

2018 | Vol. 19

UMBC REVIEW
JOURNAL OF UNDERGRADUATE RESEARCH

2018 | Vol. 19

UMBC REVIEW
JOURNAL OF UNDERGRADUATE RESEARCH

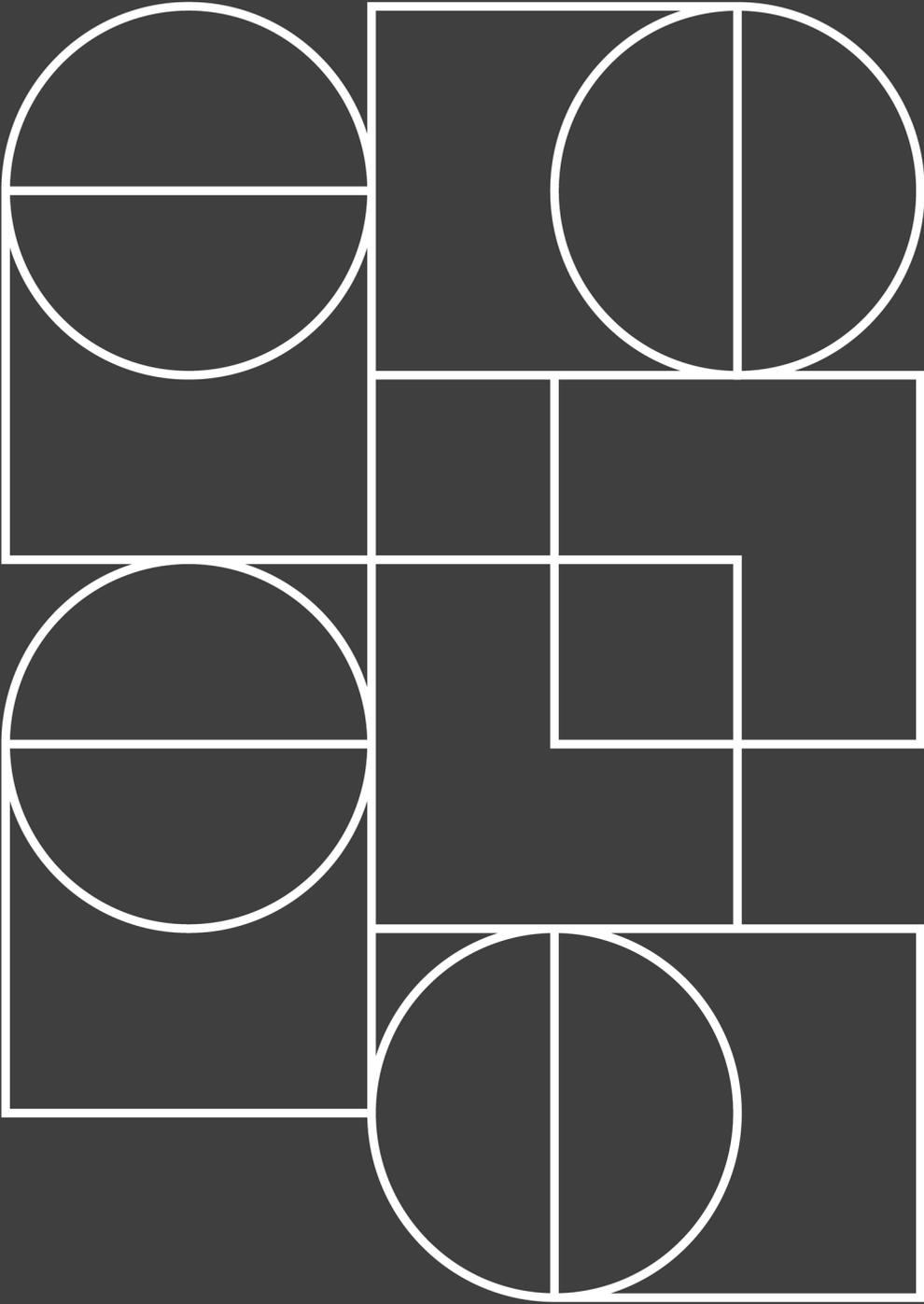
© COPYRIGHT 2018
UNIVERSITY OF MARYLAND
BALTIMORE COUNTY (UMBC)
ALL RIGHTS RESERVED

EDITORS
IOANA PETRICEL
MANISHA VEPA

DESIGNER
SAMUAL BUETTNER

2018 | Vol. 19

UMBC REVIEW
JOURNAL OF UNDERGRADUATE RESEARCH



Contents

- 17 **Rebecca Gale**
History
Cigarettes, Sailors, and Sororities:
Student Scrapbooks and the Female
Experience at National Park Smeinary,
1900-1942
- 37 **Bruce James**
Mathematics
Optimization of the K-means
Clustering Algorithm through
Initialized Principal Direction
Divisive Partitioning
- 55 **Himadri Patel**
Interdisciplinary Studies
Brain Mechanisms of Stress-Induced
Analgesia: Exploring the Relationship
Between Pain and Stress
- 75 **Manneha Qazi**
Biology
Loss of Function Tool Development
for N-myc Downstream Regulated 1
(NDRG1)
- 93 **Sean Owen**
Mathematics
Pronounced Leh-nurd Skih-nurd:
Rhoticity and the South in American
Rock Music
- 111 **Nimasha Fernando**
Interdisciplinary Studies
Latin American Immigrant Health
in the Baltimore Area: Provider
Perspectives of Alternative Remedies
- 137 **Susannah Jones-Hochmuth**
Gender and Women's Studies
Environmental Studies
Faith and Feminism: An Exploration
of Intersecting Identities
- 159 **Jacob Street**
Political Science
Paying Dividends: Universal Basic
Income, Income Inequality, and
Public Opinion
- 185 **Marina Mizell**
Interdisciplinary Studies
Maternal Depression and Other
Possible Barriers to Early Head
Start/Head Start (EHS/HS)
Enrollment in Baltimore, Maryland
- 213 **Alexander Sievers**
History
The Question of 'Left-Wing Fascism'
within the British Union of Fascists
in the 1930s

Editors' Introduction

Since the first edition was published in 2000, the *UMBC Review: Journal of Undergraduate Research* has been a unique opportunity for UMBC students to share their research, as well as an example of the university's strong commitment to celebrating undergraduate research. In this latest volume, we seek to uphold this tradition by presenting ten fantastic articles selected through a rigorous selection process.

The *UMBC Review* is a unique research journal for several reasons. For one, the journal is completely run by undergraduate students. The student editors, with the help of off-campus faculty reviewers, select the best articles submitted between May and September and then provide multiple rounds of edits to each author. The student designer not only creates the front page and layout of the journal, but also performs all the typesetting of the articles. These students work within a condensed time frame to present a volume that is both polished and accessible to all readers.

Second, the *UMBC Review*, unlike other undergraduate journals, is printed journal. Although we have an online archive of past articles, we do not distribute the latest volume electronically. For many of our authors, this is their first publication and a printed edition of their article is valuable for them. Thus, we take pride in our commitment to printing and distributing physical copies of the journal every year.

Perhaps most importantly, the *UMBC Review* is different in its focus on interdisciplinarity. This is both a challenge and a reward. The challenge, for the editors, lies in selecting articles from across the disciplines and ensuring these articles are appropriate for an multidisciplinary audience. The reward lies in the final product—a collection of fantastic articles—and in the fact that cross-discipline sharing often leads to broader perspectives on how to address current issues.

Volume 19 of the *UMBC Review* exhibits the diversity of undergraduate student research at UMBC with the following articles:

Rebecca Gale examines scrapbooks from the National Park Seminary, an all girls school, to understand how the women's experiences differed over time.

Bruce James investigates the Principal Direction Divisive Partitioning (PDDP) algorithm as a plug-in to the k-means algorithm.

Himadri Patel explores the brain mechanisms that underlie the modulation of pain by stress through the use of functional magnetic resonance imaging (fMRI).

Manneha Qazi investigates the role of N-myc Downstream Regulated Gene-1 (NDRG1) in the molecular pathway that allows zebrafish to survive under anoxic conditions.

Sean Owen looks at the pronunciation of *r* in different sub-genres of rock music to understand how social environments shape music.

Nimasha Fernando demonstrates how health providers perceptions of alternative medicine suggested an understanding the American medical practices and other cultures should be mutually exclusive of one another.

Susannah Jones-Hochmuth explores the connections between Christianity and Feminism, and how people's identities form around seemingly incongruent beliefs.

Jacob Street studies how public support for Universal Basic Income varies depending on how the issue of income inequality is framed.

Marina Mizell analyzes the relationship between maternal depression and enrollment of children under the age of four in the Baltimore City Early Head Start/Head Start Programs.

Alexander Sievers breaks down the speeches and biographies of prominent British fascists to understand their true political leanings.

Acknowledgements

There are many people who we have to thank for their help in publishing this edition of the *UMBC Review*.

We would like to thank the author's faculty advisors and mentors, who provided motivation and guidance for the students first through the research process, and later through the editing process.

Without the work of these mentors, the journal would not be able to uphold the high standard of quality that we strive for the research we publish.

Dr. Andrew Nolan

Dr. Melissa Blair

Dr. Amy Bhatt

Dr. Thomas Field

Dr. Bambi Chapin

Dr. Cynthia Hody

Dr. Ian Anson

Dr. Dan Ritschel

We also extend our deepest gratitude to the off-campus reviewers who contributed their time and effort to reviewing students' work. These reviewers, experts in their respective fields, provided us and the authors with valuable feedback that enabled us to ensure that the papers in this edition are both relevant and novel in the discipline.

We are also grateful to the following proofreaders who lent us their perspective during the editing process:

Janet McGlynn *Emerita Staff, Office of Undergraduate Education*

Lisa Beall *Office of Undergraduate Education*

Brian Souders *International Education Services*

We would like to thank the following for their commitment to undergraduate research at UMBC and for their financial support of the *UMBC Review*:

Dr. Freeman Hrabowski *President*

Dr. Katherine Cole *Vice Provost and Dean of Undergraduate Academic Affairs*

Dr. April Householder *Director of Undergraduate Research
and Prestigious Scholarships*

The Office of the President

The Office of the Provost

Last but not least, we are indebted to the faculty mentors who guide the editors and designers through the publication process. Their experience and support have been crucial to the realization of this journal.

Dr. Susan McDonough *Editing*

Ms. Guenet Abraham *Design*

We hope that Volume 19 of the *UMBC Review* is as enriching and interesting for the readers to read as it was for the editors to produce.

