetraHydroFuran), and tBSCL (tert-ButyldimethylSilyl Chloride). Then, these silyl dienol ethers were coupled with the bioactive antibiotic Chloramphenicol through transition metal catalysis. Anhydrous Cu(OTf)₂ (Copper (II) Triflate) and NaHCO₃ (Sodium Bicarbonate), in the presence of PMDTA (PentaMethylDiethyleneTriAmine) ligand and EtOH (Ethanol) to strategically produce a C-C bond between the silyl dienol ether and Chloramphenicol at the γ-carbon. This process may be replicated with the use of a range of substituted silyl dienol ethers to produce new bonds at the γ-carbon. Successful coupling of Chloramphenicol to multiple enone systems contributes to the ongoing investigations of bond formation at γ-sites that are directly applicable to the synthesis of valuable target molecules. Potentially, bioactive molecules and pharmaceutical drugs are suitable coupling partners due to the unknown reactivity and stability of such molecules when bonded at the γ-position.

Research Background

Unsaturated carbonyl compounds, enones, are valuable synthetic intermediates due to multiple locations poised for further functionalization. Most notably, the α- and β-carbons may be readily substituted via enolate alkylation or conjugate addition, respectively. Considerable effort in the Mohr laboratory has been directed toward achieving this goal, often relying on dienolate intermediates via vinylogous esters. To further efforts in the area of γ-functionalization, the Mohr group has aimed to address this issue with the express goal of creating γ-functionalized enone products that are largely inaccessible through dienolates derived from vinylogous esters. Their research has sought to discover a system to resolve the significant problem of γ-C–C bond formation by utilizing simple enone systems which would be directly applicable to the synthesis of valuable target molecules bearing substituents at the γ location.
Cyclohex-2-en-1-one was used as a model substrate owing to literature reports of selective formation of the preferred extended $\gamma$-dienolate isomer and trapping of this intermediate as an isolable silyl dienol ether\textsuperscript{8}. It was found that the $\textit{tert}$-Butyl Silyl-derived ether was easily prepared and offered good stability that allowed purification and storage.

With this material in hand, the Mohr group turned their attention to identifying a suitable coupling partner. Multiple transition metals were screened amongst a vast array of solvents, and ligands, but Copper II in the presence of PMDTA enable the reaction at the $\gamma$-position of the silyl dienol ethers to form the putative alkoxyallyl radical that would then rearrange to form the enone product. This new reaction would aid in the synthesis of valuable target molecules bearing substituents at the $\gamma$-location. These suitable coupling partners were initially found to be sulfonyl groups.\textsuperscript{6} However, further research also discovered $\alpha$-halo ketones to be viable coupling partners. These approaches have met with some success, but are limited to a narrow range of suitable electrophilic partners and often require basic reaction conditions.

Chloramphenicol was found to be a suitable coupling partner due to its bioactivity and its dichloroacetamide group. Chloramphenicol is the first isolated naturally occurring antibiotic compound which contained a nitro group. The overall goal of this research project is to synthesize a small library of analogues of the antibiotic compound Chloramphenicol through the $\gamma$-C–C bond formation developed by the Mohr lab. Once, a small library of compounds has been isolated, a collaborator will evaluate their potency as bioactive molecules or antibiotic compounds; there is precedent for simple analogues of Chloramphenicol to maintain bioactivity. This method enables the synthesis of $\gamma$-alkylated silyl dienol ethers that have largely eluded conventional bond formation strategies through the use of simple commercially available starting
materials. The excellent functional group compatibility of this transformation ensures broad applicability to a variety of highly functionalized target molecules\textsuperscript{2}.

**Project Description**

Natural compounds including Kalihinol B, Platencin, and Nardoaristolone B exist as natural compounds bearing $\gamma$-substituents. Although these compounds already exist bolstering remote $\gamma$-substituents, previous syntheses of these molecules do not have a novel approach to perform $\gamma$-alkylation. Instead, great effort is required to install $\gamma$-alkyl groups without directly using $\gamma$-alkylation. Therefore, a robust chemical transformation that can resolve the significant difficulty of new bonds at the $\gamma$-position would be a valuable transformation. Through the use of silyl dienol ethers derived from simple enone systems, a synthetic approach has enabled $\gamma$-alkylation. The first objective of my research project is to synthesize a library of silyl dienol ethers capable of coupling to the antibiotic compound Chloramphenicol through the use of the $\gamma$-C–C bond formation. Thereafter, the current organic synthesis for the delivery of the pharmacologically active coupling of Chloramphenicol with a library of silyl dienol ethers will be discussed.

**Objectives**

The goal of this research project is to synthesize derivatives of Chloramphenicol through $\gamma$-alkylation of simple enones. First, dienolates are formed from various enone systems, that may be trapped to afford silyl dienol ethers which are poised for $\gamma$-alkylation. Through this method, a variety of silyl dienol ethers with various functional groups will be isolated. Then, transition catalysis $\gamma$-C–C bond formation may occur. The most viable coupling partner was found to be $\alpha$-halo carbonyl compounds. Along with being commercially available and a bioactive molecule, Chloramphenicol has a dichloroacetamide side chain functional group necessary for the coupling reaction. Simple analogues of Chloramphenicol have some precedent to maintain bioactivity\textsuperscript{27}. 
The excellent functional group compatibility of Chloramphenicol ensures broad applicability to a variety of highly functionalized target molecules\(^2\). Chloramphenicol is a natural product and antibiotic produced by *Streptomyces Venezuela*, an organism first isolated in 1947 from a soil sample in Venezuela by Ehrlrich *et al*\(^{30}\). It acts as a medicine or pharmaceutical product which inhibits the growth of or destroys microorganisms.

**Methods**

An oven-dried 100 mL round bottom flask equipped with a magnetic stirring bar, was sealed with a rubber septum and then evacuated and backfilled with nitrogen (three cycles). The flask was charged with a solution of enone (10 mmol, 1.0 equiv) in anhydrous THF (20 mL) and HMPA (2.17 mL, 25 mmol, 2.5 equiv) and then cooled to \(-78^\circ\text{C}\). After stirring the mixture, a solution of LiHMDS (1.0 M soln in THF, 5.5 mL, 5.5 mmol, 1.1 equiv) was added dropwise over 6 min. Stirring was continued for 1 h at \(-78^\circ\text{C}\), and then the mixture was warmed to 0 °C and stirred for 1 h. LiHMDS (Lithium HexaMethylDiSilazane) in HMPA/THF(HexaMethylPhosphorAmide)/(TetraHydroFuran) acts as a base and deprotonates the gamma position of Cyclohex-2-en-1-one (enone start material) to form an \(\gamma\)-enolate. The reaction mixture was cooled to \(-78^\circ\text{C}\) and a solution of tert-ButyldimethylSilyl Chloride (tBSCI) (1.13 g, 7.5 mmol, 1.5 equiv) in THF (10 mL) was added dropwise over 10 min. tBSCI protects the alkoxide which is formed. Stirring was continued for
30 min, at which time TLC indicated complete consumption of the enone. The reaction was quenched by addition of saturated NaHCO₃ (sodium bicarbonate) solution (20 mL). The phases were separated and the aqueous phase was extracted with hexanes (3 x 20 mL). The combined organic phases were washed with brine (1 x 20 mL), dried over anhydrous Na₂SO₄, filtered through cotton, and concentrated in vacuo. The reaction yields silyl dienol ether. Anhydrous Cu(OTf)₂ (Copper (II) Triflate) (6.8 mg, 0.01875 mmol, 7.5 mol%) and 42 mg of NaHCO₃ (sodium bicarbonate) (21 mg, 0.25 mmol, 1.0 equiv) was added to an oven-dried 20 mL vial equipped with a magnetic stirring bar. Then the vial was sealed with a septum cap and then evacuated and backfilled with dry Nitrogen (three cycles). Ethanol (EtOH 0.25M) and N, N, N’, N’’,N’’pentamethyldiethylenetriamine (PMDTA) (16 µl 0.0375 mmol, 15 mol%) was injected into the vial via a syringe, then Chloramphenicol (242 mg, 0.75mmol, 1.5 equiv) and 1 equivalent of silyl dienol ether in 0.10ml EtOH (0.15 equiv, 0.25M) was added into the vial and the mixture was stirred for another 6 hours at 80 °C before the reaction was cooled to room temperature¹. For the exocyclic silyl dienol ethers, DBU (1, 8-Diazabicyclo [5.4.0] undec-7-ene) (1.5 equiv, 0.75 mmol, 0.11ml) was also added and the reaction was stirred at 22°C. After the reaction was complete (monitored by TLC). The reaction was concentrated then, the crude residue was purified by flash column chromatography on silica and MeOH/EtOAc. Reaction temperatures were controlled by an IKAmag immersion temperature modulator. Thin-layer chromatography (TLC) was performed using Silicycle silica gel 60 F254 precoated plates (0.25 mm) and visualized by UV fluorescence quenching or staining with p-anisaldehyde solutions. Flash chromatography was performed using Silicycle SiliaFlash® P60 silica gel (40–63 μm particle size)⁶.
**Expected Significance**

Chloramphenicol is an ophthalmological medication that stops bacterial growth by binding to the bacterial ribosome (blocking peptidyl transferase) and inhibiting protein synthesis\(^\text{27}\). It acts by interfering with bacterial protein synthesis and is mainly bacteriostatic. It serves as an antibiotic, prescribed for certain types of bacterial infection. It hosts a wide spectrum of bioactivity, including the inhibition of bacteria including: Haemophilus influenza (50%), Escherichia coli (50%), Neisseria bacterium (50%), Staphylococcus (50%), Brucella Abortus (100%), Mycobacterium tuberculosis (100%), Lymphogranuloma-psittacosis group of organisms (50%), and other bacteria that cause bacteremia (bacteria in blood)\(^\text{30}\). It kills or slows the growth of sensitive bacteria\(^\text{26}\). Synthetic modification of the parent or original compound is done with the aim of getting a specific activity or an improved antagonistic response. The effectiveness of a bioactive molecule is enhanced when a suitable and optimal delivery system is available\(^\text{26}\). In the advent of coupling a bioactive molecule via $\gamma$-C–C bond formation of simple silyl dienol ethers, the bioactive potency still needs to be investigated. Chloramphenicol is a good choice for this reaction due to the dichloroacetamide side chain being poised for the $\gamma$-alkylation. Ideally, pharmaceutical bioactive molecules could potentially be synthesized at this remote location for potency screenings. In general, this effects medical chemistry, pharmacology, and daily pharmaceutical products that are taken orally and intravenously. In theory, medications could potentially have different reactivities once consumed.

**Project Plan**

Throughout the duration of the University of Illinois at Chicago’s summer research opportunities program research was conducted in the field of chemistry. A holistic eight weeks were spent in
the Mohr lab learning new chemistry lab skills and techniques. Initially in the first week, a lab overview and safety training requirements were administered. Thin Layer Chromatography (TLC), UV-VIS and an intro to organic synthesis procedures were refreshed. On day three the synthesis of α-substituted cyclohexenone commenced. An oven-dried 50 mL round bottom flask equipped with a magnetic stirring bar, was sealed with a rubber septum and then evacuated and backfilled with argon (three cycles). The flask was charged with a solution of enone (10 mmol, 1.0 equiv) in anhydrous THF (10 mL) and then cooled to −78 °C. After stirring the mixture, a solution of LiHMDS (1.0 M soln in THF, 12 mL, 1.2 equiv) Once synthesized the crude product was extracted and then flash column chromatography was used to purify. Afterwards, rotary evaporation was used to concentrate the solution. After learning the mechanisms and procedures needed for alpha synthesis of enone systems, week two introduced the process of synthesizing silyl dienol ethers. The process required different start materials as the conventional alpha chemistry and differed by the quantity of reagents. Again, extraction/purification techniques using separatory funnels and flash columns were used to extract and purify the crude product. The substrates were then further analyzed using ¹H NMR and ¹³C NMR. Finally, at the conclusion of the week there was a recap of the synthetic mechanisms. Week three, began the introduction to gamma chemistry and its synthesis strategies. Starting from enone start materials, silyl dienol ethers were produced and coupled to Chloramphenicol through transition metal catalysis. The product was then concentrated and analyzed via ¹H NMR and ¹³C NMR. At the commencement of week four, the process to complete the project had been established. Optimization of synthesis reactions and chemistry lab skills were the remaining goals. Introductions to the solvent systems, reagents used, and lab materials were rehearsed daily.
following the first successful coupling reaction. A weekly overview of organic synthesis strategies was provided and focused on specific mechanisms used throughout the project.

**Results**

Due to a host of synthesis reactions available through carbonyl reactions, the conjugation of a double bond to a carbonyl group (enone) were used to further synthesize silyl dienol ethers. These enone start materials are commercially available. Then a library of enones were initially formed. Starting with Cyclohex-2-en-1-one as the start material, 6-methylcyclohex-2-en-1-one 12%, 6-benzycyclohex-2-en-1-one 28%, 6-allylcyclohex-2-en-1-one 15%, and tert-butyl 2-(2-oxocyclohex-3-en-1-yl) acetate 53% were produced in sufficient yield. (Table 1).
Once synthesized, the $\alpha$-substituted enones under mild reaction conditions were converted into silyl dienol ethers. *Tert*-butyl(cyclohexa-1,3-dien-1-yloxy) dimethylsilane synthesis provided a 48% yield, *tert*-butyldimethyl((3-methylene cyclohex-1-en-1-yl) oxy) silane 61%, *tert*-butyldimethyl((3-methylene-5-(prop-1-en-2-yl) cyclohex-1-en-1-yl) oxy) silane 50%, *tert*-butyl((5,5-dimethyl-3-methylene cyclohex-1-en-1-yl) oxy) dimethylsilane 47%, *tert*-butyl((1-

<table>
<thead>
<tr>
<th>Alkyl Halide</th>
<th>Product</th>
<th>% Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>t-BuOBr</td>
<td>tert-butyl 2-(2-oxocyclohex-3-en-1-yl)acetate</td>
<td>53%</td>
</tr>
<tr>
<td>C6H5Br</td>
<td>6-benzylcyclohex-2-en-1-one</td>
<td>28%</td>
</tr>
<tr>
<td>MeI</td>
<td>6-methylocyclohex-2-en-1-one</td>
<td>12%</td>
</tr>
<tr>
<td>C2H4Br</td>
<td>6-allylcyclohex-2-en-1-one</td>
<td>15%</td>
</tr>
</tbody>
</table>

Isolated yields from reaction of cyclohexen-2-one (1 equiv, 10 mmol), R-X (2 equiv, 20 mmol), LiHMDS (1.2 equiv, 12 mmol), THF (1M, 10ml, 10mmol).
ethoxybuta-1,3-dien-1-yl)oxy) dimethylsilane 32% tert-butyl 2-(2-(tert-butyldimethylsilyl)oxy)cyclohexa-2,4-dien-1-yl)acetate 76%. tert-butyl(dimethyl(6-methylcyclohexa-1,3-dien-1-yl)oxy)silane 65%, ((6-benzylcyclohexa-1,3-dien-1-yl)oxy)(tert-butyl)dimethylsilane 69%, ((6-allylcyclohexa-1,3-dien-1-yl)oxy)(tert-butyl)dimethylsilane 87%. (Table 2).

These silyl dienol ethers were produced and then coupled to Chloramphenicol through transition metal catalysis. Copper triflate (Anhydrous Cu(OTf)$_2$) coupled to the ligand PMDTA followed by NaHCO$_3$ afforded a C-C bond at the remote γ-location. The coupling of tert-butyl(cyclohexa-1,3-dien-1-yloxy) dimethylsilane resulted in 19% yield, %. tert-butyl(dimethyl(6-methylcyclohexa-1,3-dien-1-yl)oxy)silane 16%, ((6-allylcyclohexa-1,3-dien-1-yl)oxy)(tert-butyl)dimethylsilane 20%, and ((6-benzylcyclohexa-1,3-dien-1-yl)oxy)(tert-butyl)dimethylsilane 26% once coupled to Chloramphenicol. (Table 3)
### Table 2. Scope of Silyl Dienol Ethers

<table>
<thead>
<tr>
<th>Enone</th>
<th>Product</th>
<th>% Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Enone 1" /></td>
<td><img src="image2" alt="Product 1" /></td>
<td>48%</td>
</tr>
<tr>
<td><img src="image3" alt="Enone 2" /></td>
<td><img src="image4" alt="Product 2" /></td>
<td>61%</td>
</tr>
<tr>
<td><img src="image5" alt="Enone 3" /></td>
<td><img src="image6" alt="Product 3" /></td>
<td>47%</td>
</tr>
<tr>
<td><img src="image7" alt="Enone 4" /></td>
<td><img src="image8" alt="Product 4" /></td>
<td>87%</td>
</tr>
<tr>
<td><img src="image9" alt="Enone 5" /></td>
<td><img src="image10" alt="Product 5" /></td>
<td>69%</td>
</tr>
<tr>
<td><img src="image11" alt="Enone 6" /></td>
<td><img src="image12" alt="Product 6" /></td>
<td>65%</td>
</tr>
<tr>
<td><img src="image13" alt="Enone 7" /></td>
<td><img src="image14" alt="Product 7" /></td>
<td>76%</td>
</tr>
<tr>
<td><img src="image15" alt="Enone 8" /></td>
<td><img src="image16" alt="Product 8" /></td>
<td>31%</td>
</tr>
</tbody>
</table>

Isolated yields from enones (1 equiv), THF (0.25M), HMPA (2.5 equiv), LiHMDS (1.1 equiv), TBSCL (1.5 equiv).
Discussion

It was observed that a variety of silyl dienol ethers are viable substrates for the $\gamma$-alkylation reaction. These dienol ethers are prepared by straightforward enolization/silylation under basic conditions or through soft enolization techniques. Milestones thus far include the successful synthesis of start materials (cyclohexanone derivatives), substrates (silyl dienol ethers), learning
new chemistry lab techniques and skills (TLC, flash columns, extraction/purification, rotary vaporization) as well as organic chemistry synthesis procedures (synthetic mechanisms-enolization, silylation, deprotonation, alkylation, coupling, catalytic reactions). My success in lab is attributed to successful preparation of each synthesis reaction, gauging my findings based on overall reaction coupling, and learning the organic mechanisms applied. Future findings in this area could ideally benefit the fields of organic chemistry, medical chemistry, and pharmacology.

**Conclusion**

In regards to enone systems, organic synthesis is primarily composed of α- and β substitution or elimination reactions. Although substitution of the more remote γ-carbon of an enone has proven substantially more challenging, this project aided in the production of γ-alkylated enone systems. Further synthesis led to silyl dienol ethers. Once formed, these silyl dienol ethers were then coupled with the bioactive antibiotic Chloramphenicol through transition metal catalysis. Due to pharmaceutical drugs ability to be suitable coupling partners, the reactivities as well as hypotency screenings potentially effects medical chemistry, pharmacology, and daily pharmaceutical products. Synthetic manipulations and optimization of such reactions are influential for the future of coupling drugs at the remote γ-carbon.
TLC $\text{SiO}_2 R_f = 0.27$ in 2.5% MeOH/EtOAc, p-anisaldehyde stain

$^1$H NMR (500 MHz, CD$_3$CN) $\delta$ 8.17 (d, $J = 9$ Hz, 2H), 7.53 (d, $J = 8.8$ Hz, 2H), 6.06 (d, $J = 8.9$ Hz, 1H), 5.16 (dd, $J = 4.6$, 4.2 Hz, 1H), 4.68 (d, $J = 8.2$ Hz, 1H), 4.06 (m, 1H), 3.95 (m, 1H), 3.81 (m, 1H), 3.74 (m, 1H), 3.29 (m, 1H), 2.95 (m, 1H), 1.77 (m, 1H), 1.70 (m, 1H)

$^{13}$C NMR (126 MHz, CD$_3$CN) $\delta$ 207.8, 173.1, 150.1, 147.4, 141.4, 130.3, 127.1, 123.4, 71.7, 62.9, 59.8, 58.2, 40.9, 36.8, 35.4, 20.5

TLC $\text{SiO}_2 R_f = 0.45$ in 2.5% MeOH/EtOAc, p-anisaldehyde stain

$^1$H NMR (500 MHz, CD$_3$CN) $\delta$ 8.17 (d, $J = 9$ Hz, 2H), 7.53 (d, $J = 8.8$ Hz, 2H), 7.15-7.25 (m, 5H), 7.00 (dd, $J = 9.7$ Hz, 1H), 6.47 (d, $J = 7.5$ Hz, 1H), 5.12 (d, $J = 2.3$ Hz, 1H), 5.06 (s, 1H), 4.01 (m, 1H), 3.88 (m, 1H), 3.63 (m, 3H), 3.21 (m, 3H), 2.31 (m, 1H), 1.69 (m, 1H), 1.59 (m, 1H)
TLC SiO₂ Rf = 0.45 in 2.5% MeOH/EtOAc, p-anisaldehyde stain

1H NMR (500 MHz, CD3CN) δ 8.17 (d, J = 9 Hz, 2H), 7.53 (d, J = 8.8Hz, 2H), 6.99 (dd, , 1H), 6.47 (d, J = 8.9 Hz, 1H), 5.12 (d, J = 2.3 Hz, 1H), 5.06 (s, 1H), 4.01 (m, 1H), 3.63 (m, 3H), 2.31 (m, 2H), 1.66 (m, 1H), 1.44 (m, 1H) 0.88 (d, 3H)
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Questioning Conservative Discourse: Sex Education for Children

Zeb Lee
Charlotte Daughhetee

Abstract

Controversy about sexuality education in public schools has continued over the past decade, despite evidence that sexuality education effectively promotes sexual health and that parents support these programs in public schools. Studies point to variations on the impact of formal and informal sex education on sexual behavior and contraceptive. Also, school-based sex education programs have different purposes. Some are created to reduce the odds of having sex. However, some are created to promote abstinence. In general, sex education resulted in reduced odds of having sex by the age of sixteen and increased odds of using contraception. This research focused on what is being conveyed to the minors of the US. Sex education in schools has become a routine part of high school curricula in many parts of the country. School-based programs target pregnancy prevention, substance abuse prevention, violence reduction, youth development, or reproductive health services. Sex education is often a component of religious education, family teaching, and some community groups. This research focuses on what sex education is given to minors and the content of what is being taught. Research questions include: How is sex education being taught? What are the locations and settings for the programs? What does the content consist of? Data was gathered through an online survey.
Fandom and the Compositional Power of Transformative Fiction

Keshia McClantoc

Erin Chandler, Ph.D.

Abstract

This research explores and examines the cultural phenomenon of transformative fiction, also known as fanfiction. This research works in three parts. First, it outlines a brief history of fan culture, known as fandom, while defining terms and explaining social stigmas of the fan community. Second, it looks into the compositional tools used by young writers to create subversive narratives within fanfiction. Finally, the historical and compositional understandings of fanfiction function cohesively to explore how young writers stimulate alternative discourse. As a whole, this research argues for the legitimacy of fanfiction not just as a cultural phenomenon, but also as a genre of writing. Fanfiction is an important compositional process that many young writers are now employing in order to create subversive narratives and alternative discourse.


Although the writing community believes fanfiction is a modern day phenomenon, fanfiction existed long before the age of the internet, comic conventions, and copyright laws. Since the rise of the novel in the 18th century, writers have been using fanfiction to produce alternative and subversive narratives. At its most basic level, fanfiction can be defined as fiction, based on previously invented fictional narratives, written by a fan author other than the original author (Coppa; Jenkins; Pugh). This alternative author transforms the original text, thereby showing the power of fanfiction as a genre—its openness to subversive and compelling revisions tailored to a wider audience. Fanfiction is a form of fiction that is primarily written by young authors, many who gain compositional skills through the process of composing fanfiction. It creates a safe space for these writers where they can freely compose, get feedback, and consistently improve, all while being immersed in a fan culture they enjoy. My research, therefore, defines and explores the power of this transformative fiction and how it uses the compositional tool of reinvention to challenge conventional forms of writing. Despite a slew of negative connotations surrounding fanfiction and the community it is created in, I argue that
even though fanfiction is constantly changing, it is this characteristic that paradoxically legitimates it as a genre and makes it a powerful form of writing. iii

My research primarily focuses on fanfiction in a contemporary context, particularly in the last twenty years, in which this fan-based culture has become known as “fandom.” In Francesca Coppa’s article, “A Brief History Media Fandom,” she explains that fandom was first used to describe the fannish behaviors surrounding both sports and theatres. These fans only became organized and actively produced art regarding films, television shows, and books in the 1960s (Coppa 42). iv The internet changed the world of fandom and today is the prime resource for fanfiction, fanart, and fan forums. As households filled with computers and internet service, the web filled up with forums, fan mailing lists, and even websites about fandom. The internet created endless possibilities for communication and creation within fandom and, in turn, the fandom population and the culture that surrounds it increased by tenfold (54). Fandom now includes more than just television shows and film; now books, movies, comics, and even animation were all being actively discussed. Fans began to create fanfiction, fan music, fanart, and many more creative projects based off fiction (56). In the last twenty years, fandom has flourished on the internet, with an infrastructure that is exceedingly complicated, multilayered, and less defined than ever before. “Fandom” now functions as a blanket term that covers an audience that grows larger every day, and one that is consistently producing at a vast rate (51). Today the two largest fanfiction websites, Fanfiction.net and ArchiveofOurOwn.Org, hold millions of fanfictions from thousands of fandoms. Organizations and non-profits, such as Organization for Transformative Works or Open Doors, constantly encourage and help with the production of fanfiction as transformative fiction. With a wider range than ever before, fanfiction
is a vastly influential cultural phenomenon that needs to be taken more seriously by the writing community and acknowledged as its own genre of writing.

2. Methodology and Reinvention

To argue for fanfiction as a legitimate form of writing, I present research that works in three parts. First, I give a brief history of fandom and fanfiction. This history begins during the rise of the novel in the 1800s and continues to the contemporary setting, where internet-sharing websites function as the prime outlets for fanfiction publication. Understanding this history helps me define the terms that frame my study, look at the growing influence of fanfiction over the last few decades, and understand fanfiction in a cultural context. It also provides a foundational understanding that fanfiction is not just a trendy occurrence but rather a constantly developing movement built on a rich and unique history. Only in the past twenty years has scholarship actually looked into the cultural power of fanfiction, but very few studies have looked into the compositional and rhetorical power of fanfiction. By providing a history that examines fanfiction, not only culturally, but also through the lens of rhetoric and composition, I demonstrate that fanfiction has always been a process that uses compositional and rhetorical tools.

The second half of my research examines the power that writers, particularly young writers, wield in their ability to transform by writing fanfiction. My primary focus for the second half will look at the influence both by and for young writers from the launch of Fanfiction.net in 1998 and onwards. **FFN was the first multi-fandom, multi-fanfiction sharing platform where writers and readers alike had constant opportunity to engage in the text. Since then, almost every fanfiction sharing platform has been influenced in some way by FFN (Fanfiction.net). This**
second half of the research not only delves into the compositional processes of young fanfiction writers, but also explores the use of reinvention as a subversive tool to stimulate change.

Finally, this combined historical and compositional research works as my lens to view contemporary fanfiction and its influence in order to argue for its legitimacy as a genre of writing. To these ends, my research shows the exceedingly complicated infrastructure of fandom in the last twenty years, and how this infrastructure has created a vast and ever growing form of alternative compositional discourse.

Understanding the transformative power of fanfiction, however, comes from understanding a key rhetorical and compositional tool—reinvention. By exploring rhetorical and compositional scholarship that define this tool, I use reinvention as lens to look at fanfiction with subversive narratives and examine the transformative power of these alternative writing processes. In one of these studies, “A Plan for Teaching Rhetorical Invention,” Richard Larson poses a series of questions that invite students to “invent” within their rhetorical and compositional processes. These questions often ask the “who, what, when, where, and why,” forcing the students to acknowledge that their process may hold deeper meaning. Larson says that in teaching invention to students that “we force them to examine the underlying concepts they consider important and the content of propositions on which they want to write” (Larson 138). This method of teaching both engages students within their process while allowing them to invent in their writing. In this way, not only does their writing challenge the literature and standard of writing, but it also allows for a process that feels as though it belongs to the writer. In fanfiction, this process of invention is happening in the form of reinvention. The narratives, the canon, already exist and the fanfiction writer is simply reinventing them for their own purposes. Larson asks the following questions: “What will or can be said in proposition, what
does the question [the writing] assume or take for granted, and what, fundamentally, is in doubt” (141). Fanfiction writers work to answer these questions through subversive narratives. Since the narratives they are writing already exist, they are not inventing a narrative but rather reinventing one. Although fan writers are able to bypass the invention phase of writing in this way, the reinvention they use often focuses on what was taken for granted or what sections of the narrative the community generally doubted. By embracing the tools of invention to reinvent a narrative, fanfiction writers have the ability to create transformative works.

In the context of the fanfiction community, fanfiction is often referred to as transformative fiction. For the purposes of my research, I use both the terms reinvention and transformation interchangeably. Although the ways by which student writers and fan writers compose are quite different, the methods by which they begin their composing are quite similar. In Larson’s work, he uses his set of questions as a rhetorical “generating device for composition” and insists that education should strive in challenging students to fill these gaps in their knowledge with questioning (139). In the classroom setting, the teacher asks the “who, what, when, where, and how” questions in order to stimulate discussion and help students to invent. In the fandom community, these questions are not asked by a figure of authority but rather by the fandom community itself. Fan forums, fan zines, fan clubs, etc.…create an open and communal space where fans can ask the “who, what, when, where, and how questions." When the fandom asks these questions, they are using the same rhetorical methods that Larson would use in a classroom, but rather than being challenged to invent, writers within fandom are being challenged to reinvent. This form of reinvention is transformative because when fan writers alter the canon they are not just changing the original narrative but they are also stimulating and changing the discussion that surrounds the narrative.
The fanfiction community is much like a classroom in that fanfiction creates feedback and discussion that is continuously built upon. The discussion stimulated by fanfiction is often that which is generally overlooked in the classroom setting. Fanfiction, then, not only reinvents the original narrative, but also transforms the rhetoric of fandom, which is why I posit that it merits the title transformative work. Today, fanfiction exists in a thriving community that is generating transformative works every day. This thriving community started with a very small group of fans whose dedication made the transformative power of fanfiction possible. Understanding reinvention is pertinent to argue for the legitimacy of fanfiction as a genre of writing but its rich and complicated history is what makes this argument possible.

3. History of Fanfiction

Examining the history of fanfiction is essential in that it provides the cultural impact of fanfiction. Much of the writing community imagines fanfiction only as a modern occurrence, “modern” in this sense being the fanfiction that began in the 1960’s and continued to the present. Fanfiction, though, was established long before that, and in many ways it has always used the tool of reinvention to provide alternative narratives. According to the website on popular culture, Tosche Station, the modern day conceptualization of fanfiction as borrowing, or rewriting characters, was first significantly noted in the 18th century with the rise of the novel. It started with the 1719 novel, Robinson Crusoe, by Daniel Defoe. Robinson Crusoe was incredibly popular and before Defoe had a chance to write his own sequel, many unauthorized sequels were released. These unauthorized sequels were essentially the first forms of fanfiction (“An Academic Defense of Fanfic”). This fanfiction-like occurrence happened again when Henry Fielding famously parodied Samuel Richardson’s novel, Pamela. Fielding’s Shamela gained just as much fame as the original work and in turn, the act of writing fanfiction (although it was not
addressed as thus during the time) gained momentum. (“An Academic Defense of Fanic”). Fanfiction-like works had been appearing even long before the rise of the novel. If we view fanfiction by the basic definition of borrowing and rewriting characters then many forms of myth, legend, or historical anecdotes can be considered fanfiction.xiii

For the most part, this borrowing of characters and rewriting of tales was not acknowledged until the widely popular 18th-century works. This rampant popularity had two effects. First, it forced the writing community to acknowledge that the borrowing and rewriting of previous narratives was both a valid and popular form of writing. Second, it caused the implementation of early copyright laws so that these works were no longer authorized. The first of these copyright laws was the Copyright Act of 1709, also known as the Statute of Anne. This was the first law that enabled courts to protect the copyright of literature, but it focused on the “pyrating” of books rather than the fanfiction-like works that were based on books (TheAvalonProject).xiv William F. Patry’s book, Copyright Law and Practice, claims that this initial act led to protest and controversies like the 1731 “Battle of the Booksellers” (Patry).xv With such controversy and attention to piracy, authors of fanfiction-like works were able to go unnoticed and continued producing material. As the controversy that surrounded the Statute of Anne waned, newer and stricter laws made an appearance, many of which took note of the fanfiction-like works that were being produced and in turn, almost all forms of fanfiction effectively disappeared (Patry). Although there were small fanfiction-like efforts made in 1913, surrounding the works of Jane Austen, and 1934, surrounding the Sherlock Holmes series, fanfiction did not make another significant appearance until the 1960s.

The 1960s not only brought fanfiction to the writing community but also brought about the term and culture of fandom. Francesca Coppa’s “A Brief History of Media Fandom” cites the
first use of the word “fandom” to describe the fannish behavior that surrounded fans of sports and theatre (Coppa 42). This term, along with the jargon, infrastructure, and community was soon adopted by the science fiction fandom, who quickly began producing fan works in the 1930s. The first science fiction fan written magazine was called *The Comet*, which included both fanfiction and fanart. The prime function of this magazine was to compensate “for deficiencies and gaps in the marketplace,” as primary works of science fiction literature were not consistently produced (42). Most of these magazines were cheaply made and had very small circulation but worked as a starting point for many famous writers, including both Donald Wollheim and Ray Bradbury. These works also originated some terms that would later inspire fanfiction argot such as flame or beta reader.xvi

These early fan writers worked as inspiration for many fans of science fiction, and in the 1960s fans of the popular series, *Star Trek*, began to mimic their efforts. While on air, *Star Trek*, often struggled for ratings, which is why fans were pushed to become “more vocal and participatory” (44). Coppa cites *Star Trek* as particularly significant because it had a large public following of female fans, who had always been present in the science fiction fandom but were very much underrepresented (44). In large part, the female audience was responding to the *Star Trek* series, which included both strong female characters and PoC. These female fans were pioneers in creating subversive narratives throughout fanfiction. Many of the women involved in the *Star Trek* fandom also worked in science fields, often citing Mr. Spock as a favorite character, because being a female scientist in the 1960s was very much like being a misunderstood alien (45). Whether female or not, the *Star Trek* fandom began producing fan works at a vast rate, including: poems, songs, stories, and drawings. Fans were responding to the show in a way that was both creative and critical, despite criticism that *Star Trek* was just science
fashion for nonreaders. XVII As this schism between science fiction writers and Star Trek fan writers grew larger, fans of the show started to hold their own conventions and events separate from the science fiction community. It was these events that made Star Trek, and the fanfiction community that surrounded it, become a phenomenon.

By the 1970s, the Star Trek fandom was thriving and overflowing with conventions, events, and fan magazines. In 1975, the book “Star Trek” Lives! was published. This book covered the history of the fandom, the establishment of zine culture, letter-writing campaigns, and the establishment of the Star Trek convention (46). The most significant part in this book was the chapter entitled “Do-It-Yourself Star Trek—The Fan Fiction,” which shared and greatly encouraged the writing of fanfiction within the fandom. There was particular attention to the contributions of female writers in the fanfiction community, and how these writers did not shy away from either psychological issues or sex within their writing. The most prominent form of fanfiction written by women was “relationship fiction,” where two characters in series are romantically paired together. XVIII The most popular pairing in the Star Trek fandom was the slashfiction pairing of Kirk and Spock (47-48). XIX This fanfiction was subversive not only because it was written primarily by female writers in a community that was generally male-centered, but also because it was rewriting the narrative to be more inclusive of LGBT+ characters. These narratives established the pattern for subversive works that included the rewriting of characters in this inclusive manner. Aside from celebrating subversive narratives, the “Do-it-Yourself” chapter was also significant because it invited anyone and everyone to actively participate in the fandom (48).

This invitation not only extended to Star Trek but also to other fandoms as well. In the late 70s, buddy shows like Starsky and Hutch and science fiction blockbusters, like Star Wars,
became increasingly popular in the fanfiction community. The *Starsky and Hutch* fandom continued the popularity of slashfiction, with many viewers reading homoerotic undertones in the show (49). Meanwhile, the *Star Trek* and *Star Wars* fandoms tried unsuccessfully to work together. Many acknowledged that fandom was a distinct and full culture, but for the first time fans began to realize the need for separate subcultures within the culture of fandom. With each new fandom that emerged, magazines and conventions catered specifically for the subculture of those fandoms emerged as well. The contributions of the *Star Trek* fandom was not overlooked, as many of these new fandoms “brought the organizational and habits of the *Star Trek* fandom with them” (50).

In the 1980s, fandom actively spread to other television shows, blockbuster movies, and comic books, with each new fandom bringing their own distinctive subculture to the communal culture of fandom. Fanfiction writers were producing at a vast rate to compensate for all the new fandoms, with many writers participating in multiple fandoms because “being an informed media fan could be a full time job” (51). During the 80s, the first forms of fanfiction crossovers appeared. These crossovers proved the creative lengths that fans were willing to go to maintain a collaborative process that uplifted the unique narratives of individual fandoms and pointed out the possibility for overlap. According to Coppa, crossovers were where “fandoms mixed together with gleeful abandon” and began to truly grasp the communal effort that went into creating fanfiction (52). Rather than just a small collection of scattered groups, fandom was now a fully realized culture that held both individual and communal efforts. These efforts were worthy of note. The study of participatory culture was a budding topic in journalism and academia, with many scholars, such as Henry Jenkins, studying and writing on fanfiction. When fandom found its way to the internet in the 1990s, both fandom and studies on fandom flourished.
With the surge of the internet in the 90s, fandom moved to the web. Fan magazines, letters, and news about conventions were all moved to the web, along with new online mailing lists, discussion boards, and archives. For the most part, Coppa says that “fans, as a group, were technologically ahead of the curve” and soon took up the positions of administrators, moderators, and archivists on the web. She also notes that the core groups of these fandoms were primarily science-orientated women (54). Early internet fandom was often highly organized, with different websites for every subculture within fandom. Gossamer, Hexwood, and Trekiverse were all examples of highly specific archives of early internet fandom. Later sites, such as OneList, eGroups, Yahoo, and LiveJournal allowed for more splintering of archives and in turn, these sites often became a playground for multiple fandoms (54).

The internet also changed the nature of slashfiction. Due to its subversive homoerotic nature, slashfiction was generally only available to specific groups, with magazines being sold “under table” at conventions. The internet allowed for consolidation of slashfiction, because it was being openly and publicly produced on the web. This also allowed more opening dialogue surrounding the writing, reading, and politics of slashfiction. Although slashfiction only covered one group of the LGBT+ community (homosexual men), these early discussions led to fandom becoming more inclusive of LGBT+ discussions in general (54). Before the internet, these topics were only discussed and shared within fandom. Now these topics were more accessible to people within fandom as well as people outside of fandom. This created a huge influx of both new fandoms and new fans, who actively used the internet to begin producing works (55).

The early 2000s ushered in more fanfiction production than ever before, with websites like Fanfiction.net and ArchiveofOurOwn.Org, becoming outlets for any and all forms of fanfiction. Some traditions of fandom died off, such as mailing lists and zine culture, while
new traditions like crossovers and round robins flourished (56). Creators of canonical works have also become aware of fandom and its influence. More often than not, creators of canon works now frequently use narratives tools, such as fanservice or Kripked, in order to gain positive feedback and participation from fans.

Fandom has also made efforts to become more inclusive and encouraging of alternative discourse than ever before, with Coppa saying that fandom is now “bigger, louder, less defined, and more exciting than it’s ever been” (56). In examining the history of fandom, we can see that fanfiction has continually pushed these boundaries and with the implementation of newer fandoms and newer methods of creating narratives, this push for alternative discourse of composition will continue. This growth is significant because more and more young writers are turning to fanfiction as means for a creative and critical outlet. More often than not, they are taking the tools of rhetoric and composition with them as they write fanfiction, but they are using these tools to create subversive narratives. In understanding the historical context that led these young writers to find this outlet, the academic writing community can acknowledge the power of these young writers to not only make their own space but to fill that space with subversive narratives and alternative discourse.