—

Ioana Petricel

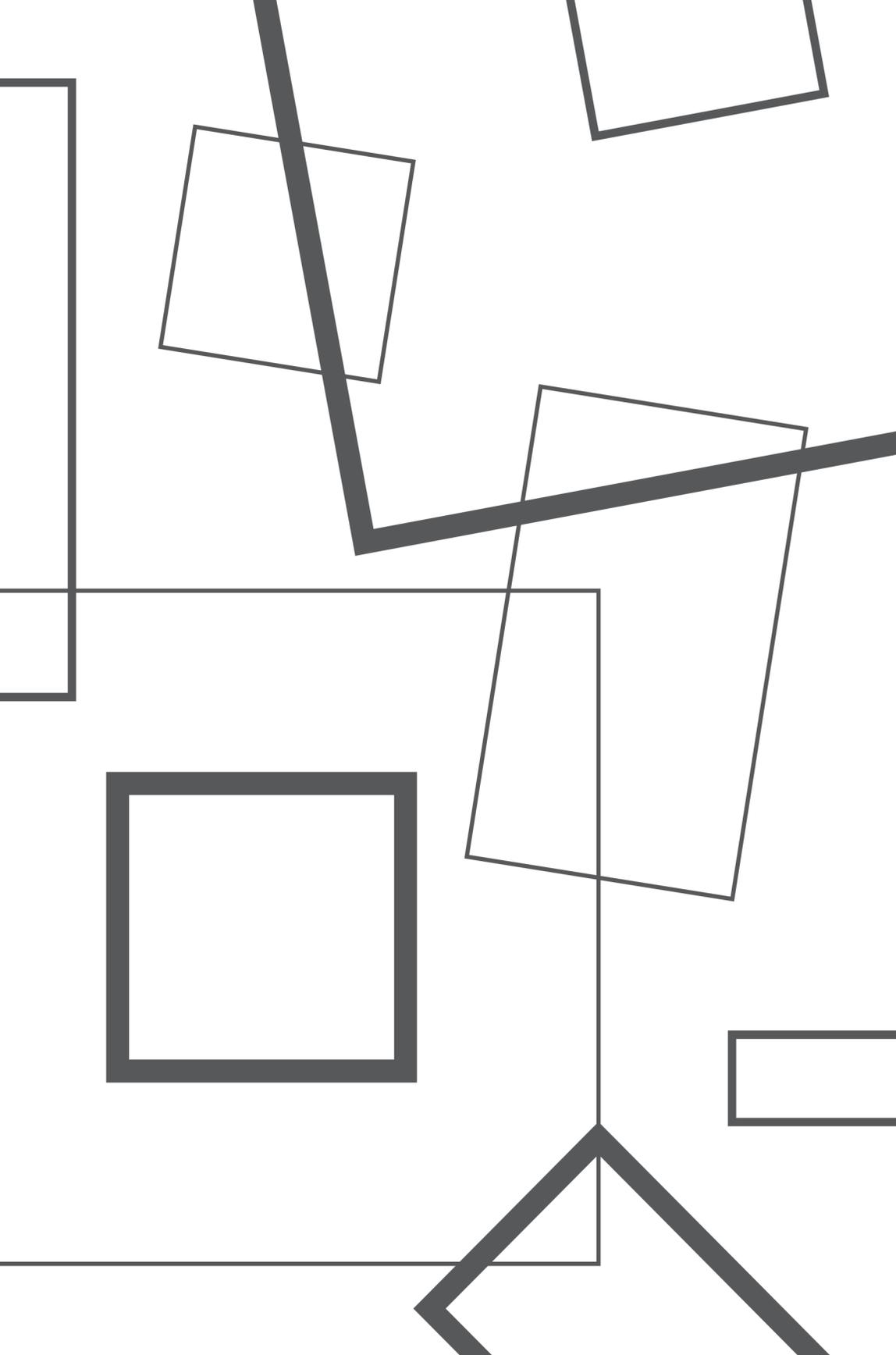
Senior, Biology and Health Administration and Public Policy

Manisha Vepa

Senior, Global Studies and Economics

2018 | Vol. 19

UMBC REVIEW
JOURNAL OF UNDERGRADUATE RESEARCH



Cigarettes, Sailors, and Sororities:

Student Scrapbooks
and the Female Experience
at National Park Smeinary,
1900-1942

Rebecca Gale

Author Bio and Research Journey

Rebecca Gale graduated in May 2017 as a History major and Public History minor. As an aspiring museum professional, she has completed internships at the Chesapeake Bay Maritime Museum, Old Sturbridge Village, Canterbury Shaker Village, and numerous local historical societies and archives. During the summer of 2017, she was a fellow at Historic Deerfield in Massachusetts. She hopes to study history at the graduate level, with an emphasis on public history and material culture. While completing an archival internship with a nonprofit responsible for advocating for the preservation of the campus of a former women's secondary school, National Park Seminary, she learned about a collection of scrapbooks that were created by students during their time at the school. She was initially intrigued by the strange assortment of objects collected in the book as well as the concept of exploring these women's experiences at the school through their own documentation. As a historian who seeks to use material objects to better understand life in the past, Rebecca saw these scrapbooks as a window into both the physical realm that surrounded these women and the social world they inhabited. Rebecca thanks her thesis advisor, Dr. Andrew Nolan, as well as her other staff mentor, Dr. Melissa Blair, for their encouragement and guidance throughout this project. Rebecca is also indebted to the board members of Save Our Seminary historic preservation nonprofit for opening their archives for this research, in particular Bonnie Rosenthal and Frank Riley.

Abstract

This paper examines the scrapbook collection in three separate chronological periods of cultural history—Victorian and World War I era, the 1920s, and the 1930s—in order to find trends of change and continuity in the women’s experiences across the four decades the content covers. Specifically, this paper examines a set of twenty scrapbooks in the archival collection of National Park Seminary (NPS), a former women’s secondary school and junior college in Silver Spring, Maryland. These scrapbooks provide unique insight into the students’ lives since the NPS students created them at or close to the time that they attended school. As sources, they provide a much-needed additional set of information to round out historical understanding of student life at the seminary. Contrasting the image of the student experienced presented in the scrapbooks with that of more traditional archival sources, such as school-issued catalogs and rulebooks reveals a discrepancy between the two types of source material. The escapades of their daily life as documented in their scrapbooks seems contrary to the strict rules put forth by the college administration in more traditional archival sources. This finding demonstrates that the women at the school were creating their own spheres of independence in a controlled environment through small rebellions against school rules.

Introduction

Twenty-two scrapbooks stowed away in metal cabinets shed light on a paradigm shift in the female experience that occurred in the first half of the twentieth century. The scrapbooks, created by students attending a women's secondary school, are material recollections of each student's time there. Some scrapbooks feature painstakingly done collages of photographs from school days or cutouts from magazines (figure 1). Others are a tornado of playbills, report cards and dance cards pasted onto the blank pages of a bound volume. A few are carefully annotated, with witty comments penned underneath each item, tracing the author's time at the school from orientation to graduation. However, most have little more writing than the creator's name scrawled on the inside of the front cover. All of them offer a glimpse into the lives of the eighteen women who created these twenty albums of artifacts, collecting the scraps from their daily lives and compiling them into museums of their own pasts.

20



FIGURE 1. A collage of snapshots of a student and her friends around the school's campus. The creator even cut pictures to form the letters "NPC", or National Park College, as the school was called in later years. (Binns *Scrapbook, 1937-38*; Save Our Seminary Archives)

National Park Seminary (NPS) was opened in 1894 in the enchanting English Tudor-style building of a failed hotel in Forest Glen, Maryland, a short train ride away from Washington, D.C.¹ The school's name hinted at its proximity to the nation's capital as well as its rural, idyllic

setting; students could have access to the cultural experiences of the city via the B&O railroad station next door, while being protected from the potential dangers of urban life.² The seminary was an all-women's boarding school and started off offering classes to high school-age students.³ Over time, it primarily became a place for women to attend college for two years after they finished high school. They also had the opportunity to transfer and finish at a four year university, though few women pursued this course. From all appearances, most of the creators of the scrapbooks examined in this paper attended NPS's junior college program for two years after graduating from high school.

NPS was meant to be more academic than a finishing school, offering college-level courses in the humanities, arts, and sciences, but the school administrators still intended to prepare women to be hostesses in high society. This was especially evident with the advent of sororities, often referred to in official school documents as "clubs," which were seen as an opportunity for the women to practice organizing events and running the type of social and philanthropic organizations that dominated women's social life at the time.⁴ Every student was strongly encouraged to join a sorority, and each of the eight clubs on campus had a small meetinghouse, all designed after international architectural styles, which became hallmarks of the storybook-esque campus. Sorority events, pledging, and the community identity that accompanied these groups are featured heavily in student scrapbooks. The fact that these women were allowed to have two, four, or six years of fun before settling down to start a family is a testimony to the changing status of women in the early twentieth century. No longer were they being ushered off to the task that made them useful to their families, marrying well and bearing children. They were given the chance to be carefree and to make memories, and encouraged to record those memories in scrapbooks, all at great monetary expense to their parents.

The guiding criteria for selecting these scrapbooks were that they were created by students of NPS during their time at the school and that the content focused on the woman's school experience. Books that contained exclusively photographs were excluded from study. As a medium, scrapbooks generally contain a variety of materials attached with adhesive to the blank pages of a folio-size bound book. The most common type of item featured in this particular collection of scrapbooks is paper material, called ephemera, such as programs from plays, greeting cards, letters, telegrams, and magazine and newspaper clippings. Some are carefully, even artistically arranged, while other books haphazardly crowd pages with objects, even layering pieces of paper on top

of each other. Photographs are sometimes included, though they are not the central focus of the scrapbook the way they tend to be today. The most intriguing part of the books is the three-dimensional material objects found within the pages, from melted candles to pieces of china plates to candy wrappers. Ultimately, whether a letter, a photograph, or a candle, these materials were intended to serve as mementos from an event and were meant to perpetuate that event in the memory of the scrapbook's creator.⁵



FIGURE 2. A spread featuring photographs of students and the school chapel, ribbons tied into bows, an ice cream spoon, words clipped from newspapers, and a multitude of chocolate candy wrappers. (Levens *Scrapbook*, 1918-19; Save Our Seminary Archives)

Ott, Tucker, and Buckler note that scrapbooks and other ephemera remain relatively untouched by scholars and even museum professionals, who describe them as “among the least understood and most dismissed components of archival holdings.”⁶ I think this represents a preference for written and published archival materials and a neglect of the vernacular experience. In addition, the historical narrative should be expanded to incorporate the lives of those who were not the movers and shakers in political, economic, and military affairs, who have traditionally been the focus of study. In this paper, I would like to give some dignity to not only the medium of the scrapbook, but also the lives of young women, a segment of the population that deserves a respectful historical analysis of their lives, culture, and social experience.

While the school these women attended talked of shaping girls into proper, refined ladies, the women themselves resisted this in small acts

of rebellion, documented in their scrapbooks. These “microrebellions” present themselves throughout the three chronological periods covered by the scrapbooks, indicating that young women may have been acting out against the ideals of femininity even before the flappers of the 1920s. These incidences of breaking the rules appear to be attempts on the part of the young women to exercise independence in a controlling environment. This knowledge, in turn, broadens modern understanding of what life was like at the school the creators of these scrapbooks attended, National Park Seminary.

Since the collection encompassed so many scrapbooks, covering such a wide span of time, 1900 to 1942, the collection was divided into three chronological sections, corresponding to both trends in the content of the scrapbooks and in American culture at large. Generalizations are made based on all of the scrapbooks in a section, with specific examples from individual scrapbooks in that time period pointed out to illustrate those points. The scrapbooks fall into the Victorian and World War I Era, from 1900 to 1919, the Roaring Twenties, from 1919 to 1930, and Pre-World War II Era, from 1937 to 1942, the date the school was closed and taken over by the United States Army.

Victorian and World War I Era Scrapbooks: 1900-1919

Although NPS prioritized academics, many aspects of school life in this era were gauged towards preparing the students to be society women and homemakers. On one hand, the school offered advanced coursework one would not expect to see at a finishing school for young women: Latin, Greek, Calculus, Philosophy, a variety of Sciences, Sociology, Economics, English Language and Literature, and History.⁷ However, more traditional subjects for secondary finishing schools, such as various arts and domestic science, were also major parts of the curriculum. The school’s reinforcement of traditional roles for women emerges in the school catalog’s argument that, “Since the care of children either of her own or those of other people comes sooner or later to every woman, we believe that girls should be taught the principles of child-culture.”⁸ The school operated on a contradiction of on the one hand empowering women through education, yet on the other, limiting them through control and reinforcement of traditional roles for women.

Life at the seminary was controlled and regulated in many ways; one student included a list of school rules in her scrapbook with the

droll caption of, “The first day—the only decorative thing in the room.”⁹ Another woman related that on her way to NPS for the first time, she and other students from that region met at a train station in a major city and traveled together to school with a chaperone sent by the seminary.¹⁰ However, being away at school also offered opportunities for freedom and independence that most women might not have had at home. Girls recorded in their scrapbooks activities like walking unaccompanied to neighboring towns like Kensington and Chevy Chase, visiting Washington, D.C. to shop, traveling with friends during breaks, and going to the Naval Academy in Annapolis to go to dances with midshipmen.

Seven scrapbooks from the Save Our Seminary collection fall into the 1900 to 1919 time period, all revealing that many students exercised a surprising amount of independence while at school. I will focus on one particularly interesting scrapbook as a case study of daily life at the seminary and incidences of rebellion against school rules, tying in similar examples from others from the period. The scrapbook was created by Margaret Jane Levens in 1918 and 1919 and lends itself well to close study in that it closely follows the trajectory of a year in a student’s life at NPS. Levens made thorough—and witty—annotations explaining the material in the book, allowing the reader to trace her school experience. The scrapbook is a folio-size green hardcover book, obviously purchased from a store, with the words “SCRAP BOOK” and a National Park Seminary pennant sticker attached to the front.¹¹ Its spine has a width of about three inches, and the front and back covers have ballooned outwards from the volume of the pages’ content. The scrapbook begins in September 1918 with Levens’ final days in her hometown before leaving for school and tapers off with some end-of-the-year school events in May 1919.

The scrapbook is full of odd items Levens saved to commemorate different events and trips, from wax candles from friends’ birthday cakes to peanut shells collected for the war effort to pressed flowers from the gardens of Mt. Vernon. Including objects was very popular in World War I-era scrapbooks as a means of recalling memories.¹² Paper ephemera such as ticket stubs, playbills, telegrams, and letters frequently appear in Levens’ scrapbook, but Levens seemed to have preferred using objects to capture her memories, going so far as to save corners of napkins from dinners and cigarettes from hang outs with men. Levens also stands out in terms of her dedication to collage, incorporating words and pictures cut out of brochures, newspapers, and the NPS school catalog into the pages of material from her own life as illustrations. An example of this

can be seen in figure 3, where Levens collaged newspaper clippings, cartoons, and objects to commemorate a momentous event—the end of World War I.



FIGURE 3. Levens combines newspaper and magazine clippings as well as personal items, like the American flag from a Victory Parade in D.C. she attended, to form an artful collage documenting the end of World War I. (Levens Scrapbook, 1918-19; Save Our Seminary Archives)

Margaret “Peggy” Jane Levens was a fifteen-year-old from Kansas City, Missouri when she came to NPS for the 1918–1919 school year, the only year she attended NPS.¹³ Levens appears to have been in a serious romantic relationship with Bobbie, a man from her home state of Missouri, who is referenced throughout her scrapbook. Letters tucked in between the front cover and first page of the scrapbook include Bobbie’s correspondence to Levens. The two were writing to each other regularly, labeling their letters with days of the week rather than dates, and referencing recent events in each other’s lives. In one letter, Bobbie mentions that he looked at houses recently with her father, so they may have been considering marrying soon. In one of Levens’ collages of chocolate candy wrappers, she labels several of the boxes as being sent from Bobbie, as well as a corsage. An alumni association directory from 1941 lists Levens as Mrs. Robert E. Steele, residing in Nevada, Missouri—the town where Bobbie’s letters are postmarked from—so it appears that Levens married this man.¹⁴ In this respect, Levens appears to have been conforming to the societal expectation that she marry and start a home.

However, Levens scrapbook hints at her small rebellions against the ideals of early twentieth-century wife and motherhood. Right beside her letters from her committed beau, Levens saved earnest missives from four other men who interacted with Levens during her time at NPS, ranging from friendly to flirtatious in tone. Some of these correspond with recordings in Levens’ scrapbook of her encounters with men on railroad trips and excursions to the U.S. Naval Academy. Her writings about her interactions with men are often accompanied by a cigarette taped to the page, lending an added edginess to the events that transpired. On one page labeled “Homeward Bound,” Levens relates that on the train ride home to Chicago, she, her roommate, and a friend, “Met three fellows from Massanutten Academy. We had a grand time”.¹⁵ The note is accompanied by a magazine cutout of a singing soldier, a cigarette with the label “Leut. Grenier” underneath, and a calling card with “1st Leut. Grenier Massanutten Woodstock” handwritten on it. It appears that Levens captured this man’s attention, since among the letters in the front cover of the scrapbook is one in an envelope labeled Massanutten Academy Cadet Corps. The man wrote that while Levens may not know him, she should think of the train ride from Washington to Chicago, and he subsequently begged her to write back to him. Attending the seminary afforded Levens some freedom she might not have had at home under the protective wing of her steady boyfriend and family. She was able to exercise more control over her interactions with men, even juggling multiple flirtations.

Similarly, in another scrapbook, Frances Newbury, a student from Trenton, New Jersey who attended from 1913 to 1915, demonstrates subtle rebellion against school rules and societal expectations. A spread of pages is dedicated to a careful collage of Newbury's unexcused absence and tardy notices from the school administration.¹⁶ One notice even includes an additional warning message from the school secretary: "Absence for such a reason is unpardonable." The reader is left to wonder what excuse was given, but the notices demonstrate the dichotomy of freedom and control that existed in the school environment. The women's attendance was being accounted for at events like breakfast and morning prayers in addition to classes. Newbury's inclusion of her reprimands from school staff appears to be a small rebellion against the control over her. Newbury is flaunting her breaking of the rules and making light of the expectations being placed upon her. Yet her rebellious, flippant act of showing off her rule-breaking behavior in a space meant to be for a quaint reminiscence of her school days is undercut by how neat and orderly her arrangement of the absence notices is. She is almost confining her rebellion to a certain level of orderliness within her own space.

A particularly poignant example of private rebellion lies in the pages of Levens' scrapbook. Levens included a document issued by the school secretary, which reads: "A Pledge. I hereby promise to use my best efforts from to-day onward to remove from the vocabulary of this school the following objectionable words with their various compounds: gee, jazz."¹⁷ The document then has numbered spaces for staff and students to sign names, the first signature being the secretary who issued Frances Newbury her absence notices. The sheet is covered in signatures, but Levens slyly notes next to the document, "The faculty have organized an A.E. Frat.—Anti-Exclamation Frat. Each new day we are to sign a pledge. Ha! Ha! Notice my name isn't on here! We've started another Frat however in competition—the G.T.H. Frat—Go to H—!"¹⁸ Levens and her friends are again exercising subtle rebellion in the face of enforced school morality, though Levens, like Newbury, undercuts her attempts at rebellion somewhat in not being able to write out the word "Hell." The students were forging their own identities, sampling what morals they were comfortable with and which rules they wanted to bend, carving out their own niches of freedom via subtle acts of rebellion.

In spite of the restrictive nature of the school's rules, being away at school allowed for some forays into freedom, as the women were able to meet new people, travel, and bend the rules to meet their own needs. The women even used their scrapbooks as a means to exercise

independence by recording these forays into freedom in a self-curated space. As World War I drew to an end and traditional ideals of womanhood became more challenged by the suffragette movement and early feminism, it appears that the female students at the seminary were enjoying more social freedom.

The Roaring Twenties, 1919–1930

For National Park Seminary, the 1920s is considered a golden age in the school's history. With the increasing wealth of industrial America, the school's enrollment swelled to four hundred students.¹⁹ Some of America's most prominent new industrial leaders sent their daughters to attend NPS, including the founders of the Kraft, Hershey, and Heinz companies. While the 1920s is known as a revolutionary decade for women, a time of increased social liberation and cultural exploration, the school remained quite traditional, retaining the same rules and traditions as in the Victorian era.²⁰

28

Ultimately, one question begs to be answered for any study of women during this period: Were the 1920s as liberating a time for women as they are portrayed in historical studies and popular culture?²¹ It is hard to tell what the experience of women at NPS was exactly based on their scrapbooks, since only four from this period have been found. Few salacious details arise from the 1920s-era scrapbooks compared with earlier ones, but then again, few details are included at all in this group of scrapbooks. The school appears to have retained its controlling, condescending nature in spite of broader social change. The scrapbooks include documents and booklets handed out by the school to students, dictating guidelines for traveling to the school, what to wear, and how to behave when eating meals.