4. Culture and Controversy

I cannot argue for the power of young writers in fanfiction without first acknowledging some of the flaws within the community. As with any community, the culture of fanfiction is filled with both negativity and controversy. Young writers must navigate this negativity and controversy in order to make a space where they can produce creative and critical work. If they do, they can then reap the benefits of the fanfiction community. Much of the literary writing community, whether popular or academic, only see fanfiction as the negativity and controversy
that fandom sometimes contains. When fandom is viewed in such a manner, the importance of the fanfiction community is overlooked. This stigma that surrounds fanfiction allows the writing community to view fandom not as a full and legitimate community that contains both good and flaws. By acknowledging the good and bad aspects of fandom, I hope to better argue for the legitimacy of fanfiction. Fanfiction, as a community, holds both strengths and weaknesses. If the writing community only focuses on the weaknesses, then a full view of the fanfiction community cannot be addressed or recognized. It is through acknowledgment of both the good and the bad that fanfiction is a legitimate community, and in turn, a legitimate genre of writing.

Sheenagh Pugh addresses the culture of today’s fanfiction community in her article “The Communal Online Sandpit” by saying that although separate fandoms are like “a bunch of independent federated republics” that the “degree of association and interactions is [still] a testament to the sense of community among fans” (Pugh 116-117). The community built through fanfiction is a supportive culture that surrounds fandoms that could be either loosely organized or tight-knit. Regardless of the type of subculture of a singular fandom, the whole of fanfiction is an interactive process. When a fan writer decides to write fanfiction, they are interacting with the original texts, their own authorial intentions, and the other fans within the fandom. Even if they are writing a fanfiction on their own and for their own pleasure, if the work is publicly published (particularly in a web-based format), the fan writers are engaging with a community that is inherently interactive. Pugh says that comment sections and mailing lists often work as “writing groups, providing not only feedback but ideas and potential collaborators” (119). Writers who want even more help often seek out beta-readers, who are “constructive [and] read critically” yet remain sympathetic of the work (12). For the fanfic writer, this interaction is an ideal environment, where they can actively write about things they are passionate while receiving both
support and feedback. To this end, fanfiction is a form of composition that is both positively reinforced as well as consistently improving.

Despite the positive impact of an interactive fanfiction community, in the vast “sandpit” that Pugh describes, it is quite easy to get lost, and sometimes the people who have the potential to be great writers are often overlooked. The reasons for this vary, anything from not writing within a popular fandom or writing within a fandom that is too popular and flooded with fanfiction. This tendency to overlook not only creates doubt within the fanfiction community but also the writing community in general. The rampant popularity of PWP, Crackfic, and badfic also cast doubt toward the fanfiction community (136). More often than not, the writing community looks at these popular works (which are often parody) and imagines them as the only significant works that the fanfiction community can produce. Pugh also attributes the doubt of the writing community against fanfiction to the idea that fanfic writers are not creating but just mimicking. She notes that fanfic writers are just “speculating on alternatives” and that their stories have the ability to “depart from the demands of realism” (140). Due to this, the writing community tends to think of fanfiction a lower form of fiction, and this stigma generally influences the public. This stigma only expands when the writing community regards the slew of copyright issues that the fanfiction community has faced.

Since modern fanfiction has begun, many people have viewed fanfiction as both immoral and infringement of copyright. Yet, just as many fans view this work as fair use. The conflict between these two groups has led to many different cases, all of which interpret the current copyright laws differently. Rebecca Tushnet’s “Copyright Law, Fan Practices, and the Right of the Author” says for the most part, fans consider their work as fair use because “fans keep relatively quiet about their fan practices,” but in recent years fanfiction has garnered more
attention than ever before (Tushnet 60). This attention has led to copyright holders taking aggressive actions toward fan creators, including cease-and-desist letters and threatening lawsuits against fan websites (60). In most of these cases, fans have stopped producing work within that certain fandom, with fan websites setting up parameters so that no fan work within that fandom can be produced on their websites. Tushnet says that this transition is often hard for many authors of fanfiction as “visibility is important,” and creating such works often gives them “a sense of validation” (63). This validation and visibility often creates online support groups for fan writers, and when a copyright holder insists that these fandoms cease-and-desist, they break up these online support groups. This makes the condemnation of fanfiction by certain authors a particularly controversial thing to fix within fandom, but generally quick settlements and supportive efforts by popular fan websites help the transition happen smoothly and quickly.

Today, though, the legal landscape for fan writers is better than ever, with many courts recognizing the significance and community of “transformative” works (61). Tushnet offers that the key to understanding the legalities of fanfiction is in understanding the transformative uses of fanfiction. Transformative uses are “uses that add new insight or meaning to the original work,” and even though sometimes this transformation is done in a way that copyright owners do not like, more courts are emphasizing that “copyright owners can’t suppress unwanted interpretations of their works by asserting copyright” (61). As far as legal jargon goes, adopting the term “transformative works” was the best move that fandom could do to maintain creative liberty. Copyright cases against fanfiction are not as frequent as they once were, with more and more copyright holders recognizing the need for fan works in building a fan community. Fans have also made more efforts in intention, using disclaimers to emphasize that while the
characters may belong to the copyright holder, that the original author has no connection to the fan work.

With so many problems in the “sandpit” of fandom and so many copyright claims against the fan community, the public writing community is generally under the impression that fanfiction is badly written, stolen, or a combination of both. While it is certainly true that some fanfiction is bad, this is true of all of forms of fiction. The only way that the writing community can acknowledge fanfiction as legitimate is by sifting through the bad to find the good, and to understand the subversive power of good fanfiction. In this research, I sift through the sandpit of fandom by using Wayne Booth’s “Three Sources of General Criteria.” These three sources come from Booth’s book, *The Rhetoric of Fiction*, and outline the three qualities that a novel (in my reading, fanfiction) must have in order to be considered good.

Booth first offers that a story must “do justice to reality” in order to be “intensely alive” (Booth 37). In fanfiction, most of the “good” works that are being produced are subversive works, and in order to do this, the fan author must incorporate their own reality into the work. The most common trope of incorporating their reality comes in changing either the gender, sexuality, or race of a canon character. When fan authors do this they are using their reality to create an alternative discourse. Writers are able to find means of self-expression and community, for readers will often seek out stories that represent their own reality as well. This representation of reality often changes fan discussion of a canon work and generates critical thought that the canon did not have the ability to do. Booth says that reality in fiction can be “experienced” as well as “contemplated” in this manner (38). When fan writers insert their reality, they are allowing themselves and the readers to experience while opening the door for contemplation of both their piece and the canon. A highly popularized example of this reality-based writing comes
in fanfics based on J.K. Rowling’s *Harry Potter* series. More often than not, fan writers will change the character Hermione Granger’s race to black. It has become such a popular trope, that much of the fandom now accepts it as fanon. By doing this, fan authors are offering a better representation of reality by inclusion of a PoC characters as well as generating discourse that places greater emphasis on the prejudices within the canon work. In this manner, when fan writers do justice to reality, they are creating subversive works.

Booth’s second source of criteria goes over the attitudes that are required of the author. Booth says that many will say authors should be objective or detached from their works, yet some of the best works are the ones that are produced through being passionate and involved (38). For the most part, fanfiction is a work that is highly passion based. Fans write fanfiction because they want to engage with fictive works that they are passionate about on a deeper level. This engagement is what encourages fan writers to not only consistently produce fanfiction, but to produce good fanfiction as well. As Tushnet noted earlier, fan writers are often seeking validation through their works. The need for validation and a shared community often pushes fan writers to create works that are just as engaging as the canon work, so that other fan writers may be spurred by their passion. Booth does says that writers need to find the proper “distance” between the two extremes in order to be a good writer (38). Although much of fanfiction is work that is highly passion-driven, good fanfiction writers also understand the distance between themselves and their writing. Although their writing is their own, they are operating in a world and with characters that are not their own. Fan writers are using reinvention rather than invention and because of this, they are able to maintain a distance from the work that allows the “good” distance that Booth implies.
Booth’s final criterion surrounds the attitudes that are needed from the reader. Booth posits that the ideal author creates narratives that cause a reader to “use [their] mind, critical intelligence, as well as [their] emotions” (38). In fanfiction, the attitude of the reader holds layered meanings. It is assumed that fans are a reader (or viewer) of a certain fandom. When a fan writer writes a fanfiction, they are using their mind, critical intelligence, and emotions to respond to a work. They must maintain that attitude of the reader in order to produce, while at the same time understanding the attitude of the readers who will engage with their fanfiction. Booth says that “a work should provide the reader with questions rather than answers” so that readers will engage with the text (38). Since fanfiction is a work that is engaging with a text, there are answers that must be given within a fan narrative. But a good fan writer will be conscious of this need for audience engagement, and will strive to write a narrative that not only answers questions but also stimulates questions as well. When a fanfiction does this, it creates the alternative discourse that subversive works demand.

In following Booth’s criterion, I posit that a good fan writer is a writer who uses their reality to make the canon works subversive. This does not always have to be a transformative move, such as changing the race of the character, but it must be a move that is motivated by wanting to engage the canon text with their reality. A good fan writer must also engage passionately with the canon work while understanding the creative distance that they must maintain from the work. In this way, they will be able to produce works that are involved but also demonstrate the proper credit to the author of the canon work. Finally, good fan writers are writers that create narratives that answer questions as well as provide room for continued questions and discussion. This is how fanfiction will continue providing alternative discourse.
By using these criteria to define good fanfiction, I am able to sift through the vast community of fanfiction. As with any genre of writing, there are both poor works and exemplary works. And just as with any other genre of writing, the entirety of fanfiction cannot be represented through the lens of the bad works. Since fanfiction is a rather untraditional method of writing, many in the writing community only choose to see the bad. They see the popularity of badfic or parody and imagine those as the only significant works that the fanfiction community can produce. They also see that negativity of the copyright cases surrounding fanfiction, and imagine fanfiction as merely stolen work. The truth is that a huge portion of fanfiction would fit in with Booth’s criteria of good fiction, and by ignoring that, the writing community is ignoring the opportunity to explore the subversive nature of fanfiction. This is why I argue for fanfiction as a legitimate form of writing, paying particular attention to the power of young writers. Young writers, whether in the fanfiction community or not, are generally doubted by the writing community. By exploring the power of young writers of fanfiction, I hope to erase the doubt that the writing community has about both groups.

5. Young Writers and Fanfiction

In the past twenty years, the population in the fandom community has gotten progressively younger. When fanfiction first took off in the 1960s, most fans were in their 20s and 30s. Attending conventions, running fan zines, and participating in mailing groups were all activities that required financial stability, hence the older demographic within the fanfiction community. When fandom moved to the internet, it made fandom accessible to everyone, including young writers. Young writers now make up the largest demographic in fandom. According to Fan Fiction Statistics – FFN Research, most members of FFN are in between the ages 13 and 17 (FFN Research). xxxiv Although there are older members on FFN, the median age
is 15.8 (FFN Research). With such a large role in the production of fanfiction, the power of young writers is clear, not just in numbers, but in their efforts to consistently produce transformative works. Demographics like this show the need for scholarship on young fanfiction writers. I cannot argue for the legitimacy of fanfiction as a genre of writing without placing emphasis on the power of these young writers. Fanfiction gives young writers an outlet to write subversive narratives while being immersed in a community that strives to consistently improve the quality of writing. To this end, fanfiction allows young writers to learn as they compose, in a process that is both their own and shared, so that they may emerge as competent writers who strive for alternative discourse.

Understanding the competence of young writers in fanfiction first comes in studying what is expected of a competent writer in composition. Thomas Newkirk’s and Nancie Atwell’s “The Competence of Young Writers” explores the competence of young writers through a method based on arguments of Plato. This method understands the “technicalities of writing—grammar, punctuation, spelling, proofreading, and editing—as taught in isolation from actual composing” (Atwell and Newkirk 185-186). Atwell and Newkirk argue that in teaching young writers, technicalities are important but they cannot overshadow the importance of process, purpose, or context of the writing (186). When these technicalities overshadow the act of composing, the students will never have the opportunity to find voice or explore language. In order for students to become competent writers, they must understand that writing is process that holds meaning, and through exploring that meaning they have the ability to learn. When a young writer composes fanfiction, they bring meaning into whatever fandom they are writing in. These young fan writers become more competent as they write because they “are given power to control language and by extension their world” (187). Although technicalities are important in
the fanfiction community, the general consensus is that a good writer will employ a beta reader to help them these technicalities. Without the stress of that on their mind, fanfiction writers are free to explore the world of the canon and reinvent. Through this reinvention, and feedback from the community, young fan writers are able to learn about the process, purpose, and context of their writing.

This process of young fan writers comes from how these writers construct the texts. As the fans read (or view) the canon, they construct images, ideas, and questions based on what they experience. They then take what they constructed in their mind while reading and construct their own story through reinvention. This reinvention allows them clear views of their process, purpose, and context in writing fanfiction. In “How Writers and Readers Construct Texts,” Jeanette Harris argues that writing, i.e. constructing a text, is not always the tidy three-step process of prewriting, writing, and rewriting (Harris 117-118). This holds true for writers of fanfiction as well. Harris offers that writers “do not simply construct a mental text and then transfer that mental phenomenon onto a piece of paper or computer screen” but rather it is a “recursive motion” between the mental and physical texts (118-119). In a compositional setting, the student may base this recursive movement on reflection, close reading, or scholarship. In exploring these resources, a writer constructs a text recursively based on what they learned through the process.

In the same manner, the young fan writer may reflect and close read a canon work, look at discussion within fandom, or rely on feedback throughout the process to recursively guide their writing. Fanfiction also allows for unique tools such as editing turn around, fix-it, and author’s notes to construct their writing. xxxvi Harris also offers that in constructing a text in such a way, writers can “find in [their] words their own meaning” (121). “Meaning” in composition is
something noted by Atwell, Newkirk, and Booth as well. In this manner, compositional scholarship unknowingly supports fanfiction writing. Harris argues that the process of writing is not simple, but rather a constructive process from which writers derive meaning. When fan writers use the resources of fandom to help them to write recursively, they are constructing meaning in their narratives. Atwell and Newkirk argue that technicalities cannot overshadow the process, because it is in process that writers derives purpose and context in order to learn. Fan writers use beta readers and are attentive to feedback in regards to technicalities. In this way, they are able to focus on the purpose of their writing as well as the context of the fandom they are writing in. This allows young fan writers to learn and become more competent writers as they write fanfiction. Finally, Booth offers that a good writer will fit into his three criteria by deriving meaningful texts. To this end, young fan writers are consistently using the tools of composition in order to derive meaningful texts. That in itself is enough to argue for the legitimacy of fanfiction as a genre writing. My argument is only furthered by scholarship on the narrative process within fanfiction writing.

Although fanfiction often overlaps with compositional scholarship, there are many processes within fanfiction that are uniquely its own. The most notable of these is that fanfiction, while dependent on the canon to exist, does not have to follow the rules of canon in order to exist. This is most prevalent in the fact that fanfiction can exist at any length. Sheenagh Pugh’s “Going There: Narrative Forms and Methods,” says that “fanfic, after all, is about wanting more, rather than less, expanding on an existing canon, rather than condensing it” (Pugh 172). Writers of the canon have to produce everything in full, whether it be books, film, or television show, while fan writers are allowed to produce works in smaller parts, such as one-shots or even just a listing of headcanons. xxxvii Most fan archives give fan writers the option to produce their works
on a chapter-by-chapter basis, meaning that writers can “satisfy rapacious readers more quickly and get feedback as [they] go along, rather than waiting until the end” (179). Fanfiction also does not require as much exposition or background knowledge because the audience, as fans, will already be equipped with that knowledge (173). To many young writers, writing fanfiction as a work in progress is essential to them becoming competent writers. It allows them to write in a way that is not too stressful nor time-consuming, all while receiving feedback that will help in consistently improving their writing. Since many of these writers use reinvention, they are able to forego the hassle of invention because they are simply transforming narratives that are already invented. This does not necessarily mean that fan writing is weaker because it does not invent, but rather that fan writing is able to compose in a way that is not traditional, nor held down by the same conventions as the writers of canon work.

Since young fan writers are able to skip over invention and go straight to reinvention, they are also able to access power in writing immediately. Fanfiction is already subversive in that it uses traditional compositional tools to compose in a non-traditional way, but it is made even more subversive when young writers use it as a tool to stimulate alternative discourse. In Pugh’s “Puppeteers,” she says that fan writers write because they want “more from” rather than “more of” a narrative (Pugh 20). This “more from” is where young writers find their power and become the “puppeteers,” or manipulators, of fanfiction. I can address fanfiction as reinvention or transformative, but I cannot deny that fanfiction is also manipulative. All three terms, whether used interchangeably or not, are powerful tools in writing. When a young writer transforms the canon, they are manipulating an already created narrative because they see “more potential in these characters and situations than…the original creator” (21). If we were to take Pugh’s analogy further, we can imagine the puppets and the stage as the characters and situations made
by the original creators. When fans manipulate the works, they are simply acting as the “puppeteers” behind the scenes. The way they make the puppets perform is the way that they seek out the “more from.” If used correctly, this “more from” has the potential to be a very powerful tool, one in which young writers can write more inclusive narratives as well as stimulate alternative discourse in both fandom and writing.

6. **The Power of Young Writers**

The power of young fanfiction writers comes not just in what young fans write, but also in the act of writing itself. Their power does not begin within process of subversive narratives or alternative discourse in the community, but rather in carving a space for themselves. To most of the writing community, the creative and critical contributions of young writers are typically ignored, or looked down upon. By representing such a large demographic in fandom, young writers are making a space for themselves in a place where they can engage with writing without being looked down upon. It is here that they can write subversive narratives and stimulate alternative discourse, both of which only grant them more power as creative and critical writers. The significance of the first step cannot be overlooked, because young writers will continually seek out spaces where they cannot be ignored. Seeking solace in fandom is not the young writers’ way of hiding out from the writing community, but rather their way of establishing their own community so that they may express their ideas on the same level as the writing community. By carving out the space within fandom, and using the tools of the writing community to create alternative discourse, young writers are establishing themselves as a powerful force.

The subversive nature of this force is only furthered in understanding why these young writers seek out spaces alternative to the writing community. Ika Willis’s article, “Keeping Promises to Queer Children: Making Space (for Mary Sue) at Hogwarts,” discusses the
significance of these spaces for young writers. She says that “through writing fanfiction, that a
fan can make space of [their] own in a text which may not at first sight prove the resources to
sustain them” (Willis 155). In order to grow as both creative and critical writers, young writers
must have a space where they are allowed to write to sustain themselves, and where that writing
must be taken seriously. The “resources” to sustain writing are often the alternative narratives
that young writers want to provide. Although academia and the writing community has made
more efforts to become more inclusive of alternative narratives, efforts made by young writers in
this aspect are largely looked down upon.xxxix If students turn to creative work (books, films,
television, etc.…) as an outlet for representation, they often see the same traditional narratives
they find in the writing community. In Willis’s study, she focuses primarily on J.K. Rowling’s
Harry Potter Series, and how “as a queer person, but specifically as a young queer youth, that
Harry lacks a sustaining world” due to lack of representation (161). xl When fan writers make
space for themselves in the Harry Potter fandom and write fanfiction surrounding queer
characters, they are doing two things. First, they are making a space for themselves in a place
where they feel there is not enough representation. Second, they are filling the lack of resources
with subversive narratives that provide sustainability. In doing so, young writers establish their
power as creative and critical writers.

The second source of power comes in finding voice. In writing subversive narratives
young writers are able to access and grow their voice. Wayne Booth’s “The Author’s Many
Voices,” says that in writing “the author is present in every speech given by any character”
(Booth 18). When fan writers compose a story, they are inserting their own reality to reinvent a
canon narrative. In this part of reinvention, they have characters and situations that were already
given voice by the original author. By writing in their reality through subversive narratives, they
are not covering the voice that is already present in the story but rather rewriting that voice to make it their own. In rewriting the voice of the narrative, fan writers are transforming the fiction to find out what they want to offer up as a resource for alternative discourse. Even if they are not writing in their own reality, or “personal touch,” Booth claims that one can still recognize that the narrative is “imposed by the author” (19). When fan writers impose on fiction by rewriting the voice of the story, they find the meaning in their writing. For many young fan writers, finding this meaning is what gives them the power to continue writing subversive narratives.

The power of young writers in writing these subversive narratives is only nurtured as writers become more involved in the community. In fanfiction, the audience functions as the editor of a narrative. Sometimes this comes in the form of a beta reader, in the form of feedback within comments, or through discussion boards. Fanfiction is powerful because it is a communal effort, and these efforts encourage young writers and help them grow. Angelina Karpovich’s, “The Audience as Editor: The Role of Beta Readers and Online Fan Fiction Communities,” says that “online resources for fanfiction writers is one of the symptoms of the general technological sophistication of the community, as well as an example of the way in which the community attempts to share its members’ individual knowledges in order to sustain itself” (Karpovich 174). Although the fanfiction community is sometimes filled with just as much negativity as any writing community, there is also the understanding that fans must support other fans in order for the fanfiction community to survive. For young writers, this focus of community provides opportunity for growth as well as support in writing subversive narratives. The power here lies in this communal effort and support.

This communal effort and support allows for writing that not only helps the writer find voice and grow but provides influence to the audience as well. When a young writer writes a
subversive fanfic, they are writing for themselves, so that they may show a better representation of their reality. But writers are also writing for the other fans who will read their story because they are already invested in the characters and world of the narrative. In writing fanfiction, the young writer and the other fans are able to engage with the canon work and with each other. As Mark Duffet says in “Fan Practices,” writing a fanfiction “based on the shared fandom of its writers and readers” functions to “create social and cultural bonds” (Duffet 171). In these bonds subversive narratives become alternative discourse. Engagement within the fanfiction community is not just in reading or writing fanfiction, it is engaging with the fanfiction while it engages in the canon text. Young writers may interact with their audience through the writing process, using feedback to guide their stories. Fans of the fanfiction may go to discussion boards or start blogs about a particular fanfiction. Duffet notes that being a fan “involves…making meaning and participating” and in interacting in such a way, the fanfiction community is creating alternative discourse (179). This discourse benefits the writer and the audience and often pushes other young writers to create their own subversive narratives in order to stimulate discourse. In this manner, the community of fanfiction is not only significant in that it provides consistent feedback but in that it also participates with the fanfiction to stimulate alternative discourse.

All of this grants power to young writers. When I argue for the legitimacy of fanfiction as a genre of writing, I also argue for the power of young writers. Without the power that young writers provide, fanfiction’s legitimacy would be harder to establish. In reality, young writers are the backbone in creating subversive narratives and stimulating alternative discourse in fandom. As I said before, I cannot argue for the legitimacy of fanfiction without looking into the practices of young fan writers. For many of these young writers, the fanfiction community is very legitimate to them because it is the place where they feel safest. It is a place where they can
express themselves and not be looked down upon or judged. It is also a space that is encouraging, and gives them positive feedback that helps them grow as writers and allows them to find their voice. Together, all of these attributes of fanfiction give young writers power and allow them to compose in a way that the writing community should be aware of. It is this awareness that can become acknowledgement of fanfiction as a legitimate form of writing.

Many young writers fall into Booth’s three criteria for good writers, for they incorporate their realities as well as understand the needed attitudes that surround both author and reader. So, I posit that fanfiction is a legitimate form of writing because, based on Booth’s rhetorical standards of fiction, most young fan writers are good writers. Young writers also use rhetorical and compositional tools, such as Larson’s invention or Harris’s construction in order to write fanfiction. It is in this writing that they derive the meaning that Atwell and Newkirk emphasized as important in composition. Fanfiction is legitimate then, for it uses what are considered legitimate tools of composition. Young writers use those tools of composition to write subversive narratives in a space where they feel supported. The act of creating this space and writing within this space is subversive, and the narratives that they produce are more inclusive than anything the writing community could offer them. How can fanfiction not be legitimate when the work being done by young writers in fanfiction is so powerful? The only way for the writing community to regard fanfiction as legitimate form of writing is to encourage more scholarship that studies the power of young writers and understands the significant impact that fanfiction has in creating subversive narratives and alternative discourse.

7. Conclusion

Fanfiction is no longer a community that can easily be ignored. The significant amount of work it has done in fandom, as well as its influence in popular culture, is something that must be
recognized and studied by the writing community and the academy. As Henry Jenkins says in “The Future of Fandom,” “there is a new kind of cultural power emerging as fans bond together within larger communities, pool their information, shape each other’s opinions, and develop a greater self-consciousness about their shared agendas and common interests” (Jenkins 363). Although academia has come to recognize the cultural impact of fandom and made significant strides to study it, there has been very little research done on what compositionally and rhetorically goes into fanfiction. Fanfiction is a form of creative writing, but it also a form of critical writing that often makes use of tools of rhetoric and composition. By acknowledging those tools within this paper, I hope the writing community can take the compositional power of fanfiction more seriously.

This power is subversive because it uses these tools to write narratives that the writing community generally does not offer. These narratives are more inclusive of LGBT+ and PoC characters, they are more actively engaged with the text than a literary analysis, and they are most often written by young, particularly female, writers. The narratives that these young writers offer to the world are usually subversive in that they give a different perspective that the writing community or canon works do not consider. These young writers also compose in a community that is highly self-sustaining. The fanfiction community allows young writers to develop through the help of feedback and beta readers. It also helps them grow by having an active discussion that surrounds the piece as it is being composed, and in turn, alternative discourse stems from subversive works. To this end, young writers in the fanfiction community are using powerful tools to write within a powerful and influential community. The writing of fanfiction has become a necessity in how fans view and read canon works, and this necessity should be acknowledged
and studied by the academic writing community. In it only in this acknowledgement that
fanfiction can be viewed as a legitimate for of writing.

Notes

1 In the context of my paper, I define subversive narratives as narratives that change details in the story to make
2 Sheenagh Pugh’s article, “Puppeteers,” says fan writers write because they want “more from” the narratives rather
3 The slew of negative connotations include copyright issues and social stigmas that surround the fanfiction
4 The first known organized “fandom” was the Star trek fandom, known better by the name of “trekkies.” Coppa’s
5 My timeline of fanfiction takes note of the “fanfiction-like” narratives that were produced in the 1800’s but the
6 The fandom community commonly refers to Fanfiction.net as FFN (Fanfiction.net). For the purpose of my
7 The questions in Larson’s proposal are divided into two categories: “Topics That Invite Comments” and “Topics
8 This “pyrating,” better known by the modern day term of “piracy” can be defined as “the action of reproducing or
9 The inclusion of LGBT+ discussion has always been a significant part of fanfiction. More on this can be found in
10 Fan forums, zines, and clubs have and always will be a significant aspects of fandom community and culture.
11 Tosche Station is a website ran primarily of group of writers who study “geek culture” and write on topics such as
12 Jenkins’s book, Textual Poachers: Television Fans and Participatory Culture, worked as a foundational study for
13 Jane Hu’s “The Importance of Fanfiction for Queer Youth.”
14 Just as Fanfiction.net is referred to as FFN within fandom, ArchiveofOurOwn.org is referred to as AO3. I will
15 See appendix for “round robin.”
Although performed by an individual person, reading is a communal effort. Because a beta reader works more like the “test audience for pre-release films” rather than a copy editor, usually before the beginning, or sometimes after the end, of a fic or chapter. Author's notes embedded within a story are generally viewed as distracting, pointless, and unwelcome. If additional explanation that cannot be incorporated into context is needed, the use of footnotes is perfectly acceptable and can often enhance a fic tremendously. That said, certain forms of parody may use the embedded A/N method deliberately for humor’s sake.

2) *Alternative Universe (AU)* - refers to a story of which there is a (often major) plot, setting, or character deviation away from established canon. AUs may be anything, but there are some themes that are quite common in a variety of fandoms such as Historical AUs, Highschool AUs, and/or Modern AUs, for example. Authors may also create and develop their own unique worlds in which to place familiar characters. Sometimes referred to as Alternate Realities, Alternate Timelines or Parallel Realities, but such precise distinctions are not usually necessary.

Appendix

1) *Author's Notes (A/N)* - refers to an author's personal notes about the story, writing experience, or whatever else the author wants to talk to their readers about. Usually included before the beginning, or sometimes after the end, of a fic or chapter. Author's notes embedded within a story are generally viewed as distracting, pointless, and unwelcome. If additional explanation that cannot be incorporated into context is needed, the use of footnotes is perfectly acceptable and can often enhance a fic tremendously. That said, certain forms of parody may use the embedded A/N method deliberately for humor’s sake.

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3) *Archive* - refers to a collection of stories by multiple different authors in one easy-to-browse location. Major fandom archives often host thousands of stories of every imaginable variety. Many archives are also multifandom or even themed, such as Crossover archives. *Fanfiction.Net* is the largest archive in existence, and thus the first archive most new readers discover. While admittedly a great starting place for delving into a new fandom, it is by no means the only archive for many varieties of fandoms or genres. More specialized archives can generally be found by a quick Google search of the name of your fandom/pairing/preference with either the word "archive" or "fanfiction" beside it.

4) *Badfic* - refers to stories written in a deliberately horrible manner as a special type of parody story. Badfics tend to use every cliché in the book, ridiculous out-of-character descriptions and dialogue, as well as awful grammar and spelling.

5) *Beta* (-'d, -read, or -reader) - refers to having someone knowledgeable in writing etiquette edit a story prior to posting. A beta-reader can catch not only the technical errors, but is often useful as a sounding board for improving the story itself. Betas can fill in plotholes, keep your characterizations on target, and help guide an author to new creative heights. Authors are fantastic and always appreciated, but betas make authors and fic better.

6) *Canon* - refers to elements established by the original source material (TV show, book, movie, etc.) itself for either plot, setting, or character developments. The official details, as it were.

7) *Continuity* - refers to the consistency within elements of a canon or fanfic's plot, characterization, settings, and other small details that add depth to the story. Failures or gaps in the continuity can be quite noticeable and may detract from the overall enjoyment of the work. Such gaps also make excellent fodder for authors looking to fill them in, such as with backstory or missing scene fics.

8) *Crackfic* - refers to stories in which completely ridiculous, unbelievable or insane things occur, often without reasonable explanation. It is so referred not only because such crackfics often seem as if they could only be conceived by an author riding a high, but also because they can be hilariously addictive to readers as well.

9) *Crossover (or X-over)* - refers to stories in which the characters, premises, or settings of more than one fandom coincide. Crossovers may consist of a complete blending of universes or only a slight, passing connection. Knowledge of both (or multiple) fandoms is not always necessary, but generally helpful to fully understanding the story.

10) *Disclaimer* - refers to the legal statement of ownership, or non-ownership, authors make regarding the use of canon characters, settings, premises, etc. Technically, disclaimers do not provide any legal protection against charges of copyright infringement, so it is not truly necessary to include them. However, they are considered a courtesy that is strongly encouraged, in that they do provide a valid defense against charges of plagiarism. The best disclaimers actually mention who the legal copyright holders are, which may mean the creator and/or production network. Most fanworks are generally considered to be
transformative and therefore fall under the "Fair Use" clause of copyright law, and
disclaimers help reinforce that distinction.

11) Editing Turn Around (ETA) - refers to a note to indicate the author (or commenter) has
added to or corrected something in their writing after it was already posted and made
public. Can be as little as fixing a missed spelling error, or a complete change of text.

12) Fanon - refers to common plot or character elements that were not established by the
original source material, but are generally accepted to be true by the fans anyway. These
are the “un-official” details. In some fandoms, fanon concepts have often become so
prevalent in the fandom that their origins (which fans came up with the idea first) are no
longer remembered.

13) Fan Service - refers to scenes or moments within the original canon source material that
are deliberate nods to the fans, such as in-jokes or bonus scenes that most fans can
immediately recognize as being targeted to them rather than just the general viewer
audience. Fan service indicates that the canon's creators and/or actors are aware of and
appreciate their fans' dedication and they wish to acknowledge it in some form by
catering to their fans' preferences. Oftentimes, this desire to please the fans is expressed
by playing up of the subtext between characters' relationships even though it is irrelevant
to the plot.

14) Feedback - refers to comments given to authors by readers about the fanfic as they read.
Readers who enjoy a story are encouraged to let the author know, either by private email
or a public review. Feedback acts as a form of extrinsic reinforcement, which means it
generates good feelings in the author. Those good feelings reinforce the author's desire to
keep writing. Feedback can be anything from a short "I love your story!" to lengthy
dissections of what works and what doesn't. Constructive criticism is generally
appreciated but criticism that is unfounded and harsh and usually referred to as flame, and
is generally not appreciated.

15) Fic - the abbreviation of fanfiction that is generally accepted and regularly used on
fandom.

16) Fix-It - refers to a specific type of alternate universe story in which the author attempts to
correct or rewrite something that they feel the original canon should not have done or
failed to do properly. Often, such fics will follow the canon right up to the certain critical
point, but then go off in whatever other direction the author decides would be best to
prevent or ameliorate whatever error they believe the canon produced. Fix-its are often
written in response to unwanted plot points within the canon, such as a beloved
character's sudden death, or to cover over obvious plot holes that the canon missed. Fans
who engage in fix-its may be known as "Denialists" because they refuse to accept canon
went the way it did when a single different choice at the critical point could have changed
everything.

17) Genderswap (-bender or -flip) - refers to stories in which a character of one gender
undergoes some kind of sex change at some point throughout or before the fic.

18) Headcanon (or Personal Canon) - refers to the personal beliefs or interpretations about
canon that an author or reader makes to explain or account for some aspect of the actual
canon. The headcanon itself, while not officially supported by the canon, tends also not to be actually disproven or refuted by the canon and will therefore seem plausible in the mind of the fan who imagines it. Headcanons are as many and varied as the fans themselves, may be about the past, present, or future of the character or plot, and can be shared by others if particularly enticing or believable. In fact, if a headcanon is so popular that it gets adopted by many members of a fandom, it may eventually become accepted as fanon for that fandom.

19) *Hiatus* - refers to a break of weeks or months between episodes of a television show, usually between seasons/series or over holidays. Authors may also take hiatuses from writing to prevent or recover from burning out. A hiatus does not mean the show or story is cancelled or abandoned, merely temporarily postponed.

20) *Kripked* - refers to stories or ideas previously conceived by fans suddenly becoming canonical because the original source material coincidentally also took the same path. Derived from show writer/creator Eric Kripke of *Supernatural*, who has repeatedly managed to validate fans' assumptions and predictions either accidentally or (perhaps) deliberately, as he is known to monitor fan activity and commit fan service.

21) *Masterlist* - refers to a single post which serves as the main point of contact for a collection of interconnected stories, either individual chapters within a larger work or a series of separate stories, which is collated into one place for ease of reading. Authors will often create a masterlist if their fics have been published across multiple platforms and cannot be easily found or cross-indexed any other way.

22) *Oneshot* - refers to a single story that can be read and understood in full without having read any other prior story are already finished and written completely prior to posting. They will not be continued, and are not related to any other story by that author. Usually posted all at once rather than in parts, often as a single chapter simply because it is easiest. May be any length.

23) *Plot? What Plot? (PWP)* - refers to stories with a defining characteristic of little to absolutely no plot.

24) *Round Robin* - refers to stories written by multiple authors taking turns; often open to the public so that anyone can add a passage to the ever-growing story.

25) *Self-Insert* - refers to a story that features an original character who deliberately and purposefully represents the author, for they have actually written themselves directly into the story to interact with the characters. Some self-inserts may be written from the second-person POV to allow any Reader to imagine themselves as the character as well. Most often used for humor, as a parody or to provide commentary, but may also be done seriously.

26) *Shipping/Ship = Short form of "Relationshipper"* - refers to someone who supports the idea of two specific characters being involved in a romantic or sexual relationship. The “ship” is the pairing, and most ships have their own in fandom nicknames to represent them.

27) *Slashfic* - refers to the presence of a homosexual relationship featuring at least one canon character. Derived from the "/" used to indicate the specific characters paired off;
originated by Kirk/Spock (of Star Trek) slash over 40 years ago. Male/male homosexual content is always known as "slash," while female/female homosexual content may also be known as "femslash" or "femmeslash."

28) **Spoiler** - refers to stories or comments which contain scenes or information crucial to a specific episode of the canon material, often about major plot points or character developments. The accidental or deliberate revelation of the information prior to seeing the canon material usually "spoils" the surprise/pleasure for the reader in discovering the information themselves. Warning for spoilers allows readers to make the choice themselves about whether or not they wish to proceed and discover the unknown information willingly or skip the story until later, instead of having the surprise ruined when they least expected it.

29) **Work in Progress (WIP)** - refers to the fact that the story is not yet completely written, but is actively undergoing updates and revisions. Some WIPs are updated frequently, even on regular schedules, while others are slower as inspiration strikes. Stories may go months or even years between updates, but if the author has not explicitly stated that it has been abandoned or discontinued, the chance still exists that it will be updated.

30) **Worldbuilding** – refers to the original fictional universe an author creates for their stories. Most fanfictions do not require worldbuilding as the canon itself provides that starting off point, but many AUs do indeed richly develop entirely unique universes with their own rules and backgrounds from which to frame their new stories.

**Works Cited**


Walking Railroads
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Abstract

Walking Railroads is a two-part novella expressly for a young adult audience. The first portion looked at challenges biracial individuals encounter when a young woman discovers she is biracial. The second observed the difficulties of interracial dating in the south. The first story begins in Birmingham, AL then travels through Tennessee and Florida as the main protagonist Alana Davis travels in search of her father and self-discovery. The second story takes place in Clarksville, Tennessee on the campus of Austin Peay State University and the surrounding area. It explored what might happen to an interracial couple that is dating in 1994-95. This topic is important to how we see everyday relationships and shows how far we have come from slavery or the mindset that people should stay in their racial dating quarters. The writing process of this creative research used articles, fiction, and nonfiction to guide the process. Publications about interracial couples such as, Vaquera and Kao’s “Public and Private Displays of Affection among Interracial and Intra-Racial Adolescent Couples” (2005) and Shawn E. Rhea "A Black Woman's Reservations about Interracial Relationships" (2006) provided insight for the characters. While books about the environment of interracial dating for example, Renea D. Nash’s “Coping with Interracial Dating” contributed to the setting and tone. Autumn and Julian are fictional characters who bring attention to the hidden obstacles among interracial couples. Alana is a character who hopefully will inspire people to learn about their heritage.

1. Introduction

The research conducted in the first half of this creative piece answered the following question: What happens to a 16-year-old girl when she finds out she is biracial? The plot of the first half of the story surrounds Alana Davis growing up in an African-American household in Birmingham, Alabama. She faced many challenges, such as difficulty being accepted by either race. When she reached the age of sixteen her father revealed that she was actually biracial. Which sparked Alana to set out to find her biological father. The research conducted for the second half focused on answering the following question: What happens to a couple that is interracial during the 1900s? The plot of this story surrounds Autumn Taylor as she enters into an interracial relationship with Julian Price, who is Caucasian. The story of what happened between the parents of Alana Davis –the protagonist from the first project– and the many challenges they faced
are now being told, such as difficulty being accepted by either race. How does dating of another race affect a family? What are the effects of this type of relationship? How is this kind of relationship dealt with socially? A young black female protagonist was chosen because of the first story. There is also the idea of understanding a female protagonist of African-American decent who struggles with trying to enter a world that does not often let outsiders in. The story is not solely about race, but class or social status as well. The character Mr. Price, Julian’s father, represents a part of this struggle. The Price family is not wealthy or living a life of luxury, but they do hold a name in the area that they live in. Although it is not Autumn’s goal to have a name of status, it does bring up the race contamination problem that will be discussed later. The title is relevant to the purpose of making decision and living with the choices you made. While that seems hard to believe, if one walks on a railroad they have to choose which side of the railing they are going to walk on. Afterward they will need to walk down the selected railroad. The same is with Autumn and Julian as they make choices that effect their loved ones and they have to live with those choices.