These attempts at control are based on an underlying assumption that young women needed heavy-handed guidance to develop and mature properly. On the first page of the catalog for the 1919–20 school year, the school administration lays out its philosophy of managing students, commenting that, "All ideals inculcated, all power developed, in the eight hours of daily study, may be rendered largely ineffective by influences at work throughout the other sixteen."²² By this logic, the seminary argues that by, "Controlling a student's whole daily life and environment, the Seminary is likely to secure results not easily obtainable by either public school or college." This desire for control appears to be underlain by an assumption that the women were extremely impressionable and needed careful moral guardianship to protect them

from unwholesome influences. Perhaps the changes that were beginning to occur in women's status made the school even more concerned with protecting women's morality.²³

However, the school did go along with the changing fashion, allowing students to wear the increasingly popular shortened hemlines and bobbed hair.²⁴ A photo collage of an NPS graduating class tucked into the cover of one of the scrapbooks reveals that all the women had their hair either bobbed or pulled back to appear bobbed, rather than piling their long hair atop their head as students did a decade earlier.²⁵ The school uniform was still a fairly long length, reaching to the ankle, though the rule guide for after-school clothes shows women in dresses reaching to the mid-calf.²⁶ A laundry list for students to fill out requesting that staff wash their laundry still lists "corset covers" in a 1922–24 scrapbook, but one from a 1928–29 scrapbook lists brassieres instead, indicating a significant shift towards freedom in the female silhouette and fashion.²⁷ However, these changes in fashion are the only obvious indications of students being influenced by "flapper culture."

Overall, however, it is hard to tell whether student's lives were drastically different in the "Roaring Twenties." Perhaps these scrapbooks contain less documentation of rebellion because previously rebellious activities had become more mainstream. Similarly, the flapper image may be an exaggerated characterization of this period. Clearly, the school was still trying to exert a moral influence over the girls, encouraging them to develop into proper society women through involvement in sororities and morally uplifting activities. Perhaps the women now no longer needed to use scrapbooking as a vehicle to create independence because they had more opportunities to do so in their daily lives. Or there is a chance that the women's parents and the NPS administration, seeing the disturbing cultural changes going on around them, began to monitor the women more closely.

Pre-World War II Scrapbooks: 1930–42

In contrast to National Park Seminary's popularity and financial success in the 1920s, the 1929 stock market crash hurt the seminary as much as it did the rest of the country. Enrollment dropped to as low as forty students during some school years in the 1930s. Notably, no scrapbooks exist in the collection that date from between 1930 and 1937. In 1937, a new school president, Roy Tasco Davis, sought to revitalize the school by changing the name to National Park College (NPC) and advertising the college as an academic institution rather than a finishing school.²⁸

Women were able to take more professionally oriented courses and the school rules became a little more flexible. However, most of the scrapbooks from this period reveal a continued expectation that the young women will marry; they also continue to document small-scale rebellions by students.

Scrapbooks from the 1930s feature much fewer objects than in the past. There are fewer playbills than before too, perhaps because of the growing popularity of movies, though programs from school theatricals and musical performances still abound. Paper ephemera such as telegrams, notes letting women know that someone had phoned for them, school rule booklets, restaurant menus, and greeting cards are frequently featured. Photographs and newspaper clippings, however, are the most dominant items in this era's scrapbooks. Photos are often small black-and-white snapshots taken on personal cameras, depicting friends smiling on outings, buildings around campus or sites visited on field trips. Newspaper clippings included tend to be features on friends who had "come out" into society as debutantes or gotten engaged or married, as well as social column blurbs from the women's hometown newspapers.

30

After the school uniform was done away with, NPC students were free to wear popular fashions of the time rather than the sack-like ankle-length sailor dresses of the past decades. Photographs and laundry lists included in the scrapbooks reveal that skirts had shortened even more since the 1920s, now hitting just below the knee. Tops were tailored and fairly form-fitting, and hair was still short. The women frequently donned heels, though saddle shoes were also ubiquitous. Women's clothing was still quite standardized with little individual flair, but huge changes in what women wore had taken place since the early days of the school's history, giving women more freedom of movement and sexual suggestiveness.

Another significant change at the school was its course offerings, which were geared more towards providing professional skills to the women than a liberal arts or domestic skills education. One scrapbook creator, Marie "Winkie" McGuigan, had a schedule of the following classes: Shorthand, spelling, typing, bookkeeping, French, Economics, Gym, Choir, English, and Social Dance, notably more practical than courses in the past.²⁹

Underlying these changes is a continued emphasis on marriage, and with that, a subtler restriction on women's actions. A common item found in scrapbooks from this time period are fortune-telling cards, such as the one in figure 4, that predicted a woman's future spouse and

children, reasserting the expectation that women would marry. While marriage is frequently referenced in the scrapbooks, there are some hints of a darker side to the marital bliss these fortune-telling cards foretold. One scrapbook features a blank pledge card where a woman could sign agreeing to, "Permit my husband to go where he pleases, and to drink what he pleases. And Further, [sic] I permit him to keep the company of any lady or ladies he sees fit, as I know him to be a good judge."³⁰ No context is given for the card, but it demonstrates an expectation that men would do what they wanted and women had to tolerate it.



31

FIGURE 4. A card foretelling women's future husband and offspring. This particular card predicts "an old lord with young ideas, and Lord! how he will Lord it over you." (McGuigan, 1938; Save Our Seminary Archives)

In their unmarried state, however, it appears that women at NPC, at least, were gaining a little more freedom. For instance, the students were permitted much more interaction with men. In previous years, men were only allowed to one school dance annually, but in the late 1930s, women were allowed to have male dates to biweekly dances at NPC, "provided that the young men are on the accepted calling list."³¹ The school rulebook permitted women to have pre-approved dates on campus in their respective sorority house tearoom one afternoon a week³² However, one woman's scrapbook has a restaurant menu on which she wrote, "Mike' Picard took us here Sat. Nov. 27, 1937," indicating that women were being taken on dates off-campus, a contrast to Margaret Levens' 1918–19 scrapbook that recorded women having to sneak off campus to have dates.³³

Other surprising activities some of the women engaged in were smoking and drinking, which were both prohibited.³⁴ One scrapbook features advertisements and menus for cocktails; another scrapbook contains coasters covered with blatant beer advertisements.³⁵ Women are shown smoking cigars in co-ed company in a set of photographs.³⁶ Control still existed in the NPC environment, but the women sometimes flaunted the rules. These menus and other notes from friends in the scrapbook indicate that the women enjoyed free time in the city on their Saturday “free days,” indicating some unsupervised time. However, the girls were required to meet up with staff for dinner and be chaperoned if they attended the theater.³⁷ In daily school life, seating at meals was still assigned, rooms were still inspected daily, and dorms had housemothers to give “helpful guidance” and monitor the women’s activities.³⁸ Ultimately, even with the new college president’s changes in policy, the women’s lives were still regulated while they attended the college in a way they would not be at most modern colleges.

Conclusion

32

The twenty National Park Seminary scrapbooks examined in this paper display both change and continuity in the female experience between 1900 and 1942. There is a common theme of young women defying control imposed by school rules by performing microrebellions, bending and breaking policies and flaunting doing so in the private space of their scrapbooks. However, over the course of the forty-year period, women saw changes in status and education, including a switch from finishing school-style education to vocational-focused coursework, changes in clothing styles, opportunities to engage in traditionally taboo behavior like drinking and smoking, and more freedom to interact with the opposite gender. At the same time, however, there continues to be an emphasis on women marrying and living up to a feminine ideal. Overall, NPC embodies the conflict over women’s status during this time period; they were being afforded more opportunity and more social freedom, but society as a whole was struggling to reconcile this change with long-held expectations for women’s behavior and character.

Scrapbooking allowed women of the past to construct both tangible art and intangible records of past events according to their own tastes, personalities, and opinions. The variation of style within the scrapbooks attests to this freedom to create within these personal spaces of ephemeral creation. Women could annotate every empty space like Margaret Levens, throw in a witty comment here or there like Frances

Newbury, or write nothing at all like Mildred Moore. When it came to scrapbooks, fashion and sensibility of the time may have had some influence on the women's creations, but the risqué content of some of the books reveals that they were ultimately spaces where the women could exercise even more independence, express their opinions, and challenge societal expectations for them.

Even in the school's controlling environment, these women seized opportunities for independence and created opportunity for themselves, even when it was denied them. Frances Newbury skipped class in 1915, Margaret Levens met men at the Naval Academy in 1918, and Winkie McGuigan smoked cigars in 1939. When completing a historical study of an academic institution, it is easy to forget to look at how that institution was experienced by those who lived under it. This sort of study can provide a more robust picture of a historical topic, filled with small triumphs amidst larger tragedies of oppression and constraint. The vibrancy of the NPS women's scrapbooks is dimmed by the knowledge of the oppressiveness of the world they lived in, keeping them from using the wit, talent, and intelligence they display in their books to their full potential. Without sources like these, history would only see these young women as demure future socialites, not the vibrant, rebellious personalities they really were.

Endnotes

1. Save Our Seminary at Forest Glen Inc., *National Park Seminary at Forest Glen: An Enduring Legacy*, 2nd ed. (Silver Spring, MD: Save Our Seminary at Forest Glen Inc., 2014), 15.
2. Save Our Seminary at Forest Glen Inc., *National Park Seminary at Forest Glen*, 15-18.
3. Save Our Seminary at Forest Glen Inc., *National Park Seminary at Forest Glen*, 16-17.
4. Save Our Seminary at Forest Glen Inc., *National Park Seminary at Forest Glen*, 24-25.
5. For more discussion of the use of objects in World War I-era scrapbooks, see Jessica Helfand, *Scrapbooks: An American History* (New Haven: Yale University Press, 2008), 11.
6. Patricia Buckler, Susan Tucker, and Katherine Ott, ed. *The Scrapbook in American Life* (Philadelphia, PA: Temple University Press, 2006), 19.
7. National Park Seminary, *National Park Seminary 1900-1901*, 30-35.
8. National Park Seminary, *National Park Seminary 1900-1901*, 50.
9. Margaret Isabel Nave, *Scrap Book*, 1900-02, Red bound hard cover scrapbook, 12.5 x 10 x 2 in., Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2009.6.11.
10. Margaret "Peggy" Jane Levens, *Scrap Book*, 1918-19, Bound hard cover scrapbook, 14.5 x 11 x 3 in., Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2014.8.1.
11. Levens scrapbook, 1918-19.
12. Helfand, *Scrapbooks*, 11.
13. Levens scrapbook, 1918-19.
14. National Park Seminary Alumnae Association, "1941 Alumnae Directory," Save Our Seminary Archives, Forest Glen, Md.
15. Levens scrapbook, 1918-19.
16. Frances Newbury, 1913-15, Bound hard cover scrapbook missing cover, 14.5 x 11 x 3.25 in., Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2011.4.64.
17. Levens scrapbook, 1918-19.