2. The research: literature
   a. A biracial narrative

   While taking an English class helped in the decision of a biracial subject, it was not the main contributing factor. There was already a present interest in the subject and other books in mind for continuing with the subject of biracial identity and the mixing of two or more races. Not many people take into consideration what it is like to be biracial, some people are enthralled with individuals of different races being together, while others aren’t so approving. There are many hard things in life people have to deal with on a
daily basis. When race is one of them, things become complicated, because society is black and white with no room left for gray. It is said that when biracial children reach adolescence they are more in tune to racial identity issues (Nuttgens 356). Thus was taken fictional and non-fictional female protagonists and select elements – telling a travelling, a coming of age, and a racial identity story – to address the biracial issue. The items were all included in the fictional piece. The overall hope is to uncover the answers to how the question of racial identity manifests, the emotional childhood memories that may not make sense (bullying/teasing), and the need to find closure when faced with the absence of information regarding identity. Using works of fiction like the main character in Toni Morrison’s *The Bluest Eye* brings to light this fact. An African-American female struggles with her racial identity through wanting the blue eyes of a white child, so that she may obtain her mother’s affection (Morrison). Alana has blue eyes and while she is not seeking the approval of her mother, she does want some form of acceptance from those around her. Maya Angelou’s autobiography, *I Know Why the Caged Bird Sings* recounts her childhood, telling a beautifully woven coming of age story (Angelou). By the end of part one of *Walking Railroads*, Alana’s story is just unfolding and hopefully seeming real for those who are reading. Zora Neale Hurston’s *Their Eyes Were Watching God* shows Janie Crawford’s desire for love and how she finds herself. She marries and is disappointed. Later she meets Tea Cake and he allows her to find herself and love and be loved in return (Hurston). Alana’s story aligns with Janie’s when it comes to the protection of those around her (i.e. Autumn, her mother) and how she want to get away to find who she is as a person and not what others are creating for her to be as a human. Simon Nuttgens’ article will support some of the claims made in the fictional piece, as
well as connect the fictional/nonfictional works that are not bi-racially oriented. It will also show that the situations presented are often visible in children that are biracial. Renea D. Nash’s *Coping as a Biracial/Biethnic Teen* details settings and circumstances that biracial teenagers face. It also looks into society’s view of biracialism and how they deal with these obstacles (Nash). Both of these scholarly works have provided the necessary facts to give Alana’s story real life effects, as well as add to the genre of realist fiction. Brenda Woods’s *The Blossoming Universe of Violet Diamond* tells the story of a young biracial girl who seeks out her African-American father’s side of the family, whom she hasn’t met (Woods). Heidi W. Durrow’s *The Girl Who Fell from the Sky* tells an impeccable story of a young girl who is forced to live with her African-American grandmother, whom she has never known, after the death of her African-American father and Danish mother (Durrow). The latter two books have influenced the need to find a drive for Alana as a biracial teen and child. They have given the few key details Alana needs in order to be complete from shared emotional trials to strength in finding one’s own identity.

b. An interracial narrative

The continuation of *Walking Railroads* introduces the parents of Alana Davis, –the protagonist from the previous research– a year before her birth. It starts in January and end in March three years after her birth. The story surrounds Autumn as she learns to balance a life outside of school, career, and success, thus keeping with tradition of a female protagonist as the center of the story. Renea D. Nash’s *Coping with Interracial Dating* helped to detail the setting and circumstances for the interracial couple. Nash used statements such as,
some things are making slower progress. For example, we are still a nation obsessed with color. Racism, prejudice, and discrimination all continue to exist. So when black boy meets white girl or Hispanic boy meets Asian girl, the answer to the question above, [what happens when a black boy meets white girl or Hispanic boy meets Asian girl? Do they fall in love, get married, and live happily ever after? Should they?] for most of society, is ‘No, everyone should stay with their own kind. (ix)

The book looked into society’s view of interracial dating where teens are involved and how they can deal with these obstacles (Nash). In the book, *African American’s and Whites: Changing Relationships on College Campuses* edited by Robert M. Moore III, there is an article written by Charles A. Gallagher, “Interracial Dating and Marriage: Fact, Fantasy and the Problem of Survey Data” that discusses the issue of ignoring the common factor for interracial dating and marriages, societies view:

the U.S. Census reports that interracial marriages increased by 800 percent between 1960 and 1990. [however] In 1998 interracial marriages accounted for only about 4% if all marriages in the United States even though 83% of blacks and 67% of whites approved of such pairings (142).

The information from this essay helped to determine the year and approval or disapproving thoughts of the people involved with Autumn and Julian. David M. Haugen the editor of *Interracial Relationships* was a major help in providing information that was relevant to 1994 and 1995. It gives essays that are personal accounts and scholarly based. An example is Shawn E. Rhea’s “A Black Woman’s Reservations about Interracial Relationships”, she stated
I appreciated […] two people refusing to let a societal taboo regulate their capacity to love, nurture and claim one another. […] Why do I no longer embrace such feelings whenever I come across a black man who has chosen to break the taboo, I ask myself? […] My feelings about black men dating white women are forever colored by the existence of a racial and sexual caste system that views black women as ball-breakers who are less-than-feminine, while white women are seen as accommodating and physically desirable (48-49)

It placed the mixed ideas about interracial dating for Autumn and her grandmother into something that could be understood and felt by readers. The essayist, Rhea also said, “Stereotypes hold power, and they have been bantered about so often people embrace them as truths” (48). Thus bringing out the idea that there are some people who only feel the way they do because they believe in the stereotypes that have been given to them. There is some truth to the statement that ignorance is bliss. If you don’t know that what you are doing is wrong, then how can you fix the problem. The same can be said for those who believe stereotypes. If they don’t know that the stereotype is false –there are some that are true– how can they change their beliefs? In addition to Rhea, there is Maria P.P. Root who wrote, “Family Intolerance is a Major Obstacle for Interracial Marriages.” She stated that, “The NORC data and my own interviews indicate that people of all races sometimes fear contamination, though for different reasons. Whites may fear loss of privileged status for their children and grandchildren, while people of color may fear loss of cultural identity” (69). The article provided the means to create characters that reflect the appropriate time period elements for particular characters (i.e. Mr. Price). She also
said, “[the] data show[s] that despite the increasing acceptance of intermarriage in this country, people are not necessarily pleased when it becomes personal. Families remain highly protective of their most significant ‘product’: future generations” (69). There is a fear of contamination that is present for not only current children, but future grandchildren. Thus why she talked about the “pseudo-closed [families]; they are sometimes able to grow over time to greater acceptance of an interracial marriage—but this often takes years, and sometimes the birth or death of a family member” (70). While there is a pseudo-closed family, there are also pseudo-open families that are more open to the idea of interracial couples. The book focused on the pseudo-closed family because it more appropriate to deal with when trying to show the issues in society. Grace Kao and Elizabeth Vaquera are the shared authors of “Private and Public Displays of Affection Among Interracial and Intra-Racial Adolescent Couples.” They stated:

> Romantic relationships offer another lens with which to view the relative distance between race and ethnic groups, but the lack of systematic nationally representative data has made it difficult to study these processes. Despite increasing interest of researchers in the formation of interracial relations, it remains unclear whether interracial and intra-racial pairings vary in their behaviors. (485)

Their findings provided the necessary information to balance the relationship of Darrius and Autumn (intra-racial) and Julian and Autumn (interracial). While the quote states that the behaviors are unclear, there is a comfort level in being with one’s own race compare to another. Jon Hurwitz and Mark Peffley the authors of *Perception and Prejudice: Race and Politics in the United States* said that they “found that southern whites routinely
probe others, especially outsiders, to discover whether they can frankly express their racial views (personal communication). In other words, open and sincere conversation about race is conditional” (4). This provided the non-communicative trait of Mr. Price, as well as added to his family traditional side of not being open about their opinions with race. Thus bringing me to my last quote from Hurwitz and Peffley that “the 1994 data also indicate that more than 60 percent of white southerners included in the study react negatively to interracial dating among teenagers” (52). Allowing the character of Mr. Price to not be racist, but disapproving and reacting negatively to the relationships. Interracial relationships are not the easiest relationship to be in when considering the outside world, but when it is just the couple and their family dynamic it is like all other relationships, unique and filled with love and understanding.

3. The writing process

The research was by far the easiest part of the project. Finding information about 1994-95 and interracial dating was simple and worry free. The hard part came when it was time to actually write the story. There was a battle between researcher and writer that made the transition difficult to complete. A part of the project is to read and find relevant information to the issues and circumstances in the book, but transcribing that information into a story is not always easy. As a writer for realistic fiction the information used needs to be accurate, but sometimes it is hard to know when there is too much fact and not enough fiction. There is also the issue of writing to the point that one forgets to insert the information, or it all gets jumbled up in the story and is confusing for the reader. Balancing the roles seemed to be the toughest job of the writing process.
When writing a story there is always the question of which point of view to use, first, second, or third person. In the previous research first person was used for an intimate feel, but for this research third person was used to not only create a magnifying glass look into the lives of the characters, but a focused view on each character involved in the separation of Autumn and Julian. The reader can see how all the characters put the relationship in a bind and later helped in causing the relationship to end. There is hopefully a learning tool in the third person viewpoint.

Developing character traits came naturally as each character was written. However there are a few traits that give definition to certain characters that help drive the story. Autumn has a fiery trait that causes her to speak what is on her mind. She often does not have a problem allowing this trait to dominate, but as she spends more time with Julian it can be observed that the trait is a protective mechanism she uses to keep people from hurting her. Julian appears to have a flirt trait that he does not seem to notice outside of the first chapter. The trait is passive in the sense that it happens without his knowledge or approval. He often finds himself helping others and it looks like he is “putting the moves on them.” Mr. Price has a tradition trait. Things are meant to be done in decency and order. He finds himself upset when he cannot keep in place the life he has and is creating. The blended traits of helpful and submissive belong to Mrs. Price and Jillian. They often work together in using these traits to meddle or stay out of trouble. Each trait creates a certain drive to push the story from beginning to end, whether it is having a trait that gets lost then reappears or using the trait consistently and putting other people in a bind because of it.
The time period was chosen because there was a desire to stay close to the present for the first half of the story, as well as show relevance of the ongoing issue of races not approving of interracial relationships. The location was chosen because of the placement of the state in the middle of the southern region and the familiarity of the city. It was a prime location because it is a medium sized community with a military base and college campus, making it a bit more susceptible to interracial dating.

4. The piece

a. Excerpt 1: Autumn meets Julian

[January 8, 1994]

The Ann Ross bookstore at Austin Peay was in full bloom. The employees were bustling about in search of items for the new students. While the old students searched around on their own. Autumn waltzed into the building without a second thought as to what she needed from the store. Five books for five classes, a new book bag because the old one had fallen apart last semester. It wasn’t surprising seeing as she had been using it since freshmen year of high school. Walking around with one strap and a hole in the bottom wouldn’t cut it this time. Autumn also needed to restock her pens, pencils, and folders; she had stacks of paper for days from her grandmother. She only needed all the things students who knew what they were looking for did on their own. Autumn slowly walked down the third aisle staring at each tag on the bookshelf that resembled the one for her class.

“I should have asked for help. It would have been a whole lot quicker that way,” she mumbled to herself.
Autumn had gone through the task of looking for school supplies before. She didn’t have a hard time finding anything, but she was struggling in this moment. She looked at each tag carefully studying the numbers. She hoped that each tag would match the letters and numbers on her sheet of paper.

“Doubt it. These employees look new,” a voice chimed in from Autumn’s right. She glanced toward it before furiously turning back to the bookshelf. A loose strand of hair fell in her face and the guy brushed it back behind her ear. Autumn snatched her head back from his hand and stood up straight.

“Excuse me?” she asked while throwing one hand on her hip looking at him.

“The employees look new,” he responded louder with an innocent face.

Autumn turned back to the bookshelf. She didn’t respond to the young man and made sure her eyes were fixated on a pile of mass communications textbooks. The young man’s eyes glimpsed over the paper in Autumn’s hand with the books she needed. He reached under where she was looking. She watched him as he grabbed two books from two piles placed right next to each.

“Here, this one’s for me.”

He leaned over and extended the book to Autumn. She took the book from his hand and her ring finger and pinky brushed against his hand. She looked up into his face and thanked him. He tried to play it off with a confident smile that said, no big deal. But instead she watched as his cheeks turned a mixture of hot pink and crimson red. Thus causing a gently giggle to escape Autumn’s lips.

“That’s cute, sir.” Autumn glided her finger back and forth as she pointed at his cheeks and watched as his entire face turned a deep red.
He looked away and coughed as if clearing his throat, “You can call me Ian.”

“Is that your government name or a cover up?”

The guy laughed at her straightforwardness. “That’s my official name as far as I’m concerned.”

“Well then Ian,” she made sure to say it sarcastically, “It was nice to meet you.”

Autumn started off back down the aisle in search of her other four books. Ian stood there confused. He wasn’t use to girls walking away from him. He might not have been the sexiest man on Earth, but between what he did look like and his personality, girls rarely walked away from him. He could count on one hand how many women walked away from him, the six-year-old girl whose mom he was flirting with, his sister when he was chatting up her best friend, and now the dark caramel skinned girl whose name he didn’t know. It wouldn’t sit well with him later if he didn’t do something about it.

“Whoa, what about your name?”

“What about it?” she asked unconcerned with the fact he obviously wanted to know what her name was.

“What is it?” he said. Autumn tilted her head.

“Sir, because you give me your name, it does not require me to give you my name.” Autumn picked up another book. “Also, you didn’t even give me your legal name. How am I supposed to trust you?”

Ian stared at Autumn like she was God’s gift to feminism. She was definitely in the right major, or she would be after reading all of those public relation and communication books. Ian shook his head and thought about what she said. If he learned
anything from his dad it would be to take the time to listen to a woman. Autumn searched through the bookshelf failing to find the book she wanted, again. Ian on the other hand was grabbing books like he owned the bookstore.

“My name is Julian Price. While you might not be able to trust me yet, I want you to start.”

Autumn rolled her eyes, “and why would I do that?”

Ian took the book Autumn had picked up and placed it back on the shelf. He then passed three books to Autumn before gently pressing the last book she was just looking for into her right hand. “We share a class. We have all semester to get to know each other.”

“Who says we have the same class?”

Ian picked up the same book before showing Autumn his list of classes and books. Autumn blew heavily and rolled her eyes again.

“Well fine then, but, keep your flirting to yourself or some other girl.” She waved her hand in the air as if to suggest any other female in the room but her. They both walked to the cashier as Julian thought over Autumn’s words.

“Only on two conditions.”

Autumn practically threw her books on the counter as she swirled around to look at Ian. “What upper hand do you think you have here?”

Ian disregarded Autumn’s words. “One, we exchange pager numbers.”

“Julian!” she exclaimed as the cashier finished her items and started collecting Ian’s things.

“Second, we go to dinner – tonight.”
“What?”

“You heard me. Dinner and your number. Otherwise all semester I will drive you absolutely nuts. And believe me, I know how to do it. I’ve been practicing on my mother and sister for years.”

Autumn shivered, “Do you have a piece of paper?” she asked the cashier.

“You’re actually going to do it?” the cashier asked.

“Look at that face. He is serious, and he is already driving me up the wall and it’s only been about twenty minutes.”

Autumn wrote down her pager number and a place to meet Ian later that night.

She didn’t think that much about it. It was a white boy that probably just wanted to tell his friends how lucky he got, or possibly build a friendship. It didn’t matter what his intentions were. They weren’t going to get in the way of her dreams. She had made it out of a rural area in Alabama and the only reason she was going back was to get her grandmother out of there. Autumn passed the paper to Ian and walked out the store, but not before telling Ian what she knew he desperately wanted to hear.

“My name is Autumn.”

b. Excerpt 2: Autumn meets Julian’s family

[July 15, 1994]

“Who is this?” there was no joy or anger; Mr. Price’s voice was dead.

Ian threw his head back from looking at Lola to attend to his father’s voice. His words were caught in his chest. He was so caught up in Lola that he had forgotten completely about why he was home. Ian glanced at Autumn, she was terrified. The goosebumps she had been looking at earlier were fully developed and Ian was sure that a
lot of the fear in Autumn was due to the look on his father’s face. He could tell by his
tone that his face was still as stone, except for that slight muscle tough on his right cheek
that caused it to jump without his approval.

“Dad this is Autumn, my girlfriend, she’s the reason I came home.” Mrs. Price
coughed throughout the latter part of Ian’s answer. She knew about Autumn, but she
didn’t think it was serious.

“I thought you came home to see us and Lola.” Mrs. Price interjected trying to
change the subject.

Ian didn’t know what to do. Lola had been his best friend since he could
remember. He didn’t want to hurt Lola by telling her that wasn’t true. She would know if
he was lying anyway. He had no idea she would be here, didn’t she recall him asking
why she was home. Considering his mother’s words made alerts set off in his mind the
more he thought about it.

“This is a setup isn’t it?” Ian said, it was meant to be in his head, but it made its
way into the general conversation.

Mr. Price turned a deadly stern gaze to Ian.

“What did you just say?” there was a trail of explicit words that followed as Mr.
Price stormed in to the kitchen telling Ian to follow suit while more explicit words fell
from his lips.

“Julian, what is–” He paused letting his thoughts fall into place.

He needed to be calm and quiet. There was no way he could rip Ian a new one
with Lola and Autumn in the living room next door. His image was everything to him, his
family was not racist nor would they be seen as racist. However that did not mean that his
son could bring a black woman into his home and announce he is dating her. He knows the plan, he knows how this all works.

Mr. Price placed his left hand on the bridge of his nose. “No Julian, just no.”

“I haven’t asked you anything.”

“Don’t you stand there and act like you bringing that girl into my house does not mean you don’t want to eventually marry her. And if that is not the case then you are not going to sabotage my plans by bringing another girl here to distract me. You are marrying Lola and that’s final” It took everything in him not to reach out and grab Ian as he spoke. Keeping his voice level low had gone out the window with every letter he spoke.

“Dad”

“Stop right there. I won’t be your dad if you keep seeing her. I told you that you could do whatever you wanted until you were eighteen, except get married or have kids. If you wanted to do something as stupid as lead a black girl on when you were younger that was your choice, but now” he chuckled dryly “that’s over and you don’t have any choices like that available.”

“Percy!” Mrs. Price said as she sucked in a load of air.

They didn’t notice her as she slid in behind them. Mr. Price’s flaming eyes dimmed as he took in his wife. Ian watched as his parents seemed to be conversing without saying a word to one another.

“Payton, I’m not catering to him, not on this.”

“You haven’t even given the girl a chance.”

“I don’t need to, her skin says it all.”
Ian shook his head. He knew his father was rigid and sometimes cold, but racist
never crossed his mind. His father never said or did anything to indicate that there was a
problem between black and white people. However Ian never put his father in a situation
that called for him to change or show his true attitude until now. Ian should have known
his father would act this way because the family’s image was important.

“I just realized that all you see first is color, but you know what dad, I don’t.” Ian
spoke up while his parents looked at each other.

“This perfect image you’re trying to paint isn’t anything I want to be a part of. If
you can’t accept Autumn, you can forget about me taking on the garage.”

Mr. Price’s face turned scarlet and his knuckles were a mixture of white and
crimson as he gripped his hands into a fist. Ian forced himself to remember he was
speaking to his father and not some stranger. It took every fiber of his being not to lose it
and tell him he couldn’t make judgments as he pleased, that because Autumn was of a
darker skin complexion it didn’t make her any less human than them.

“Julian Zachary Price!” Mrs. Price yelled.

She was louder than anyone in the house thought possible from her tiny frame. It
was the only thing the people standing in the living room heard from the entire ordeal. No
one could miss how livid she was at Ian. Disagreeing with his father was one thing, but to
blatantly defy, threaten, and raise his voice to his father was unacceptable.

“This conversation ends now. Take that girl,” Mrs. Price pause and corrected
herself, “You take Autumn home, to the dorms, or wherever she is from. When you are
finished go to your apartment, calm down, and we will talk about this later.” She hugged
him and felt his anger slightly ease away.
Mr. Price grunted and stormed out of the kitchen hitting Jill in the forehead with the door as he made his exit. He didn’t apologize as he kept to his path for the car. Once outside he cursed and yelled at Jack to move his car out his yard and anyone else who was parked in his way.

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Autumn lay on her bed and stared at her ceiling. She recounted the moments prior to her being on the bed and Ian on the floor sighing every five minutes. She didn’t hear anything from the conversation that he had in kitchen with his parent but Ian’s whole name. It didn’t matter that everyone was silent and trying to hear what was being said, they all were left puzzled. On the ride back to campus, Autumn wanted to ask what had happened, but she knew by Ian’s twisted face that he didn’t want to talk about it. She tried distracting herself but the issue kept pulling at her, even now in her bedroom she wanted to know.

“Ian stop sighing.” she spoke up without blinking or looking at him.

Without thinking Ian blew another heavy sigh. Autumn took the pillow beside her and hit Ian in the face. “I said stop. If you aren’t going to share then leave.”

“Sorry Attie.” the pain in his voice immediately made Autumn regret her words.

“Don’t be. I’ve just been trying to figure out what happened.” Autumn rolled onto her stomach and buried her face into her pillow. “Your dad was so mad and your mom wouldn’t even look at me. Your face has been contorted since you came out of the kitchen in your parents’ home. I’m worried about you.”
It was silent for a while before Ian spoke. He was weighing his options, continue with an open and honest relationship with Autumn, lie to her, or do not say anything about it at all. He got up from the floor and pushed Autumn over by the wall.

“Promise you won’t be mad or misunderstand.” Autumn nodded her head vigorously at his words.

“My dad doesn’t… um,” Autumn was granted with another sigh.

“He doesn’t like me,” her words were flat and without feelings.

“It’s not that, because he doesn’t know you. He hasn’t given you or us a chance. He likes tradition and order. We don’t follow either.”

A weak smile appeared on Autumn’s face. “Ian I’m not blind. I saw the way he lit up when he saw Lola.” The name rolled off Autumn’s tongue like the jealousy that boiled at the center of her core.

Ian scrunched up his face, “Lola is irrelevant. She’s my best friend, we grew up together.”

“It’s obvious that they want to marry you two off or something along those lines.” Autumn put her face on the wall and allowed the coolness of the old paint to ease her mind about the conversation.

“Well yeah, I noticed that too. However—,” he shouted the latter causing Autumn to feel a slight rumble from the other side.

“I don’t want to marry her,” Autumn turned and watched Ian’s blue eyes stare back at her light brown ones.
“That’s what angered my dad, I wanted to marry the black girl who runs when she sees other people running.” Autumn couldn’t help the burst of giggles that consumed her body into a shaking fit as the memory of their first outing flashed through her mind.

“That’s a black people thing, not an Autumn thing. If you want to marry me, what are you going to do about your dad?” She extended the marry in a teasing manner and earned a small pink blush from Ian.

He shrugged and pulled Autumn closer to his body. He wanted to kiss her but knew she would tell him to leave without even finishing the conversation if he tried it.

“It will be hard for him to get past it, which I understand. He wants me to marry well, produce some good offspring, and run the company, yada yada. I don’t want any of that, I want to do what I wanna do not what he thinks is best based of my grandfather’s will. I want you and travelling. If that means causing war then so be it. I’ve never fought my parents’ wishes after I turned eighteen, but now.”

“Ian I don’t want to come between you and your family. And what about Jill? How would all this affect her? I know you want to make this work, but we have to find another way.”

A smile was plastered onto Ian’s face as he thought about her sticking by him even though his family didn’t want her around. She was going to fight with him and not leave him high and dry like he felt she might. While it still was a possibility he didn’t want to think about it while it wasn’t a problem.

“Are you saying we should care what other people think about our relationship?”

“I swear you don’t listen to me sometimes. I’m saying what your family thinks is important. If your dad doesn’t like me, then who’s to say if we have kids he won’t like
them either? I want us to be able to share family moments with your family. I want my
kids to have both parents in the home and in a loving environment, particularly if I send
them to their grandparents who are of a different race.” she turned back onto her back.

“I refuse to let my children grow up like me.” Ian placed his hand in hers. Family
was a sore spot for Autumn. Her parents were never around after her eighth birthday. She
only lived with them for two. Autumn would often call her grandmother, mom to help fill
the void of her mother’s absence in her life. The words never seeped between her lips but
she hated her parents for choosing drugs over her. It wasn’t fair that she had few
memories of them doing what they were suppose to, and many others of things that
should have never happened.

“Ian I don’t know from experience about your family, beyond today. But from
what you and Jill tell me about your mom, I want to be around her as much as you like to
tell me you love being around her. I get that your father isn’t the most giving, but at least
he is present and you have to be thankful for that at the least. Promise me you won’t ruin
that for yourself or our future.” Autumn turned back onto her side to look at him and put
out her pinky. Ian followed suit and wrapped his pinky around hers before clasping their
thumbs together to seal the promise.

“I love you.” The words slipped out of Ian’s mouth so fast that stopping them
never crossed his mind. It wasn’t the first time that he had told Autumn, but it was the
first time that the passion in his heart for Autumn enveloped the words while he was
pinky promising her. It was as though he was telling her he would love her forever.
Autumn’s cheeks burned her mocha cheeks shown a hint of ruby. She took the
opportunity of Ian beaming from his accomplishment to out due him. She had wanted to do it for months, but wasn’t sure until this moment if it was safe.

Autumn had never given herself completely to a man before, and the fact that her grandmother warned against boys made submitting even harder. Ian had shown her in the last six months that he was different. He didn’t call her out of her name, use embarrassing pick-up lines, or lead her on pretending that they had a future. If anything he presented her with a future as bright as the moon in an open forest. He didn’t need his father’s approval to provide for Autumn, but she wanted it and knew deep down that Ian did too. Autumn leaned in and whispered she loved him too before she kissed him and allowed him to show her what love could be if she let down all her walls.

c. Excerpt 3: Autumn’s encounter with Mr. Price

[August 10, 1994]

Autumn rose from her seat after everyone else had rushed out of the class. She wasn’t in any hurry to anywhere for fear of being bumped and knocked to the floor. Her classmates seemed to be vicious about the laws of public relations when it came to exiting the hour and fifteen minute class. Autumn’s stomach rumbled, she placed her hand over her abdomen and mentally fussed at the fetus for acting like she hadn’t eaten before class. When she finally exited the classroom she walked slap into a hard surface. Autumn looked up without saying a word. It was as though the atmosphere was without oxygen and she was trying to stay alive by holding her breathe.

“Hello Miss Taylor, can we speak?” the familiar voice of Mr. Price spoke.

Autumn shook her head up and down in agreement with his question. When they started down the hall Mr. Price put his hand near Autumn in his pocket while she played
with her fingers against the front of her stomach. A part of her wanted to run to protect
her growing baby, but the other part of her longed for Mr. Price to accept her and
eventually his grandchild. The only problem with the latter was that only her family knew
she was pregnant. Ian had been so busy trying to make his family understand not only his
desire to be with Autumn, but the plans he had for himself that communicating with
Autumn had been on the back burner.

It didn’t concern her as much because she knew what was going on. It wasn’t
until three weeks ago when she realized he had gotten her pregnant that panic ensued.
When she found out she cursed up a storm and cried. She had so many plans and this
pregnancy wasn’t a part of it. She called her grandmother and asked what she was
supposed to do now. Her grandmother supplied her with a lecture that seemed to last
days. However Autumn was grateful that her grandmother still produced love in every
angry word she said. After calming down and having time to think her grandmother was
gentler and requested Autumn come home. At first Autumn was mad about the ordeal,
but as time went on and she changed her plans in relation to her baby, she found herself
as happy as a kitten. The baby was a gift to commemorate their love.

Autumn hadn’t gotten to cloud nine about the situation alone, while her
grandmother was barking orders about what not to do, she had Darrius. Autumn had
known Darrius from high school. As they kept in touch here and there over the years he
had been a great friend. It wasn’t her intention to tell him, but when they spoke on the
phone he could tell something was bothering her. She spilled the beans and he comforted
her. She leaned on him and he held her up, assuring her that everything would work out.
He reminded her that she was in control of her life even when it didn’t feel like it. He had turned into her Lola and although she never admitted she was okay with that.

“Here is fine.” Mr. Price placed his hand out and Autumn bumped into it and instinctively put her hand on her stomach before snatching it away.

“Sorry.” she mumbled and he grunted in reply.

“I have spoken with Ian and my wife. They haven’t changed my mind about you. It’s not that I don’t think of you as a human being as Ian likes to think.” He rubbed the back of his neck. “It has everything to do with what has already been set in stone.”

“I understand that, but sir if Ian isn’t happy how can he do his best?”

“He will.” His friendly tone faltered and the frustration he held about the whole issue showed in his face.

“You don’t know that.”

“I do, because he is my son and I expect nothing but the best from him. He knows that I am only complying with speaking to him because of his mother. If it was up to me I would show his spoiled butt just how much influence I have around here.”

Autumn could tell where this was going and scratched at her arm in discomfort. He wasn’t going to prove to his son what he could do because he had his mother to protect him, but the next best thing was her. As the conversation went on with her bluntly not taking the hints, he came out with his true intention.

“What can I give you to make you go away?”

“I want your son.” His anger was evident now.

“That’s not an option. He is marrying Lola, not you. I don’t care what you or he thinks. I won’t be defied. You take the money or you leave with nothing. I’m not one for
games. I might not be filthy rich, but give me your price and I will get every cent to you.” His words were like fire and each one burned her heart.

He walked away in haste but not without reminding her that she was to stay away from his son or face his wrath. When he was no longer in sight Autumn dropped the hardened facial expression she had created to keep from crying in front of him. It was the same face she had when her father popped back up high as a kite telling her about how much of a mistake she was. How it was her mother’s fault for not wanting to do the right thing and abort her because of some heartbeat she heard. He was different from the man that took her in his arms as a child protecting her from her fears. She knew that he had long surpassed frying all of his brain cells, but his words still hurt whether he meant them or not.

Autumn wanted to collapse on the grass and cry, but even as the tears pooled in her eyes she would not let them fall. She would not let her child know how weak she was, even if they would never know this moment happened. Autumn readjusted her backpack and headed to get something to eat. She was hurt, but not broken.

5. Conclusion: aspirations

The hope for this summer’s research is to add to the realistic fiction pool of interracial literature. The overall goal is to bring to light the continual slow progression of interracial couple approvals overall and the hidden issue of race that is often not mentioned. It is not about the animosity between blacks and whites that is of concern, but the overall and inclusive problem with race as a whole. Research demonstrates that all races at some point or at some level do not approve of interracial relationships. The goal is to help youth be aware of this problem and inspire them to find ways to improve the race issue.
The couple in the narrative is not only focused on discussing race and acceptance of it, but is seeking the approval from parents to live a life that they want, not dictated by family traditions or parental motivations. There is also the problem of making it in life even when there seems to be an obstacle at every turn. The female protagonist is the one who deals with concurrent situations that could keep her from accomplishing her dreams and goals, but she is resilient. There is a great expectation that she will be a motivation for young women of any race to push through tough times and make a way even when you cannot see one. It would be great if she could help men too in that aspect, if not, then Julian and Darrius would be great role models for young men as well. To summarize, eliminating elements of humanity that need improvement is the goal and hope of this project.

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Redefining Health Habits in College
Kimberly McDade
Stacy Bishop, Ph.D.

Abstract

College students everywhere are fighting a growing problem, the battle often known as the “Freshman 15.” This war on weight gain, which most often leads to obesity, is not only battled by freshmen, but also affects sophomores and upperclassmen. It may be seen immediately as inactivity, fatigue, and low grades. However, the biggest problem with students gaining weight in college is the progression and development of chronic illness and diseases after college, affecting their long term health. The purpose of this research was to investigate and understand the effects of the health habits of students on the weight gain acquired in college and the implications they have on long term health. A survey was conducted examining participant’s nutritional and exercise habits as a pilot study in the summer of 2015. The participants were students of a small liberal arts college in the south. They were undergraduates, aged 18 and above. This pilot study was modified to include sleep habits and was administered in the spring to include more students living on campus. It is the researchers hope to provide information that will assist students in improving their health habits in the college environment that will ultimately help assist them in the battle of chronic disease.

Introduction

According to The State of Obesity: Better Policies for a Healthier America, “Alabama now has the eighth highest ranking adult obesity rate in the nation”, which is associated with diabetes and heart disease, and other illnesses (Alabama, 2015, para. 1). College life is looked at as an opportunity to improve the student and help achieve his/her endeavors to accomplish the best in life. However, due to the association of weight gain and other negative health habits, colleges and universities are now trying to their efforts to help decrease this issue for college students. They recognize that students transitioning from home to living on college campuses can be faced with challenges to good health habits.

The purpose of this research is to investigate the health habits of college students and find out the opportunities that they have available to assist them in developing
healthy nutritional and exercise habits in the college campus environment compared to
those they had already established at home. This study is important for college students
everywhere. The health habits developed in college can lead to long-term benefits in the
fight against obesity, diabetes, and other illnesses and can offer a greater chance for
longevity and wellness for their future.

Universities are making more efforts to help motivate students toward better
practices after seeing such a large number of students showing declines in healthy
practices and increases in weight gain. As seen online, academic environments like that at
Temple University note the tendency for these dietary patterns to develop and Student
Health Services addresses health issues on their websites with helpful tips (Nutrition:
Freshman 15, 2013). Middle Tennessee State University has information sheets available
in the student café regarding nutrition that are easily seen on visitation there. They also
have large salad bars with vegetable and fruit options available. These are just a few
examples of actions colleges are implementing and is not in any way an attempt to
represent all the efforts made or available on those campuses.

When observing the University of Montevallo as an example, there are several
options available for the wellbeing of its students. In the cafeteria, there are fresh fruit
and vegetable choices, along with healthier foods like veggie wraps and veggie burgers.
There is a spectacular student activity center with an indoor track, swimming pool,
weight room, gym, racquetball rooms, etc. Intramural sports, team sports, yoga, aerobics,
vallo-cycle, walking/running groups, and walking and park trails are available. There is
the UM Lake for those interested in kayaking and canoeing, as well. Filtered water sites
are located in the activity center. UM counseling provides services where eating
disorders, stress and other mental health related challenges can be addressed.

This project attempts to answer some of the following questions that arise when
the efforts colleges and universities exert are not as effective as expected, such as: Is
campus college life contributing to the health habits of college students and producing
positive outcomes? Are students taking advantage of the efforts of the colleges and
universities to promote healthy habits? Do the students understand the benefits of proper
nutrition, exercise, and the lifelong impact they have on wellness? What needs to be
added or changed, and what other things can be explored to encourage healthy choices in
student life? These are questions that need to be addressed and answered in order to
reduce health challenges of obesity and chronic illness.

**Literature Review**

Weight gain during the first year of college has become known as the “Freshman
15.” Though all students may not gain this much weight, some may actually gain more,
and some not at all. “Only one study found a decrease of weight (1.5 pounds) during the
freshman year, whereas several others showed an average increase of weight for the
freshman population, ranging from 2.4 to 4.6 pounds” (Smith-Jackson & Reel, 2012, p. 1).
Weight gain can also continue through the college years, which can lead to obesity
and on to disease. Sadly, many students carry this weight on until well after college
setting themselves up for chronic disease and challenges to long-term health. While some
argue the validity of the Freshman 15, the effects of college weight gain are showing up
as long-term challenges to health (Smith-Jackson & Reel, 2012, p. 1).
Most students believe that gaining weight (particularly the first year) is unavoidable (Jung, Bray, & Ginis, n.d., p. 523). In reviewing other studies that address the weight gain, and other habits that affect college students, researchers report that eating becomes an act of socialization more than a time to feed and nourish the body. Students hang out in the cafeteria for long periods of time and most activities involve some form of eating. This leads to a lot of grazing, eating that continues over a longer period of time than necessary (Franklin, 2013, p. 1). This causes weight issues in a lot of students. It leads to extra pounds from the extra calories taken in. An article from Oregon State University, News & Research Communications stated that college students are not eating enough fruits and vegetables, that some are not getting even one serving a day (Study College Students, 2011, p. 1). This shows up as a deficiency of proper vitamins and minerals because the foods they are ingesting are nutritionally void.

According to studies by Ha and Caine-Bish (2009), the foods students are taking in are low in fiber; vitamins A, C, and E; folate; iron; and calcium. This alone is a problem, starting with weight gain but leading to other health issues. Other habits college students display that should be a concern would be skipping meals and snacking on high calorie foods, also using unhealthy diets to lose weight. Students typically are less aware of the health benefits provided by eating fruits and vegetables than older adults (Ha & Caine-Bish, 2009, p. 103). This makes it easier for students to continue unhealthy food practices.

A study by Jung, Bray, and Ginis (n.d.), assessed the stability of diet and physical activity and their relationship to weight changes in first-year university women. They hypothesized the women would lower their levels of physical activity and increase levels
of caloric intake causing weight gain in these first year students (Jung, Bray, & Ginis, n.d., p. 524). Their findings support that a combination of eating behaviors of college students, not just increased caloric intake, and physical activity all come together to cause an increase weight gain (Jung, Bray, & Ginis, n.d., p. 528).

Two of the objectives of Healthy Campus 2010 are as follows:

1. To improve health, fitness, and quality of life through daily physical activity in the entire population... we will increase the proportion of USC students who engage in moderate physical activity at least 3 days per week for 30 minutes OR vigorous physical activity at least 3 days per week for 20 minutes (Healthy Campus, 2010, p. 2).

2. To promote health and reduce chronic disease associated with diet and weight...we will increase the proportion of USC students who consume at least five daily servings of fruits and vegetables. (Healthy Campus, 2010, p. 3)

Sleep is essential for healthy living (Lohsoonthorn et al., 2013). Proper rest is crucial in making and repairing cells. It is beneficial for proper brain function and fighting infection. For example, when you don’t get enough sleep you often experience fatigue, slow reaction times, low mood levels, and bad decision making as a result (Why is Sleep Important, 2012). There are many negative conditions associated with improper sleep. When evaluating sleep there must be a knowledge of both quality and duration (Lohsoonthorn et al., 2013).

**Methodology**

The data in this quantitative research study was obtained through the use of a survey of questions regarding health and wellness habits (see Appendix A). This survey
was approved by the Institutional Review Board of the university. Questions included the following: How many times a week do you eat vegetables? How often do you exercise or participate in organized fitness classes? It was offered to undergraduate students at the University of Montevallo, ages 18 and above. The survey was presented to various classes at the university. It was introduced by the researcher, and an informed consent was signed by the participants willing to volunteer, then the survey was administered. The survey addresses behaviors from both before and while attending college.

**Results**

**Pilot Study**

In the pilot study from the previous year, there were 69 participants including 48 commuters, 20 campus residents, and 1 non-responder. The findings of the survey from the pilot study were counted and recorded using Microsoft Excel software and statistically analyzed with IBM SPSS Statistical Software under the assistance of Dr. Gregory Longo, Assistant Professor of Psychology. The data showed (see Table 1) no significant difference in the means with the exception of water intake. Although when looking at the individual means a decline in habits is apparent. With the exception in the intake of water and fish all the numbers were lower during college attendance. One expected result was that the nutritional habits of the participants that exercised routinely were better than those that did not exercise routinely.
Table 1

*Paired Results from Pilot Study*

<table>
<thead>
<tr>
<th>BEFORE COLLEGE</th>
<th>Mean</th>
<th>DURING COLLEGE</th>
<th>Mean</th>
<th>Sig.(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweets</td>
<td>3.01</td>
<td>Sweets</td>
<td>2.87</td>
<td>.199</td>
</tr>
<tr>
<td>Soda</td>
<td>3.14</td>
<td>Soda</td>
<td>2.94</td>
<td>.211</td>
</tr>
<tr>
<td>Water</td>
<td>3.91</td>
<td>Water</td>
<td>4.23</td>
<td>.012</td>
</tr>
<tr>
<td>Fruit</td>
<td>3.12</td>
<td>Fruit</td>
<td>2.93</td>
<td>.107</td>
</tr>
<tr>
<td>Vegetables</td>
<td>3.01</td>
<td>Vegetables</td>
<td>2.93</td>
<td>.443</td>
</tr>
<tr>
<td>Fish</td>
<td>1.82</td>
<td>Fish</td>
<td>1.99</td>
<td>.117</td>
</tr>
<tr>
<td>Exercise</td>
<td>2.90</td>
<td>Exercise</td>
<td>2.71</td>
<td>.175</td>
</tr>
</tbody>
</table>

**Pilot study nutritional results.** Table 2 lists the nutritional results from the pilot study according to number of participants and percentage of participants and their specific response. This chart was prepared to identify areas of concern in the nutritional information. When looking at this chart the areas of difference can be seen on a broader scale. Although there are some differences (as in Table 1 indicating the means and differences) they are very small but definite areas of concern when considering issues regarding obesity leading to challenges to good health. There was a decline in soda and sweets after college and no change in the low intake of vegetables. Also noted was a decrease in fruit (a negative change) and fish was never eaten by a large majority of students.
Table 2

Nutritional Results from Pilot Study

<table>
<thead>
<tr>
<th>Item</th>
<th>Before College Number of Participants</th>
<th>Before College of Participants Percentage</th>
<th>Frequency</th>
<th>During College #</th>
<th>During College %</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soda</td>
<td>19</td>
<td>27.5</td>
<td>5-7/wk</td>
<td>14</td>
<td>20.3</td>
<td>5-7/wk</td>
</tr>
<tr>
<td>Sweets</td>
<td>8</td>
<td>11.6</td>
<td>5-7/wk</td>
<td>7</td>
<td>10.1</td>
<td>5-7/wk</td>
</tr>
<tr>
<td>Water</td>
<td>32</td>
<td>46.4</td>
<td>5-7/wk</td>
<td>43</td>
<td>62.3</td>
<td>5-7/wk</td>
</tr>
<tr>
<td>Fish</td>
<td>26</td>
<td>38.2</td>
<td>Never</td>
<td>23</td>
<td>33.3</td>
<td>Never</td>
</tr>
<tr>
<td>Veg.</td>
<td>10</td>
<td>14.5</td>
<td>5-7/wk</td>
<td>10</td>
<td>14.5</td>
<td>5-7/wk</td>
</tr>
<tr>
<td>Fruit</td>
<td>11</td>
<td>15.9</td>
<td>5-7/wk</td>
<td>8</td>
<td>11.6</td>
<td>5-7/wk</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eat Out</th>
<th>32</th>
<th>46.4</th>
<th>1-2/wk</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM Cafe</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pilot study exercise results.** The top reason responders participated in exercise was to stay healthy. A little over half or 55.2% of participants exercised at the recommended moderate level of intensity. Exercise activities included: cardio exercise (73.9%), utilized the SAC – 47.8, participated in organized classes – 13%, and participated in intramural activities – 39.1% (see Figures 1 and 2).
Figure 1. Exercise activities by participant and percentage.