18. Levens scrapbook, 1918-19.
19. Save Our Seminary at Forest Glen Inc., *National Park Seminary*, 42-43.
20. Birgitte Soland, *Becoming Modern: Young Women and the Reconstruction of Womanhood in the 1920s* (Princeton: Princeton University Press, 2000), 6-7.
21. Soland, *Becoming Modern*, 6-7.
22. National Park Seminary, *National Park Seminary 1919-20*, 1.
23. Soland, *Becoming Modern*, 4-5.
24. Grace Elaine Metzger, 1922-24, Green suede tied scrapbook with suede "NPS" monogram, 12.75 x 10 x 1.75 in., Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 1887.2.16; for more on changing standards in Western women's fashion in the 1920s, see Soland, *Becoming Modern*, 22-26.
25. Mildred Evelyn Moore, 1919-21, Green hardcover bound scrapbook, Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2012.9.1.
26. "Concerning Dress" in Metzger scrapbook, 1922-24.
27. Metzger scrapbook, 1922-24; Elizabeth Thompson, 1928-29, Black hard cover tied binding scrapbook with embossed NPS monogram, 16 x 12.25 x 1.85 in., Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2013.8.1.
28. *Ibid.*, 50.
29. Marie Alice "Winkie" McGuigan, 1938, Navy blue hardcover with tied binding, 10.25 x 12.75 x 2 in., Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2003.1.4.
30. Marie Alice "Winkie" McGuigan, 1940-41, Black hardcover scrapbook with tied binding, 10 x 15.25 x 2.25 in., Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2003.1.1.
31. Marguerite Elizabeth "Bette" Binns, 1937-38, Green felt softcover scrapbook, 15.25 x 8.75 x 1.75 in., Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2012.8.1.
32. "Clockwise" in Binns scrapbook, 1937-38.
33. Dolores Storck, 1937-38, Black hardcover scrapbook with tied binding, 12.75 x 12 x 2 in. Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2009.10.4.
34. "Clockwise" in Binns scrapbook, 1937-38.
35. McGuigan scrapbook, 1938; Dolores Storck, 1938-40, Green hardcover scrapbook with tied binding, 12.75 x 12 x 2 in., Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2009.10.2.
36. Marie Alice "Winkie" McGuigan, *Scrapbook*, 1940-41, Loose pages from a scrapbook, Save Our Seminary at Forest Glen Archives, Silver Spring, Md., Catalog: 2003.1.2.
37. "Clockwise" in Binns scrapbook, 1937-38.
38. "Clockwise" in Binns scrapbook, 1937-38.

Bibliography

Secondary Sources

Buckler, Patricia, Susan Tucker, and Katherine Ott, ed. *The Scrapbook in American Life*. Philadelphia, PA: Temple University Press, 2006.

Helfand, Jessica. *Scrapbooks: An American History*. New Haven: Yale University Press, 2008.

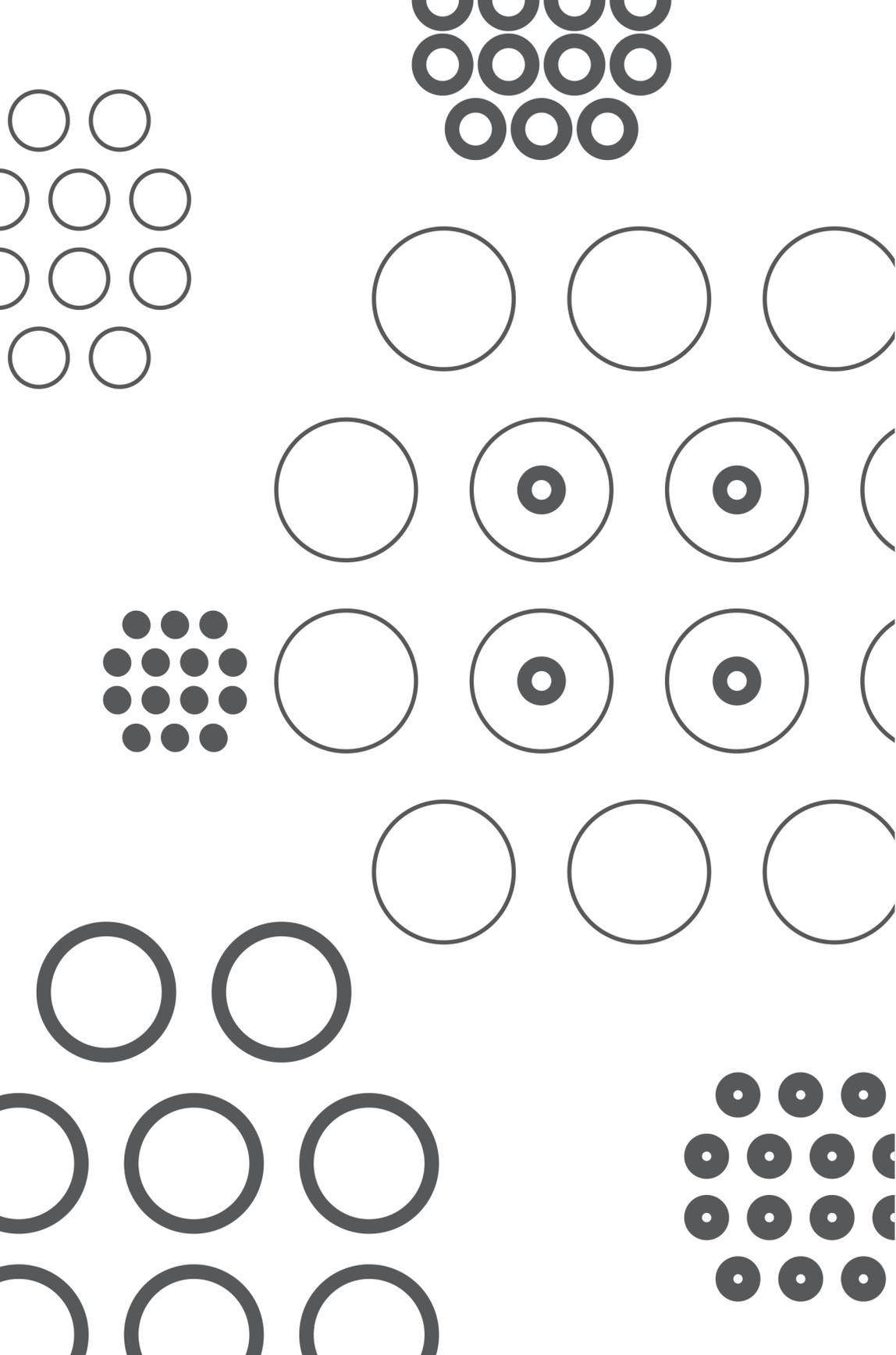
Save Our Seminary at Forest Glen Inc., *National Park Seminary at Forest Glen: An Enduring Legacy*. 2nd ed. Silver Spring, MD: Save Our Seminary at Forest Glen Inc., 2014.

Soland, Birgitte. *Becoming Modern: Young Women and the Reconstruction of Womanhood in the 1920s*. Princeton: Princeton University Press, 2000.

Primary Sources

Ballard, Anna Lee. *The Girl Graduate: Her Own Book*. 1917. Tan embossed suede bound scrapbook with pre-printed pages. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2015.9.1.

- Binns, Marguerite Elizabeth "Bette". *Memories: NPC*. 1937-38. Green felt softcover scrapbook. 15.25 x 8.75 x 1.75 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2012.8.1.
- Cooper, Florrie. *National Park*. 1915-16. Green hard cover screw-bound scrapbook with "National Park" embossed on cover. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Uncataloged.
- Decker, Virginia. *Footprints of Fellowship*. 1927-28. Black hardcover tied binding scrapbook with embossed gilded NPS monogram. 16 x 12.25 x 1.875 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 1997.1.1.
- Gairy, Mary Elizabeth. 1940-41. Bound leather scrapbook with Spanish-themed vista picture cover. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2005.2.11.
- Kraft, Minerva. *NPS*. 1925. Green suede softcover robe bound photo album with white NPS logo. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 1887.2.17.
- Levens, Margaret "Peggy" Jane. *Scrap Book*. 1918-19. Bound hard cover scrapbook. 14.5 x 11 x 3 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2014.8.1.
- Macke, Christine Estella. 1939-41. Brown hardcover bound scrapbook. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2013.4.1.
- McGuigan, Marie Alice "Winkie". *Scrap Book*. 1938. Blue hardcover scrapbook with tied binding. 10.25 x 12.75 x 2 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2003.1.4.
- McGuigan, Marie Alice "Winkie". *Scrap Book*. 1940-41. Black hardcover scrapbook with tied binding. 10 x 15.25 x 2.25 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2003.1.1.
- McGuigan, Marie Alice "Winkie". *Scrap Book*. 1940-41. Yellow hardcover scrapbook with tied binding. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2003.1.3.
- McGuigan, Marie Alice "Winkie". 1940-41. Loose pages from a scrapbook. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2003.1.2.
- Metzger, Grace Elaine. *NPS*. 1922-24. Green suede tied scrapbook with suede "NPS" monogram. 12.75 x 10 x 1.75 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 1887.2.16.
- Moore, Mildred Evelyn. *Scrap Book*. 1919-21. Green hardcover bound scrapbook. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2012.9.1.
- National Park College. "National Park College: An Album of Pictures Portraying a Design for Learning and Living." Forest Glen, Md., ca. 1937. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 1887.2.131.
- National Park Seminary Alumnae Association. "1941 Alumnae Directory."
- National Park Seminary. *National Park Seminary: A Junior College (Incorporated) for Young Women*, 1919-20. Baltimore: Thomsen-Ellis Company, 1919.
- National Park Seminary. *National Park Seminary ("The Glen School") For Young Women (Incorporated) Washington, DC Suburbs 1900-1901*. Philadelphia: George H. Buchanan & Company, 1902.
- Nave, Margaret Isabel. *Scrap Book*. 1900-02. Red bound hard cover scrapbook. 12.5 x 10 x 2 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2009.6.11.
- Newbury, Frances. 1913-15. Bound hard cover scrapbook missing cover. 14.5 x 11 x 3.25 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2011.4.64.
- Perkins, Henrietta H. *Memory Book*. 1904-05. Bound hard cover scrapbook. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2008.12.1
- Phelps, Pattie. 1938-40. Scrapbook. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2007.8.2.
- Storck, Dolores. *Scrap Book*. 1938-40. Green hardcover scrapbook with tied binding. 12.75 x 12 x 2 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2009.10.2.
- Storck, Dolores. *Scrap Book*. 1937-38. Black hardcover scrapbook with tied binding. 12.75 x 12 x 2 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2009.10.4.
- Thompson, Elizabeth. *NPS*. 1928-29. Black hard cover tied binding scrapbook with embossed NPS monogram. 16 x 12.25 x 1.85 in. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2013.8.1.
- Young, Bernice. 1906-07. Loose ephemera from a scrapbook. Save Our Seminary at Forest Glen Archives. Silver Spring, Md. Catalog: 2010.2.1.



Optimization of the K-means Clustering Algorithm through Initialized Principal Direction Divisive Partitioning

Bruce James

Author Bio and Research Journey

Bruce James is a senior mathematics major, and McNair scholar. While he concentrates his studies on topics in pure mathematics, his last two research experiences were heavily involved with applications—at both the National Institute of Standards and Technology, and at UMBC’s McNair Summer Research Institute. He began his current research project at the beginning of the summer of 2017. After a discussion that his mentor had with him about possible independent research, they agreed to investigate a clustering application related to document analysis. He had the opportunity to work with the linear algebra and optimization techniques that reduce size and complexity of the problem. This analysis aids in the efficiency and accuracy of the algorithms used. It is Bruce’s hope to continue with these investigations and also find applications in the field of algebraic topology. He is appreciative of the support and guidance of his mentor, Dr. Jacob Kogan of the Department of Mathematics and Statistics. Inspired by elements of information technology that connects to his research, Bruce hopes to be able to work in the fields of homotopy type theory.

Abstract

Data clustering is invaluable to the automated analysis of large document sets. Documents are converted into vectors in a finite dimensional space, and the resulting collection of salient features is then processed through an algorithm of one's choice, such as the classic k-means clustering algorithm. Due to the size of the feature space, different algorithms offer a trade-off between accuracy and computational efficiency. This study investigates the Principal Direction Divisive Partitioning (PDDP) algorithm, described as a top-down hierarchical technique, as a plug-in to the k-means algorithm. K-means reliance on initial random partitioning builds computational cost into the analysis. Using a PDDP initialized partition to seed k-means, computational efficiency will be compared to a k-means trial without PDDP.

Introduction

Clustering techniques have found numerous uses within the disparate fields of research that rely on data analysis. A cursory list of beneficiaries includes data mining, genomics, bioinformatics, and signal processing, with the field of text mining providing an historic impetus in its own right. Since the advent of the World Wide Web, cluster analysis has further developed in tandem with the rapidly increasing volume of document data existing online. Where human-based classification of text is assisted by an unsupervised approach, the organization and retrieval of documents from large data sets invariably becomes an automated task. With the proliferation of clustering algorithms to handle different text mining problems, the cost-benefit analysis of using different classification schemes has become a deciding factor in which method to use.

More than just providing motivation to develop existing methods, the field of document analysis also requires the development of the mathematical tools of optimization to increase the utility of such methods. Here, the linear algebra and optimization that supports clustering algorithms take a center position in the discussion. Naturally, data that is typically catalogued, as in text-based data, lends itself to the problem of finding the “optimal” clustering.

The clustering problem has been defined as the task of partitioning data with high in-group similarity, and low out-group similarity [11]. Implementing such a method with automation makes cluster analysis amenable to many applications in data mining and unsupervised machine learning. Yet, within the reach of clustering applications, many types of clustering algorithms have been developed, with none under as much scrutiny as the classic k-means algorithm.

The classic k-means algorithm is a partition-based, iterative process, using some distance-like function to establish a measure of similarity in the data [11]. Inadequacies in the results of k-means have become the reason for developing further algorithms. However, these developments have made k-means a benchmark for measuring the inspired algorithms.

In this paper, an alternative algorithm to k-means, the Principal Direction Divisive Partitioning (PDDP) clustering algorithm developed by Daniel Boley is described [2]. One limitation of k-means has been shown to arise from how the procedure is initialized [6]. Using a random initialization, k-means may prove to be computationally costly when compared to algorithms having a heuristic advantage. In contrast, PDDP has been shown to be an algorithm with exceptional utility in the clustering of document data.

The majority of this work appeals to conventional linear algebra and optimization techniques that underwrite the validity of the above-mentioned algorithms. First, the relevant notation and terminology are developed from the literature. The documents are then set in the context of high dimensional vector spaces, using a Euclidean norm to provide a distance-like measure, with the purpose of finding a least-squares approximation of the resulting data set to a “line of best fit.” An objective function is defined and, using Lagrange multipliers, the least-squares approximation is reduced to an optimization problem. The relevant import, and necessary properties of the covariance matrix are then presented. This motivates the further discussions on the computation of the leading eigenvector, which makes up the principal direction used in Boley’s original paper [1].

The ultimate goal of this investigation extends further to the coding of a working computer program, which will run the k-means algorithm with, and then without PDDP. The results of both trials will then be compared, where it is anticipated that the PDDP trial will run more efficiently than the solo k-means trial. A demonstrable efficiency in the PDDP initialized program may suggest that initial directed partitioning of large text documents is superior to randomly seeded partitioning, in both computational runtime and accuracy of document clustering.

Literature Review

The character of many types of clustering methods depends on the applications involved. Document analysis differs from other applications like spatial recognition and robotic vision; sample spaces in which large document sets rely, do not necessarily possess the regularity of extended space [6]. From its human-generated origins, text typically contains irregularity, where the addition of new text evolves in unpredictable ways [4]. Historically, probabilistic methods have been used to anticipate this irregularity. Ultimately this ignores vast amounts of text, and greatly affects the accuracy of the analysis [2]. Contrasting with probabilistic means, the popular k-means algorithm is deterministic in its implementation, often with strategic use of random partitioning [2].

The k-means algorithm has long been an industry standard in partition-based clustering of texts. As such, much of the developed literature starts with the procedure’s shortcomings when performing highly specialized tasks. Yet the algorithm has also been used as a benchmark in the literature for measuring the performance of many other

boutique procedures. Here, a short description of the k-means algorithm will provide a wider coin of vantage to the survey of document clustering.

In the field of document analysis, mathematical and information theoretic tools are used to prepare semantically valued text for an objective treatment. First, document sets are grouped together and relevant features, in the form of “content-bearing words” [4], are extracted and used to create a high-dimensional vector space. Individual documents then exist as very sparse vectors (i.e. most word frequencies are zero, as any given document uses only a small fraction of the lexical set) in the vector space. Then, the k-means algorithm provides a similarity-measure for clusters of documents having affinity within a group, compared to clusters outside of the group [11].

One computational consideration that arises when running k-means, originates from the random selection of centers used to initialize the algorithm. With no unique starting point, many resulting cluster arrangements may be found. The algorithm converges very fast, and even on large data sets this is not a problem. However, there is no guarantee that k-means will converge to the global minimum. Convergence of the algorithm to the global minimum is NP-hard. This exceeds realistic computational time constraints, and requires some additional heuristics to reduce computational effort [6].

As shown in Dhillon, et al. [4], one such heuristic, the spherical k-means technique, was expanded upon to work with the limitations in the k-means “hill climbing” strategy. After multiple iterations, both Euclidean and spherical k-means tend to become stuck in “qualitatively poor” local maxima, and not fully realize the optimal clustering scheme [4]. This is due to the gradient ascent scheme underwriting spherical k-means [3], and the problem of finding the “nearest cluster center” [5]. The latter issue stems from the discrete clustering problem (vs. a continuous problem that is readily accessible to linear algebra techniques [5]), where finding the global optimal clustering is NP-hard [5]. As the standard definition of optima is based on neighborhoods existing in a metric space, some work was needed to provide meaning to optimal partitioning. Drineas, et al. defined optimal clustering as a set of orthonormal vectors that has the smallest possible “error” matrix, found by summing the squares of the matrix’s entries after subtracting some set of clusters with negligible weight (Weight is the frequency of an occurrence of a node of a corresponding graph.) [5].

To then address optimization, Dhillon, et al. [4] suggested a “ping-pong” strategy that increases the computational efficiency of k-means by

forming a sequence of separate clusters and moving certain documents from one cluster to another. The objective function was then studied to find a better optimization, thereby circumventing the optimization difficulty. As noted by the authors of that study, the approach was limited to static amounts of documents clustered. Further work would be required for large variances in sizes of the initial document set.

Optimization was extended further in Kogan, et al. [9] by developing the distance-like function from the combination of the Squared-Euclidean distance with an information theoretic quantity. It was suggested that the resulting similarity measures could be tailored to specific data sets. From this approach, whole classes of variations on the k-means theme could then be studied.

Limitations to the standard k-means algorithm have also been treated with various hybrid approaches [7], using an algorithm like PDDP to guide the k-means algorithm into trajectories with higher quality. The principal direction divisive partitioning (PDDP) algorithm, under consideration in this study, was developed by Daniel Boley. The method used a “divisive” method, where initially large document sets were divided into smaller partitions [2]. Boley used the term “principal direction” for the foremost direction that is computed at the beginning of all iterations dividing the document set. It was shown that this approach further increased computational efficiency [2].

The mathematical treatment implemented in the PDDP algorithm can be summarized as follows. The projection of a set of vectors onto the nearest line starts the principal direction. From there, the problem reverts to maximizing the leading eigenvalue of the covariance matrix, by using the power method [8]. Here, exploitation of the symmetric properties of the covariance matrix suggests the use of singular valued decomposition (SVD). According to Boley, increased accuracy of the computation can be achieved through the use of SVD [1]. Boley then implements the Lanczos algorithm for rapid computation of a partial SVD. Applying these linear algebra techniques significantly reduces computational complexity and run-time [1], thereby rendering PDDP more practical for use in high-dimensional cluster analysis.