Figure 2. Exercise results with types of exercise.
Modified Study

The modified survey findings (see Appendix B) conducted spring semester had 108 participants, 50 commuters, 57 residents, 1 non location responder. Excel Software and IBM SPSS Statistical Analysis Software was used for the results. The findings for the study this time showed a significant decline in the data means for the overall health habits of college students.

Descriptive statistics.

Table 3. Before College

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13.1250</td>
<td>4.71699</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>15.0769</td>
<td>3.59308</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>14.2258</td>
<td>4.28727</td>
<td>31</td>
</tr>
<tr>
<td>4</td>
<td>14.7368</td>
<td>4.95212</td>
<td>38</td>
</tr>
<tr>
<td>5</td>
<td>10.5000</td>
<td>3.53553</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>14.2800</td>
<td>4.52397</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4. After College

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11.2500</td>
<td>5.20897</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>13.3571</td>
<td>3.56494</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>12.2667</td>
<td>4.78455</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>14.0000</td>
<td>4.86386</td>
<td>36</td>
</tr>
<tr>
<td>5</td>
<td>14.5000</td>
<td>7.77817</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>12.9388</td>
<td>4.79651</td>
<td>98</td>
</tr>
</tbody>
</table>

Nutritional results. There was also a decreasing trend in fruits, $T(105) = 1.886$, $p < .062$. The change in fruits and vegetables revealed a significant decrease (see Table 5). Water was noted to have a significant correlation but no significant difference. The change is fish was not found to be significant.
### Table 5

**Fruits and Vegetables Paired Samples Test**

<table>
<thead>
<tr>
<th></th>
<th>Paired Differences</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Std. Error Mean</td>
<td>95% Confidence Interval of the Difference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 1</td>
<td>fruit - Cfruit</td>
<td>.198</td>
<td>1.082</td>
<td>.105</td>
<td>-.010</td>
<td>.406</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2</td>
<td>veg - Cveg</td>
<td>.212</td>
<td>1.067</td>
<td>.105</td>
<td>.004</td>
<td>.419</td>
<td>2.021</td>
<td>103</td>
</tr>
</tbody>
</table>

**Exercise results.** There were 55 students of the 108 participants that exercised regularly. Most students (69%) responded they exercised for cardio effects and only 16% for stress relief. In the response to 60 minutes of exercise by participants there is no finding of significant change. However, 37% of responding participants indicated they exercised at a moderate level of intensity as recommended (American Heart Association, 2015).

**Sleep results.** The students reported to have rested better before attending college. There were no participants that indicated they never rested at home but 3.7% indicated they never got restful sleep on campus. There were 21.3% who responded they always rested at home but only 11.1% responded they always got restful sleep on campus. Only 29.9% of participants responded that they slept the recommended 7-8 hours (How Much Sleep is Enough, 2012) and 5.7% slept 8 hours after college, while 37.4% slept 7-8 hours and 13.9% slept 8 hours before attending college. There were 24.5% that slept 6 hours or less in college compared to the 19.4% that slept 6 hours or less at home.
Conclusion

The age-old theory of the Freshman Fifteen is still a reality despite efforts by universities to provide healthier nutritional choices and exercise options. The results of this survey are disappointing in supporting the effectiveness of the university’s wellness efforts. There may be some skew to the results because of the large number of commuters. Overall the results of this study were unexpected. They support the issue that college students’ health habits are not improving significantly.

The nutritional habits showed a great need for improvement. A large number of students never ate fish, while vegetables and fruit were severely low on the frequency intake list. While water was taken in significantly, all values were well below recommendations for daily allowances.

Cardio exercise was the most popular type of exercise. Over half of students did exercise at the recommended moderate intensity. A little less than 50% of students utilized the student activity center. Organized classes only had 13% participation. Intramural activities lodged 39.1% of student participation.

As can while be imagined, there was a definite decline in student sleep habits in college as compared to home. There are many reasons for this change as parental control is replaced considerably by a new found independence. Students are staying up late to study, hang out with friend, or just because they can. They don’t realize the havoc it can cause with their health.

Students do not appear to be aware of the benefits of healthy habits whether short or long term. Obesity has be shown to be associated with chronic disease. Yet when
placed in the academic community with the benefit of nutritious food choices and various options for physical activity, there is still a significant decline in the healthy habits. Sleeping habits were revealed to decline after college as well. Somehow colleges and universities must explore further opportunities to improve the awareness and advantages available on campus for students to develop wellness and understand the long term benefits in diminishing chronic diseases in their future. There are numerous options the researchers realize that were not taken account for such as varying cultures, habits, and home environments of the many student. It is hoped that some of these variables may be

**Recommendations for Colleges and Universities**

Efforts by college campuses may need to include more information on nutritional, exercise and sleep as well as on their long term benefits, increase the number of programs, and find ways to motivate college students to take advantage of wellness options which could promote better health benefits long term. With the understanding of the health habits of college students examined, some considerations for improvements would be as follows:

1. Market healthier food choices by strategic placement in highly visible areas
2. Provide nutritional breakdowns indicated at each food item in the cafeteria
3. Provide healthier alternatives placed above/near high calorie items
4. Work with the student dietetic association, if available on campus, to offer monthly nutritional moments (programs) such as food demos, flyers and information booths, weight mgmt. strategies, etc.
5. The SAC (student activity center) could offer training sessions on equipment, post banners of different activities, indoor walking track, gym, and swimming pool for
individuals or groups, have desk staff give information flyers and talk to students to promote the activities available and their health benefits

6. Intramural activities should be promoted - tryouts, practices and games - not just leave it to the teams

7. Consider Nutritional and Fitness Fairs each semester

8. Information booths should be available periodically from the cafeteria, the student dietetic association, and the student activity center, along with student life, on wellness opportunities on campus

9. Provide wellness coaches, physical activity training and nutritional assistance for student guidance for substantial and sustained lifestyle changes. This is especially an option when schools with Kinesiology and Dietetic programs coordinate and may be able to utilize interns and/or graduate students in this capacity

10. Increasing number of Health Events and Promotion and marketing of these events

11. Offer programs that encourage food, exercise, and sleep participation, i.e. special event tickets, bonus bucks for achievement of weight loss, fitness and sleep goals; cooking retreats (quite often students have little to no cooking experience or healthy meal preparation; Try It You’ll Like It Food Booths)
References


Understanding the Adversities that Affect First-Generation Students and Their Transition to Higher Education

Paris Nelson

Dr. Tiffany R. Wang

Abstract

In this study, I explored adversities that impacted first-generation students’ high school experiences, transition from high school to college, and college experiences. Through semi-structured interviews, I identified two adversities first-generation students experienced during high school, five adversities first-generation students experienced during high school/college, described how these adversities impact first-generation students’ high school/college experiences, and described how first-generation students overcame adversities as they pursue high school/college. First-generation students from six institutions in the Southeast traced their high school experiences, transition from high school to college, and college experiences.

Introduction

For many students, the transition from high school to college can be an exciting and enriching experience as they leave home to come to college where they will pursue a major that will prepare them for a fulfilling future career as well as extracurricular activities that will help them develop as people. Equipped with specific advice from parents who have successfully navigated the college experience and completed a four-year college degree, these students often transition seamlessly to college confident in the knowledge that they belong in higher education and will persist to graduation. However, for some students this experience does not reflect their day-to-day reality. Instead, the transition from high school to college is turbulent and fraught with obstacles and adversities that inhibit college success. This is often true for first-generation students (FGS) who come from households where neither parent completed a four-year degree. Thus, FGS often experience significant difficulties transitioning from high school to college as they doubt that they will belong in higher education and wonder whether they have the necessary knowledge and skills to persist to graduation.
Over the years, researchers have studied high school and college student populations extensively. High school and college students share many common characteristics including race, age, gender, and socioeconomic status. However, one defining characteristic that distinguishes some students from other students is generational status. FGS are students who are the first in their families to enroll in college and complete a four-year degree. They differ from continuing generation students (CGS) who come from families where parents have successfully enrolled in college and completed a four-year degree. Researchers who study FGS highlight the common adversities FGS face such as academic (Bragg, Eunyoung, & Barnett, 2006; Graham, 2011; Orbe & Groscurth, 2004; Tate, Williams, & Harden, 2013; Wang, 2012, 2014a, 2014b), financial (Graham, 2011), family (Blackwell & Pinder, 2014; Orbe, 2008; Orbe & Groscurth, 2004; Tate et al., 2013; Wang, 2012, 2014b), and personal (Graham, 2011; Orbe, 2004, 2008; Orbe & Groscurth, 2004; Tate et al., 2013; Wang, 2014a, 2014b) obstacles that can greatly affect FGS’ success in higher education. FGS face many of these adversities as they transition from high school to college and begin to negotiate their home and college life identities (Graham, 2011; Orbe, 2004, 2008; Orbe & Groscurth, 2004; Tate et al., 2013). To understand how these obstacles and adversities shape FGS’ high school and college experiences, it is important to explore the following research questions:

**RQ1a:** What adversities do first-generation students experience during high school?

**RQ1b:** How do adversities impact first-generation students’ high school experience?
RQ1c: How do first-generation students overcome adversities as they pursue high school?

RQ2a: What adversities do first-generation students experience during college?

RQ2b: How do adversities impact first-generation students’ college experience?

RQ2c: How do first-generation students overcome adversities as they pursue college?

Rationale and Literature Review

High School Experience

FGS first begin to experience these adversities in high school. The first adversity FGS experience is a lack of academic preparation (Graham, 2011; Orbe, 2008; Tate et al., 2013). This lack of academic preparation occurs when FGS come from families where their parents never went to college or failed to complete a four-year college degree (Graham, 2011). This means that FGS do not know how to navigate the college admission process or pay for college (Graham, 2011). This lack of knowledge can also impact FGS personally in that they lack confidence about their ability to succeed in college (Graham, 2011; Orbe, 2008) and doubt that they will be able to fit in with other college students (Orbe, 2008).

The second adversity FGS experience is significant financial barriers (Graham, 2011; Tate et al., 2013). This lack of financial support occurs when FGS come from families where their parents do not have sufficient income to fully fund their FGS’ college education (Graham, 2011). This means that oftentimes FGS do not have the necessary amount of funding to adequately support their efforts to achieve a four-year
degree such as ACT exams, ACT preparation courses, dual enrollment courses, and application fees (Graham, 2011).

The third common adversity FGS experience is a lack of family support and guidance (Graham, 2011; Wang, 2012, 2014a). This lack of family support and guidance occurs when FGS come from families where their parents never went to college and are limited by the amount of guidance they can provide due to their inexperience with the application process needed to gain admittance to a postsecondary institution (Graham, 2011; Wang, 2012, 2014a). Due to this lack of family support FGS often struggle locating a stable support system to guide them through their higher education journey (Blackwell & Pinder, 2014; Wang, 2014a, 2014b). Thus, mentors who have navigated the college experience can be very valuable.

The fourth adversity FGS experience is personal adversities such as feelings of inadequacy about their lack of exposure to college level courses and the collegiate environment (Graham, 2011; Orbe, 2008). These feelings often arise from FGS believing that they are responsible for representing their respective groups of people, which can add high levels of stress (Orbe, 2008). In a study by Blackwell and Pinder (2014), FGS’ feelings of inadequacy often occur due to lack of exposure to individuals like them who have obtained college degrees; this is particularly significant for minority FGS.

Although these four barriers often create obstacles for finding appropriate pathways to college, bridge programs such as TRIO governmental programs (e.g., Student Support Services, Upward Bound, Talent Search) help FGS overcome these obstacles (Bragg et al., 2006; Graham, 2011, Orbe & Groscurth, 2004; Wang 2014a). These programs benefit FGS by providing application fee waivers, FAFSA workshops,
ACT preparation courses, and exposure to college level courses and the college environment (Graham, 2011). In addition to improving financial and college admission literacy, TRIO programs also helped FGS use their identity to their benefit through the assertive accommodation strategy (Graham, 2011). Assertive accommodation strategy allows students to “use their first-generation status positively to achieve their academic goals” (Graham, 2011, p. 36) and form a network with fellow FGS as well as mentors who can advocate and support them (Orbe & Groscurth, 2004). TRIO programs also help to prepare FGS for their transition into higher education. TRIO programs prepare their students for college through rigorous summer sessions where students have a chance to take college level courses, structure healthy study habits, and gain exposure to a diverse group of students (Graham, 2011).

High school mentors such as guidance counselors, teachers, and community members also provide FGS with a stable support system that creates a positive and open environment for the students to develop and transition to college. Some ways that FGS mentors can help guide FGS is to first acknowledge the diversity in FGS experiences and share their own lived experiences with FGS in terms of navigating the road to higher education (Orbe, 2008).

Subsequently, in the present study, I explored the adversities FGS high school students experience and how those experiences affected their transition to higher education. Thus, my future study poses the following research questions:

RQ1a: What adversities do first-generation students experience during high school?
RQ1b: How do adversities impact first-generation students’ high school experience?

RQ1c: How do first-generation students overcome adversities as they pursue high school?

The four barriers, lack of academic preparation, financial instability, family support, and personal obstacles FGS experience in high school also contribute to a more challenging transition from high school to college (Blackwell & Pinder, 2014; Graham, 2011; Orbe, 2008; Orbe & Groscurth, 2004; Tate et al., 2013; Wang, 2012, 2014a). One particularly difficult aspect of the FGS’ transition to higher education is the feeling of straddling two cultures: home culture and academic culture (Orbe, 2004, 2008; Orbe & Groscurth, 2004; Tate et al., 2013; Wang, 2012, 2014a). Oftentimes FGS go into their higher education experience with a number of factors that place them in a disadvantaged position to succeed when compared to CGS. The factors that affect FGS often translate into other adversities that FGS face as they pursue a four-year degree.

FGS experience several adversities during their time in higher education. Researchers who study FGS highlight the common adversities FGS face such as academic (Graham, 2011; Orbe & Groscurth, 2004; Tate et al., 2013), financial (Graham, 2011; Tate et al., 2013), social (Graham, 2011; Orbe, 2008; Orbe & Groscurth, 2004; Tate et al., 2013), personal (Orbe, 2004, 2008; Orbe & Groscurth, 2004; Tate el al., 2013; Wang, 2012, 2014a), and support (Blackwell & Pinder, 2014; Orbe, 2008; Orbe & Groscurth, 2004; Wang, 2012, 2014a, 2014b) adversities. FGS face many of these adversities after they transition from high school to college and begin to negotiate past
home and new college life identities (Orbe, 2008; Orbe & Groscurth, 2004; Wang, 2014a).

**College Experience**

The first adversity FGS experience in higher education is a lack of academic preparation (Graham, 2011; Tate et al., 2013; Wang, 2014b). This lack of academic preparation occurs when FGS come from families where their parents never went to college or failed to complete a four-year college degree (Graham, 2011). Some factors that affect FGS academically are a lack of exposure to college level courses (Graham, 2011; Orbe, 2008), poorly developed study habits (Graham, 2011; Wang, 2014a), and lack of involvement in academic support programs geared specifically for FGS (Graham, 2011; Orbe & Groscurth, 2004; Wang, 2014b). This lack of academic preparation can impact FGS’ confidence in their ability to succeed in college (Graham, 2011; Orbe, 2008).

The second adversity FGS experience is financial barriers (Tate et al., 2013). This lack of financial support occurs when FGS come from families where their parents have insufficient income to fully support their student’s cost of attendance at a higher education institution. This means that oftentimes FGS do not have the necessary amount of funding needed to adequately support their efforts to achieve a four-year degree such as tuition, room and board, fees, books, and meal plan. FGS must often juggle multiple jobs and college to make up for their lack of financial support in order to pay for the cost of college attendance. This juggling act can lead to lower success rate for FGS as they attempt to balance classes, studying, social lives, and work (Orbe, 2008).
The third adversity FGS experience is difficulty socially integrating into the college culture (Graham, 2011; Orbe, 2008; Orbe & Groscurth, 2004; Wang, 2014b). The difficulty in social integration occurs when FGS come from environments in which FGS did not receive exposure to the college environment and culture; consequently FGS often feel as if they do not fit into the college crowd and often project a censored self in hopes of avoiding highlighting their differences from CGS (Orbe & Groscurth, 2004). FGS find ways of easing into their social integration by connecting and networking with other FGS (Graham, 2011; Orbe, 2008; Orbe & Groscurth, 2004; Wang, 2014b) and participating in FGS support programs (Blackwell & Pinder, 2014; Graham, 2011; Wang, 2014b), cultural groups (Orbe, 2008), worship groups (Orbe, 2008), and professional groups (Orbe, 2008).

The fourth adversity FGS experience is personal adversities such as identity negotiation between past home self and present college self (Orbe, 2008; Orbe & Groscurth, 2004; Tate et al., 2013; Wang, 2012, 2014a), an overwhelming push to overachieve (Orbe & Groscurth, 2004), lack of communal identity (Orbe, 2004), feelings of survival guilt (Tate et al., 2013), and imposter syndrome (Orbe, 2008). These feelings of survival guilt involve FGS worrying about being in a more advantageous position in life than parents, peers, and others (Tate et al., 2013). Similarly, FGS experience imposter complex and have a difficult time registering and internalizing their successes when they question their own validity as a college student (Orbe, 2008). This often cultivates feelings of being a fraud and being misplaced in higher education (Orbe, 2008).

The fifth adversity FGS experience is a lack of a support system in higher education (Blackwell & Pinder, 2014; Graham, 2011; Orbe, 2004, 2008, Orbe &
Groscurth, 2004; Tate et al., 2013; Wang, 2012, 2014b). These feelings are often grounded in FGS’ lack of parental guidance through the college experience (Blackwell & Pinder, 2014; Orbe, 2004, Orbe & Groscurth, 2004; Wang, 2012, 2014b) and failure to locate a college mentor who had navigated the process (Blackwell & Pinder, 2014; Graham, 2011; Tate et al., 2013; Wang, 2014b).

Although these five barriers often create environments that make succeeding in college difficult, programs that are geared specifically towards FGS (e.g., TRIO SSS—Aspire, McNair) can be very instrumental to the success of FGS (Graham, 2011; Wang, 2014b). These programs benefit FGS by providing application fee waivers for graduate school, assistance in personal statement writing, undergraduate research opportunities, connection with a faculty mentor, and help socializing into the world of academia (Graham, 2011). These programs also benefit FGS by providing an environment where FGS can develop relationships with other FGS (Graham, 2011; Orbe, 2008).

FGS also derive support from college mentors such as professors or academic advisors who provide FGS with a stable support system that creates a positive and open environment for FGS to grow and develop through their higher education experience (Blackwell & Pinder, 2014; Orbe, 2004, 2008; Orbe & Groscurth, 2004; Wang, 2012, 2014b). Some ways that FGS mentors can help guide FGS is by incorporating memorable messages (e.g., messages of academic success, valuing school, increasing future potential, major/minor selection, support, encouragement) (Orbe, 2008; Wang, 2012) and assisting FGS to engage in assertive accommodation in order to connect with resources to best support FGS (e.g., TRIO, SSS, Aspire, McNair) (Orbe & Groscurth, 2004; Wang, 2014b).
Although some FGS researchers have highlighted common adversities that FGS experience during their college experience there is a need to further explore the adversities that FGS encounter prior to their college experience and identify how these adversities affect FGS’ transition to college. Researchers also suggest that one of the most common obstacles that affects FGS’ matriculation and retention is the significant financial barriers that college poses (Graham, 2011; Tate et al., 2013). My study provides a fuller profile of the FGS because the focus of my study is on recipients who have received significant financial assistance from their scholarship agency. Thus, I will be able to highlight other common adversities FGS face exclusive of the significant financial barriers that many FGS experience. By focusing on these scholarship recipients I hope to see different themes emerge when financial barriers are lifted from FGS’ college experiences.

Subsequently, in the present study, I explored the FGS experiences in college and how their college experiences shaped their overall higher education experience. Thus, the present study posed the following research questions:

RQ2a: What adversities do first-generation students experience during college?
RQ2b: How do adversities impact first-generation students’ college experience?
RQ2c: How do first-generation students overcome adversities as they pursue college?

Method

My study is centered in the interpretive paradigm. Interpretive researchers work to understand what human action means to people (Baxter & Babbie, 2004). I used the interpretive paradigm to acquire a deeper understanding of the experiences of my
participants. In my study I examined the adversities that affect FGS and their transition to higher education. By approaching my research from the interpretive paradigm I was able to ask for more in depth contextual information from FGS, interpret and contextualize the messages I received from FGS, and derive themes from FGS’ experiences during high school and college.

**Participants**

I chose participants who were 18 years of age or older and met the U.S. Department of Education’s (1998) definition of a FGS: neither parent completed a bachelor’s degree. I located participants through convenience sampling and snowballing techniques approved by the university’s Institutional Review Board (IRB). Rather than seeking a specific number of interviewees, I interviewed participants until I reached theoretical saturation, the point in analysis when all categories were well developed and further interviews and analysis added little new information to the existing conceptualization (Corbin & Strauss, 2008). Although theoretical saturation was achieved within the first 15 interviews, I continued to interview participants to further develop my analysis and develop a credible data set.

I interviewed a total of 25 FGS from six public universities in the Southeast. The FGS averaged 19 years of age with a median of 20 years of age and a range of 18-21 years of age. Eighteen FGS identified as female and 7 identified as male. Six FGS identified as first year students, 11 identified as sophomores, 4 identified as juniors, and 4 identified as seniors. 18 identified as Caucasian, 1 identified as Hispanic, 5 identified as African American, and 1 preferred not to report race. FGS reported that 5 parents completed an associate’s degree, 35 parents completed high school, 1 parent completed
7th grade, 2 parents completed 8th grade, 1 parent completed 9th grade, 1 parent completed 10th grade, and 5 participants were unsure of their parents’ level of completion.

Data Collection

Each FGS’ interview lasted between 28 and 143 minutes for an average of 70 minutes and was conducted in a private location near the FGS’ campus that was convenient for the FGS. To maintain confidentiality, I used pseudonyms rather than the real names of the participants. For my study, I used in-depth, semi structured, responsive interviews to obtain information about FGS’ experiences during high school and college. My interviews encouraged FGS to describe and explain their experiences during their high school and college careers. I used my interview protocol to guide the interview process but also integrated a sense of flexibility from the protocol in order to probe unforeseen insights that contributed to depicting a fuller picture of the FGS experience (Rubin & Rubin, 2005). I derived meaning and themes from these interviews that were related to my six research questions.

I created a well organized and structured interview protocol based off Rubin and Rubin’s (2005) guidelines and utilized open-ended questions to best encapsulate FGS’ experiences during high school and college. I used direct quotes and stories from my interviews to build a vivid image of the diverse adversities that FGS face. I asked demographic questions such as age, sex, and ethnicity. I also asked FGS questions about their high school and college experiences such as “describe what a typical day of your senior year of high school was like.”
Data Analysis

I used Smith’s (1995) guidelines to identify emerging themes while developing detailed mindmaps for each interview. Mindmaps included detailed drawings of emerging themes, counts for repetition, and lines of connection among various themes. I listened to my audio twice: first to obtain a general understanding of the messages I received from FGS and a second time to group themes and meaning about how the environments FGS lived in affected their high school and college experiences. I sought out themes that recurred, repeated, and were forceful based on Owen’s (1984) method of interpretation. First, I defined a theme as recurrent when “at least two parts of [the audio] had the same thread of meaning, even though different wording indicated such a meaning” (Owen, 1984, p. 275). Second, I defined a theme as repetitive when I heard “repeated use of the same wording” (Owen, 1984, p. 275). Third, I defined a theme as forceful when it involved “vocal inflection, volume, or dramatic pauses which serve to stress and subordinate some utterances from other locutions” (Owen, 1984, p. 275). I used these three theme identifiers to cluster themes that emerged from my audio into categories that addressed my research questions and looked for possible connections to how they affected FGS’ transition to higher education. After my themes were identified and I reached theoretical saturation, I produced a list of themes with phrases that captured the essence of each theme.

Verification

To meet interpretive paradigmatic conventions, I employed several common validation strategies. First, I recorded each interview and created detailed mindmaps and notes. Second, I continued interviewing and analyzing data beyond theoretical saturation.
Third, I assessed the quality and validity of my results using member checking by emailing summaries of my findings and themes to all 25 participants to check whether my findings accurately depicted their individual experiences as FGS (Creswell, 2007). Eight participants reviewed and agreed with the themes I constructed. Fourth, I provided evidence for my findings through extensive rich participant quotes.

Results

In this section, I detail the themes that helped me answer my research questions using exemplar statements to illustrate the FGS’ high school and college experiences. In response to RQ1, I identified two adversities that were unique to the high school experience. These themes included adversities involving (a) college search and (b) economic problems. In response to RQ1 and RQ2, I identified five adversities that occurred during both the high school and college experiences. These themes included adversities involving (a) social/community life, (b) academic life, (c) risky behaviors, (d) self doubt, and (e) family problems. In all 25 interviews at least one of these themes was present, and usually multiple themes were linked to any one interview. These themes were consistent for all FGS. Each theme is discussed in turn.

High School Adversities

College search. As FGS prepared to begin their lives in college they experienced a common time of hardship when they tried to complete college/scholarship applications, identify the college that best fit their academic needs, channel relevant experiences in life to inform what majors were most desirable, and harness their desire to break away from their high school lives to achieve something their family had never done before. The
combination of these adversities did not go unnoticed to FGS like Carmen a 20-year-old sophomore African American FGS:

During that time [senior year] when I’d be at school, going to ACT prep, tutoring, anything I could do ’cause by that time not only did I have to get my stuff together to apply [to college and for scholarships], I had to catch up with everybody else whose parents were college educated. They knew they shoulda had this stuff in by the December 1st deadline, they’re already accepted, they already have scholarships, you know? I’m trying to compete with these people … because I didn’t know all this existed!

Carmen found that her experience put her at a disadvantage when she was preparing and applying for admission to college and for scholarships. She believed that she was at a competitive disadvantage to her CGS peers because her parents did not have the same level of college knowledge as her CGS classmates who had college-educated parents who were familiar with the college/scholarship search and application process. Despite the enormity of the task at hand Carmen chose to take advantage of the resources provided at her school as well as the guidance of on campus mentors to propel herself into the application processes and towards her goal of higher education.

Some FGS found that one aspect of their college search was the motivating and demotivating impact of high school adversities. In response to these adversities, FGS wanted to break away from their homes and family cycles of inexperience with higher education. Jason a 20-year-old junior Caucasian FGS captures this theme:

It was just kind of like this mixed feeling I had because I knew I had to go to college to break from this … this … generational curse that had been placed on us, you know like this nobody in my family, to my knowledge even on my outside family… nobody had been to college. They had all settled for high school, if that. So it was just like … I know I need to go to college to be successful, but I had already made up my mind that I’m never going to, … that I can't do it because of what I’ve been through.
Jason’s experience with this adversity both motivated and demotivated his progress to higher education completion due to the sheer weight of his family’s inexperience with college. Jason was raised in an unstable environment, with family members who often abused substances and neglected his brothers and him. He knew that in order to create a better life he would have to do something his family had never done: go to college. Despite his knowledge that he needed to break the “generational curse” he could not see himself achieving his dreams due to the weight of his lived experiences. Similar to Jason’s experience, FGS who recalled memories about their college search often found ways to utilize their adverse lived experiences to motivate and propel themselves toward their dreams of higher education.

**Economic problems.** As FGS prepared to begin their lives in college they experienced a common time of hardship as they tried to navigate economic problems such as homelessness/inconsistent living situations or insufficient income/economic support and identify ways to pay for college. One FGS who experienced this adversity in high school was Charlotte a 21-year-old sophomore Caucasian FGS:

> When my mom had kicked me out, she got really super drunk and told me to go live with my friends, and then, like, I think the worst time for that was [and] what really made me feel worthless was me and my friend were in youth leadership and she was coming to get me that Sunday anyways and she heard everything that my mom had said when she kicked me out.

Charlotte found that her experience with homelessness not only propelled her into an inconsistent living situation but also caused significant emotional turmoil as she negotiated messages such as “I don’t want you anymore” and “I’m done with you” from her mother. She found that once she moved in with her best friend and removed herself from her previous living environment her grades began to improve. However, the feelings
of abandonment from her absentee parents caused emotional damage as she came to terms with the fact that neither of her parents wanted her. In the end this adversity went on to motivate Charlotte to pursue a college degree.

Some FGS found that one aspect of their economic problems was the adversity of paying for college. Jasmine a 20-year-old freshman Caucasian FGS captures this theme:

There were no options. There was nothing. There wasn’t like “oh maybe dad or mom can help me pay for it” because dad and mom can’t. They can’t. Like even my dad, who would if he had it, he doesn’t have the ability. Even dad was like, “oh I’ll pay for it with my retirement,” and I was like, “dad that won’t even pay for a year, and you’re just gonna waste [it].” Oh my god that was the worst. That was the worst feeling in the world.

Jasmine’s experience with this adversity caused her to stress and compare her ability to go to college to her CGS peers. Before Jasmine received a scholarship she was not hopeful about her ability to go to college. She commented, “that was the only time in my life I can honestly look back and be like, I don’t know if I would have went to college.”

The college search and economic problems adversities represent adversities that were unique to the high school experience. Next, I will discuss five adversities that spanned FGS’ high school and college experiences.

High School and College Adversities

Social/community life. As FGS navigated social and community life in high school they experienced a common time of hardship as they tried to navigate peer relationships. One FGS who experienced this adversity in high school was Jade a 20-year-old sophomore Caucasian FGS:

In high school I went through everything teenage girls go through. I went through the body image issues, the bullying, the shaming like kids were mean; kids were awful, like they were telling me and my brother that we were the reason our mom died. It was crazy.
Jade’s experience with this adversity occurred after she found out that her mother’s death was due to suicide. She found that most of her peers were not supportive during her time of grief and rather than pulling together to support her they chose to bully her about the death. Her peers would tell her things such as, “you and your brother drove your mother even crazier than she was.” This experience caused her to compare her life to her peers’ families as she dealt with the death of her mother. This experience later influenced Jade’s decision to try to take her own life commenting, “If my mom did it I can do it.” Despite the magnitude of this adversity she found that she was able to overcome feelings of mistrust and bitterness towards everyone and transcend to become a more empathetic person. She was able to overcome this adversity by challenging herself to demonstrate to others how good her mother was by embodying her best characteristics. She learned to use her experiences to find unique ways of relating to others and channeled her suffering into a drive to pursue something better for herself through higher education.

Some FGS experienced social/community adversities in college that included issues with adjusting to new environments and extracurricular involvement. One FGS who experienced this adversity in college was Dharma an 18-year-old freshman Caucasian FGS:

I talked to a bunch of people and tried to be friends with them and in high school I had so many friends; yeah so I just tried to talk to people and find things we had in common but it seems like I can’t really make any friends that stick, friends that I talk to everyday or really care about me much at all. It’s been really hard, you know especially when I’m here all alone and no one from my high school goes here. It’s just like hard.

Dharma’s experience with this adversity occurred during her first year of college. Due to her troubles with integrating socially she struggled to make friends and maintain involvement in clubs on campus. After several attempts to make friends she began to
withdraw from clubs and turn down opportunities to develop new friendships. This adversity created a feeling that her university was not a proper fit for her and made her dread being on campus.

**Academic life.** As FGS navigated academic life in high school they experienced a common time of hardship as they tried to navigate class tracks, gain access to college preparatory programs, participate in extracurricular/community activities, and interact with high school faculty/staff. One FGS who experienced this adversity in high school was Audra a 19-year-old freshman Caucasian FGS:

> When I was in Upward Bound, I could only do that for a year because they took it out of our county 'cause they couldn't pay for it anymore so then I had to go to Talent Search and I really liked how Upward Bound was structured 'cause we got to do a lot of campus visits and I got to live in a dorm for a summer and got to experience that situation. So I really would have liked for that to happen again, for that to go on for my entire high school career. I think that would have been, not that it would have made anything really different about what happened, but I think maybe I could have gotten a lot more college support and [learned] how I could have handled the doubt about college.

Audra’s experience with this adversity occurred as she reflected on her high school career and the ways she wished she had been better supported. She found that this adversity impacted her ability to access Upward Bound programming and the benefits she needed to assist her in her transition to college. The lack of funding for Audra’s local Upward Bound program caused her to become self sufficient during her transition academically to college. Although she had to navigate the adversities of preparing herself in high school she was able to channel her drive to succeed and go to college.

As FGS navigated academic life in college they experienced a common time of hardship as they tried to navigate the rigor of classes, establish college and major fit, interact with university faculty/staff and scholarship staff, and gain access to the
TRIO/SSS program. One FGS who experienced this adversity in college was Blane a 19-year-old sophomore Caucasian FGS:

The transition from high school courses to college courses was really difficult just because, you know, I never had real college courses before. I had dual enrollment but those were kind of B level compared to [my university’s] classes, I feel. I struggled right off the bat with some of my classes. I had gotten some bad test scores and that started to worry me some but as the semester picked up I learned ways to study and ways to better retain information.

Blane’s experience with this adversity occurred during his first year of college after taking his first calculus test. He had previously taken calculus in high school and expected that his class had adequately prepared him for college level calculus. He later found he was not prepared for this class and made lower grades than he expected. His performance was largely impacted by a lack of study skills and previous preparation for the course in high school. Blane performed well in courses during high school, so the sudden change in his performance and the rigor of the classes surprised him. Despite this adversity he was about to push himself to develop new ways of studying, retaining information, and managing his time.

**Risky behaviors.** As FGS navigated high school they often experienced a common time of hardship and experienced risky behaviors such as self-harm, suicide ideation/attempts, and anxiety/depression/stress. One FGS who experienced this adversity in high school was Jade a 20-year-old sophomore Caucasian FGS who stated, “I went through a time where I had an overdose. I overdosed, I was in the hospital for a minute, it was just anything in the medicine cabinet. It was a bunch of painkillers and cough syrup.” Jade’s experience with this adversity occurred during her first year of high school when she attempted suicide. Jade was raised in an unstable environment. During the time of this adversity she was struggling to navigate the grief and feelings of responsibility
surrounding her mother’s suicide, father’s alcoholism, as well as a physically, verbally, and sexually abusive boyfriend. After this adversity Jade was able to reframe how she looked at the world and gained valuable experience about the ways she could empathize with others who were struggling with suicide ideation. She overcame this adversity after her brother visited her in the hospital and she realized that she had someone she loved and wanted to live for. After this realization during her brother’s visit, she devoted her energy to getting better. This moment of family support helped her overcome her adversity.

As FGS navigated college they often experienced a common time of hardship and experienced risky behaviors such as anxiety/depression/stress. One FGS who experienced this adversity in college was Charlotte a 21-year-old sophomore Caucasian FGS:

Sophomore year in the fall, I’m not really sure, but I got really depressed for some reason, and a few things were going on at the time. I almost failed two classes, but I was struggling really bad in math and chemistry. I was struggling in both and my teacher, I was going to her for help and I was getting tutoring, I was studying with her, and I failed all of my tests except for one. She pushed me to get tested and I found out that I had PTSD, ADD, ADHD, anxiety and panic disorder, depression, and insomnia.

Charlotte’s experience with this adversity occurred during her sophomore year of college when she began developing depression and was later diagnosed with seven disorders. This adversity impacted her scholastically, causing her to struggle particularly in math and chemistry, failing one course. Due to failing a course for her major, this adversity had a large impact on her major choice, ultimately prompting her to change from nursing to social work. The adversity strongly discouraged Charlotte, set her back from graduating in four years, and caused her to question if she could complete college at all. She overcame this adversity through an interpersonal relationship with her on campus faculty.
mentor. Charlotte sought out tutoring from on campus services and scheduled to meet with her math professor during office hours for additional academic support. Through the office hours with her professor she was able to boost her grades in math to a passing score and was encouraged to follow up with a physician to identify her various disabilities. She was later tested and confirmed to have PTSD, ADD, ADHD, anxiety and panic disorder, depression, and insomnia. Once Charlotte was aware of her disabilities, she was able to identify ways to better manage her experiences and seek disability support on her campus.

**Self doubt.** As FGS navigated self-doubt in high school they experienced a common time of hardship including limited future opportunities, introversion/reluctance to trust others, lack of prototypes/role models/exposure, bullying, self-confidence/esteem, and emotional expression. One FGS who experienced this adversity in high school was Carmen a 20-year-old sophomore African American FGS:

Where you come from doesn’t determine where you’re gonna be in life, and that’s a big lesson I had to learn because at that point I was seeing people just basically succumb to their own weakness or not believing in themselves enough to finish out something they started and I didn’t want to be like that.

Carmen’s experience with this adversity occurred during high school when she realized that her hometown limited her future opportunities to excel. During her high school career she spent much of her time caring for her disabled parents and their health needs while simultaneously preparing to go to college. She was the first her in family out of six siblings to break the cycle and go to college. This adversity impacted her confidence in being able to gain funding and admission to college, but after connecting with an on campus faculty mentor she was able to learn ways to prepare to go to college. She overcame this adversity due to the after school meetings with her faculty mentor who
assisted her in preparing scholarship and college admission applications and pointed her to free health services for her family members. Carmen’s drive to break her family’s cycle and become a role model for her nieces and nephews was another driving force behind the resilience that she embodied to overcome her adversity.

As FGS navigate self-doubt in college they experienced a common time of hardship as they experienced survivor guilt and imposter syndrome. One FGS who experienced this adversity in college was River a 20-year-old sophomore Caucasian FGS:

I had this sense that I’m abandoning my family, like I’m abandoning ship and I just struggled with that. I had [my brother] on my mind a lot, and then not being here to, you know. When I got to make visits back home and seeing [my brother’s] condition had took a turn for the worse, or something like that, and not being here to be with the family to help support the family emotionally through that.

River’s experience with this adversity occurred during his first year of college when he experienced survivor guilt after he left his disabled brother and family. During his high school career he spent much of his time helping care for his disabled brother and his health needs while simultaneously preparing to go to college. This adversity impacted his transition to college because he was riddled with guilt about not being home to help care for his brother or support his family emotionally. This adversity caused him to be unfocused during class and had a negative effect on his scholastic performance. Despite this adversity he was able to overcome this adversity by channeling his guilt and worry about his family into a need to develop close friendships for additional support. This encouraged him to socially integrate quickly so that he could establish a support network.