Research Objective

The ultimate objective of this study is to investigate a hybrid application of the PDDP algorithm to initialize the k-means clustering algorithm, as a way to reduce the computational effort exerted by the stand-alone k-means algorithm. The reduction in computational cost

would compensate for the irregularity of text data, and enable more accuracy for sorting and querying from large document sets. A comprehensive review of the optimization performed on the PDDP algorithm, as well as cluster validation measures, will inform further investigations on the quality of the resulting clusters, and suggest further work on the strengths and limitations of hybrid approaches.

Analysis of the PDDP Algorithm

High-dimensional vector spaces, equipped with some distance-like function, are the standard environment for large document sets. This study begins with an overview of the linear algebra and optimization techniques, which underwrite these spaces. With deference to the notation of the prior works, vectors representing documents with m features will be represented as boldfaced, lowercase letters, namely, $\mathbf{b} = [b_1, b_2, \dots, b_m]^T$, and a collection of n documents will be denoted by the matrix $B = [\mathbf{b}_1, \mathbf{b}_2, \dots, \mathbf{b}_n]$.

44 We start by finding the projection, \mathbf{p}_a on a line L in \mathbf{R}^n , parameterized by $\mathbf{y} + t\mathbf{x}$, on which is projected the document vector \mathbf{a} . Note that the vector $(\mathbf{y} - t_0\mathbf{x}) - \mathbf{a}$ is orthogonal to L , and also the vector \mathbf{x} at the point of projection, for some t_0 , namely

$$(\mathbf{y} + t_0\mathbf{x} - \mathbf{a})^T \mathbf{x} = 0$$

So, $\mathbf{p}_a = \mathbf{y} + t_0\mathbf{x}$, where $t_0 = (\mathbf{a}^T\mathbf{x} - \mathbf{y}^T\mathbf{x}) / \|\mathbf{x}\|^2$, which is the point that \mathbf{a} projects on L . With this, then $(\mathbf{a} - \mathbf{p}_a)^T \mathbf{x} = 0$. If we take \mathbf{x} to lie on the unit sphere, and \mathbf{y} orthogonal to \mathbf{x} , such that $\mathbf{x}^T\mathbf{x} = 1 \Rightarrow \|\mathbf{x}\|^2 = 1$, and $\mathbf{y}^T\mathbf{x} = 0$, then

$$\mathbf{p}_a = \mathbf{y} + (\mathbf{a}^T\mathbf{x}) \mathbf{x}$$

In this form, we hope to find the least squares approximation of a set of document vectors. To do this, we will minimize the sum of the distances of each projection \mathbf{p}_i on L , with \mathbf{a}_i . In terms of $\mathbf{x}^T\mathbf{x} = 1$, and $\mathbf{y}^T\mathbf{x} = 0$, the sum, then is

$$\sum_{1 \leq i \leq n} |\mathbf{a}_i - (\mathbf{y} + (\mathbf{a}_i^T\mathbf{x}) \mathbf{x})|^2$$

Simplifying each term in the sum gives

$$\sum_{1 \leq i \leq n} |\mathbf{a}_i - \mathbf{y}|^2 - |\mathbf{a}_i^T\mathbf{x}|^2$$

This sum is a “fit” line of the data set.

We now want a “best fit” line. Assuming a known value for \mathbf{x} , we use the method of Lagrange multipliers to find \mathbf{y} , such that

$$\min_{\mathbf{y}} \{ \sum_{1 \leq i \leq n} |a_i - y|^2, \text{ subject to } \mathbf{y}^T \mathbf{x} = 0 \},$$

yielding (derivation in appendix A),

$$\mathbf{y} = 1/n [\sum_{1 \leq i \leq n} a_i - \mathbf{x}^T (\sum_{1 \leq i \leq n} a_i) \mathbf{x}] \quad \text{EQUATION 1}$$

Now, we turn to the collection of column vectors representing the document set. First, we note the following properties (proof in appendix B):

Property 1:

For $B = [b_1, b_2, \dots, b_n]$, with $A = b_1 b_1^T + b_2 b_2^T + \dots + b_n b_n^T$, then

$$BB^T = A$$

Property 2:

A is positive semi-definite.

From property 2, we know that all of the eigenvalues of A are real. We gather this from the real spectral theorem, and since \mathbf{A} can be decomposed into the product $\mathbf{U}\mathbf{D}\mathbf{U}^T$, where \mathbf{U} is an orthogonal matrix and \mathbf{D} is diagonal, with real entries on the main diagonal equal to the eigenvalues of \mathbf{A} . Hence, the eigenvalues are real [10]. We state the next property (proof in appendix B).

Property 3:

Every eigenvalue of A is non-negative.

After discussing some of the useful properties of the covariance matrix, which comprises matrix multiplication of the document column vectors with their transpose, it is now desired to find the least squares approximation of the “fit” line of the data set. We start by substituting $\mathbf{c} - \mathbf{x}(\mathbf{c}^T \mathbf{x})$ in for \mathbf{y} to find

$$\min_{\mathbf{x}, \mathbf{y}} \{ \sum_{1 \leq i \leq n} |a_i - y|^2 - |\mathbf{x}^T \mathbf{a}_i|^2, \text{ subject to } \mathbf{y}^T \mathbf{x} = 0, \mathbf{x}^T \mathbf{x} = 1 \} \quad \text{EQUATION 2}$$

and simplifying the expression $|a_i - y|^2 - |\mathbf{x}^T \mathbf{a}_i|^2$, as such:

$$\begin{aligned} |a_i - y|^2 - |x^T a_i|^2 &= [(a_i - c) + x(c^T x)]^T [(a_i - c) + x(c^T x)] - |x^T a_i|^2 \\ &= |a_i - c|^2 - |c^T x - a_i^T x|^2 \end{aligned}$$

Since $|a_i - c|^2 \geq 0$, and the only expression that depends on \mathbf{x} is

$$|c^T x - a_i^T x|^2 \geq 0, \text{ for all } x \in \mathbb{R}^n,$$

then the minimum of (equation 2) is the largest value of $(c^T x - a_i^T x)^2$, namely

$$\sup_x \{ \sum_{1 \leq i \leq n} |c^T x - a_i^T x|^2, \text{ constrained to } x^T x = 1 \} \quad \text{EQUATION 3}$$

In order to set-up the optimization problem, let $f(\mathbf{x})$ be the vector-valued objective function

$$f(x_1, \dots, x_n) = \sum_{1 \leq i \leq n} [|c^T x - a_i^T x|^2],$$

and

46

$$g(x) = x^T x$$

be the constraint function. Taking the gradient of f yields

$$\nabla f(x) = \sum_{1 \leq j \leq n} f_j(x_1, \dots, x_n) e_j,$$

where f_j is the partial derivative of f with respect to the j -th component, and e_j is the unit basis vector of the j -th component namely

$$e_j = [0, \dots, e_j = 1, \dots, 0]^T$$

Then

$$\begin{aligned} \nabla f(x) &= \sum_{1 \leq j \leq n} \partial / \partial x_j [\sum_{1 \leq i \leq n} [|c^T x - a_i^T x|^2]] e_j \\ &= \sum_{1 \leq j \leq n} \sum_{1 \leq i \leq n} [\partial / \partial x_j [x^T ((c - a_i)(c - a_i)^T) x]] e_j \end{aligned}$$

Using the results from property 1, as follows:

Letting $c - a_i = b_i$, then

$$\begin{aligned} & \sum_{1 \leq j \leq n} \sum_{1 \leq i \leq n} [\partial/\partial x_j [x^T ((c - a_i)(c - a_i)^T)x]e_j \\ & = \sum_{1 \leq j \leq n} \sum_{1 \leq i \leq n} [\partial/\partial x_j x^T (b_i b_i^T)x]e_j \end{aligned}$$

From the results of property 1, $BB^T = \sum_{1 \leq i \leq n} b_i b_i^T$. So,

$$\sum_{1 \leq j \leq n} \sum_{1 \leq i \leq n} [\partial/\partial x_j x^T (b_i b_i^T)x]e_j = \sum_{1 \leq j \leq n} \partial/\partial x_j [x^T BB^T x]e_j$$

The result from property 2 states that $\mathbf{x}^T BB^T \mathbf{x}$ is symmetric, and positive semi-definite. Therefore, all of the eigenvalues of BB^T are real.

Now, taking the gradient of g , gives

$$\nabla g(\mathbf{x}) = \sum_{1 \leq j \leq n} \partial/\partial x_j [x^T \mathbf{x}]e_j$$

where $\mathbf{x}^T \mathbf{x} = 1$. Employing the Lagrange multiplier, and solving the system for lambda yields

$$\nabla f(\mathbf{x}) = \lambda \nabla g(\mathbf{x}) \quad \text{EQUATION 4}$$

It is a simple exercise to then show that (equation 4) implies

$$\mathbf{x}^T BB^T \mathbf{x} = \lambda \mathbf{x}^T \mathbf{x} = \lambda$$

Squaring both sides and simplifying gives

$$\lambda = |\mathbf{x}^T BB^T \mathbf{x}|$$

Note that $\mathbf{x}\mathbf{x}^T$ is an $n \times n$ array, such that left multiplying by \mathbf{x} , and noting that $\mathbf{x}^T \mathbf{x} = 1 \Rightarrow \mathbf{x}\mathbf{x}^T = 1$, yields

$$BB^T \mathbf{x} = \lambda \mathbf{x}$$

where \mathbf{x} is the eigenvector to some real eigenvalue, lambda. To find lambda, left multiply the last equation by \mathbf{x}^T to get

$$\mathbf{x}^T BB^T \mathbf{x} = \mathbf{x}^T \lambda \mathbf{x} = \lambda (\mathbf{x}^T \mathbf{x}) = \lambda$$

So, to minimize (equation 3), \mathbf{x} is an eigenvector, with the corresponding real eigenvalue $\lambda = \mathbf{x}^T BB^T \mathbf{x}$, of the matrix BB^T .

Extensions and Future Work

Mathematical Analysis

Further mathematical treatment of the PDDP algorithm will look into finding the leading eigenvector obtained through the optimization process. The SVD and power methods used to increase efficiency and accuracy of computation, including the Lanczos algorithm, will also be studied. Investigation of the use of the Frobenius norm of the covariance matrix would also provide a segue into the latter steps in the completion of PDDP [2].

Experimental Exploration

The latter work of this study hopes to explore two programs running the PDDP and k-means algorithms over a set of document data. The algorithms will be written in Python. Documents would then be procured from web-based sources, such as MEDLINE, for sample research abstracts and larger documents. An off-the-shelf porter stemmer will be required to reduce the morphological complexity of the texts.