**Family problems.** As FGS navigated family problems in high school they experienced a common time of hardship that included abuse of substance/prescription/illega drugs, verbal/physical/emotional/sexual abuse, lack of
emotional support, poor health such as illness/disability, absentee parents through incarceration/absence, caretaker responsibilities of loved ones, death of a family member, and discourse dependent families such as divorce/single parent/no parents/extra members. One FGS who experienced this adversity in high school was Kasandra a 19-year-old sophomore Caucasian FGS:

You go to those school dances, and they have the father daughter dance, well you don't get that. And then you do other things like prom and graduation, your parents aren’t there, everyone else’s are, and it’s an upsetting thing. And it’s something you have to live with forever because your parents weren’t there, so when everybody’s doing the parent thing you don't get to.

Kasandra’s experience with this adversity occurred throughout her high school career as she negotiated her feelings about both of her absentee parents. Kasandra was raised in a tumultuous household as a young child. Due to her parents’ neglect and drug abuse, custody was revoked from Kasandra’s parents and she went to live with her grandmother. This adversity caused her to compare her family to her peers’ families as she found ways of dealing with the emotional turmoil of absentee parents in high school. Despite this adversity she was able to overcome and find the courage to pursue higher education due to a drive to “be better than my parents.” Kasandra knew that the road to college would be riddled with obstacles unique to FGS commenting, “statistically I’m not supposed to be here [in college], but personally [the adversity] pushed me more towards being [in college].”

As FGS navigated family problems in college they experienced a common time of hardship including carryover high school adversities and family support. One FGS who experienced this adversity in college was Ellie a 21-year-old junior Caucasian FGS:

I did not know my biological family at all. I hadn’t seen them since I was 18 months old. I had not recollection or memory of them at all. So when I turned 18 I
started looking, like when I got emancipated and all that, but I didn't find them until I was in college ... right in the freaking middle of my freshman year. So that is a huge emotional thing.

Ellie’s experience with this adversity occurred during her freshman year of college after she received contact from her biological family for the first time. Ellie was adopted at a young age and was raised by an abusive adoptive mother for most her life. During the middle of her freshman year she was taken by surprise when she first communicated with her family. The experience was disorienting, emotional, and disappointing as she learned about family health concerns and traits that were unfavorable. This experience had a deep emotional impact on Ellie as she learned that she could be a carrier for muscular dystrophy. This went on to impact her future visions for herself and starting a family with the fear of passing on the gene to her future children. This adversity had a large impact on Ellie’s vision for her future and caused much emotional turmoil. She was experiencing depression during this time and found that the added stress from this experience caused her to avoid attending class. Despite the immensity of this adversity she was able to attend the office hours of her professors and catch up on missed content in class. She was able to overcome this adversity by allowing the experience to shape her positively and find solace in focusing on completing her education.

FGS experienced a myriad of adversities such as the college search and economic problems that were unique to the high school experience. They also experienced social/community, academic, risky behavior, self-doubt, and family adversities during high school and college. Multiple adversities were often found in any given FGS’ high school and college experiences. However, despite these overwhelming circumstances FGS found a way to persevere. Many FGS possessed the resilience to transform the
adversities they experienced into the motivation they needed to transcend their circumstances and achieve their dream of pursuing a college degree.

**Discussion**

My primary goal in this study was to understand the obstacles and adversities that shape FGS’ high school and college experiences (Graham, 2011; Orbe, 2004, 2008; Orbe & Groscurth, 2004; Tate et al., 2013). Overall my findings provide a foundation for further investigating the academic, family, and personal adversities that affect FGS’ success in higher education. FGS identified two adversities that were unique to their high school experience: college search and economic problems. FGS also identified five adversities that spanned both the high school and college experiences: social/community life, academic life, risky behaviors, self-doubt, and family problems. The high school experience, transition to college, and college experience are important contexts for studying instructional communication because FGS are straddling home and academic cultures (Orbe, 2004, 2008; Orbe & Groscurth, 2004; Tate et al., 2013; Wang, 2012, 2014a) and working to create a new tradition of college completion for their families. FGS’ high school and college adversities are central to understanding how these adversities impacted their high school and college experiences and how FGS overcame those adversities to persist to college graduation. Ultimately, the three major implications of the present study are centered on the range of college adversities that FGS experience beyond financial adversities; the reframing of adversities into opportunities that allowed FGS to be successful in high school and college; and the ways in which high school adversities continued to impact FGS’ college experience even after they left their home environments.
Implications

The first set of implications draws on the range of college adversities that FGS experience beyond financial adversities. Orbe’s (2008) research suggests that FGS who come from families who are unable to fully support their student’s cost of attendance at a higher education institution are less likely to succeed in college because they must work multiple jobs to make up the financial deficit needed to pay for the cost of attendance. Despite having significant financial support from their scholarship funding agency to offset the rising cost of college attendance, FGS still reported experiencing significant adversities that impacted their ability to succeed in college. Similar to past research, FGS reported that they struggled to adjust to the new college culture’s social/community life and academic life (Graham, 2011; Orbe, 2008; Orbe & Groscurth, 2004; Wang, 2014a). Some FGS struggled to adjust socially to a college environment that was different from the sheltered community environments they had grown up in. Faced with a myriad of new experiences and options they had not been exposed to before college, FGS often turned inward and chose not to engage in their campuses’ vibrant social/community life. Some FGS indicated that they came from small schools where they were not adequately prepared for the rigor of classes and small hometowns where they were exposed to a limited set of careers that did not reflect the majors and career paths available to them in college. Additionally, FGS lacked family role models who depicted how to interact with university faculty/staff and scholarship staff and gain access to programs tailored to FGS such as TRIO/SSS programs. Similar to past research, FGS were able to fit into social/community life and academic life when they identified a support network of faculty/staff (Orbe, 2008; Wang, 2012) and peers (Graham, 2011; Orbe, 2008) who were
able to provide the college knowledge their families were unable to provide, found a major/career path that was an appropriate for their skills and talents (Orbe, 2008; Wang, 2012), and used student support services (Graham, 2011; Wang, 2014b) that met their needs.

The second set of implications focuses on how FGS reframed their adversities into opportunities that allowed them to be successful in high school and college. FGS who failed to reframe their adversities often lacked the motivation to succeed scholastically and socially that compromised their ability to succeed in high school/college and persist to college graduation. FGS reported that they were unable to see past the overwhelming adversities they were experiencing, because they were myopically focused on their present circumstances. For these FGS, the magnitude and pervasiveness of their adversities created an impenetrable obstacle to their college completion dream. This is consistent with past research that suggests that FGS experience feelings of inadequacy (Graham, 2011; Orbe, 2008) and high levels of stress (Orbe, 2008) that negatively impact their ability to succeed in high school and college. Conversely, some FGS realized that in order to escape the overwhelming adversities they were faced with they would have to succeed in reframing their experiences into opportunities to grow and achieve educational accomplishments their parents had failed to achieve. For these FGS college represented an escape from their past adverse experiences and presented new opportunities to start a new tradition of college completion. Whereas adversities created obstacles for other FGS, these FGS found that their adversities pushed them forward in the pursuit of higher education. This is consistent with past research that suggests that some resilient FGS are able to transcend their adversities to successfully
transition from high school to college and negotiate their home and college life identities (Graham, 2011; Orbe, 2004, 2008; Orbe & Groscurth, 2004; Tate et al., 2013).

The third set of implications includes the ways in which high school adversities continued to impact FGS’ college experience even after they left their home environments. Unfortunately, despite FGS’ attempts to leave their problems behind in high school and escape the adversities they were experiencing in unstable family environments, these problems did not completely fade away. FGS who experienced risky behaviors in high school such as self-harm, suicide ideation/attempts, and anxiety/depression/stress still struggled with anxiety/depression/stress in college as they worked to manage the new adversities of their college social/community life and academic life. These findings support previous research that suggests that FGS struggle to find healthy ways to manage new college adversities (Blackwell & Pinder, 2014; Orbe, 2004; Orbe & Groscurth, 2004; Wang, 2012, 2014b). FGS who had struggled with feelings of self doubt in high school continued to experience self doubt in college as they worried about whether they made the right decision to leave their families for new opportunities and questioned whether they had the ability to succeed in college. These research findings echo Orbe (2004, 2008) and Orbe and Grocurth (2004)’s research that suggests that FGS must straddle the tensions between their home and academic cultures. FGS who experienced significant family problems in high school such as abuse, lack of support, health problems, and unstable family environments found that their family problems carried over to their college experience as they worried that they were not fully supporting their family back home and/or failed to receive the support from their families they needed to confirm the validity of their choice to come to college. The findings from
the present study support previous research that suggests that FGS experience feelings of survival guilt (Tate et al., 2013) and imposter syndrome (Orbe, 2008) that causes FGS to question their validity as a college student.

**Strengths and Contributions of Present Study**

The present study provides three important contributions to existing FGS research. First, this study highlights the adversities experienced in high school and college, how those experiences impact FGS, and how FGS overcame their adversities. The results of my study provide a foundation for understanding the unique adversities FGS experience and increase the likelihood that high schools, colleges, families, and communities can better support FGS during and through their adversities. Second, the present study offers a unique look at the FGS experience due to the lack of college economic adversity that is present in my sample. The participants in my study all have significant financial support from their scholarship agency that significantly reduces the cost of college attendance. This angle adds to the body of knowledge because it sheds light on the adversities that are present outside the economic adversities that form the foundation of exigent FGS research. Third, the present study contributed results that deepened the understanding of how adversities impact the FGS from the student’s point of view. Although many researchers have studied FGS, few have conducted a study that spotlights FGS’ experiences across multiple higher education institutions. The present study includes interviews with participants from six institutions across the southeast, whereas much exigent research involves a single institution. Studying multiple institutions sheds light on a pivotal time in a FGS’ life as it describes the full range of adversities that are experienced in institutions with varying sizes and campus cultures.
The findings from the present study contribute to exigent research that helps institutions, faculty, staff, and families understand FGS’ experiences and better support FGS as they pursue their dream of college completion.

**Limitations of Present Study and Future Directions**

Although the present study makes several contributions to exigent research, it is not without limitations. One limitation of the present study is that it only considers the FGS’ perspective of their adversity. It would be interesting to incorporate and examine a parent or administrator’s perspective in order to cultivate a deeper appreciation and understanding of how the adversities impact the family and high school or college. By including parents or administrators researchers could determine how adversities affect the family and provide an assessment of the accuracy of the adversities that are remembered and retained. Second, although this study provides an in depth understanding in a retrospective view of adverse high school and college experiences, this study relies on FGS’ recollections of high school and college events. Longitudinal and diary studies could better represent how adversities impact the FGS over the course of their high school and college careers. A longitudinal or diary design would help eliminate the threats retrospective views provide such as the quality of memory the participant can provide when recalling adversities that might have occurred up to eight years before. Third, although my study is multi-institutional the study primarily captures the experiences of female, Caucasian first year and sophomore FGS. Thus, this sample does not fully reflect the diversity of the FGS population. A larger study that includes more male, junior and senior, nontraditionally aged, and minority (Hispanic American/African
American/Asian American/biracial) FGS could strengthen the findings of this study and better reflect the diversity of the heterogeneous FGS population.

In conclusion, understanding FGS’ high school and college adversities offers a useful framework for examining the pivotal time period ranging from the beginning of high school through college graduation. Future instructional communication researchers should continue to investigate FGS’ adversities, explain how these adversities impact FGS’ high school and college experiences, and identify ways that FGS can transcend these adversities and succeed in high school and college despite significant adversities. Overall, the exploratory nature of my study provides a broad foundation for continuing to research the diverse FGS population and helps extend our understanding of their experiences.

References


Analysis of Environmental Justice Cases in Alabama

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Abstract

Typically, minority populations and impoverished peoples tend to be exposed to environmental hazards significantly more often than other demographic populations (Bullard, 2000). Oftentimes these exploited communities do not have the necessary resources to relocate, or have the political voice to deny the industry residency in their community. This research explores what environmental injustice looks like in Alabama, specifically examining the key players in local, state, and federal governance that have decision-making power in environmental justice (EJ) communities, the ways in which EJ issues affect residents and the community, and the ways in which communities are organizing for environmental justice. Our results have shown that frustration by EJ communities in Alabama have resulted from lack of participation in the decision-making process within local, state, and federal levels as well as a lack of effort to consider EJ as a serious issue by these entities. Residents perceive these issues as attacks on their quality of life, their culture, and their ability to pursue happiness. When organizing for environmental justice, important items residents and key informants highlighted were networking and building alliances across state lines, connecting environmental and social issues as a part of the framing of their issues, appropriate and representational leaders, and building connections amongst both social and environmental organizations. Through the use of Critical Race Theory as our theoretical framework, we were able to analyze racial dynamics at play between entities involved with environmental justice organizing in Alabama.

Introduction

Production and consumption within our current economic system generate an enormous amount of waste and byproducts. The externalities produced from these industrial processes create a significant citing problem. This becomes an issue of justice when considering the spatial distribution of environmental hazards and benefits. Typically, minority populations and impoverished peoples tend to be exposed to environmental hazards significantly more often than other demographic populations (Bullard, 2000, p. 4). The voices of the frontline environmental justice (EJ) communities are often underrepresented and ignored within the mainstream environmental movement. Environmental racism is used to describe the placement of low-income or minority
communities in the proximity of environmentally hazardous or degraded environments, such as toxic waste, pollution and urban decay.

The purpose of this study is to understand how the key players in local, state, and federal governance that have decision-making power over environmental justice communities in Alabama interact, and the ways in which communities are organizing for environmental justice. With the completion of this study, we can have a better understanding of environmental justice issues at play in Alabama, and better understand the challenges of organizing for environmental justice within the state. Ideally, this study will contribute to the knowledge of environmental justice issues in Alabama and inspire folks to become active in their communities and more involved with environmental and social issues within the state.

Review of Relevant Literature

Environmental Justice: An Overview

The EPA definition, environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (U.S. Environmental Protection Agency, 2016). The EPA states that this will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work. A multitude of studies have shown a relationship between the siting of environmental hazards and minority communities, low-income communities, and working class communities. In a study conducted by the Commission for Racial Justice (1987) it was found that race was the
most significant variable in determining the location of commercial hazardous waste facilities, even when comparing socio-economic characteristics. Downey, Liam, and Hawkins conducted a more recent study (2008), which established the same point. They state that:

This study demonstrates that in the continental United States, blacks are more highly represented in census tracts with high toxic concentration levels than are any other major racial/ethnic group in the country, experiencing neighborhood toxic concentration levels that are on average 1.45 times as great as those experienced by the second most highly burdened group included in the study and 2.52 times as great as those experienced by the least burdened group included in the study. Moreover, low-income black neighborhoods and households experience a much higher pollution burden than do any other neighborhood or household type included in the study and. In fact, blacks experience such a high pollution burden that black households with incomes between $50,000 and $60,000 live in neighborhoods that are, on average, more polluted than the average neighborhood in which white households with incomes below $10,000 live. (para. 60)

Environmental racism is defined by Bullard (1993) as:

any policy, practice, or directive that intentionally or unintentionally differentially impacts or disadvantaged individuals, groups, or communities based on race or color; as well as the exclusionary and restrictive practices that limit participation by people of color in decision-making boards, commissions, and staffs. (p. 4)

Several environmental justice scholars highlight the notion that even if actions resulting in the unequal permitting of facilities in poor or minority communities are not intentional, these communities are still bearing an unequal amount of environmental burden. Mohai, Pellow, and Roberts (2009) describe this concept by stating that the “disproportionate impact of hazards on minority communities can occur regardless of racist intent” (p. 425). Black communities in the south are impacted disproportionately when compared to the north. Higgins (1993) discusses the burden that blacks in the Southern United States face when considering environmental inequity in stating:
The institutionalized vulnerability of African Americans in this context is suggested by the GAO report on the siting of hazardous waste landfills in southern states, and also by the UCC study, which shows that southern cities comprise sixteen of the top twenty cities where significantly greater percentages of the black population live in communities with uncontrolled toxic waste sites. (p. 289)

Three economic theories are used to describe environmental justice, for example, “pure discrimination in siting decisions; differences in the willingness to pay for environmental amenities based on income and education; and differences in the probability of communities to engage in collective action against the location of the polluting site” (Couch et al., 2003, p. 238).

There are various suggested reasons that environmental justice communities continue to be environmentally exploited. One mechanism that Bullard (2000) describes as a reason that locally unwanted land-uses continue to be placed in communities of marginalized populations is because of “Not in My Backyard” Syndrome, or NIMBY, which oftentimes results in “Put in Blacks’ Backyards Syndrome” due to the differences in political power to oppose unwanted sites or facilities (p. 4). Racial segregation perpetuated by zoning practices also contribute to the unequal distribution of environmental burdens (Bullard, 2000). Higgins (1993) states, “Finally, racial segregation per se is a critical factor in shaping environmental inequities” (p. 289).

Although counterintuitive in many instances, communities often view environmental protection as a job-diminishing practice and perceive a dichotomy between a clean environment and an ample amount of jobs within their community (Bullard, 2000). Bullard (2000) brings attention to this mindset in questioning “What civic-minded individual would advocate against economic progress?” and illuminating a quote by George Wallace in stating “For example, a paper mill spewing its stench and
poison in one of Alabama's poverty-ridden black belt counties led Governor George Wallace to declare: ‘Yeah, that's the smell of prosperity. Sho' does smell sweet, don't it’” (p. 29). Some of the fears and concerns of communities, though, are rooted in the real consequences that have resulted from the decrease of available industrial jobs as environmental regulations increase. Most of the jobs that environmentalists aid in creating in these communities are given to outsiders that have the necessary skills for the jobs, which the residents often do not possess (Bullard, 2000). Bullard also explores the concept of compensation for pollution, and states that “compensation taken to the extreme can only exacerbate existing environmental inequities” (Bullard, 2000, p. 85). Compensation in exchange for pollution is viewed as a problematic solution because impoverished communities are especially susceptible to becoming exploited by industry because of their willingness to risk the adverse affects to the community when promised monetary gain. In response to these violations of human rights and social injustices, frontline communities have engaged in grassroots organizing for environmental justice.

The Environmental Justice movement seeks to address the inequalities presented when considering the distribution of environmental hazards or other burdens or benefits surrounding environmental action. Traditionally, the movement concerns inequality in zoning of environmental hazards when considering race and class, clean ups, and minority representation in environmental groups (Brown, 2013). Higgins (1993) states that “The environmental justice movement melds various goals from the civil rights, poor people's, occupational safety and health, and grassroots environmental movements” and that the “vision that emerges is a qualitative challenge to existing business and government agendas, as well as to the reform agendas of mainstream environmentalism”
The movement now encompasses other issues, such as parklands, urban development, transportation, food access, and climate change (Brown, 2013).

Much of the literature regarding the environmental justice movement highlights the challenges in mobilizing people for environmental and social justice. Differences in goals and objectives of mainstream environmental advocates and social justice advocates involved in mobilizing for environmental justice create scenarios for conflict and challenges within the movement. Schlosberg mentions how the larger, well funded international environmental organizations (referred to as the ‘The Big Ten’) have received much criticism due to their “disregard of the wide variety of environmental hazards faced by people of colour, a paternalistic attitude toward low income and minority communities and grassroots groups, and the lack of attention to diversity in the memberships, staffs, and boards” (1999, p.122). They point out that one key difference between The Big Ten organizations and grassroots efforts are where the individuals come from (Schlosberg, 1999). He emphasizes that instead of creating social networks that using networks already in existence where people “live, work, play and worship” is much more effective (Schlosberg, 1999, p. 125). Churches, for example have been a very beneficial resource for EJ communities to work with. Schlosberg (1999) specifically references the importance of social networks within the environmental justice movement and illuminates the key differences between large environmental organizations and grassroots efforts fight for environmental justice.

Alliance-building and the utilization of social networks have become a key component in environmental organizing around EJ issues. Hines discusses the movements to address the environmental injustice that occurred in Sumter County,
Alabama regarding a mega-landfill. She points out that the environmental movement lacked the participation of black people because “African American Communities do not view classic environmentalism as a movement that promotes overall equality, justice, or civil rights issues” (Hines, 2007, p. 51). Environmental groups that have succeeded in organizing with frontline communities occurred because of “the alliances between environmental and social action advocacy” (Hines, 2007, p. 51).

According to Hines (2007), “Sumter County houses the nation’s largest hazardous waste landfill facility. This facility is located near the village of Emelle. Emelle consists of about 300 residents. Approximately 90 percent of Emelle and 70% of Sumter County is African American” (Hines, 2007, p. 52). “Sumter County and Emelle are two of the poorest regions in the US and according to the 2000 census the median family income for the family is $16,185 ” (Hines, 2007, p. 52). In Sumter County there was a large disconnect between the county representatives and citizens. The group Alabamians for a Clean Environment was formed and became known in the area as they were organizing against a massive landfill. Their main objective was to close the landfill down.

Hines (2007) concludes the article with lessons learned from these grassroots efforts. She states that environmental justice needs to be linked to the broader political, social, and economic issues of the community in order to receive more acceptance by African American Communities. She states that this is important because the residents viewed the landfill as a source of economic boom. She asserts that building local support is just as necessary as national support, which ACE focused on more. Lastly, she maintains that the community needed more education efforts to inform them on the
negative effects these facilities may have on their health. Hines’ conclusions from this study are often challenges that EJ communities face when organizing, as discussed in other environmental justice scholarly works. Key elements that Bullard (2000) highlights as important when considering grassroots organizing include utilizing existing social networks, leadership residing in indigenous social action groups, limited reliance on outside elites, and the integration of social justice into environmental action.

**Critical Race Theory as a Theoretical Framework**

Environmental injustice is an issue that is specific to minority communities. Therefore, acknowledging the role that race plays in organizing dynamics for environmental justice in Alabama is essential in research accompanying this subject. In order to acknowledge racial dynamics in this research, Critical Race Theory was used as the overarching theoretical framework to shape this study, and this paper. Critical Race Theory evaluates the relationships among race, racism, and power. Delgado and Stefancic (2012) describe the Critical Race Theory (CRT) movement beginning in the 1970s by stating that a “number of lawyers, activists, and legal scholars across the country realized, more or less simultaneously, that the heady advances of the civil rights era of the 1960s had stalled and, in many respects, were being rolled back” (p. 4). Taylor (1998) asserts, “CRT challenges the experience of whites as the normative standard and grounds its conceptual framework in the distinctive experiences of people of color” (p. 122). They (Taylor, 1998) also declare that “this call to context insists that the social and experiential context of racial oppression is crucial for understanding racial dynamics, particularly the way that current inequalities are connected to earlier, more overt, practices of racial
exclusion” (p. 122). Delgado and Stefancic (2012) state the following about the work of critical race theorists in the environmental justice movement:

The environmental justice movement analyzes a type of internal colonialism, in which installations such as toxic waste sites, radioactive tailings, and sewage treatment plants are disproportionately placed in minority communities or on Indian reservations. Corporate defenders of these practices argue, as they do in the international arena, that they are merely going to the best market. Sometimes they point out that minority communities welcome the jobs that a sewage treatment plant, for example, would bring. Civil rights activists reply that the marketplace is far from neutral, and that a corporation that takes advantage of a community’s financial vulnerability is engaging in predatory behavior, if not outright racism. A dynamic example of critical race theory in action, the environmental justice movement aims at forging a coalition between the hitherto white-dominated conservation movement and minority communities. If it succeeds, it will have created a truly powerful force for change. (p. 109)

This theoretical framework was used to structure this paper, in which the tenets of CRT are used to describe environmental justice issues in Alabama, and the efforts of organizing for environmental justice in various communities in Alabama.

Three basic tenets of Critical Race Theory are outlined by Delgado and Stefancic (2012). The first tenet is that racism is ordinary, and the everyday experience of people of color, making racism difficult to address. Because of this normalness, perceived solutions to racism, such as color-blindness, only address the most blatant forms of racism (Delgado & Stefancic, 2012). The second tenet is that white superiority over people of color is important when analyzing and understanding racial dynamics. This tenet highlights that both white elites and working-class people benefit from racism, therefore a large proportion of society has no incentive to oppose racism and racists mechanisms. Therefore, whites support advances for people of color only when it supports the interest, or agenda, of whites (Delgado & Stefancic, 2012). The third tenet illuminates the notion that race is a social construction, and concludes that race and races are products of social
thought patterns and relations. This tenet also discusses the racialization of minorities by
dominant society, highlighting that the perception and outward identity of minorities
painted by the oppressor change over time to suite the needs of dominant society. This
tenet mentions the role of intersectionality of identities of minorities, concluding that all
individuals are made up of multiple identities layered on one another. Lastly, this tenet
speaks of the importance of storytelling by black and brown peoples to share their
experiences of racism and oppression (Delgado & Stefancic, 2012). These three tenets
were used as guidelines when analyzing and organizing data collected from interview
subjects and key informants in each of the communities.

Research Questions

1. Who and what are the key players, processes, and relationships existing in the state of
Alabama that affect decision making processes in environmental justice communities in
the state, and in what ways are communities organizing for environmental justice?

   a. What are the key entities in local, state, and federal government that have
control over decision making processes regarding the presence of
environmental hazards located in communities, and how do these entities
interact with the community?

   b. How does environmental issues affect communities?

   c. How do residents of environmental justice communities perceive and react to
   EJ issues?

   d. In what ways are communities organizing for environmental justice?
e. Who are the key organizations or entities organizing with and for environmental justice communities, and in what ways do these organizations interact with the EJ community?

f. How are environmental justice issues framed by community groups?

**Methods**

This study consisted of a series of interviews with residents of environmental justice communities, environmental justice organizers, and staff of environmental organizations in Alabama. An interview protocol was created to ensure that topics were covered adequately (See Appendix). Upon approval by the University of Montevallo’s Institutional Review Board, interviews were recorded using an audio recorder and then transcribed. Additional data was gathered from articles and blogs written about environmental justice issues in Alabama. Individuals that had extensive knowledge of an EJ case/community, primarily non-residents of EJ communities and/or staff from environmental organizations, were selected as initial interview subjects. Snowball interviewing was then used to collect additional interviews from residents of EJ communities, the end goal being saturation of the sample. A total of nine interviews were conducted, two of which contained two interview subjects (by the subjects’ recommendation and preference). Data was collected representing five EJ communities in Alabama: Africatown, Holt, Uniontown, Northern Birmingham. These communities were recommended by initial interviewees, or were a well-known EJ community in the state of Alabama. A disproportionate number of interviews were collected in Uniontown due to ease of availability to find interview subjects in this community. Once the
Interviews were transcribed, qualitative coding was utilized to uncover emergent themes within the transcriptions of interviews, blogs, and articles (Strauss, 1987).

Interviews were conducted in five communities: Africatown, Holt, North Birmingham, Triana, and Uniontown, Alabama. Various subjects related to environmental issues within the community include battling unwanted land uses, such as landfills, soil remediation, contamination of land and water, damage to local cemeteries, battles against petrochemical storage tanks, crude oil pipelines, air pollution from coke processing plants, and wastewater treatment system issues.

**Limitations of Study**

Due to time-restraints and the method of research design, I was unable to reach saturation within each community where I collected interviews. With more time, I would have focused on reaching saturation in each community rather than collecting small amounts of data per community.

Because of the inability to reach saturation, and the inability to gather enough interviews per community, my interview subjects are, of course, not representative of the entire communities’ experience. In order to gather more data when interviewing subjects was not feasible, I collected blogs and articles about each EJ community, but this data also has its own limitations and cannot replace a diverse pool of interviewees per community. My specific concerns are that in some of the communities where I collected data, the only interview subject was a non-resident organizer that has extensive knowledge of the EJ situation occurring in the community, but of course does not experience the difficulty of living in a frontline EJ community. In this research, residents interviewed are referred to as ‘interview subjects’, and outside interviewees as ‘key
informants’. The idea was that these individuals would introduce me to community members, so that community members would feel more comfortable with me, and so that I could get an overview of the issues, then focus on residents’ own stories and experiences of the environmental injustices occurring in their community. Due to time constraints I was unable to saturate the pool of knowledgeable interview subjects and key informants for each community. For some of the communities I was only able to collect data from key informants, rather than residents, which produces data more objective data considering policy and the basic story of the community, rather than perceptions of these issues and data regarding personal experience from residents.

As a qualitative researcher, it is important to introduce my background, academic interests, and why I am researching environmental justice communities. As a researcher, I bring my own biases, especially as I study these communities as an outsider in many senses of the term. As a student involved with various environmental issues in the state I must mention that I had previously known a significant number of my interviewees, which could have influenced the way in which data was presented to me.

Results

Interactions with Local, State, and Federal Government and Agencies Regarding the Decision Making Process

Local politics. In each EJ community, local politics seemed to play an important role in the pursuing of environmental justice and resolution of environmental and social issues within each community. Each community differed in their relationship with local government, and this relationship is, of course, shaped by various factors. The type of industry, as well as the various benefits that local government reap from the industry, could be one factor influencing the interactions between local government, community
organizations, and the industry. This factor will be highlighted throughout this section of the results.

In two of the communities hosting a landfill, the interaction with local government seems to include more conflict and opposing interests. In both of these communities, the interaction with local government is one of dominance on part of the local government, specifically city council and county commissioners. This relationship is exemplified by a statement from a key informant who is an environmental activist that works with community members fighting the expansion of a local landfill. The informant describe a public hearing about the expansion of the landfill:

We had a room full of people on objection to that landfill expansion in the room, after the third speaker got to the microphone, the probate judge knew I was coming up next, and he said if everybody on this side of the room has the same things to say as these people just said, I really don't want to hear it, we got your message, and I stood up and said this is a public hearing and I will be heard. He said alright you're the last one, and I said no sir all of these people came here to be heard, it’s a hearing, it was published in a paper, it's a public hearing. After I spoke he cut off all the comments.

In the other community hosting a landfill, various interview subjects mentioned that the county commissioners stated that it was “a done deal” and that the shots were already called prior to any participation by citizens.

The lack of participation by citizens in the local decision-making process was a recurring problem within these communities, lack of reception from community officials, and a lack of expected professionalism exhibited by elected officials was also mentioned in several interviews. This behavior may result due to the economic incentive provided to the local government by both of the landfills, which is not necessarily the case in all environmental justice communities. Issues brought up in Uniontown, one of the communities hosting a landfill holding coal ash, specifically deal with the unclear
management of funds in the city, corruption in city government, and conflict between
citizen’s groups and local government. Africatown, Alabama, a community battling the
placement of petrochemical storage tanks in their community, had similar issues to the
two communities battling a landfill. Africatown relies on their city council to vote for or
against an ordinance allowing more storage tanks in Africatown, which was supported six
to one by the city councilman. They also rely on the Mobile Planning Commission to
make decisions regarding these storage tanks. Issues associated with the rezoning of
residential areas to industrial areas, or land-grabbing, also persist as an issue regarding
local government in this community. Many times the officials that vote in favor of these
ordinances, or industry entering their community, are from districts that will not be
affected by this decision, as this was the situation in several communities.

In each of the other communities, the relationship with local government varied.
For example, in Triana, Alabama the mayor spearheaded a petition to investigate DDT
contamination in the community. This does not necessarily mean that the motives of local
government in this situation were any less driven by money, but one cannot determine
this. The prosecution of Olin Corporation would only benefit the community
economically by reparations made from the industry, without sacrificing any jobs or the
local economy because the pollution was coming from outside of the community. In this
case, there was not a decision to be made between the environment and health of the
community versus economic growth and jobs.

The situation in North Birmingham is very different from all of the other
communities in this study, most likely because of support from the EPA and the fact that
the issues present in this community relate to cleaning up contamination, rather than
opposing an unwanted land use or facility. The polluting industries in the communities of North Birmingham have been present for much longer than any of the other industries in each of the other communities, and the ways in which the community group are organizing for environmental justice are different than each of the other communities. Rather than trying to shut down the polluting industries in North Birmingham, the community group has worked closely with EPA through a collaboration project to properly clean up contaminated sites and create a community organization to guide further revitalization in North Birmingham. In this community, the city council does not play as big of a role in determining the communities environmental fate, and a key informant discussed how a councilor used her position of power to get EPA’s attention regarding the contamination in these communities. Many of the leaders in the coalition are neighborhood presidents. Although this community worked with the federal agency to address environmental issues, there was still political backlash regarding the cleanup process. A key informant discussed the political backlash regarding this issue in an interview by highlighting that EPA made a formal recommendation based on the hazardous risk indicator score they identified when they did their assessment of Birmingham. The score was high enough that it compelled EPA to recommend Birmingham, specifically the 35th Avenue Superfund Site, to be placed on the National Priority List (NPL). A community has to be ranked high to be placed on this list, meaning the community is very contaminated. Birmingham ranked high enough to compel EPA to place them on that list, and if Birmingham made the final list it would have released significant funding to basically clean up all of the properties that EPA found contaminated, which was significantly greater than the properties that were cleaned from
the Superfund Emergency Response Division. EPA and the community members were counting on this listing being final, but in order to get put on the final list, the EPA headquarters in DC looks at the recommendations made by the regional offices across the nation, and headquarters decide who is going to make the final list, and the final list includes the communities that get the funding for the clean up. There was such political backlash in Alabama against that listing that Birmingham has not made the final list, and we have reasons to believe they never will.

Although local government has a large role in determining the outcome of environmental decisions being made in various communities, local, state, and federal agencies play a role in determining environmental practices in EJ communities. These entities are responsible for various actions that affect EJ communities. Examples include the creation of strict environmental policies, or policies that specifically include EJ language and ensure that community socioeconomic characteristics are considered in the citing of facilities. The permitting and violation documentation process is also left up to the state and federal environmental agency, as well as other actions.

**Local and state agencies.** The Alabama Department of Environmental Management (ADEM), was involved in the permitting process for industry and various other aspects in each community. Actions involving ADEM were similar across all communities. In the case of North Birmingham, and all of Jefferson County, the Jefferson County Health Department handles the issuance and enforcement of air pollution permits, as ADEM does for the rest of the state. ADEM is the agency that issues the permits for industry to legally operate. They also are responsible for the management and enforcement of these permits to ensure that entities are abiding by the appropriate rules.
and regulations. Environmental advocates have criticized ADEM widely regarding their practices. The actions that the state agency take to ensure environmental protection are seen as a sort of rubber stamping according to key informants and interview subjects, rather than adequately protecting the communities and residents of Alabama. A lack of enforcement and implementation of strict environmental policies regarding EJ was a recurring theme brought up in interviews of residents and by key informants. Informants brought up issues associated with the permitting process. For example, permits are issued under the communities’ nose, and that industries are not operating under the correct permit. Several informants mention that they feel that ADEM has ties with the industries they are supposed to be regulating, and that the laws are created by the industry themselves. For example, in an interview with an environmental advocate aiding in organizing for environmental justice it is mentioned that the CEO of the landfill is a former state agency employee at ADEM who helped write the solid waste regulations. One key informant states, “inspectors are encouraged not to write up violations.” Two outside environmental advocacy key informants from different communities mention the falsifying of reports associated with inspections. Although the state agency employs a Title VI/Environmental Justice Coordinator, interviewees expressed concern regarding the insurance of fair and equitable treatment of EJ communities regarding the permitting of environmental hazards by ADEM. Residents feel that the state is not taking adequate measures to ensure their health, safety, and role in the decision making and permitting process. There is currently no legislation at the state level preventing the disproportionate citing of environmental hazards in minority communities. The role of the state agency is to keep businesses from sacrificing the health and well being of Alabama’s residents and
the environment for profit, but residents see this played out differently in environmental justice communities, and oftentimes feel that the corporations are given the benefit of the doubt rather than an eye kept on them closely.

**Federal agency.** One purpose of the EPA is to ensure that agencies that receive funding do not discriminate in their practices. This statute is mandated under Title VI of the Civil Rights Act, which prohibits the discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance (Civil Rights Act of 1964). The U.S. EPA has an Office of Civil Rights, where complaints regarding Title VI are sent. Several of the communities in Alabama have utilized Title VI as a legal tool to fight for justice. Although this is seemingly a useful resource, very few complaints are actually accepted for investigation, and upon investigation discrimination is not often found (Yang, 2001). There have been several complaints filed with the EPA Office of Civil Rights regarding communities in Alabama, most of which have been rejected. Uniontown and North Birmingham have both used this as a legal tool and filed complaints under Title VI. Interview subjects and key informants suggest that EPA does not effectively execute its role in ensuring that ADEM does its part in requiring that the health of Alabama’s residents and the environment are protected. Residents expressed dissatisfaction with both agencies. This dissatisfaction is highlighted in an interview with one resident:

My thing is we fine them and they do the same thing over and over again. It's like a cycle that ADEM don't give a dang, for the community. We tell them out concerns over and over again and nothing is done, and EPA is the same way. Our federal and our state government is not listening but they need to be listening because they are using state and federal money, and no one is listening but we are still making noise.
Another informant that works for an advocacy organization when mentioning complaints filed with EPA’s Office of Civil Rights stated, “EPA has granted those investigations just like they did in Uniontown, but unfortunately they haven't done anything about it yet, and EPA does not have a great track record in that area.”

**How Industry Impacts on Quality of Life**

Environmental issues affect communities in various ways. Residents expressed that these issues affect them in regards to health, economics, livelihood, the burdening of public infrastructure, property value and damage, and in various other ways too numerous to include. Impacts affecting people's health, community, and family and friends, of course, have a bearing on their ability to enjoy life. A recurring theme throughout the interviews was that the residents’ quality of life has worsened due to environmental issues in their community. A key informant stated:

> We see an external form of pollution that is violent, that keeps people inside of their house, it keeps them stressed out, it keeps them going to the hospital, it keeps them sick, it keeps them sad, it keeps them poisoned.

Several residents feel as if they should spend more time indoors, rather than enjoying time spent outdoors. Residents have also expressed concern about their children playing outside. A resident pondered:

> Is this America? Do we have any rights at all? What about the pursuit of happiness in your community? You know, life liberty and the pursuit of happiness? How can you pursue happiness? How can you go outside and have a barbeque when you're so nauseated from the smell. And you've got your kids playing outside, and you're worried about the dust coming off the landfill.

A key informant of Triana, Alabama discusses the impact on local fisherman, and the local economy, in the area by stating, “There were commercial fisherman who would fish, and sell the fish for their livelihood, and they would ingest the fish and people got
sick.” In the communities that deal with issues regarding cemeteries adjacent to landfill, residents are unable to peacefully visit their buried loved ones without disturbances from trash trucks loudly rolling by, or from visits from landfill employees. In Holt, Alabama, because of the proximity of the landfill to the homes, residents deal with trash trucks constantly passing by, creating an unsafe situation for children, possible health implications from kicked up dust in the air, and increased noise levels.

Mobilizing for Environmental Justice in Alabama

**Framing of issues.** Each of the communities represented in this study process these issues differently. Not all of the communities are actively combating environmental injustice through community organizing and mobilization. Holt, Alabama does not currently have an organized group of residents combating environmental injustice. Most of the organizers involved with incidences occurring around DDT contamination in Triana, Alabama are no longer alive; therefore, much of the information regarding organizing at that time was left unanswered. The communities that have some sort of established group (Africatown, Uniontown, and North Birmingham) are each fighting different issues, which most likely affects the shaping and framing of their messaging in organizing. For example, communities may feel it more strategic to frame the issue as a social issue, and focus on a narrative surrounding environmental racism, or a community may feel more inclined to stick to discussing only environmental issues. It was brought up by several interview subjects and key informants that the issues surrounding these communities are not only about environmental justice, or environmental issues, but rather about all issues these communities are struggling with. Issues that were brought up in various communities were revitalization, economic development and jobs, access to
healthcare, affordable housing, voting rights, police brutality, and all other matters surrounding and specific to black communities.

The use of storytelling was also observed as important in organizing. For example, an interview subject highlights the importance of storytelling to outsiders in stating that:

The last few weeks ago the River Network had their annual convention right here in Mobile, for 4 days, and one day they sent out ten tours, and one of the tours came through Africatown of 25 people, and I assure you that every last one of them enjoyed that 5 hour trip. It was 5 hours of telling them Africatown’s story and showing them the community and showing them what we're trying to do. And tourism is one thing we're trying to push for, but you can't push for it if you're putting a storage tank in our community.

In several communities, there was an unofficial spokesperson for their community who focused on conveying how they perceive the issues occurring in their community, their words and stories were often used in social media, and they often served as a public speaker on issues relating to environmental justice in their community. Some of the speakers were valued due to their ability to convey emotion when speaking and tell the true story of their community, and their experience living in an EJ community, to create powerful a message and speech. Others were true historians and storytellers within their community as well as to those outside of the community. They also communicated through social media and in blogs. Their role as a black multigenerational resident of their community is also important when considering the spokesperson for EJ communities.

**Environmental racism as ordinary: Multi-generational environmental issues in Alabama’s black communities.** Communities impacted by environmental hazards in Alabama, in various situations, have been dealing with these problems on a multi-
generational basis. For example, in Africatown individuals who grew up under the smoke stacks of paper mills are now battling petrochemical storage tanks among various other environmental issues facing gulf coast communities. To residents of these communities, these issues may seem normal. A resident of Uniontown references this conception of ordinary racism through environmental injustice:

I think a lot of people out here don't even know what justice is. And a lot of people don't really know what environmental injustice is, so you have to just straight up talk and say well this is wrong you shouldn't be smelling this.

This creates various issues related to organizing for environmental justice. When residents do not recognize these environmental issues as a problem, community engagement and advocacy for addressing these issues with just solutions would seemingly create a difficult situation, or in the minimum create a burden for organizers due to the extra effort required to educate residents on these issues and why they are problematic.

**Origins and composition of community groups, leaders, role of outsiders, and external support.** Most of the organizations or groups in the communities included in this study fighting for environmental justice are made up of community members, or a combination of community members and supporters from outside of the community. Some groups were composed primarily of members of the community already involved in a leadership position, such as a neighborhood leader, and others consisted of various segments of the community.

Each of the groups organizing around environmental justice shared several characteristics. Most of the groups were organized around a single issue, such as pollution or an unwanted land use. The community groups were each receiving some sort
of technical support, or resource sharing from an outside environmental or social group, or a single individual who is knowledgeable of environmental issues and willing to volunteer time. Most of the groups consisted of a core group of individuals, and different groups were at different places in engaging with the community, and community support for their issues.

In various interviews it was mentioned that there was an emphasis on the notion that community members should front any group or organization organizing in and for this community. Correct representation when considering leaders of these community groups was also mentioned in interviews. Black leadership was especially important in one community group, because they view these issues as specifically black issues. One interviewee talks about correct representation in this way:

But my thing is you have to be black. You wanna know why? It would be more success because the majority of the town is a black community and you're fighting black things. It could be a black president and a white vice president. Because you're fighting this in a black community, and it would be most successful if it was black-leaded.

Some of the communities engaged in some form of resources sharing with a larger environmental or social justice organization. North Birmingham worked with the EPA, who funded the creation of their coalition. Residents active in this community consisted primarily of neighborhood leaders, and GASP, a local environmental advocacy organization that is an official resource partner of the coalition. According to the key informant, the coalition is just now becoming more involved and active within the community. Uniontown, Alabama has various groups and organizations aiding the Black Belt Citizens Fighting for Health and Justice (BBC) and their efforts. School groups, churches, social justice organizations, and environmental organizations at the state,
regional, and national level have aided in organizing with BBC. Environmental organizations at the state level have provided technical support through testing of water and environmental investigating. National environmental organizations have assisted through legal means, and some groups have recently received fiscal support and resources from various social justice and environmental organizations, or are working on finding financial assistance in order to hire staff. The community organization in Africatown/Mobile, the Mobile Environmental Justice Action Coalition, has networked, and built partnerships and coalitions with various environmental organizations, and other community groups, that support or are battling the same issues. They have made an effort to network and connect with organizations on the gulf coast, especially. Several of the communities have made an effort to connect EJ issues affecting their community, to larger environmental issues, such as climate change, and our dependence on coal and oil.

Racial conflict within community groups and elitism of outsiders. Racial dynamics were also at play within community groups and organizations. Racial tension within the community was expressed by black leaders in interviews. Prominent white leaders within the community group were sometimes seen as mothering, controlling, and out of touch with the direction the organization was moving. Black leaders expressed dissatisfaction with some of the actions that white individuals took, such as exhibiting these controlling behaviors. An interviewee mentions that these individuals sometimes speak for them, or try and tell them what to do and see this as wrong and perpetuating white supremacy, and that their experiences are still not the same as black residents. White leaders sometimes said that ‘they see no color’, a notion that has the potential to discount race as a part of the community’s narrative and the framing of these issues.
These communities, that oftentimes consist of families with several generations from the community sometimes dating back to slave days, have experienced historical racial tension and conflict, making these issues complex when organizing for environmental justice. In these small rural communities with multi-generational homeowners, racial tension may run rampant due to histories involving violent oppression exhibited by ancestors of white residents. It could also be said that white landowners in these communities who have historical roots are more likely to become involved in community organizations, especially ones related to environmental justice due to how environmental issues, sometimes irreversibly, change the community. These dynamics are especially important to note when considering power dynamics in organizing groups.

Interviewees touched on elitism sometimes present from visiting outsiders. For example, a resident stated that:

Sometimes you have to get out of your comfort zone. Sometimes you need to step in other people’s zone, don't talk the big words, try and be friendly, always listen first and then you can understand that person by just listening, and after you listen to that person you get more out of it and they will listen to you, but if you try and go in there with all of these big words and ask why do they live like this and judging people before you even know anything about them, so I had the experience to just tell the story.

This subject highlights the importance of roles of outsiders, and that rather than speaking over residents, listening to them, and using accessible language for everyone can go a long way when considering community trust for outsiders and acceptance of their help and input.

**Networking opportunities and building connections.** Opportunities to network and build relationships with other grassroots groups, as well as connecting with various environmental or social organizations were seen as a valuable resource for grassroots
groups organizing for EJ. Examples of opportunities to network that interview subjects mentioned multiple times include conferences, regional or national environmental actions, and other organized events to connect and build relationships with other groups, organizations, and communities struggling with EJ and other environmental or social issues. Several residents brought up the importance of attending the Alabama Water Rally, a conference where various segments of the environmental community have the opportunity to present and attend workshops about environmental issues in Alabama, as well as meet and connect with other individuals and organizations from around the state. Organizers also mention attending environmental and social justice conferences regionally and nationally to build relationships with communities struggling with similar issues, or connect with organizations working on similar issues.

**Connecting issues and building solidarity.** With access to resources for networking, communities and groups are able to build relationships and alliances with other communities and organizations battling the same issues. Several interviewees mentioned the importance of building these relationships. Creating connections and solidarity with these communities helps them to increase support and hold clout, as well as create a narrative around these issues. These connections and relationships look like communities and groups connecting on the basis of the type of hazard, for example, air pollution, or oil pipelines; communities may also connect on the basis of the company that is responsible for the hazard, for example, community groups in Alabama might contact other communities around the US that are hosting the same hazard from the same parent company. These connections may also look like various communities organizing for EJ in very different ways, but connecting these issues to larger issues, such as climate
change, or fossil fuel dependency can be beneficial. Each of the communities has exhibited some form of these behaviors. Some of the groups have also made efforts to support other movements and social issues, and use a collective liberation framework, or no one is free, until we are all free, mentality when supporting other social issues. This organizing concept also builds support across movements, and shapes a narrative centered around environmental issues as social injustices. A key informant closely involved with one community sums up this sentiment:

Success is being able to now reach across state lines in other places and be able to share and help support communities of struggle. We have seen those successes on the ground but things have gotten worse. The only successes is that we have been able to build partnerships and relationships and to join a movement for collective liberation.

**Perceptions of environmental injustice.** Although each community perceives and frames their struggle for environmental justice differently, as mentioned earlier, there were some aspects of this topic that I think are worth mentioning. In interviews, residents express their true feelings about these issues. Emotions were rampant during these discussions. Tears were shed and anger was apparent. Some residents see this as a violation of their human rights to live in a clean environment, breath clean air, and drink clean water. Not only are these communities experiencing environmental and health issues, but some of the communities are experiencing an attack on their culture and history. Industry threatens historical and sacred spaces in these communities, which has the possibility to generate various emotions. Below is a series of excerpts from an interview discussing the ways in which these instances make one resident feel:

I mean you don't take heavy equipment on top of a cemetery, and that's a violation of my rights. I mean my family is buried and they ignore the whole thing. The bulldozer is on top of my family members that are buried...
You can never own it. But they have said that they own the cemetery, but my cousins buried out there, my great grandparents buried out there, my second cousin is buried out there I know my great grandparents they are probably slaves, because where the landfill is is where the plantation used to be...

Even when I go down to do a tour with someone, here comes the landfill people, someone that works for the landfill, they are following me, they're taking pictures, I feel so uncomfortable, but at the same time I'm not afraid of you. Everything's been done to me. Everything has been done to me. From police brutality, to all of this other stuff that just makes you mad, makes you so terrified, that all of these rights, all of my freedom have been taken away.

These quotes speak for themselves regarding the disrespect that certain companies have for black communities, and the ways in which this impacts historical and cultural roots of black communities in Alabama. In an article titled “Landfills are Destroying Alabamians’ Connections to their Ancestors” on AL.com written by Phyllis Gosa (July 25th, 2016), Gosa recounts how landfills in Alabama impact black lives:

Ashurst Bar/Smith is important to me because 6 generations of my family have lived in this community. Today, my family owns land there, bought by freed slaves and passed onto their descendants like my parents and me, who lived through Jim Crow segregation in Alabama. The landfill has essentially taken this land away from us, extinguishing the only connection to our ancestors.

The ever-expanding landfill receives waste from all 67 counties in Alabama and 3 counties in Georgia. As a result, this trash is literally dumped in our front and back yards. (para. 3 and 4)

Landfills, as well as other environmental hazards, simply use a lot of land. Why are they situated so close to black communities and black neighborhoods? I do not know this answer, but the fact that these land uses and facilities continue to be sited in black communities continues to impact their land, which blacks historically have not been granted a lot of. Culture and history are both connected to land, therefore residents are deeply dissatisfied with the theft and blatant disrespect of their land and sacred spaces.
Discussion

Issues Through the Lens of Critical Race Theory

Looking at the results through the lens of Critical Race Theory, one is able to analyze the racial dynamics in play when considering environmental justice in Alabama. Discussing race when discussing environmental issues and organizing for environmental justice in Alabama is necessary because these issues are ones that specifically affect black communities. Therefore, with the use of Critical Race Theory, we can discuss race and environmental justice communities in Alabama.

The first tenet of the theory discusses the notion that racism is ordinary, and is the experience of people of color every day. This tenet is especially relevant to environmental justice cases in Alabama. Communities impacted by environmental hazards in Alabama, in various situations, have been dealing with these issues on a multi-generational basis. When environmental issues run rampant in a community for generations on end, outsiders as well as residents may not even recognize environmental issues or environmental racism as an issue, or see discrimination with siting and permitting of environmental hazards and benefits. This is also where the dangerous notion of color-blind racism could be perceived as a solution to environmental injustice. Just as black activists state that black lives don't matter to police as part of the Black Lives Matter movement, black lives have consistently not mattered to decision makers regarding environmental benefits and hazards, and black lives have carried the burden of modern society through environmental hazards. If these issues are not viewed as a form of racism, then urging policymakers to use environmental justice principles in the
permitting process is especially difficult. Without acknowledging race, no real and just solutions can be created.

A few interviewees and key informants, some black and some white, mentioned the concept that they see no color, or mentioned that others have made this statement. Some followed this statement by conveying the notion that they recognize that black communities are disproportionately impacted by these issues. So, this is a start to recognizing environmental issues as racists issues and engaging in discussions about environmental racism. There was also an overall sense that everyone realized that black residents needed to front the movement, as also stated in the literature, and white outsiders respected this. I observed that for the most part, white individuals from outside of the community were only there in support, and made sure that they were not fronting the movement or overpowering the voices of black residents. One can conclude that in Alabama, those involved in EJ communities are moving in the right direction when acknowledging race when discussing who is impacted by these issues, and also, in turn who should be fronting these movements and actions for environmental justice.

The discussion around the validity of environmental racism can be viewed through this lens as well, for example, the debate of whether the community or the environmental hazard came first fails to address the systematic oppression of people of color through poverty that creates a scenario where people of color are more susceptible to choosing to live in areas with heavy industry or pollution. Economically disadvantaged communities are more prone to accept environmental risks and a degraded environment in order to receive jobs or revenue for their community, which may look like the community is willingly choosing environmental degradation. Delgado and Stefancic
(2012) explain, “Civil rights activists reply that the marketplace is far from neutral, and that a corporation that takes advantage of a community’s financial vulnerability is engaging in predatory behavior, if not outright racism” (p. 108). In reality, it may be their only option to sustain a livelihood. Although this discussion was not specifically brought up in interviews, it most likely occurs surrounding EJ communities in Alabama and would affect the overall perception of these communities. In turn, this could shape how people view the interactions between race and class surrounding EJ communities. The perceptions of these issues would affect those who support organizing efforts in EJ communities, and decisions and policies made regarding the placement and siting of potential hazards or unwanted land uses for decision makers.

The second tenet states that when discussing racial dynamics, addressing white over color superiority is important. When discussing environmental racism, this tenet is applicable in the discussion of environmental injustice, as well as the mechanisms in which environmental justice solutions are reached and the racial dynamics present in mobilizing black communities for environmental justice. This tenet discusses how racism benefits both white elites, and working class people, so that a large proportion of the population is incentivized to oppose racial advances for people of color unless it also directly benefits them. This tenet is applicable when looking at the relationships between industry, government, and EJ communities; interactions between community groups and primarily white conservation and environmental organizations; and the racial dynamics at play internally within community groups. For example, it was mentioned that residents and key informants of EJ communities feel that certain environmental justice programs within ADEM and EPA are minimally involved in meaningful action to protect
Communities of color from industrial exploitation. Interviewees saw these programs as rubber stamping in order to receive funds from the EPA. Actions such as this could be considered ones that ideally should benefit communities of color, but in reality residents did not express that they valued these actions or programs, but rather they feel that the agency uses these programs for the advancement of their own agency in order to receive funds.

Delgado and Stefancic (2012) regard environmental racism as a form of internal colonialism, because of the uneven distribution of environmental hazards in communities of color. Hines (2007) states, “The town of Emelle did exhibit this type of internal colonialism, where the minority population was rendered powerless against an elite chemical giant facility” (p. 54). This is also true of the communities present in this study. The landfill in one of the communities is actually located on land that was once a plantation. The inequitable distribution of environmental benefits and hazards disproportionately affect black communities. As we know from previous studies, even between low income white communities, and low income black communities, black communities are impacted more often by environmental hazards. Therefore, when considering environmental issues, acknowledging white over color superiority must be part of the discussion. Implementing measures to discuss environmental racism within local, state, and federal governance and bureaucracy is an important step for acknowledging this. In addition to having trainings discussing environmental justice and other educational programs for employees within state agencies, and educational programs in EJ communities, implementing sound policies and regulations which would create strict standards when evaluating where hazards and unwanted land uses will be
placed is also a necessary step. Ideally, communities would make these decisions themselves, and requiring more participation in the decision-making process in minority communities would be a sound step towards environmental justice. Decisions should not be made for communities, but by them.

Environmental justice benefits not only the frontline environmental communities, but also achieves some of the goals and objectives that predominantly white led environmental and conservation organizations advocate for. Because environmental issues are interconnected, and pollution and environmental degradation affect not only frontline communities, but the rest of the world, in many cases outside organizations are incentivized to become involved. This can be seen as a way that environmental organizations are advocating for the advancement of communities of color, but only because they are achieving progress for their missions and goals simultaneously. For example, when looking at communities in Alabama one can see that organizations centered around environmental protection and conservation could make the case for working in EJ communities solely for environmental advances or improvements. Both environmental groups and social justice groups can achieve their goals by taking the same actions, though their reasons and motives for taking these actions may be different due to different organizational missions. For example, with stricter environmental regulations on coke manufacturing plants, the community’s health improves while air pollution decreases. The resolution of wastewater treatment issues improves community health, but also improves stream health and local ecology. Predominantly white environmental and conservation organizations also receive criticism for neglecting to take a stance on or delegate resources to environmental justice, and other issues related to
racism, therefore the placement of more resources in environmental justice communities
can be seen as a way of advancing the organization to meet the standards of their
audience? Is this the case between EJ communities and environmental or conservation
organizations in Alabama? One cannot assess the motives of these organizations, and
although they may be active in these communities to promote their missions, they are still
oftentimes working towards the same outcome. Although these environmental
organizations may not be implementing anti-racism measures and environmental justice
into their organizations, the combination of movements has potential to create a larger
base of individuals fighting for these issues, as well as connections between
environmental and social justice movements. Each of the communities had some sort of a
relationship with an environmental advocate, or environmental organization, therefore in
my opinion it would make sense to utilize these resources and possibly push for more
assistance from these organizations or individuals in the future when these communities
continue to organize.

Also important to discuss is racial tension within community organizations
fighting for EJ. The second tenet can be used to view this situation because actions of
white residents in communities organizing for environmental justice not only benefit
themselves, but the community as well. In this situation it is unknown if these individuals
would be as actively involved with supporting the actions taken by community members
if they were outsiders and not affected by the same situation as black residents.

The third tenet mentions the role of intersectionality of identities of minorities,
concluding that all individuals are made up of multiple identities layered on one another.
This is relevant to environmental justice communities because with the acknowledgement
of intersectional identities, one can bridge the gap between various social movements and support one another in organizing efforts. As mentioned earlier, supporting other social movements can be strategic in creating a larger base of supporters, as well as creating a stronger sense of purpose in organizing for environmental justice. Lastly, this tenet speaks of the importance of storytelling by black and brown peoples to share their experiences of racism and oppression (Delgado & Stefancic, 2012). Just like any other struggle specific to a marginalized group of people, storytelling within the environmental justice movement is important. As mentioned, storytelling was valued by community groups as an organizing tool and individuals held roles as sort of storytellers, conveying their thoughts, feelings, and emotions regarding the situations occurring in their community to outsiders. This is an area where community groups that do not openly engage in storytelling within their organizing group could utilize this already established behavior. This could be used to pass along information to outsiders in order to gain support.

**Notes on Mobilizing for Environmental Justice in Alabama**

This study provides insight into the ways in which communities are organizing for environmental justice, and can give us a better understanding of what this battle looks like for Alabama. Within the communities in this study, it seems that they are each at different places in organizing for EJ. Interestingly, I did not find a larger narrative about EJ in Alabama in which all communities were connected on the basis of environmental racism. There did seem to be connections among communities, and collaboration among organizers, but a lack of overall narrative about environmental justice in Alabama connecting all of the communities. This may, of course, exist but was not mentioned in
my interviews. I would speculate that this narrative has not been extensively organized and developed due to each community being strapped for resources and time, therefore focusing on the individual narrative in their community and building connections with the organizations that they are receiving resources from probably shape the ways in which they frame the issues in their community. I would suggest that in addition to making connections between communities affected by the same environmentally degrading process across state lines and regionally, also connecting EJ communities within the state could help build strength when organizing for EJ against state agencies. This could not only strengthen battles dealing with entities such as ADEM, and other state agencies, but it could also create a more inclusive environment for communities with less resources to become more involved, and offer encouragement and empowerment, to begin organizing.

Also, more interaction between larger environmental organizations and community groups could be seen as an area that could grow. Stances environmental organizations take on certain issues most likely also shapes how likely the community is to trust this organization, which could in turn affect the ways in which the community organizes around environmental justice. Because these communities are not as closely aligned with environmental and conservation issues as social and civil rights issues, it would make sense that they are more likely to trust organizations that work specifically on issues regarding inequity in various situations. Delgado and Stefancic (2012) explain, “A dynamic example of critical race theory in action, the environmental justice movement aims at forging a coalition between the hitherto white-dominated conservation movement and minority communities. If it succeeds, it will have created a truly powerful force for change” (p. 109). In Alabama, it seems that the participation of both social
justice organizations and environmental organizations in certain communities have been fairly successful. Communities seemed to have various organizations from different backgrounds participating in resource sharing of some degree, and seemed to benefit from all organizations participating.

One of the difficulties communities have had in organizing is engagement from residents in large numbers, and one possible explanation for this issue could be the framing of these issues. Communities that frame issues only as an environmental problem may benefit from framing these issues as both an environmental and social problem due to historical and ancestral connections to fighting for racial justice. Emphasizing how these issues are results of racism would not only broaden the base for supporters across the nation and world, creating a more powerful movement, but also may increase support within the community. This being said, within a conservative state, groups may have abstained from this more radical rhetoric related to racism in order to broaden their base of support.

Overall, it seems that the communities that have been organizing for an extended period of time in Alabama are in a time of growth, which only means progress for environmental justice efforts in Alabama. Areas that, in my opinion, could be expanded on and developed would be working to push environmental and conservation organizations in Alabama to becoming more dedicated to supporting environmental justice communities. Although EJ communities tend to connect with social justice issues and civil rights issues more than conservation or environmental issues, incorporating EJ into statewide organizations could only build more support for EJ issues, as well as build trust and create long term relationships between EJ communities and environmental
organizations in the state. Tapping into the network of supporters of these older, larger, well established environmental organizations in Alabama could create possibilities for a powerful movement for EJ in Alabama. From a social justice standpoint, it is the responsibility of individuals with privilege to utilize their privilege to take actions to support and back actions by the oppressed and marginalized groups. I would say that this is relevant for organizations as well. Well established environmental organizations that have built relationships with state government and state agencies could use their power to help advocate for EJ communities, as well as tap into their large network of environmentalists in Alabama for statewide support for these EJ communities. It is important to note, however, that the power resides in the black residents that are organizing within their own communities, and that the role of these organizations is to support the movement of EJ communities for justice. As suggested in the literature review, dependence on the support from outsiders is not a sound organizing strategy.

**Suggestions for Further Research**

This study was only the beginning of research that is needed for EJ communities in Alabama. Topics brought up in my interviews were local, state, and federal programs and policies for EJ, how residents feel about environmental issues within their communities, the effects of environmental issues on individuals and communities, and the ways in which people are organizing for EJ in Alabama. Each of these topics, or even subtopics of these topics, could be researched further. There is also a need for quantitative environmental justice research within the state. Research on the health of environmental justice communities, the distribution of environmental hazards and benefits in Alabama, and various other topics to explore are needed, as well as basic
monitoring of health and the environment. More research on environmental justice in Alabama provides opportunities for communities to use this research for organizing purposes, which may help communities hold clout in organizing for EJ.

**Conclusion**

The fight for environmental justice in Alabama is a growing and inspiring movement composed of very passionate individuals from environmental justice communities, social justice organizations, and environmental organizations. EJ communities are impacted in various ways by environmental injustice, such as health and quality of life. Local governments and politics, as well as state and federal environmental agencies each affect the outcome of various environmental justice communities, for better or for worse. Residents and individuals across the state have worked hard to build relationships with one another to continue to demand environmental justice in our state.

The use of Critical Race Theory is one way to look at environmental justice cases, and organizing around EJ. When discussing EJ issues, especially in Alabama, race is an integral part of the conversation about environmental issues.

**References**


**Appendix**

**Interview Questionnaire**

1. What is/was your role when considering the community of ________.
2. How did you find yourself involved with this community?
3. Please give a short description or timeline of the incidences occurring in ________ when considering environmental and justice issues.
4. Describe the polluting industries in the community and why citizens are concerned about their presence?
5. Describe the policies that affect/affected this community in regard to environmental justice?
6. Who are the key players in organizing for environmental justice in this community?
7. Describe the governmental organizations involved with decision-making in the community and the extent of their involvement/importance when considering the decisions made that affect the community.
8. Was there the presence of external support for the community, for example regional organizations working on these issues?
9. Which organizations take a stance on these issues, and to what extent are they involved?
10. Geographically, how far does the support from other organizations for this issue reach?
11. For each organization involved describe the range in which they are involved, for example, do they have local initiatives, state-wide initiatives, regional initiatives, or national initiatives?
12. Do any of the organizations involved with these issues receive financial support for their work? And in what form do they receive this financial support? (i.e. paid staff, grants, etc.)
13. What is/was the goal of the collective groups of organizations and individuals organizing for these communities?
14. Which specific actions are these organizations advocating and organizing for, and do you see this as an attainable goal?
15. If this goal is not met, what would be the most basic action taken that a community is willing to accept?
16. Do the community organizers involved with this community identify with larger social movements? Which movements or issues would you say this community identifies with?
17. What are broader goals that the collective group of organizers and individuals are advocating for to address these issues?
18. Where has conflict arisen within these issues?
19. Describe the characteristics of individuals/volunteers involved with organizing in this community.
20. Describe the extent to which community members participate in organizing for environmental justice in their community.
21. In your opinion, what has been the successes and failures in organizing for environmental justice for this community?
Aging out of the Foster Care System: Entering Higher Education

Nicholas Preston

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Abstract

Aging out of the foster care system is an issue that gets little attention. Most teenagers in Alabama’s foster care system will be out on their own without a support system to assist them. For those who want to transition into higher education, it gets worse. Currently, the legal age to age out of the system is 21, leaving many foster care youth who are in higher education unaware of the resources that are available to them once they enter college. This qualitative research study explores the foster care system as a whole and examines what resources are available to Alabama’s foster care youth once they have aged out. The participants are social workers in the Central Alabama metropolitan area. The social workers were interviewed and the interviews were transcribed. The data was then analyzed. Insight from the research sampling will hopefully garner support for individuals in foster care.

Introduction

Aging out of the foster care system has been a big issue for centuries. Making sure foster care youth are educated and can access the resources available to them once they have aged out of the system is crucial. This has been a major issue in the past decades, and we have to find different ways to address it. By becoming more knowledgeable of ways to help foster care youth transition, the youth preparing to live independently can find resources available to them once they age out. We also can find ways to increase students in foster care with educational attainment in high school graduation rates and those who go on further into higher education.

Literature Review

Welfare System

In “Homelessness and the Transition from Foster Care to Adulthood,” Dworsky & Courtney (2009) give an overview of the child welfare system as a whole. The researchers explain that 510,000 children lived in out-of-home care in the United States
in 2006, but that number continues to rise. Three-fifths of these children were members of an ethnic or racial minority group, 52% were male, and their median age was 10.2 years. State child welfare provided by the Titles IV-E and IV-B of the Social Security Act. Title IV-E provided states with federal reimbursement for a significant part of the costs of foster care for children is the source of funding for foster care youth. Child welfare agencies are required to make “reasonable efforts” to prevent placement of children in out-of-home-care; these efforts generally consist of social services provided for the child’s family (Dworsky & Courtney).

**Programs**

Batsche et al. (2014) explains the steps to prepare for the young adult once he/she has aged out of the child welfare system and has plans to enter higher education. One program that was created, called KnowHow2Go (KH2Go), is a national media campaign designed to help middle school and high school youth obtain information on how to go to college. The program emphasizes four steps: Find someone to help, Push yourself, Find the right fit, Put your hands on some cash (Batsche et al., 2014). This study was conducted in a large urban county with a population of 1.2 million within the southeastern United States (Batsche et al., 2014). Thirty individuals volunteered for the interviews, but three did not meet the criteria and could not be used (Batsche et al., 2012). The criteria was (a) be between the ages of 18 and 25; (b) emancipated from foster care within the past five years, and (c) enrolled in or have completed a postsecondary program (Batsche, 2012). The researchers found that most of the foster care participants had no one to help them and were not aware of resources to help them apply to college (Batsche et al., 2014). One student received help from a federally funded TRIO program called
Upward Bound, which facilitated his post secondary education transition (Batsche et al., 2014). Another student talked about how he attended a public institution to receive tuition exemption; however, he felt they needed a support system at or near the institution (Batsche et al., 2014). In order to pay for college 16 of the 27 respondents had the following sources of income: tuition exemptions, state stipends, Pell grants, jobs and other scholarships (Batsche et al., 2014). Overall, the process to transition into higher education can be a strain if there is no one there to assist. However, the KH2Go program gives step by step guidance on how to prepare for post-secondary education.

**Housing**

Youth who age out of the foster care system have difficulties in their transition to adulthood. They have a hard time trying to find housing opportunities (Curry & Abrams, 2015). Young people who are making the transition to adulthood benefit from stable housing as they pursue education and vocational opportunities and master tasks related to economic independence. Youth who have been emancipated from foster care face a unique set of barriers to independence related to their backgrounds and histories with the child welfare system. According to Curry and Abrams (2015), financial independence is also often unattainable for emancipated foster youth. As a result, federal legislation in the 1980s established the Independent Living Program (ILP). The ILP included transitional housing and assistance in earning a high school diploma or college degree. Still, gaining economic independence is problematic for foster care youth. Overall, it is very difficult for foster care youth to transition out of foster care and they struggle finding available resources.
Education

Studies of former foster youth find poor levels of education attainment. According to Osgood (2007), these youth have fewer years of education, and they are less likely to earn a high school diploma. He goes on to give statistics from the Cook, Fleishman, and Grimes study, which found that 66% of 18-year-olds discharged from foster care in the US between 1987 and 1988 had not graduated high school (Osgood 2007). The study, conducted in 2001, found that 37% of their sample of former foster youth had not completed high school or obtained a GED within 12 to 18 months of being discharged (Osgood 2007, p. 34). It was also found that only 9 percent of participants had taken any college courses (Osgood 2007). Former foster youth face the transition to independence because of low educational attainment. These deficits make it difficult for them to survive in the competitive job market.

Methodology

In this qualitative research study, I interviewed social workers in the Central Alabama metropolitan area. I used a pseudonym for their names. Participants were found by using the snowball effect. Both participants, Katie and Mark, signed a consent form that informed them of the purpose of the study and if there were any risks involved. The interviews were recorded and transcribed. The transcriptions were kept under lock and key. Once the research project was completed, the recorded interviews were deleted. I asked each of my participants a pool of interview questions. Once the interviews were over, I analyze the transcriptions looking for themes that stood out during the interviews.
Findings

As expected, findings confirmed that foster care youth struggle with various difficulties when transitioning from high school into higher education. Post-traumatic Stress Disorder (PTSD) is very common in foster care youth. Katie explained:

Most people only think of people having PTSD are ones in the military; a lot of our kids are diagnosed with PTSD and are taking medication for it and or seeing a counselor for it, simply because of the trauma they have witnessed.

Also, most youth find it difficult to transition into higher education simply because of their support system. Foster care youth are legally emancipated from the system once they turn 21. Katie stated, “Basically once a child becomes an adult if the child has a plan to support themselves, what we can do is emancipation; that’s when we kind of like discharge them.” She added, “If they are 21 and they are still in college we have to let them go legally.” I also found that there are resources available to foster care youth who want to attend higher education. On many campuses these resources include: Counseling Centers, TRIO Student Support Services, Writing Centers and various others outlets that foster care youth can utilize. However, if there is no one there to help inform them of these resources then it becomes very difficult for the foster care youth to be knowledgeable about the resources.

Higher Education

Not all foster care youth go on to higher education once they have completed high school. For the ones who do go to high school and then college, it can be a very difficult transition for them. Katie explained:

Generally on the holidays and things like most students go home for Thanksgiving, and everyone goes home for Christmas, but foster care youth who have been emancipated sometimes don’t know where to go or who to go because
they may not have that family to visit. This is a big barrier for a lot of teenagers who are in foster care that do pursue higher education.

The feeling of being alone can often cause students to become depressed and isolated. However, some foster care youth develop a plan, and their transition from high school to higher education can be very smooth. Mark stated, “Mostly the kids on my caseload have already identified before they finished high school what school they want to attend.”

There are many resources available at the institution, but if there is no one there to inform them of the resources then it becomes difficult to utilize them. Mark explained:

There are resources out there, I know the governor just signed into law a scholarship for pretty much all children who are in foster care or have been adopted after a certain age to have free college tuition and stuff paid for, I think up to a certain amount.

By using the assistance of social workers and developing an ILP before high school graduation, youth in the foster care system can make a healthy transition into higher education.

**Families**

When youth age out of the foster care system, they need some type of support system. For instance, one participant stated, “It can be a very difficult transition for children who are in foster care simply because generally your family is helping you get all the things ready, as far as preparation even what people consider a trump party.” The same participant stated, “A lot of our youth are not in traditional foster home setting a lot of our teenagers are in group home settings.

**Independent Living Programs**

Independent Living Programs (ILP) are designed for foster care youth ages fourteen and older, and it teaches them basic necessities of life. Katie explained:
They bring in different speakers and things like that to equip the kids in giving them different tools so that they can prepare themselves to be able to live independently because a lot of the things kids traditionally learn from their families they may not get in a group setting or something like that.

Mark added, “This is a federal program that gives each state individual funds that they can use to pay for things for kids like if they have recreational activities, school fees, prom.” This program is a great investment for the foster care youth. From my perspective, this gives foster care youth the chance to have a hands-on experience learning life’s basic necessities.

**Fostering Hope Scholarship**

The Fostering Hope Scholarship will launch the 2016-2017 academic year and will provide full tuition and fees to Alabama foster care youth. They will have the opportunity to attend any of Alabama 42 public 2-year or 4-year institutions (Moseley, 2015). This scholarship is a great investment for foster care youth. This will allow them the opportunity to worry less about the financial barriers and focus more on pursuing their dream of getting a college degree. High school guidance counselors and caseworkers are responsible for informing the foster care youth of this scholarship.

**Resources and Funding**

There are a lot of resources available for foster care youth who have aged out of the system and chose to enter higher education. Mark stated, “All of them qualify for student support services, but not all of them used it though.” He went on to say that, “The University of Alabama has a REACH program which is designed to meet the needs of individuals in foster care.” All universities have resources set aside for individuals who are in foster care; however, it is up to the foster care youth to utilize and take advantage of these programs. Many programs set aside for foster care youth are funded by the state,
which means that funds are limited. Katie noted, “Financial barriers is one of the main barrier for foster care youth.” Foster care youth have a hard time trying to find funding whether for higher education or transitioning into their own independence.

**Discussion**

In conducting this research, I did not know how it was going to turn out. It was difficult to find participants for my study because of the social workers’ caseloads. However, I had to realize that foster care workers have busy schedules from office work, to days in court, to just a personal life and it can be difficult for them to balance it all. However, I am so glad that I was granted the opportunity to speak with two participants. From this research, I have learned that many foster care youth struggle with transition from high school into higher education. Katie stated, “The kids really doubt themselves in knowing and trying to figure out how they can do it.” These youth do not have the “typical life” and transitioning into college without any type of assistance is hard for them, especially if they are 21 and have aged out of the foster care system.

**Conclusion**

Aging out of the foster care system at the age of 21 can be very difficult for foster care youth. They sometimes feel left alone. It is important to keep them uplifted and provide them with a support system. If they do not have family, caseworker, or friends to form their support network, it can be very difficult for them once they age out of the system and transition into higher education. Also, learning to network and making new connections is very important. The resources of the college are crucial for academic success. All of these qualities can help motivate foster care youth to enroll in higher education and be successful.
Limitations and Future Research

This study has touched me personally. Before conducting research on the foster care system, I did not know much about what actually happened behind the scenes. Now, from this research, I have been inspired to continue my search for resources for foster care youth. I plan for this to be a continuation in my research study. This summer, I focused on interviewing social workers and their perception of the transition for foster care youth from high school to higher education. One of the limitations was having such a small pool of participants. It would have been a much richer study if I could have interviewed more social workers from both public and private agencies. Next summer, I plan to focus on interviewing foster care youth who have transitioned into higher education or have completed higher education to get their perspective of the challenges that they foresaw as they transitioned.

References


Abstract. "Primes are the atoms of the number system, because every other number can be built by multiplying primes together." (New Scientist Magazine). Many scholars and mathematicians have been intrigued by prime numbers for centuries. Several computer systems have been built to compute large primes. The more known primes, the more we can discover about the properties of such numbers. Around 300 B.C., Euclid was the first to prove there are infinitely many primes. Although they appear to be randomly spaced, there seems to be some general trends on the number line. The discovery of the distribution of the prime numbers would have great effects in computer security, nuclear physics, and number theory as a whole. This research will discuss several conjectures and theorems that have been made by mathematicians, such as the Prime Number Theorem, which tells us how the primes are distributed on average. Also, the Riemann Hypothesis and Riemann-Zeta Function will be observed. Several statements related to this hypothesis will be analyzed. Many of these statements, if proven, would lead to the proof of the Riemann Hypothesis, thus resulting in a discovery of the distribution of the primes.

1. What is a Prime Number?

We must first begin with defining a prime number.

**Definition 1.1.** A Prime Number is an integer $p > 1$ such that its only positive two divisors are 1 and $p$.

Note, a common misconception is that the number 1 is a prime number. According to the way that we define a prime number, 1 must be excluded. Therefore 2 is the smallest prime number. It is also the only even prime number.

There are several unique characteristics of small primes.

**Theorem 1.1.** The only prime of the form $n^3 - 1$ is 7.

**Proof.** Let $p = n^3 - 1$, where $p$ is prime. Then $p = (n - 1)(n^2 + n + 1)$.

Case 1: Let $n - 1 = p$, and $n^2 + n + 1 = 1$. Then, $n^2 + n = 0$, i.e. $n(n + 1) = 0$. So $n = 0$ or $n = -1$. If $n = 0$, then $p = -1$. If $n = -1$ then $p = -2$. A contradiction.

Case 2: Let $n - 1 = 1$, then $n^2 + n + 1 = p$. We have, $n = 2$, and $p = 7$.

Case 3: Let $n - 1 = -1$ and $n^2 + n + 1 = -p$. Then $n = 0$ and $p = -1$. A contradiction.

Case 4: Let $n - 1 = -p$ and $n^2 + n + 1 = -1$. Then $n^2 + n + 2 = 0$, which has no integer solutions. □

One might ask, is there a largest prime number? It was actually believed that the set of prime numbers was finite. In January 2016, the number $2^{74,207,281} - 1$
was confirmed to be a prime number. To this day, this is the largest known prime number. It is so large that it would fill up over 3,100 pages. That is 22,338,618 digits. This is a prime number of the form of a Mersenne Prime.

**Definition 1.2.** We define a **Mersenne Prime** as a prime number that can be written in the form,

\[ 2^n - 1. \]

The computer software, "The Great Mersenne Prime Search" first reported this number as prime on September 17th 2015. It took 31 days of non-stop computing. This software uses a vital theorem.

**Theorem 1.2.** If \( a > 1 \) is composite, then it will have a prime divisor \( p \leq \sqrt{a} \).

*Proof.* Let \( a = bc \) where \( 1 < b < a \) and \( 1 < c < a \). Without loss of generality, \( b \leq c \). Then,

\[ b^2 \leq bc \leq a \]

Hence,

\[ b \leq \sqrt{a}. \]

If \( b \) is prime, take \( p = b \). Otherwise take \( p \) to be a prime divisor of \( b \). \( \Box \)

The computer software takes the square root of such a number and tests all of the divisors less than or equal to that number. That is why it takes so long to confirm a prime number. A small example would be,

**Example 1.1.** \( 2^7 - 1 = 127 \). Now, \( \sqrt{127} = 11.2694... \) So the only prime divisors that we need to test are: 2, 3, 5, 7, 11. All of these fail to divide 127. Hence, \( 2^7 - 1 \) is prime.

Harvey Dubner, is a well distinguished American mathematician. He found the largest known prime that contains all prime digits is \( 7532 \times 10^{1104} - 1 + 1 \). This number contains 1104 digits and was discovered in 1988. Also in 1988, Dubner computed the largest prime number consisting of just odd digits, \( 1358 \times 10^{3821} - 1 \). Found in 1984, the prime number \( 10^{641} - 1 \times 10^{641} + 1 \) is the largest known prime with digits equal to only 0 or 1. In 1993, Dubner was responsible for more than half the known primes of more than two thousand digits.

However around 300 B.C., Euclid proved that the prime numbers were infinite.

**Theorem 1.3.** There are infinitely many primes.

*Proof.* Let \( p_1 = 2, p_2 = 3, p_3 = 5, ..., \) and assume there is a largest prime, \( p_n \). Let \( c = p_1p_2p_3...p_n + 1 \)

Clearly \( c > 1 \), so by the Fundamental Theorem of Arithmetic, \( c \) must be divisible by some prime \( p \). However, \( p_1, p_2, p_3, ..., p_n \) are the only primes, so \( p \) must equal one of these. Thus,

\[ p|p_1p_2p_3...p_n \]

and by definition of divisibility,

\[ px = p_1p_2p_3...p_n \]

for some \( x \in \mathbb{Z} \). Also, since \( p|c \), we have \( pa = c \) for some \( a \in \mathbb{Z} \). Thus we have,

\[ 1 = c - p_1p_2p_3...p_n = pa - px = p(a - x) \]
so $p|1$. But the only positive divisor of 1 is 1 itself, so $p=1$. This contradicts the fact that $p > 1$. Therefore there must be infinitely many primes. □

Since Euclid’s proof, there have been several other proofs to prove that the prime numbers are infinite. Some of these do not include proof by contradiction for the mathematicians that are uncomfortable with such a proof.

2. Finding the primes

Eratosthenes of Cyrene, 276-194 B.C., established a systematic composition for tables of prime numbers. He used the contrapositive of Theorem 1.2 as a basis of this clever technique called the *Sieve of Eratosthenes*. To find all the primes below a given integer $n$, first write down all the integers 2 to $n$ in their natural order and then systematically eliminate all the composite numbers by striking out all the multiples $2p, 3p, 5p, 7p, \ldots$ of the primes $p \leq \sqrt{n}$. The remaining integers are prime.

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**Figure 1.** Sieve of Eratosthenes up to 100.

Numerous mathematicians have attempted to construct formulas that produce only prime numbers. For example, Pierre de Fermat thought that for $n \in \mathbb{N}, F_n = 2^{2^n} + 1$ produced only prime numbers. Euler later proved that this fails at $F_5 = 641 \times 6700417$. 
It would be necessary to have a table of primes up to 100,000 or to derive and use some criterion for a number to be a factor of a Fermat number. This Fermat failed to do.

Many polynomials have also been constructed to attempt such a task. For example, let \( x \in \mathbb{N} \) and take the quadratic \( Y(x) = x^2 - x + 41 \). Euler found that this polynomial fails at \( Y(40) = 1681 \). Many other attempts were made, but the record holding quadratic is \( Y(x) = 36x^2 - 810x + 2753 \). This produces 45 consecutive prime numbers, but fails at \( x = 45 \). It is no coincidence that these polynomials fail to produce just prime numbers.

**Theorem 2.1.** There is no nonconstant polynomial \( f(n) \) with integer coefficients that takes on just prime values for integer \( n \).

**Proof.** Suppose not. That is suppose a polynomial \( f(n) \), exists such that this polynomial produces only primes. Define,

\[
 f(n) = a_k n^k + a_{k-1} n^{k-1} + \ldots + a_1 (n_0 + tp) + a_0
\]

where \( a_0, a_1, \ldots, a_k \) are integers , and \( a_k \neq 0 \). For a fixed value \( n_0 \), \( p = f(n_0) \) is a prime number. For any integer \( t \), we consider

\[
 f(n_0 + tp) = a_k (n_0 + tp)^k + \ldots + a_2 n^2 + a_1 n + a_0
 = (a_k n_0^k + \ldots + a_1 n_0 + a_0) + pQ(t)
 = f(n_0) + pQ(t)
 = p + pQ(t)
 = p(1 + Q(t))
\]

where \( Q(t) \) is a polynomial in \( t \) having integer coefficients. We have, \( p|f(n_0 + tp) \); hence by our assumption that \( f(n) \) takes on only prime numbers, \( f(n_0 + tp) = p \). However, a polynomial of degree \( k \) cannot assume the same value more than \( k \) times. \( \square \)

In 1947 W.H. Mills proved that there exists a positive real number \( r \) where \( n \in \mathbb{N} \) such that

\[
 f(n) = \lfloor r^{3^n} \rfloor
\]

produces only prime numbers. This proof is just an existence proof, and nothing is known about the actual value of \( r \). Although Mill’s function produces only prime numbers, it does not produce all of the prime numbers.

### 3. The Distribution of the Primes

For centuries, number theorists have been consumed with trying to determine the distribution of the prime numbers. Actually, several have been driven to their death laboring over the seemingly random distribution of the prime numbers. From that, we have several known properties. \( \pi(x) \) represents how the primes are distributed. More formally,

\[
 \pi(x) = \sum_{p \leq x} 1
\]

\( \pi(x) \) gives the number of primes less than or equal to \( x \). Gauss and Legendre both worked diligently to find approximations of this. As a result of their work, we have the Prime Number Theorem.
Theorem 3.1. For a positive integer $n$,

$$\lim_{n \to \infty} \frac{\pi(x)}{\frac{x}{\log(x)}} = 1.$$ 

The Prime Number Theorem tells us how the primes are distributed "in the large" or "on the average". Conjectured by Gauss, great effort was given to obtain a proof. Tschebycheff came very close to a proof, but had to wait for about 50 years until a proof would be found. During this time Riemann did extensive work and contributed several important new ideas. In 1896, Jacques Hadamard and Charles de la Vallee Poussin independently of each other and almost simultaneously succeeded in proving this. They used a lot of the ideas put forth by Tschebycheff and Riemann.

Legendre offered a better approximation. He ventured that $\pi(x)$ is approximately equal to the function

$$x \frac{1}{\log x - 1.08366}.$$ 

This is a good addition to the Prime Number Theorem. Let’s observe the actual values of these formulas:

<table>
<thead>
<tr>
<th>$x$</th>
<th>$\pi(x)$</th>
<th>$x \frac{1}{\log(x)}$</th>
<th>$x \frac{1}{\log(x) - 1.08366}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>168</td>
<td>145</td>
<td>172</td>
</tr>
<tr>
<td>10000</td>
<td>1229</td>
<td>1086</td>
<td>1231</td>
</tr>
<tr>
<td>100000</td>
<td>9592</td>
<td>8686</td>
<td>9588</td>
</tr>
<tr>
<td>1000000</td>
<td>78498</td>
<td>72382</td>
<td>78543</td>
</tr>
<tr>
<td>10000000</td>
<td>664579</td>
<td>620420</td>
<td>665140</td>
</tr>
<tr>
<td>100000000</td>
<td>5761455</td>
<td>5428681</td>
<td>5768004</td>
</tr>
</tbody>
</table>

These do provide a very close generalization of $\pi(x)$. The graphs of these functions might provide a better visual:

**Figure 2.** The function $f(x) = \frac{x}{\log(x)}$. 

The function $g(x) = x \log(x) - 1.08366$.

By compiling extensive tables on how the primes distribute themselves in blocks of 1000 consecutive integers, Gauss also reached the conclusion that $\pi(x)$ increases
at roughly the same rate as
\[ \int_2^x \frac{1}{\log u} \, du. \]
This is known as the Logarithmic Integral, $\text{Li}(x)$.

In his extensive work, Riemann composed the function
\[ R(x) = \sum_{m=1}^{\infty} \frac{\mu(m)}{m} \text{Li}(x^{1/m}). \]
This is known as the Riemann Function where
\[ \mu(m) = \begin{cases} [h] & \text{if } m = 1 \\ 0 & \text{if the product of a prime divides } m \\ (-1)^m & \text{if } m \text{ is the product of } r \text{ distinct primes} \end{cases} \]

The Riemann function is a very close approximation of $\pi(x)$.

All of these approximate functions are very close, some closer than others, to $\pi(x)$. However, none of them are exact. The following chart shows the actual value of $\pi(x)$ compared to the values of these functions.

<table>
<thead>
<tr>
<th>$x$</th>
<th>$\pi(x)$</th>
<th>$\frac{x}{\log x} - \pi(x)$</th>
<th>$\text{Li}(x) - \pi(x)$</th>
<th>$R(x) - \pi(x)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10^8$</td>
<td>5,761,455</td>
<td>-332,774</td>
<td>754</td>
<td>97</td>
</tr>
<tr>
<td>$10^{10}$</td>
<td>455,052,511</td>
<td>-20,758,030</td>
<td>3,104</td>
<td>-1,828</td>
</tr>
<tr>
<td>$10^{12}$</td>
<td>37,607,912,018</td>
<td>-1,416,706,193</td>
<td>38,263</td>
<td>-1,476</td>
</tr>
<tr>
<td>$10^{14}$</td>
<td>3,204,941,750,802</td>
<td>-102,838,308,636</td>
<td>314,890</td>
<td>-19,200</td>
</tr>
<tr>
<td>$10^{16}$</td>
<td>279,238,341,033,925</td>
<td>-7,804,289,844,393</td>
<td>3,214,632</td>
<td>327,052</td>
</tr>
<tr>
<td>$2 \times 10^{16}$</td>
<td>547,863,431,950,008</td>
<td>-15,020,437,343,198</td>
<td>3,776,488</td>
<td>-225,875</td>
</tr>
</tbody>
</table>

There have also been several theorems and conjectures about the general distribution of the primes. In 1845, Joseph Bertrand made a remarkable conjecture. He verified it for all $n \leq 3,000,000$. In 1852, Tschebycheff proved it to be true.

**Theorem 3.2.** The prime numbers are well distributed in the sense that for $n \geq 2$, there is at least one prime number between $n$ and $2n$.

It has been proven that, in general, the prime numbers are more spread out as you approach infinity. It has been described as the prime numbers repelling against each other as they increase.

**Theorem 3.3.** Let $x \in \mathbb{N}$,
\[ \lim_{x \to \infty} \frac{\pi(x)}{x} = 0. \]

Since $\frac{\pi(x)}{x} \geq 0$ for all $x > 0$, the proof is reduced to proving $\frac{\pi(x)}{x}$ can be made arbitrarily small by choosing $x$ sufficiently large. In more precise terms, we need to prove if $\epsilon > 0$ is any number, then there must exist some positive integer $N$ such that
\[ \frac{\pi(x)}{x} < \epsilon \]
whenever $x \geq N$.

**Proof.** Let $n \in \mathbb{N}$. Use Bertrand's conjecture to pick a prime $p$ with
\[ 2^{n-1} < p \leq 2^n. \]
Then $p \nmid (2^n)!$, but $p \nmid (2^{n-1})!$, so that the binomial coefficient $\binom{2^n}{2^{n-1}-1}$ is divisible by $p$. This leads to the inequalities

$$2^{2n} \geq \binom{2^n}{2^{n-1}} \geq \prod_{2^{n-1} < p \leq 2^n} p \geq (2^{n-1})^{\pi(2^n) - \pi(2^{n-1})}$$

and, upon taking the exponents of 2 on each side, the subsequent inequality

$$\pi(2^n) - \pi(2^{n-1}) \leq \frac{2^n}{n-1}. \quad (1)$$

If we successively set $n = 2k, 2k-1, 2k-2, ..., 3$ in inequality (1) and add the resulting inequalities, we get

$$\pi(2^{2k}) - \pi(2^2) \leq \sum_{r=3}^{2k} \frac{2r}{r-1}. \quad \text{But } \pi(2^2) < 2^2 \text{ trivially, so that}$$

$$\pi(2^{2k}) < \sum_{r=2}^{2k} 2^r = \sum_{r=2}^{k} \frac{2^r}{r-1} + \sum_{r=k+1}^{2k} \frac{2^r}{r-1}.$$ 

In the last two sums, let us replace the denominators $r - 1$ by 1 and $k$, respectively, to arrive at

$$\pi(2^{2k}) < \sum_{r=2}^{k} 2^r + \sum_{r=k+1}^{2k} \frac{2^r}{k} < 2^{k+1} + \frac{2^{2k+1}}{k}.$$ 

Because $k < 2^k$, we have $2^{k+1} < 2^{\frac{2^{2k+1}}{k}}$ for $k \geq 2$, and therefore

$$\pi(2^{2k}) < 2^{\frac{2^{2k+1}}{k}} = 4^{\frac{2^{2k}}{k}}$$

which can be written as

$$\frac{\pi(2^{2k})}{2^{2k}} < \frac{4}{k}. \quad (2)$$

With this inequality available, our argument proceeds rapidly to its conclusion. Given any real number $x > 4$, there exists a unique integer $k$ satisfying

$$2^{2k-2} < x \leq 2^{2k}.$$ 

From inequality (2), it follows that

$$\frac{\pi(x)}{x} < \frac{\pi(2^{2k})}{x} < \frac{\pi(2^{2k})}{2^{2k-2}} = 4\left(\frac{\pi(2^{2k})}{2^{2k}}\right) < \frac{16}{k}.$$ 

If we now take

$$x \geq N = 2^{2\left(\frac{16}{\epsilon}+1\right)},$$

then

$$k \geq \frac{16}{\epsilon} + 1.$$ 

Hence,

$$\frac{\pi(x)}{x} < \frac{16}{k} + 1 < \epsilon$$

as desired.
A discovery made by Euler, is that the primes are not so sparse as the squares. He noted for real number $\sigma > 1$ the series
\[ \sum_{n=1}^{\infty} \frac{1}{n^\sigma} \]
is convergent. In fact, it is uniformly convergent on the half-line $\sigma_0 \leq x < \infty$ Hence it defines a function $\zeta(\sigma)$, which is continuous and differentiable. This is called the zeta function. In 1737, Euler proved that the sum of the inverses of the prime numbers is divergent.

**Theorem 3.4.** For all prime numbers $p$,
\[ \sum_{p} \frac{1}{p} = \infty \]

**Proof.** Let $N$ be an arbitrary natural number. Each integer $n \leq N$ is a product, in a unique way, of powers of primes $p$, $p \leq n \leq N$. Also for every prime $p$,
\[ \sum_{k=0}^{\infty} \frac{1}{p^k} = \frac{1}{1 - \frac{1}{p}}. \]
Hence
\[ \sum_{n=1}^{N} \frac{1}{n} \leq \prod_{p \leq N} \left( \sum_{k=0}^{\infty} \frac{1}{p^k} \right) = \prod_{p \leq N} \frac{1}{1 - \frac{1}{p}}. \]
But,
\[ \log \prod_{p \leq N} \frac{1}{1 - \frac{1}{p}} = - \sum_{p \leq N} \log(1 - \frac{1}{p}), \]
and for each prime $p$,
\[ - \log(1 - \frac{1}{p}) = \sum_{m=1}^{\infty} \frac{1}{mp^m} \]
\[ \leq \frac{1}{p} + \frac{1}{p^2} \left( \sum_{k=0}^{\infty} \frac{1}{p^k} \right) \]
\[ = \frac{1}{p} + \frac{1}{p^2} \left( \frac{1}{1 - \frac{1}{p}} \right) \]
\[ = \frac{1}{p} + \frac{1}{p(p-1)} \]
\[ < \frac{1}{p} + \frac{1}{p^2}. \]
Hence, $\log \sum_{n=1}^{N} \frac{1}{n} \leq \prod_{p \leq N} \frac{1}{1 - \frac{1}{p}} \leq \sum_{p \leq r} \frac{1}{p} + \sum_{p \leq p} \frac{1}{p^2} \leq \sum_{p \leq p} \frac{1}{p} + \sum_{n=1}^{\infty} \frac{1}{n^2}$. The series $\sum_{n=1}^{\infty} (1/n^2)$ is convergent. Then $\log \sum_{n=1}^{\infty} (1/n) = \infty$, since $N$ is arbitrary and the harmonic series is divergent. Therefore, the series $\sum_{p}(1/p)$ is divergent. We know that the series $\sum_{n=1}^{\infty} (1/n^2)$ is convergent. Hence it can be said that the primes are not so sparsely distributed as the squares. □
The German mathematician Bernhard Riemann made several revolutionary contributions to analysis, differential geometry, and number theory. Riemann defined the zeta function for complex numbers $s$ having real parts greater than $1$. Specifically,

$$
\zeta(s) = \sum_{n=1}^{\infty} \frac{1}{n^s}
$$

$\zeta(s)$ can be expressed in many ways. Using the Euler-MacLaurin summation formula,

$$\zeta(s) = \frac{1}{s-1} + \frac{1}{2} + \sum_{r=2}^{k} \frac{B_r}{r!} s(s+1)\ldots(s+r-2) - \frac{1}{k!} s(s+1)\ldots(s+k-1) \int_{1}^{\infty} B_k(x-[x]) \frac{dx}{x^{s+k}}$$

In this case, $k$ is any integer $k \geq 1$, and $B_r$ denotes the Bernoulli numbers. It can be determined that the integral converges to $\text{Re}(s) > 1 - k$. Since $k$ is an arbitrary natural number, this formula provides the analytic continuation of $\zeta(s)$ to the entire plane.

Riemann studied the zeros of the Riemann-zeta function. He observed that the negative even integers were trivial zeros to this function. Using this function, he constructed an exact equation to $\pi(x)$. He stated,

$$\pi(x) = R(x) - \sum_{\rho} R(x^\rho)$$

The sum $\sum_{\rho} R(x^\rho)$ is extended over all the nontrivial zeros, $\rho$, of $\zeta(s)$. This is an exact representation of $\pi(x)$, but depends on a key hypothesis. Riemann hypothesized "All nontrivial zeros of the Riemann-zeta function lie on the critical line $\text{Re}(s) = \frac{1}{2}$." A lot of work has been done to attempt a proof of this hypothesis, but nothing has been successful.

Surprisingly, the Riemann Hypothesis is connected to several other areas of mathematics. Many statements depend on the truth value of this hypothesis. For example, "The Riemann Hypothesis is true if and only if

$$\pi(x) - Li(x) = O \left( x^{\frac{1}{2}} \log x \right).$$

**Definition 3.1.** $f(x) = O(g(x))$ if there is a positive constant $M$ such that

$$|\frac{f(x)}{g(x)}| \leq M$$

for all $x \geq x_0$.

Another equivalent statement is, let $A_n = (a_{ij})_{n \times n}$ where

$$a_{ij} = \begin{cases} 
1 & \text{if } j = 1 \text{ or if } i|j \\
0 & \text{otherwise}
\end{cases}$$

"The Riemann Hypothesis is true if and only if $\det(A_n) = O \left( n^{\frac{1}{2}+\epsilon} \right)$ for all $\epsilon > 0.$" There are several other statements equivalent to the Riemann Hypothesis, and a proof to just one of these statements would in turn prove the Riemann Hypothesis, hence lead to an exact equation of the distribution of the primes.
References


The Media’s Evaluation of Presidencies’ Focus on Poverty

Xavier Scruggs

Alvin Tillery, PhD, Northwestern University

Abstract

Historically, political scientists and historians have engaged in ranking presidencies based on their accomplishments and meeting objectives. However, there is a dearth of information on how the media has evaluated presidencies. The current project proposes an alternative evaluating method—the Editorial Opinion Score (EOS)—for ranking presidents based on content analyses of editorials published in mainstream media outlets, such as, the Washington Post, the New York Times and African American newspapers (i.e. Chicago Daily Defender, New York Amsterdam News, The Los Angeles Sentinel, and etc.). Specifically, we evaluate the John Kennedy, Lyndon Johnson, and Richard Nixon administrations’ focus on poverty. In conclusion, we found few mentions of poverty, but the few we found were high-quality mentions and contained criticism. At times the media scrutinized the President for vagueness or inaction on the topic of poverty. At this particular time in history, there were a plethora of issues that plagued the United States, including income, housing, and opportunity inequality. It will be helpful to understand how the media evaluated a president’s handling of these domestic issues. We can thus begin to better understand the media’s discussion of these issues in real time, with a special focus on poverty.
The Girls and the “Others”: Analyzing Villainy in The First Season of The Powerpuff Girls

Jalen Thompson

Deborah Lowry, Ph.D.

Abstract

Television presents stereotypes about race/ethnicity and gender and these stereotypes make their way into children’s media, especially Disney animated films. Since Disney is a leading producer of children's media, they have a great influence on the young audiences they capture. Since children can recognize racial/ethnic and gendered stereotypes on television, the messages they receive can be quite damaging to their perspectives on reality. It is interesting that these negative gender messages are shown in the Disney villains, through gender transgression. The present study extends this knowledge about Disney villains to villains in children’s animation television and seeks to explore Othering by racial/ethnic and gender stereotypes in the villains of the first season of The Powerpuff Girls. After watching three rounds of the season and using observational protocols and character analyses, I was able to gather my data. My research question asked, “Will the villains in the first season of The Powerpuff Girls show Othering by racial/ethnic and/or gendered stereotypes? If so, in what ways?” The analysis proved that the villains were Othered by those stereotypes and in multiple ways. The Powerpuff Girls is often held as a progressive cartoon show that portrayed girl power—a feminist movement that focuses on empowering young girls. The series’ three heroes, Blossom, Bubbles, and Buttercup, fight against “the forces of evil” while trying to be “the perfect little girls” that the professor created them to be. While the girls fight against “the forces of evil,” they are fighting characters who are presented as racial/ethnic and gendered Others, creating less progressive messages about race, gender, sexuality, and even class.

Keywords: Othering, stereotyping, children’s media, socialization, cartoons, villains, animation, gender, race, ethnicity

Introduction

Television actively presents stereotypes about race/ethnicity and gender. These stereotypes can be quite damaging when they are constantly viewed, especially when they are constantly viewed by children (Berry & Mitchell-Kernan, 1982; Bryant, Thompson, & Finklea, 2012; Mastro, 2009). Children can “see” race (Children Now, 1998) and understand gender roles (Durkin, 1984), so these programs can provide them many negative perspective about race/ethnicity and gender when they view television’s stereotyped content (Bryant et. al., 2012). Stereotyped messages about race/ethnicity and gender are heavily shown in children’s animation television and in Disney media (Ahmed
Since Disney’s formation in the 1930s, different racial groups have often been portrayed as animals (the crows in Dumbo; the donkeys in Fantasia; the apes in The Jungle Book) that are anthropomorphized and given caricatured features like big noses and lips, made dumb, are shown in low subservient roles (Wasko, 2001, Willets 2013), and portrayed as “villainous or thieving” (Towbin et al., 2003, p. 36). England (2011) found that Disney establishes gender binaries by having some characteristics (for example, being emotional or being strong) less frequented in the prince and princess characters to suggest that some characteristics “are not for the prince (boys) or princess (girls) to portray” (p. 563).

In every Disney story, there is a villain who represents the “evil” other. This evil is conveyed through “gender transgression,” defined by Li-Vollmer and LaPointe (2003) as overly feminized behaviors in male villains (like Governor Ratcliffe in Pocahontas or Jafar in Aladdin) or masculine, drag queen-esque portrayals in female villains (like Ursula from The Little Mermaid). The “evil” that is shown in these gendered portrayals of villainy clearly puts forth a message that villains are “bad” and “evil,” not just because they do “bad” and “evil” things, but because they do not abide by traditional gender portrayals (Griffin, 2000; Putnam, 2013). It is clear in the portrayal of Disney villains that racial/ethnic and gender stereotypes help establish them as villains.

There has been much scholarly work dedicated to analyzing the villains in Disney animated films, but little to no research done on the villains of children animated television series. Since it has been abundantly proven that children are able to pick up on stereotyped portrayals of television characters, these portrayals can have negative effects on how children view the world and Others in it. It is evident from *The Powerpuff Girls’*
opening title theme that the villains’ place in the series is to work as examples of “evil,” of what is considered “bad,” of being the Others. Scholars have analyzed *The Powerpuff Girls* as feminist text and have exposed its contradicting and problematic messages (Hains, 2008; Kirkland, 2010). Much of the show’s problematic content comes from the girls’ fight against their “racial, sexually, and class-coded opponents” (Kirkland, 2010, p. 19). The purpose of this qualitative content analysis is to explore how Othering by racial/ethnic and gendered stereotypes is portrayed in the first season of *The Powerpuff Girls*.

**Literature Review**

Socialization refers to the process of how individuals adopt their values, beliefs, and ideals, ultimately convincing the individual of her or his self-concept. An agent of socialization is the device by which socialization messages are conveyed. Daily encounters with parents, teachers, and peers are examples of agents of socialization (Bramlett-Solomon & Carstarphen, 2012). Television is one of the most influential agents of socialization of recent generations (Grusec & Hastings, 2007). Television has also had a history of displaying stereotyped portrayals of race/ethnicity and gender (Bryant et al., 2012; Children Now, 1998). Understanding how effective these stereotyped portrayals are, through media socialization methods, can be explained by examining a few media theories behind the phenomena. Social learning theory (suggests which behaviors are “appropriate”) (Bandura, 1971; Kunkel et al., 1996), priming effects theory (suggests that media coverage activates or triggers stereotypes stored in memory) (Bramlett-Solomon & Carstarphen, 2012), cultivation theory (focuses on the effect media viewing has on the viewer's perception of the world and suggests the more one views media, the more
influence it has over the viewer) (Gerbner et. al. 1986; Gerbner et. al., 2002), and gender schema theory (suggests that through media socialization children learn what it is to be male or female) (Bem, 1981; Liben & Signorella, 1993) equally explain how and why viewers pick up and/or buy in to certain messages media portrays (Bandura, 1971, Calvert & Houston, 1987; Gerbner et al., 2002; Kunkel et. al., 1996). Knowing that television has great power to convey many messages, stereotyped portrayals of race/ethnicity and gender can be damaging to its viewers, mostly its young viewers.

In television shows, minority groups are underrepresented and when they do appear on television (this is very apparent for Latinos, Asians, and Native Americans), they are misrepresented and stereotyped (Bryant et al., 2012; Leavitt, Covarrubias, Perez, & Fryberg, 2015; Mastro 2009; Tukachinsky, Mastro, & Yarchi, 2015). Television portrayals of minorities as lazy, as in a lower social standing, as highly sexual, as criminals, or as dangerous cause viewers to associate those stereotypes with that racial group. Those stereotypes are further established by constant viewings of these portrayals (Bryant et al., 2012; Hurley, Jenson, Weaver, & Dixon, 2015; Mastro et al., 2007). As researchers have proven that children can “see” their race when it is portrayed on television, they can also “see” the stereotypes associated with different racial groups (Berry & Mitchell-Kernan, 1982; Children Now, 1998; Tobin, 2000). Children Now (1998) found that children associate having lots of money, being well-educated, being a leader, doing well in school, and being intelligent more closely align with traits in White children on television. While breaking the law, having a hard time financially, being lazy, and being goofy was seen with racial/ethnic minority characters. These negative portrayals are not just damaging to those that view them, but they are also damaging to
the self-esteem or racial identity of young children and adolescents of the minority group portrayed. Children look to adults and peers in their own racial group for examples of how to act; they may also look to television characters for these examples. When those characters are stereotyped portrayals of the race/ethnicity represented, children will believe that those are adequate examples of how they too should behave (Berry and Mitchell-Kernan, 1982; Rivadeneyra et al., 2007; Mastro, 2009; Stroman, 1984).

As children can “see” race, they can “see” and understand gendered messages portrayed on television (Durkin, 1984; Signorielli & Lears, 1992). Durkin (1984) found that children, from ages 4 ½ to 9 ½, having already acquired knowledge about traditional gender roles from previous viewings of television and other forms of socialization (i.e. parents, teacher, peers), were able to explain gendered behavior and its underlying causes. Interestingly, in children’s animation television shows, scholars found that these shows tended to contain large amounts of gendered content (Ahmed & Wahab, 2014; Klein, et. al., 2000; Leaper, et. al., 2002; Thompson & Zerbinos, 1995; Towbin, et. al., 2003). Male characters in animation were shown more often and as active, not intelligent, not emotional, assertive, independent, athletic, physically stronger, and aggressive. In contrast, females were shown less often and as emotional, more occupied with their appearance, beautiful and sexually attractive, warm, romantic, affectionate, sensitive, mature and domestic. These representations were evident over a span of decades and genres, (Ahmed & Wahab, 2014; Klein, et. al., 2000; Leaper, et. al., 2002; Thompson & Zerbinos, 1995). Ahmed and Wahab (2014) note that these kinds of representations “could convey the misleading messages to majority of children in the society” and “should be avoided” (p. 52).
When one thinks of childhood cartoons and films and all of the nostalgic qualities they hold, one goes immediately to Disney. Since Disney’s 1937 release *Snow White and the Seven Dwarfs*, they have been established as leading producers for children’s media. Films like *Cinderella*, *Beauty and the Beast*, and *The Little Mermaid*, helped create a brand for Disney to sell, a brand that is over a $4 billion industry (Orenstein, 2011). Wasko’s (2001) book *Understanding Disney* shows how powerful the Disney company is owning many forms of media—television, radio, film—and being an empire that reaches audiences over the world. Giroux (1999) clearly states “…it becomes clear that Disney wields enormous influence on the cultural life of the nation, especially with regard to the culture of children” and that “these films possess at least as much cultural authority and legitimacy for teaching roles, values, and ideals as more traditional sites of learning, such as the public schools, religious institutions, and the family” (p. 14). In other words, Disney—the company and its movies—is a greater agent of socialization that is more than capable to spread messages to their child viewers. As Disney is held as one of the leading producers of children’s animation films, it is interesting to examine its history with the portrayal of racial/ethnic and gendered stereotypes in their animated films.

The absence of people of color in Disney films is highly prevalent. When they are seen, minority racial groups are often portrayed as animals (crows as in *Dumbo*; donkeys in *Fantasia*; apes in *The Jungle Book*) that are anthropomorphized and given caricatured features like big noses and lips, made dumb, and are shown in low subservient roles (Wasko, 2001, Willets 2013). King, Lugo-Lugo, and Bloodsworth-Lugo (2010) refer to this trend as *racialized anthropomorphism*. Towin et al. (2003) points out:
Characters of color were often portrayed as villainous or scary…In *The Jungle Book*, the apes sing with African American voices to a Caucasian boy, ‘I want to be a man. I want to walk like you, talk like you. I want to be like you.’… Even 40 years after the production of Jungle, *The Lion King*’s portrayal of the hyenas mimics stereotypes of inner-city minorities; they are portrayed as sinister and thieving, and they often complain that the lions maintain the power in their society. Tarzan, a film reproduced in 1999…also contains racist overtones. Tarzan, a White man, is shown in control of African jungles, without even one portrayal of a Black character. (p. 36)

Mirroring what was seen in broader forms of media, when characters of color were represented they were always racially stereotyped. King et al. (2011) says, “[w]e can conclude that these representations…reinforce accepted understanding of certain racial and ethnic categories along with accepted narratives involving their position in society and history and their role(s) in relation to mainstream culture” (p. 91).

Many studies have shown that much of Disney’s content is gendered (Faherty, 2001; England, 2011; King et al., 2011; Towbin et al., 2003; Wiersma, 2000). Male characters were overrepresented and shown as dominant, aggressive, brave, strong, independent, unemotional, outside-of-home, and powerful. Females were underrepresented and shown as young, thin, attractive, good, passive, dependent, emotional and romantic, overly sexual, domestic, and powerless (Faherty, 2001; Towbin et al., 2003; Wiersma, 2000). Male characters were also shown in more realistic jobs, like a butler, doctor, or lawyer, while female characters were shown in unrealistic jobs, like a princess or fairy (Wiersma, 2000). England (2011) found that some characteristics shown in Disney’s prince and
princess characters are less frequented to suggest that some characteristics “are not for the princes (boys) or princesses (girls) to portray” (p. 563). Gendered characteristics in princess characters (beautiful, dependent, weak) were strict, showing nearly no masculine characteristics; however, gendered characteristics in the prince characters (brave, strong) were less strict—for some princes were shown as emotional—deemed a feminine characteristic. When a female character did display some masculine characteristics, this was only done “to further traditionally gendered messages” (England, 2011, p. 562). For example, in *Mulan* (1998), the title character gender bends in order to serve in the military under her father’s name. While this film may seem progressive, “Disney’s *Mulan* contains the disruption that arises when a woman becomes a man to reinforce the gender binary and deny any agency that occurs when these boundaries are crossed” (Limbach, 2013, p. 116). Kelly and Smith (2006) provide an interesting perspective on the impact of the messages that children receive from these films:

> …children are not impacted exclusively by how characters of their own gender are portrayed…children’s expectations for members of the other gender…can be influenced by repeated viewings of characters and stories that reinforce particular notions about male and female roles. (p. 6)

That fact that these films are re-released every couple of decades suggests that Disney’s influence is and will continue to reach younger generations every couple of years, keeping these stereotypes alive.

In every Disney story, there is a villain. The villains in these stories provide examples of what is bad or evil and are often referred to as “evil,” “wicked,” “devil,” or “demon” (Fouts, Callan, Piasentin, & Lawson, 2006; Wasko 2001). Fouts et al. (2006)
concluded that “watching Disney animated movies may influence children’s acquisition of demonizing labels and stereotypes as well as subsequent imitation of the use of such labeling behavior when observing people engaging in inappropriate or ‘bad’ behavior” (p. 20). Much of the “bad” or “inappropriate” behaviors can be attributed to the gendered messages seen in the villains (Davis 2006; Davis 2013; Towbin et al., 2003; Wiersma 2000). Disney scholar Amy M. Davis dedicates her two books *Handsome Heroes & Vile Villains* (2013) and *Good Girls & Wicked Witches* (2006) to examining male and female Disney villains, respectively. Both male and female villains acted as a “monstrous other” who obscures the hero/ine from doing what is right. She found that, generally, the male villains in Disney were flamboyant, vain, monstrous, and exhibited despicable traits of greed, hypermasculinity, lust, aggression, sexism, revenge, and self-obsessed, and the right to assert authority; however, they possessed a comedic quality (Davis, 2013). The female villains in Disney were strong, fearless, and often mature, powerful and independent, particularly sensitive and easily offended, selfish, ugly, greedy, vain, obsessive creatures, and displayed traits associated with anger, jealousy, frustration, desire, cunning, sought “to be the fairest,” “to rule with absolute authority,” and were portrayed with nightmarish seriousness, as not simply bad, mean, or evil, but also insane (Davis, 2006).

In defining “evil” and the idea of the Disney villains as the “monstrous other,” gender performance is used as a determining factor (Griffin 2001; Li-Vollmer and LaPointe, 2003). Putnam (2013) says, “[i]n many of Disney’s films, the villains portrayed are not only the bad guys in terms of their nefarious choices and desires, but also due to their so-called deviant behaviors via their gender performance” (p.157). Disney villains
are often portrayed by way of “gender transgression” which Li-Vollmer and LaPointe (2003) define as overly feminized behaviors in male villains (like Governor Ratcliffe in Pocahontas or Jafar in Aladdin) or masculine, drag queen-like portrayals in female villains (like Ursula from The Little Mermaid). The researchers also referred to gender transgression as the “villain-as-sissy” archetype. They note:

This equation of villainy with the feminine and queer reinforces hierarchies of traditionally male qualities over female, heterosexual over homosexual…Children may be more vulnerable to the implicit messages about acceptable versus deviant gender performance because they are drawn to a genre that is rife with strongly gendered messages…children who view these films may be more likely to organize information about gender roles and identifications in ways that are consistent with the vilification of feminine qualities, especially in men. (p. 105)

The researchers saw that through the use of cinematic techniques (props, voice, and costumes), negative performances of gender were displayed in the villains and that through those performances the villains were cast as Others. Nick Roger’s intriguing video “Animating Animus” (2015) shows instances of the transgressive portrayals of Disney villains in films over the company’s lengthy career dating back to 1937. It is interesting that these transgressive portrayals are stereotypes seen in members of the LGBTQ+ community and knowing that Disney frowns upon same-sex contact (Towbin et al., 2003) and views the LGBTQ+ community as nothing more than a group of consumers (Griffin 2001), having those transgressive qualities in the villains of their films certainly puts forth the message that a non-heterosexual lifestyle and everything that is associated with it is inappropriate or is “evil.” Finklea’s (2011) analysis of
masculinity (or lack thereof) in Ken in the *Toy Story* series mirrors much of Disney’s true views on feminine qualities in men and their association with homosexuality. At the end of *Toy Story 3*, the characters exchange questioning and uncomfortable looks with each other after reading a feminized letter from Ken. If these homophobic attitudes are expressed as negative in regular characters, they possess an amplified meaning in the “monstrous Others” of the rest of their films.

**The Present Study**

The present study takes the stereotyped messages about race and gender found in television and in Disney animated films and applies it to examining the villains of a children’s animated television series. There has been a lot of scholarly work on the villains in Disney animated films, but little to no research on the villains of children animated television shows. In the studies conducted on Disney villains, there has only been works showing the villains displaying negative gendered portrayals associated, and none to examine negative racial/ethnic portrayals. It is safe to say that through stereotyped portrayals of race/ethnicity and gender, the Disney villains have been presented as Others. An analysis of the villains in the first season of Cartoon Network’s *The Powerpuff Girls* is conducted showing how they are “othered” by both racial/ethnic and gendered stereotyping. With the rise of third wave feminism, Craig McCracken set out to create a show about girl power. Thus, on November 18, 1998, The Powerpuff Girls was born. The three girls—Blossom, Bubbles, and Buttercup—made out of sugar, spice, and everything nice, and an accidental spill of Chemical X, band together “to fight the forces of evil.” This study seeks to explore the “evilness” of the villains by analyzing why and how they are categorized as “evil” and what that “evil” really means.
Theoretical Framework and Methods

The theoretical framework from this study is heavily influenced by multiple theories on Othering. Zygmunt Bauman (1991) defines the Others as someone who is “the opposite (degraded, suppressed, exiled)...animal the other of the human, woman the other of man, stranger the other of the native, enemy the other of friends, ‘them’ the other of ‘us’” (p. 14). Lajos Brons (2015) defines Othering as:

...the simultaneous construction of the self or in-group and the other or out-group in mutual and unequal opposition through identification of some desirable characteristic that the self/in-group has and the other/out-group lacks and/or some undesirable characteristic that the other/out-group has and the self/in-group lacks. Othering thus sets up a superior self/in-group in contrast to an inferior other/out-group, but this superiority/inferiority is nearly always left implicit. (p. 70)

Simone de Beauvoir (1949) applies the theory of the Other to convey the unequal power dynamics between men (the dominant sex) and women (the subservient sex). De Beauvoir (1949) said, “for a man represents both the positive and the neutral, as indicated by the common use of [the word] Man to designate human beings in general; whereas Woman represents only the negative, defined by limiting criteria, without reciprocity” (qtd. in McCain, p. 33). Edward Said’s Orientalism (1978) describes how Western cultures view Middle Eastern cultures as exotic, uncivilized, and weaker Others, solely based on their ethnicity. A running theme in all these is power over the Other, whether it be the Other of gender or of race/ethnicity. These theories of Othering help shape the study’s way of examining the Othering of the villains in the first season of The Powerpuff Girls. Based on these theories of Othering, I have proposed a research question:
Will the villains in the first season of The Powerpuff Girls show Othering by racial/ethnic and/or gendered stereotypes? If so, in what ways?

I used an observational protocol to gather my data. Creswell (2009) defines an observational protocol (OP) as:

…a single page with a dividing line down the middle to separate descriptive notes (portraits of the participants, a reconstruction of dialogue, a description of the physical setting, account of particular events, or activities) from reflective notes (the researcher’s personal thoughts) (p. 201).

An observational protocol was used for each episode (the 11-minute segments were treated as individual episodes). In addition to the observational protocols, a character analysis (CA) of each villain character was conducted. In the character analysis, the character’s physical appearance, dialog, voice, and any supplementary evidence that represented a racial/ethnic or gender stereotype was taken into account.

Creswell (2009) outlines six steps in using data analysis and interpretation:

1. Organize and prepare the data for analysis. This involves transcribing interviews, optically scanning material, typing field notes, or sorting and arranging data.
   ○ In this phase, I collected data on the observational protocols (OPs) and character analyses (CAs) worksheets (See Appendices A & B, respectively).

2. Read through all the data.
   ○ In the first round of analysis, I watched the first season of the series without stopping or rewinding. All of the data collected in the OPs, both
descriptive and reflective, and the CAs was based on an initial first impression reading of the season.

3. Begin detailed analysis with a coding process (organizing the material into chunks or segments of text before bringing meaning to information).
   - Two more rounds of analyses were conducted that produced more detailed information. I continued to use the OPs and CAs.

4. Use coding to generate a description of the setting or people as well as categories or theme for analysis.
   - From my OPs and CAs, I began to find common themes and recurrences that existed.

5. Advance how the description and themes will be represented in the qualitative narrative.

6. A final step in data analysis involves making an interpretation or meaning of the data.
   - For steps 5 and 6, I gathered all of my information and interpreted it. It was found that I answered my research question abundantly.

I do acknowledge that I have some levels of researcher bias. I identify as a gay, Black male and I am researching racial/ethnic and gendered stereotypes as displayed in the villains of a cartoon show. Even though I have examined a cartoon, certain attitudes and behaviors toward characters that were presented as racial/ethnic Others or as gay Others has affected me in some way that it would not have affected a straight, White male researcher. My experience as a gay, Black male has a great influence on how I have interpreted my data. Having a double identity, I reacted aggressively to racial/ethnic
stereotypes, portrayals of feminized men as silly, comedic, or demonic, and anything that
dealt with traditional gender roles, which is found much of the data I have collected. I
believe I have approached this research from a completely objective standpoint; however,
I must admit, some of my own personal biases are reflected in this paper to some degree.
Below is a series of behaviors and attitudes toward villains seen as Others that I have
discovered, recorded, and observed during my research.

**Findings and Discussion**

With the rise of third wave feminism, Craig McCracken set out to create a show
about “girl power.” Thus, on November 18, 1998, *The Powerpuff Girls* was born. The
three girls—Blossom, Buttercup, and Bubbles—made out of sugar, spice and everything
nice, band together “to fight the forces of evil.” This content analysis sets out to examine
that “evil” in the villains and see if it is associated with racial/ethnic or gendered
stereotypes. In the 24 episodes in the first season of *The Powerpuff Girls*, there were 16
villains (villains in groups were counted as one) who demonstrated Othering (Table 1;
also see Figure 1, Appendix C). In many villains, Othering by the racial/ethnic or gender
stereotypes was clear. In some villains, Othering did occur, but it was not by the
stereotypes examined. This was the case for three villains: Elmer, Rainbow the
Clown/Mr. Mime, and the Blowfishes. It is for that reason, they are left out of the
analytic sample. In one episode, “Ice Sore,” there was not a villain (the antagonist was
the weather). This episode was also removed from my analytic sample.
Table 1. The Villains of the First Season of The Powerpuff Girls

<table>
<thead>
<tr>
<th>Character(s)</th>
<th>Gender:</th>
<th>Othered By:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Abracadaver</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>The Amoeba Boys</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>The Blowfishes</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Boogie Man</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Crook #3</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Elmer</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Evil Cat</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Fuzzy Lumpkins</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The Gangreen Gang</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>“Him”</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Ima Goodlady/Sedusa</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Major Man</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Mojo Jojo</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Rainbow the Clown/Mr. Mime</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roach Coach</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The Rowdyruff Boys</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

The Others

The research question asks, “Will the villains in the first season of The Powerpuff Girls show Othering by racial/ethnic and/or gendered stereotypes? If so, in what ways?” The answer is yes and Othering was shown in a variety of cinematic and animation visual techniques. Like the theories of Othering, The Powerpuff Girls is all about having power over the Others. The examples presented in this section demonstrates how power is enforced on simple cartoon characters, yet, how that power over racial/ethnic and gender Others is seen in reality.

Making “Them” look and sound different. Racial/Ethnic Othering occurred in an attempt to make the villains look and sound different via their appearance, clothing, props, and accessories, and accents. The villains were usually presented as non-White
and non-human, clearly making them racially anthropomorphized (King et al., 2011). For instance, Mojo Jojo, is a green-faced monkey; members of The Gangreen Gang are green and alien-like; The Boogie Man (monster), The Amoeba Boys (disease-carrying bacteria), and Abracadaver (zombie) are blue; Crook #2 from “Powerpuff Bluff” (1998) is African-American and is made muscular to the extent that he appears animalistic compared to his White counterparts (Figure 1.1).

![Figure 1.1](image)

*Figure 1.1.* The three Crooks from left to right: Crook #2, Crook #1, and Crook #3. Although Crook #2 is made just as muscular as Crook #3, he is not subjected racial Othering like Crook #3. Screenshot from netflix.com. Copyright 2016.

Through their clothing, props, and accessories, along with being non-White and non-human, certain racial signifiers can be drawn. Mojo Jojo’s helmet that resembles a turban and his almond-shaped eyes present him as a representation of many racial stereotypes common in Eastern cultures. This finding is interesting when taken into account Tobin’s (2000) finding that one child associated a character as one of the “bad guys” in an animation film because of their “Chinese Eyes”; Mojo is also seen with nunchucks in “The Bare Facts” (1999), which draws on the Asian stereotype of the martial arts master (Holtzman, Sharpe, & Gardner, 2014). When The Boogie Man (Figure
1.2) arrives in a White, stretch limousine in “Boogie Frights” (1998), his attire—a White suit, White platform shoes and a cane—is a clear nod to 70s Blaxploitation films (his name “Boogie,” evoking 70s disco culture) that portrayed African-American characters as suave and always threatening to the (White) man (Holtzman et. al., 2014). The Boogie Man’s plan to block out the sun with a large disco ball, drowning the town in Blackness is very threatening to Townsville, a predominantly White town. The distinct fedoras that The Amoeba Boys wear resembles the mobster stereotypes associated with Italians (Holtzman et. al., 2014).

![Figure 1.2. The Boogieman in his 70s attire. Screenshot from netflix.com. Copyright 2016.](image)

To reinforce the villains’ non-Whiteness, many possessed accents that were associated with minority racial groups. Mojo Jojo, who was inspired by the Japanese show, Speed Racer (Internet Archives), often talks in circles and even mispronounces “giggling” and “pillars,” sounding like “gig-rar-ling” (Just Another Manic Mojo, 1999) and “pil-rars” (The Rowdyruff Boys, 1999), commonly associated with Asian stereotypes that “relie[s] on the exchange of /s and /r/ for cheap laughs” (Holtzman, p. 326, 2014).
Three of the five members (the other two talk in ways that could suggest mental disorders, see Kirkland, 2010) in The Gangreen Gang (Figure 1.3) are products of the “greaser” stereotype as seen in Latina/os (Holtzman et al., 2014, p. 336) and have stereotypical Mexican-American accents; specifically, Lil’ Arturo, who, in his first appearance, was voiced by Argentinian actor, Carlos Jaime Alazraqui (Internet Movie Database), speaks in a small, high-pitched voice (Buttercrush, 1998). Crook #2 and The Boogie Man are both voiced by Kevin Michael Richardson, a Black voice actor (Internet Movie Database), furthering their association with Black stereotypes and The Amoeba Boys speak in 1930s mobster-like voices, furthering their association with Italian stereotypes.

Figure 1.3. The Gangreen Gang. Lil’ Autro (bottom left), Ace (center), and Snake (upper right) represent the “greasy” Latino stereotype. Screenshot from netflix.com. Copyright 2016.

There were a few accents that could not be pinpointed to a certain racial group, but it was apparent that the villain was meant to sound like a foreigner. Abracadaver talks like a person who cannot speak English, in short, simple sentences: “You! You’re that girl! You ruined Al Lusion! You make them laugh at me, but now, revenge!” Two interesting cases are found in the evil cat in “Cat Man Do” (1999) and from “Insect
Inside” (1998) Roach Coach (the actual roach). The evil cat is White, however, he possesses an accent that is clearly not native to Townsville. When it is revealed that Roach Coach is an actual roach (with an accent) and not the White male vessel that he was controlling (this was a weird episode), he is thus made a racial Other. Altogether, the way the villains looked and sounded like non-Townsvillians, the villains represented something that was non-American and therefore justifiably “evil” and warranted the girls to protect Townsville from “Them.” This, of course, conveys a less progressive message to young viewers about how to treat those who look and sound different from themselves or to react when they themselves possess these qualities.

Making “Them” act different. Gendered Othering occurred in an attempt to present the villains as Others via hyper or transgressive gender performances. The show’s focus on “girl power”—a particular type of gender empowerment directed at young girls, rooted in consumerism (Kirkland, 2010)—is displayed through the villains’ gender performances. One of these gender performances is shown in the season’s only female villain character Ima Goodlady/Sedusa who represents negative forms of femininity: one that is too overbearing and one that is too sexual. When she is first seen as Ima Goodlady in “Mommy Fearest” (1998), she is a conservative woman dressed in a pink pantsuit with her big, green eyes and white hair (Figure 2.1). It is not until she is brought into the Powerpuff home she poses as an emasculating threat for the professor (controlling the household) and the girls (restricting them from using their superpowers and domesticating them). After going on a date with the professor, she is brought back and says that she’ll be “helping out” around the house:

Ima: I'm so excited to be helping out around here with you girls.
Girls: Helping out?

Blossom: With what?

Professor: Well, girls...

Ima: Why don't you let me explain to them?

Professor: Oh, okay...sure.

Ima: Alone?

Professor: I'm at your command, Ima.

(They both laugh. The professor leaves.)

Ima: Oh, you. (to the girls) You see, it's quite simple, girls. With the Professor being as busy as he is, it'll be good to have a female touch helping out around here.

Blossom: But...we don't need any extra help around here. We're...

Girls: ...the Powerpuff Girls!

(Ima softly laughs).

Ima (in a much harsher, evil tone): And it is that kind of attitude that is going to change around here!

(The girls are taken aback.) (“Mommy Fearest,”powerpuffgirls.wikia.com)

Another moment this monstrous femininity is when Ima makes the girls to chores before they go out and fight crime: “You three left the living room a complete mess last night. And there will be no crime-fighting until that room is SPOTLESS!” The girls, having superpowers, zip through the house and it is spotless. Ima proceeds to make the house dirty again and says, “From now on you are forbidden to use your superpowers! You will do things like normal little girls!” Her presence supplements the overbearing mother
stereotype that is seen in female villains (Davis, 2006). Her second form, Sedusa (a portmanteau of “Seduce” and “Medusa”) is a direct opposite to Ima’s look: she is clad in a red jumpsuit with “long gloves-mittens and thigh-high boots, leotard, red fishnet stockings and black pantyhose which she wears under the fishnets” that accentuate her breasts and curves (Figure 2.1). She appears quite monstrous compared to the girls’ prepubescent, infantile appearance. Sedusa’s “monstrous femininity” (Kirkland 2010, p.20) is something the does not fit in the realm of girl power. Davis’s (2013) finding that Disney wanted to “avoid being called sexist” as a reason for the lack of female villains in their films (p. 244) is the same ideology Craig McCracken uses in The Powerpuff Girls; however, (in both cases) the creators do not make themselves exempt from sexist claims because they show the female villains stereotyped portrayals. If anything, Ima Goodlady/Sedusa gender portrayal relies on negative stereotypes associated with women, contributing to the sexism that is trying to be avoided.

Figure 2.1. The sexualized Sedusa and the conservative Ima Goodlady. Photo from https://www.pinterest.com/pin/141019032056355881/. Copyright 2016.

The girls’ interaction with hypermasculine male villains reveals messages about sexism or sexist remarks towards women (represented in Miss Bellum, the town Mayor’s secretary) and girls (represented in The Powerpuff Girls) and how they are inappropriate
or unrealistic. For example, The Three Crooks in “Powerpuff Bluff” (1998) demonstrate sexism by referring to Ms. Bellum as “sweet cheeks” and their gawking at her. Besides posing as the girls to rob banks and museums, calling a woman “sweet cheeks” is their biggest offense. Similarly, The Rowdyruff Boys (The Rowdyruff Boys, 1999) expecting the girls to cry simply because they are girls is something that is seen as sexist and unrealistic. With the introduction to a new superhero, Major Man, the girls expose him as a phony and prove to the town that girls are just as strong as men (Major Competition 1999). In “Impeach Fuzz” (1999), the backwoods, pink bear, Fuzzy Lumpkins is elected as Mayor of Townsville and demonstrates some very sexist behaviors to Ms. Bellum and the girls. In one instance, Fuzzy makes Miss Bellum speak and dress to his liking (Figure 2.2):

**Fuzzy:** (from o.c., as if calling a hog) Bel-LUM!

**Ms. Bellum:** (over intercom, wearily) Yes, Mayor? (Pull back to show Fuzzy.)

**Fuzzy:** Scoot your purty little self in here, and let's take a gander at ye!

**Ms. Bellum:** (over intercom) Do I have to?

**Fuzzy:** I said... (hog call) ...sco-OOT!

(Cut to the office door at floor level. Ms. Bellum steps into view, in bare feet rather than her customary red high heels. Turn up to show her red suit gone; she wears denim cutoffs, with a piece of rope for a belt, and a short White top with red polka dots tied in front. Her hair is in two pigtails. Fuzzy lets off a wolf whistle from off screen. Cut back and forth between the two of them.)
Ms. Bellum: (dryly) Charming. Is there anything else I can do for you, Mayor?

Fuzzy: (cupping hand to ear) Wha-a-at?

Ms. Bellum: (sighing, then adopting backwoods drawl) Well, uh, howdy, Your Fuzziness. Is thar anything else I can do fer ye?

Fuzzy: Hoo doggie, I likes that! (He laughs briefly.) Oh, yeah! Oh, yeah! I almost forgotton. I gots me an emergency! What am I 'posed to do?

Ms. Bellum: (normal voice) Well, first off...

Cut to Fuzzy, who clears his throat, then back to her.

Ms. Bellum: (sighing, adopting drawl) I reckon you all should call them thar Powerpuff Girls. (“Impeach Fuzz,” powerpuffgirls.wikia.com)

Fuzzy also domesticates the girls by making them do various tasks like wash his clothes, catch his pig, and play music for (and with) him. Fuzzy’s placement in this season acts as an example of the highest form of sexism and how it is wrong to treat women and girls in that manner. Such was the case with all hypermasculine male villains.

Figure 2.2. Miss Bellum dressed in a country get up. Screenshot from netflix.com. Copyright 2016.
For a show that is presumably about gender equality, male villains who went outside of the gender norm or gender transgressed were portrayed as weird, funny, scary or evil. For instance, there is definitely something comical about the crooks in “Powerpuff Bluff” (1998) dressing up as little girls—they prance around and talk with high pitch voices with their hairy legs and muscles. We as viewers (child and adult alike) can watch this performance and find amusement by it, but know (subconsciously or consciously) that something is wrong with these three men dressing up and acting like girls. Grubber from The Gangreen Gang can be seen as a weird gender trickster: In “Buttercrush” (1998), he disguises himself as Buttercup to trick Blossom and Bubbles; he also does convincing voice impersonations of Buttercup (Buttercrush, 1998) and Miss Bellum (Telephonies, 1998).

The character “Him” (Figure 2.3) is perhaps the biggest example of gender transgression in the season and is given an introduction with much foreboding by the narrator: “This is a villain so evil, so sinister, so horribly vile that even the utterance of his name strikes fear into the hearts of men! The only safe way to refer to this king of darkness is simply…‘Him’” (Octi-Evil, 1998). We then see “Him” in his pink living room, sitting on a pink couch, wearing a slimming Mrs. Clause outfit, with high-heeled boots, his hair slicked down, and blush on his cheeks. When he talks, he exaggerates his movements. He lifts his legs, he bends his lobster claws and he fluctuates between an eerie echo and a harsh demonic voice. His feminine appearance coupled with demonic tendencies outs the message that feminine men are associated with evil. Li-Vollmer and LaPointe (2003) found that gender transgression drew on “derogatory, culturally embedded stereotypes of gay men” (105). The Powerpuff Girls makes the statement that
feminine behavior in males (or feminine behavior in general) is not appropriate and is silly, comedic, or evil.

Figure 2.3. “Him” sitting in his pink lair. Screenshot from netflix.com. Copyright 2016.

Crime in the city of Townsville. The city of Townsville is a nice, suburban town and that is filled with crime and disaster everyday, each episode. The show’s narrator does a good job at masking this by prefacing each episode with a delightful message:

**Narrator:** The city of Townsville—which is kept safe from crime…

**Narrator:** The city of Townsville. A safe haven for all.

**Narrator:** The city of Townsville! A community where random acts of kindness are an everyday occurrence. And where warm, fuzzy smiles grace the faces of everyone you meet. (“Mommy Fearest,” “Powerpuff Bluff,” “Fuzzy Lumpkins,” powerpuffgirls.wiki.com)

These messages were followed after those messages there was a crime or disaster happening. Crime and disaster run the town because without it, there would be no need for its saviors, or for the villains they fight. In “Geshundfight” (1998) both the girls and the narrator perpetuate crime through showcasing incompetence of The Amoeba Boys as
villains. This episode is prefaced with the narrator saying, “The city of Townsville. A place filled with some of the most brilliant, clever, and ingenious criminal masterminds ever to hatch an evil scheme...Then there’s the Amoeba Boys” (Geshundfight, 1998). For most of the episode, The Amoeba Boys are trying to do the crime of the century, to warrant the attention of the girls; however, they are not good at crime and they find themselves begging to get the girls to stay:

**Bossman:** No! Wait! So you wanna see a crime, huh?

**Blossom:** Huh?

**Bossman:** A real crime?

**Blossom:** Yeah. Sure. Okay.

**Bubbles:** Sounds fun. (“Geshundfight,” powerpuffgirls.wika.com).

When the crime they commit is littering, the girls pay it no mind and leave because it is not a “real crime” (like world domination, stealing precious jewels, trying to kidnap and/or murder the girls; you know, the good stuff). The Amoeba Boy’s need to create crime reinforces the town’s need for crime in order to need their superheroes.

**Class and citizenship.** Class is one of the main elements in the Othering of the villains. The City of Townsville (with all of its generic qualities) represents all American towns, as if this town could be any town in any state. Its status as a suburban town holds its town’s people to a higher social class. However, the “Americanness” of Townsville seems to refer only to those who are the opposite of what the villains are. The villains are seen in homes that are excluded from Townsville: Him’s pink lair, Fuzzy Lumpkins’ cabin in the woods, Mojo Jojo’s volcano mountain, The Gangreen Gang’s home at the town dump. The villains’ statuses as not only villains but as abnormal citizens of
Townsville makes their exclusion appropriate because even though they are excluded from the main town, they still reside in the town’s vicinity. There is a need to distance them to show that “they” are not like “us”. The narrator's voice is most effective in distancing the villains from the “real citizens” of Townsville. After giving a delightful summary of Townsville, the narrator’s tone shifts to introduce Fuzzy Lumpkins who represents a low class, hillbilly: “…Except some people who've decided to be far, far away. Some people who don't like visitors. Some people like...Fuzzy Lumpkins” (Fuzzy Logic, 1998). In the case of Fuzzy Lumpkins, he is not represented with any type of racial/ethnic group and he represents some instances of sexism, but he mostly represented a class group: the lowly, backwoods, country bumpkin. His acts of sexism can be seen as complementary to his low-class standing. In “Just Another Manic Mojo” (1999), Mojo Jojo is given a very elaborate and hateful introduction:

**Narrator:** (coldly) But one place in Townsville Park is not filled with fun activity. Townsville Volcano Mountain! For on top of this mountain lies the lair...of the revengeful, resentful, spiteful, lawbreaking, mad, swindling, thieving, malicious, extorting, assaulting, crooked, torturous, dishonest, complaining, wicked, indecent, menacing, touchy, swarthy, shadowy, villainous villain of all time. And he calls himself...Mojo Jojo! Oh, I hate you, I hate you, I hate you! (powerpuffgirls.wika.com)

The villains are clearly distanced from the rest of the town. The episode “Telephonies” (1998), however, raises questions about the villains’ rights as citizens. After getting fake phone calls from The Gangreen Gang about crimes that were happening, the girls invade the homes of Mojo Jojo, Fuzzy Lumpkins, and “Him,” beating up Mojo Jojo and Fuzzy
Lumpkins. When they find out the accused villains were not committing any crime, they return to their home free of consequence. When discussing this incident with his fellow comrades, Mojo Jojo says, “we are evil citizens, but citizens nonetheless,” expressing a right of respect as a citizen. However, those who do not look like the model citizens of Townsville, who are colored, who are non-human, who have accents, who are shown as foreigners, cannot be respected and must be feared and signaled out.

**Fear.** The show’s opening sequence tells of the creation of the girls and their fight of “the forces of evil”. It is then followed by a preview of the many villains and the girls aggressively beating them up. The aggression shown towards these colored, anthropomorphized, transgressive “evil” villains is certainly associated with fear. Many of the villains wanted world domination (i.e. Mojo, Roach Coach, The Boogie Man, The Evil Cat) which could be equated with the fear of a foreign forces taking over our American towns or even the whole world—that these animals, these savages, these Others are trying to take over. The Amoeba Boys who lack “true villainy” end up spreading “one of the most deadly viruses ever to befall mankind” which mirrors a fear of foreign disease. The Gangreen Gang and The Amoeba Boys represent a fear of racial/ethnic groups starting trouble and gang violence in White, middle-class neighborhoods. The Evil Cat (Figure 3.1) and Roach Coach (Figure 3.2) are the most interesting examples of this racial fear. The cat is White in its appearance, but it has a foreign accent. The cat is able to manipulate the professor (the professor calls the cat “Master”) into stealing for him and constructing his machine that will make the town obey cats as dominant forces. This episode reads as exerting a fear of White-passing foreigners controlling patriarchal White males into turning against their own race. The
Roach Coach episode reads the same way. The whole episode is really about confronting racial fear and uses roaches (of course) to mirror a non-White race. When we are introduced to Roach Coach he is a middle aged, White male screaming out the window of his apartment about the coming of “earth’s true masters”. At the end of the episode, the White male is revealed to be a robot and inside is a non-White, foreign sounding roach. It is then apparent that the roach was using the guise of White male to accomplish his plan of roach (racial) domination.

![Image of Roach Coach](image1.png)

**Figure 3.1.** The White foreign sounding cat. Photo from powerpuffgirls.wika.com. Copyright 2016.

![Image of Roach Coach and vessel](image2.png)

**Figure 3.2.** Left: The White vessel that Roach Coach controls; Right: Roach Coach himself. Photos from powerpuffgirls.wika.com. Copyright 2016.

It is ironic that a show about girl power perpetuates the idea that femininity is associated with villainy. Villains who possessed overly feminine qualities were shown as
evil and manipulating. The presence of the overbearing mother figure in “Mommy Fearest” represents an emasculating force but in “DyNaMo” (1999) the professor’s overbearing act (he builds a gigantic robot for the girls to battle a monster in) it is not portrayed in the same light. This double standard reinforces patriarchy and hegemony that encourages male guidance over female guidance. “Him’s” manipulation plots, demonic powers, and controlling presence (he is addressed as “Yes sir!” by Mojo Jojo) are equally associated with his femininity. A simple conclusion about these characters can be drawn: anyone who is feminine (female or male) is controlling, manipulative, evil, insane, and demonic.

**Limitations, Further Research, and Conclusions**

This study only looked at the villains and how they were othered by racial/ethnic and gendered stereotypes, it did not seek to analyze all of the characters. Further research should be conducted looking at the show as a whole. *The Powerpuff Girls* is a show about girl power, but it seems that power is limited to a certain type of girl: a White, suburban, heterosexual girl. Further examination of that girl power would further expose the exclusion of people of color in the series (I can count on one hand how many non-White characters (besides the villains) I saw in this first season; these characters were extras). Studies examining the production and design of this children’s animation show and other shows like it should be pursued to discover whether the racist, sexist, homophobic, and transphobic messages are intentional or unintentional. Either conclusion found is problematic because it suggests that creators are not aware of the power their content possesses and how it can affect different people from diverse backgrounds in different
ways. Further research should be conducted on the later seasons to see if the same themes found in this study are prevalent throughout the whole series.

Often, scholars do not believe a children’s television show is capable of having themes, symbolism, and social commentary. There are many studies showing that certain messages exist, but there are no studies that show how those messages are stylistically conveyed. This content analysis of The Powerpuff Girls demonstrates that children’s television shows are capable of possessing such qualities and that scholars need to conduct more content analyses on children’s animation shows. Further examination of this topic will provide more awareness in this genre and will hopefully make parents more critical of the messages their children are receiving from media advertised for their children. However, parents should not make their child stop watching such content—for that will simply ignore that stereotyped portrayals of race, ethnicity, gender, and sexuality exist—but, they should watch said content with them and actively engage in conversation with them about what they think is going on. If possible and if it is found, discuss any stereotypes and offensive messages to help eliminate those negative perspectives.

As this study set out to explore, the villains in the first season of The Powerpuff Girls were othered by racial/ethnic and gendered stereotypes. The most interesting finding is that there were a number of ways that the Othering was complemented through the use of technical and stylistic animation and filmic devices: costumes, sound, music. What was clearly evident for all cases of Othering in the villains of The Powerpuff Girls is that the Othering was done in order to distance or to humiliate. Kirkland (2005) notes:

> Middle class, White and heterosexual, the girls live in a spacious modern home, have Caucasian skin colour and features...The show’s celebration of its main
characters not only as female and young, but also as White, straight and bourgeois, impacts on the construction of the villains the girls face, associating the series with less progressive traditions in animation culture and history…. (p. 17)

The aggression shown towards these “colored,” anthropomorphized, transgressive villains clearly sends messages that anyone who is not straight, White, and middle class is “bad.” For a show directed towards children, these are not the messages that should be put out.

It is evident, as scholars have proven, that The Powerpuff Girls is not as progressive as it may seem. Hains (2008) found that while there were some feminist messages in the series, they were often contradicting, for example the girls defeating The Rowdyruff Boys not with their powers, but with a kiss. Even though the series clearly has less progressive messages evoking racism and reinforcing sexism, in reality, young girls find these acts justifiable—the kiss to The Rowdyruff Boys was a “nice” way to defeat them and the constant need to beat up a villain because they are “mean” (Duvall, 2008). It is clear that contradicting and problematic messages go over the heads of the show’s young viewers. This is because of the stylistic way cartoons are able to socialize their viewers, as children see cartoons as entertainment. The Powerpuff Girls reboot that recently started makes this study all the more relevant. Characters in the original are reflected in the reboot and the fact that cartoons are much more crude now (I am speaking from experience) it is questionable how the same messages conveyed in the original are shown in the reboot. The girls also seem to appear more infantile (Figure 4.1) to target even younger audiences (younger girls, mostly). This is the same tactic Disney uses when
they re-release their classic films in theaters to captivate younger audiences (Orenstein, 2011).

Townsville is not a truly great town as it is portrayed. It has high crime and disaster rates as displayed in every episode, but those facts are masked by the voice of The Narrator. His all-seeing, omnipotent voice represents the White heteronormative voice that weaves throughout the series and acts as the ultimate agent of socialization. He often refers to the villains as “evil,” “thugs,” and “criminals” and he constantly mocks the villains as well. In “Fuzzy Logic,” he mocks Fuzzy’s country accent saying, “Fuzzy done gone plum crazy” (Fuzzy Logic, 1999). The only reason why certain people are seen as evil is because of The Narrator’s attitudes towards them. This strong voice is able to morph the narrative into fitting into the White heteronormative structure. This influential voice of The Narrator proves that a show about girl power is overseen by the eyes of a patriarchal manifestation.

In any story about heroes, there is a need for villains because without the “bad guys” it is impossible to tell who are the “good guys”. But who decides who the villains or the “bad guys” are? Is it something internal, embedded? Or is it the influences around us that are sometimes out of sight that help weave certain narratives about the Others. In *The Powerpuff Girls*, it is the voice of the narrator that is able to morph the narrative of the show. The narrator is the omnipotent voice that actively helps to distance and to humiliate the villains from the good citizens of Townsville. When is it realized that Townsville is mostly White (I can count on one hand how many people of color were in this season), suburban, and everyone is presumably heterosexual, the narrative of the “good guys” versus the “bad guys” turns into maintaining the White heteronormative
values. It seems that “girl power” cannot just be about empowering girls, but it has to be about pushing some type of agenda via the White male voice. In this case it is Othering the villains. So, it seems that girl power can only be portrayed at the expense and approval of White male patriarchy, with the creator, Craig McCracken, the professor (the girls’ creator/father) and the narrator (played by Tom Kenny) all being White males, symbolizing a holy trinity of hegemony that helps maintain true (White) “Americanness.”


References


Appendix A

Episode:

<table>
<thead>
<tr>
<th>Descriptive</th>
<th>Reflective</th>
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</thead>
<tbody>
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<td></td>
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Appendix B

Character Analysis Worksheet

Character Name:

Episode:

Is this the character’s first appearance? If not, what how many episodes thus far has the character appeared on?

Is the character Male or Female? Or other?

Is the character Animal or Human? Or other?

Is the character othered? If so, how: Racial, Sexual, or Gendered?

How does this character cause harm or commit crime?

Describe physical markers (i.e., character’s appearance) of othering for this character:

Describe verbal markers (i.e., spoken dialog) of othering for this character:

Describe any notable dialog that functions as a marker of othering:

Describe any other data that signifies othering:
Appendix C
The Villains


From left to right, Row 2: Fuzzy Lumpkins, Sedusa, The Rowdyruff Boys, The Three Crooks.

From left to right, Row 3: The Boogie Man, The Evil Cat, Abracadaver, Roach Coach

From left to right, Row 4: Elmer the Glue Monster, Mr. Mime, Major Man, The Sea Monster. Photos from powerpuffgils.wika.com. Copyright 2016.
The Effect of Hydroxylation on Anthocyanin-based Dye Sensitized Solar Cells

Jordan Wilson

Dalilah Mathews, Ph.D.

Abstract

Dye sensitized solar cells (DSSCs) have received intense scrutiny in recent years because of their significance as a simpler and cheaper generation of solar cells. This research focuses on a class of molecules called anthocyanins as the sensitizer. Anthocyanins are multi-cyclic organic molecules that are abundant in nature [1]. In this study three specific anthocyanins are under investigation, cyanidin, delphinidin, and pelargonidin. The three anthocyanins differ by the number and placement of hydroxyl functional groups. This study determined if these small differences affect the maximum current and voltage output of a DSSC constructed with these anthocyanins as the sensitizer. Electronic absorption spectroscopy was utilized to determine the maximum wavelength of absorption for each dye. The molar absorptivity of each dye was determined through a Beer’s Law study and then a voltmeter was used to measure the voltage output of the DSSC with the assorted dye prepared.

Introduction

DSSCs are composed of five major components: a conducting electrode, a thin film semiconductor, a dye sensitizing species, an electrolyte solution and a conducting counter electrode. Typically the first layer is a glassy tin oxide electrode that is coated on one side with a layer of mesoporous titanium dioxide which acts as the semiconductor [2]. The titanium dioxide semiconductor has a thin layer of covalently bonded sensitizer covering the surface. Next, an electrolyte solution is present which contains a redox couple, usually iodide/triiodide. Another glassy tin oxide counter electrode completes the solar cell and is usually coated with a conductive material such as graphene that is used as a catalyst in renewing the redox couple. Sunlight enters the transparent tin oxide top coating and strikes the sensitizer attached to the semiconductor. The sensitizer is electronically excited and ejects an electron into the conduction band of the titanium dioxide semiconductor. The dye is immediately reduced by the redox couple in the
electrolyte solution and again available to interact with the sun's radiation and eject another electron. Meanwhile, the electron in the conduction band of the semiconductor diffuses across an electron gradient to the conductive layer of the glass. This electrode is connected to a graphene counter electrode and the electron flows from the first electrode to the counter electrode to produce a current [3]. A schematic of the cell can be seen in figure one.

Figure 1. Schematic of the components of a dye sensitized solar cell

This research focuses on anthocyanins as the sensitizer. Anthocyanins are flavonoid pigments responsible for many of the red, violet and purple colors characteristic of fruits and flowers. Some of the most basic anthocyanins only differ by having a few more or less functional groups attached to the aromatic rings [1,4]. In this project three anthocyanins, pelargonidin (Pg), cyaniding (Cy), and delphinidin (Dp) are under investigation. The three pigments differ by the number of hydroxyl functional groups on the third carbon ring as is seen below in Figure 2.
For the overall preliminary data collected, the maximum wavelength of light absorbed was determined for each dye. To achieve this, each individual dye was dissolved in 25 ml of ethanol and a spectrum was recorded. The dye was diluted as needed to provide absorption below 1 on the spectrum. The UV-Vis results were important because they provided information of whether these dyes absorbed strongly in the visible spectrum (measured from 350 nm-750 nm) which is important if they are to be used in a DSSC.

Once it was determined the dyes absorbed in the correct wavelength range it was necessary to determine how strongly they absorbed. A series of dilution were made in order to perform a Beer’s Law to test for the molar absorptivity of each individual dye. The molar absorptivity allows for a better understanding of how well or intensely the dye absorbs energy from a particular wavelength of light. In this case, Pg and Cy were to be tested first. Five milligrams of Pg was dissolved in 25 ml of distilled water and a series of 6 dilutions were made of the Pg stock solution and each solution was tested for its highest
peak absorbance. This step was repeated with Cy however, 1 mg was used of the sample and instead of distilled water as the solvent, 25 ml ethanol was used. In order to find the molar absorptivity, the Beer’s Law equation, shown below, must be utilized.

\[ A = \varepsilon lc \]

It states that absorbance is directly proportional to concentration. So by graphing the data of the changing concentrations at the same measured wavelength, the slope of the line created gives the molar absorptivity.

The TiO\textsubscript{2} semiconductor was prepared in two different ways (first for preliminary and second for final data). The first method involved making a paste of TiO\textsubscript{2} by adding 10 ml of an acetic acid solution (pH of 2.67) to 6.0 g of TiO\textsubscript{2} powder. The powder was ground vigorously while 1ml aliquots of the acetic acid solution were added. This was continued until a less viscous fluid was obtained with the consistency of thick paint. In this research, only 6.5 ml-7.6 ml of acid was used. Once the consistency is to the desired effect one drop of Trident X (surfactant) was added and slightly mixed throughout the paste in order to allow for a more even coating of the TiO\textsubscript{2} on the glass. Next, the paste was loaded in to an airbrush and from there, sprayed onto the conductive sides of the glass panels. The cells were placed on a hot plate at 450°C for about an hour. The cells were allowed to slowly cool to room temperature at which point they were ready to have the dye applied.

The second method for preparing TiO\textsubscript{2} was a screen printing method. A custom screen was prepared in order to prepare 80 cells at one time. Typical screen printing techniques were utilized except instead of using paint, a specially formulated TiO\textsubscript{2} paste (purchased from Australia) was used for the printing. Once the process with screen
printing finished, the glass slides with screen printed semi-conductor were then kept covered for future use. When it was time to dye the semiconductor, the slides were put into an oven at 500°C for 2 hours and then allowed to cool to room temperature.

Once the data for the absorbance was obtained, the room temperature cells were soaked in their assigned dyes overnight in the fume hood or fridge with a glass covering and a box draped over it to aid in stopping light from deteriorating the dyes. The next day, these cells were taken out of the dyes and rinsed with ethanol and then dried with a chem-wipe. These dyed cells were then put aside and the opposing glass panel was made by coating graphene on the conductive side so there was a cathode to the solar cell. The glass panels were then sandwiched together with the conductive layers on the inside. Enough room was left on the cell to place a drop of the electrolyte solution (iodide/triiodide) on the exposed inside of the cell and allow capillary action to spread the solution evenly throughout the cell. Each complete cell was tested for voltage using an AM 1.5 solar illuminator and a voltmeter. The voltage was tested at ambient light and high exposure light (from a solar simulator).

Comparison for Cy cells were needed so a natural comparison was prepared. Red radish extract was used as the natural source because it only contains one type of anthocyanin, cyanidin. The only difference is the cyanidin is present in its glycosylated form, cyaniding-3-glucoside. To obtain the extract, red radishes were juiced in a commercial juicer. The resulting liquid was then vacuum filtrated 3 times. Once the extract was filtered, the cells were constructed as usual. These cells were also tested via the same voltmeter.
Results and Discussion

These brightly colored solutions absorbed strongly in the visible part of the spectrum, as expected (Figure 3). Pelargonidin had a max absorption at 535 nm, delphinidin had a max absorption at 570 nm and cyanidin had a max absorption at 548 nm. Pelargonidin also showed the definite presence of a low, broad peak around 425 nm.

![Anthocyanin Spectra](image1)

Figure 3. UV-Visible spectra of the three anthocyanins.

The pH of delphinidin, pelargonidin, and cyanidin were respectively 5.52, 4.20, and 5.09. A series of cyanidin solutions were created and the absorption measured (Figure 4).

![Cyanidin Absorption](image2)

Figure 4. UV-Vis spectra of the cyanidin dilutions.
The absorbance at 548 nm was tabulated (Table 1) and graphed versus the concentration (Figure 5) so the molar absorptivity could be determined.

Table 1. Concentration and absorption data for cyanidin at 548 nm

<table>
<thead>
<tr>
<th>Concentration Molarity</th>
<th>Absorption</th>
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</thead>
<tbody>
<tr>
<td>6.20E-05</td>
<td>0.94736</td>
</tr>
<tr>
<td>3.72E-05</td>
<td>0.49302</td>
</tr>
<tr>
<td>3.10E-05</td>
<td>0.4251</td>
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<tr>
<td>2.48E-05</td>
<td>0.27999</td>
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<td>1.24E-05</td>
<td>0.14024</td>
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<tr>
<td>6.20E-06</td>
<td>0.06364</td>
</tr>
</tbody>
</table>

Figure 5. Beer’s Law plot for molar absorptivity of cyanidin
The experimental value for the molar absorptivity of cyanidin was determined to be $1.6 \times 10^4 \text{ L/(mol cm)}$. The data of the Beer’s Law test for pelargonidin was unusable due to rapid oxidation of the molecule in distilled water as could be seen in the spectra (Figure 6).

![Figure 6. UV-Vis of pelargonidin before and after oxidation](image)

A similar issue was seen with cyanidin, however, data was collected quickly in an attempt to lower the overall effect of oxidation.

The average voltages measured for pelargonidin was 78.32 mV, delphinidin was 149.1 mV, and cyanidin was 195.1 mV. For the radish cells, it was 272.7 mV. The data is shown in Table 2.

Table 2. Table depicting average voltage for the overall DSSC’s

<table>
<thead>
<tr>
<th>Dye</th>
<th>Hydroxyl groups</th>
<th>Average Voltage (mV)</th>
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</thead>
<tbody>
<tr>
<td>Delphinidin</td>
<td>6</td>
<td>149.1</td>
</tr>
<tr>
<td>Cyanidin</td>
<td>5</td>
<td>195.1</td>
</tr>
<tr>
<td>Pelargonidin</td>
<td>4</td>
<td>78.32</td>
</tr>
<tr>
<td>Cyanidin-3-Glucoside</td>
<td>4</td>
<td>272.7</td>
</tr>
</tbody>
</table>
The data didn’t show a gradual increase or decrease of voltage when the number of hydroxyl groups changed in a specific order. A possible explanation is that when the dye binds to TiO$_2$ having only 2 R groups attached the non-double bonded carbons (where R1 and R2 are) is what’s most preferred [5]. This could be due to possibly steric hindrance from the R3 group or just the loss of electron density at the R2 carbon region because of the electronegativity of the vinylic R3 group (hydroxyl in this case). The dye may also have a hard time bonding to the semi-conductor if there is only 1 R group at the R2 location. This would cause less dye to bond with the semi-conductor. Examples of the different types of dye-TiO$_2$ linkage are shown in Figure 7. This theory must be confirmed by more research.

![Figure 7. Example of how the dye can bond to the semi-conductor [5].](image)

The quickly oxidizing nature of pure anthocyanins makes them difficult to research with the current equipment. Once the dyes were dissolved, there was a time limit on how long they would retain their optical characteristics. This was seen visually as a change in the color of the solution. Once the optic properties change, the overall absorbance shifts and changes and leaving the dye unusable. The dye extracted from the radish did not suffer from this problem. It is interesting to compare the structures of natural cyanidin to pure cyanidin (Figure 8). The glycoside sugar on the middle carbon
ring stabilizes the overall molecule and protects it from such light degradation and oxidation in solution.

![Molecular structures of (a) cyanidin-3-glucoside and (b) cyanidin](image)

**Figure 8.** Molecular structures of (a) cyanidin-3-glucoside and (b) cyanidin

**Conclusions**

The goal of this research was to identify how these hydroxyl groups affected the efficiency of the cell. This was moderately achieved in comparison of cyanidin and radishes. To complete this research, a Beer’s law and comparison study must be done for delphinidin and pelargonidin. The overall obstacle is to stabilize the dye in solution so an accurate molar absorptivity can be determined and solar cells can be constructed. The final goal is to determine which functional groups are required for better efficiency of the solarized cell. This will be important as the project moves toward synthesizing novel dyes.

**Acknowledgements**

My Mentor, Dr. Dalila Mathews
University of Montevallo and the McNair Scholars Program
Harmon Hall, Department of Biology, Chemistry, Mathematics
Lee Somers, Bloch Hall, Department of Art
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