The clustered documents will come from various disciplines, with optimal variance. Two sets of trials will be made, with one trial set consisting of a collection of research abstracts, and another trial set from the bodies of the research papers. Each document set will then be run through a porter stemmer, and the resulting morphologically reduced data set fed into the PDDP initialized k-means program, and again, through the solo k-means program.

Computational Analysis

Under further investigation, it would be interesting to measure the efficiency and accuracy of the experimental clusters. Computational run-time will be measured in Python. In keeping with prior research, clustering validation measures will be employed to determine the quality of the final clusters; both internal and external validation techniques would be useful here. The accuracy of each trial will then be determined through a confusion matrix [9]. Anticipating a uniform effect from the back-end of both k-means applications (with and without PDDP), the clusters are then qualitatively assessed by comparing the “true” class size with the experimental results. Since entropy-based assessments of the resulting clusters may not adequately measure uniform effects, a Coefficient of Variation statistic can here be applied to the trial clusters [12].

Appendix A

Let $f(\mathbf{y})$ be the vector-valued objective function

$$f(y_1, \dots, y_n) = \sum_{1 \leq i \leq n} |a_i - y|^2 \quad \text{and} \quad g(\mathbf{y}) = \mathbf{y}^T \mathbf{x} = 0$$

be the constraint function. Taking the gradient of f yields

$$\nabla f(\mathbf{y}) = \sum_{1 \leq j \leq n} f_j(y_1, \dots, y_n) \mathbf{e}_j$$

where f_j is the partial derivative of f with respect to the j -th component, and \mathbf{e}_j is the unit basis vector of the j -th component, namely

$$\mathbf{e}_j = [0, \dots, \mathbf{e}_j = 1, \dots, 0]^T$$

With $|a_i - \mathbf{y}|^2 = \mathbf{a}_i^T \mathbf{a}_i - 2\mathbf{a}_i^T \mathbf{y} + \mathbf{y}^T \mathbf{y}$ for each i , then

$$\begin{aligned} \nabla f(\mathbf{y}) &= \sum_{1 \leq j \leq n} \partial/\partial y_j [\sum_{1 \leq i \leq n} |a_i - \mathbf{y}|^2] \mathbf{e}_j \\ &= \sum_{1 \leq j \leq n} \partial/\partial y_j [\sum_{1 \leq i \leq n} \mathbf{a}_i^T \mathbf{a}_i - 2\mathbf{a}_i^T \mathbf{y} + \mathbf{y}^T \mathbf{y}] \mathbf{e}_j \end{aligned}$$

Since we are in \mathbf{R}^n , and the 2-norm is an assignment from \mathbf{R}^n to \mathbf{R} ($|a_i - \mathbf{y}|^2$ is the Euclidean norm assigning the n -vector \mathbf{y} to a real number). Thus, f is continuous, and we can interchange the summand with partial derivative, yielding

$$\begin{aligned} \nabla f(\mathbf{y}) &= \sum_{1 \leq j \leq n} \sum_{1 \leq i \leq n} \partial/\partial y_j [\mathbf{a}_i^T \mathbf{a}_i - 2\mathbf{a}_i^T \mathbf{y} + \mathbf{y}^T \mathbf{y}] \mathbf{e}_j \\ &= \sum_{1 \leq j \leq n} \sum_{1 \leq i \leq n} \partial/\partial y_j [\mathbf{a}_i^T \mathbf{a}_i - 2(a_{ji}y_j) + y_j^2] \mathbf{e}_j \\ &= \sum_{1 \leq j \leq n} [\sum_{1 \leq i \leq n} (-2a_{ji} + 2y_j) \mathbf{e}_j] \\ &= \sum_{1 \leq j \leq n} [\sum_{1 \leq i \leq n} (-a_{ji}) \mathbf{e}_j + \sum_{1 \leq i \leq n} y_j \mathbf{e}_j] \\ &= 2 [\sum_{1 \leq i \leq n} (-a_i) + \sum_{1 \leq i \leq n} y] \\ &= 2n\mathbf{y} - 2 \sum_{1 \leq i \leq n} \mathbf{a}_i \end{aligned}$$

Now, taking the gradient of g , gives

$$\begin{aligned}\nabla g(\mathbf{y}) &= \sum_{1 \leq j \leq n} \partial/\partial y_j [y_j x_j] \mathbf{e}_j \\ \nabla g(\mathbf{y}) &= \partial/\partial y_j [y_1 x_1 + \dots + y_n x_n] \mathbf{e}_j \\ &= \sum_{1 \leq j \leq n} (x_j) \mathbf{e}_j \\ &= \mathbf{x}\end{aligned}$$

Employing the Lagrange multiplier, and solving the system for lambda yields

$$\nabla f(\mathbf{y}) = \lambda \nabla g(\mathbf{y}) \Rightarrow 2n\mathbf{y} - 2 \sum_{1 \leq i \leq n} \mathbf{a}_i = \lambda \mathbf{x}$$

Now, left-multiplying by \mathbf{x}^T , and using the conditions $\mathbf{y}^T \mathbf{x} = 0 \Rightarrow \mathbf{x}^T \mathbf{y} = 0$, and $\mathbf{x}^T \mathbf{x} = 1$,

$$\begin{aligned}\mathbf{x}^T (2n\mathbf{y} - 2 \sum_{1 \leq i \leq n} \mathbf{a}_i) &= \mathbf{x}^T \lambda \mathbf{x} \\ \Rightarrow \mathbf{x}^T (2n)\mathbf{y} - \mathbf{x}^T (2) \sum_{1 \leq i \leq n} \mathbf{a}_i &= \lambda (\mathbf{x}^T \mathbf{x}) \\ \Rightarrow (2n)\mathbf{x}^T \mathbf{y} - 2\mathbf{x}^T \sum_{1 \leq i \leq n} \mathbf{a}_i &= \lambda (\mathbf{x}^T \mathbf{x}) \\ \Rightarrow \lambda &= -2\mathbf{x}^T \sum_{1 \leq i \leq n} \mathbf{a}_i\end{aligned}$$

50

Substituting for lambda gives

$$2n\mathbf{y} - 2 \sum_{1 \leq i \leq n} \mathbf{a}_i = -2\mathbf{x}^T (\sum_{1 \leq i \leq n} \mathbf{a}_i) \mathbf{x}$$

Thus,

$$\mathbf{y} = 1/n [\sum_{1 \leq i \leq n} \mathbf{a}_i - \mathbf{x}^T (\sum_{1 \leq i \leq n} \mathbf{a}_i) \mathbf{x}]$$

with \mathbf{x} and its transpose as known entities. So, to minimize (equation 2),

$$\mathbf{y} = 1/n [\sum_{1 \leq i \leq n} \mathbf{a}_i - \mathbf{x}^T (\sum_{1 \leq i \leq n} \mathbf{a}_i) \mathbf{x}]$$

Appendix B

Property 1:

For $B = [\mathbf{b}_1, \mathbf{b}_2, \dots, \mathbf{b}_n]$, with $A = \mathbf{b}_1\mathbf{b}_1^T + \mathbf{b}_2\mathbf{b}_2^T + \dots + \mathbf{b}_n\mathbf{b}_n^T$, then

$$BB^T = A$$

Proof:

Since matrix B is an $m \times n$ array and B^T is an $n \times m$ array, then BB^T is an $m \times m$ array. Similarly for A , each $\mathbf{b}_k\mathbf{b}_k^T$ term, where

$$\mathbf{b}_k\mathbf{b}_k^T = [b_{k1} \ b_{k2} \ \dots \ b_{km}]^T [b_{k1} \ b_{k2} \ \dots \ b_{km}]$$

is an $m \times m$ array, whose sum for $1 \leq k \leq n$ is also an $m \times m$ array. Let the ij^{th} entry of BB^T be denoted by c_{ij} . Then, performing matrix multiplication yields,

$$c_{ij} = b_{i1}b_{1j} + b_{i2}b_{2j} + \dots + b_{im}b_{mj}$$

Let the ij^{th} entry of $\mathbf{b}_k\mathbf{b}_k^T = d^{(k)}_{ij}$. Carrying out matrix multiplication gives $d^{(k)}_{ij} = b_{ik}b_{kj}$. Performing addition for $1 \leq k \leq n$ yields,

$$\sum_{1 \leq k \leq n} d^{(k)}_{ij} = b_{i1}b_{1j} + b_{i2}b_{2j} + \dots + b_{im}b_{mj}$$

This sum is the ij^{th} entry of matrix A . Since $c_{ij} = \sum_{1 \leq k \leq n} d^{(k)}_{ij}$ for the ij^{th} entries of BB^T and A respectively, therefore,

$$BB^T = A$$

Now, we want to exploit the symmetric and positive semi-definite properties of the matrix A .

Property 2:

A is positive semi-definite.

Proof:

From the associative properties of matrix multiplication,

$$\mathbf{x}^T B B^T \mathbf{x} = (\mathbf{x}^T B)(B^T \mathbf{x})$$

Since $\mathbf{x}^T \mathbf{B} = (\mathbf{B}^T \mathbf{x})^T$, and $\mathbf{x}^T \mathbf{B}$ is the transpose of a column vector $\mathbf{B}^T \mathbf{x}$, then $(\mathbf{x}^T \mathbf{B})(\mathbf{B}^T \mathbf{x})$ is a dot product of $\mathbf{B}^T \mathbf{x}$ with itself. From the positivity property of inner product spaces (i.e. $\langle v, v \rangle \geq 0$, for all $v \in \mathbf{R}^n$), then

$$\mathbf{x}^T \mathbf{B} \mathbf{B}^T \mathbf{x} \geq 0$$

So, A is positive semi-definite.

Property 3:

Every eigenvalue of A is non-negative.

Proof:

Since \mathbf{A} is symmetric, then for any arbitrary eigenvalue λ of \mathbf{A} satisfying $\mathbf{A}\mathbf{x} = \lambda\mathbf{x}$, $\lambda \in \mathbf{R}$, left multiplying \mathbf{x}^T to both sides of $\mathbf{A}\mathbf{x} = \lambda\mathbf{x}$, yields

$$\mathbf{x}^T \mathbf{A} \mathbf{x} = \mathbf{x}^T \lambda \mathbf{x} = \lambda \mathbf{x}^T \mathbf{x}$$

Since \mathbf{A} is positive semi-definite,

$$\mathbf{x}^T \mathbf{A} \mathbf{x} \geq 0 \Rightarrow \lambda \mathbf{x}^T \mathbf{x} \geq 0$$

52

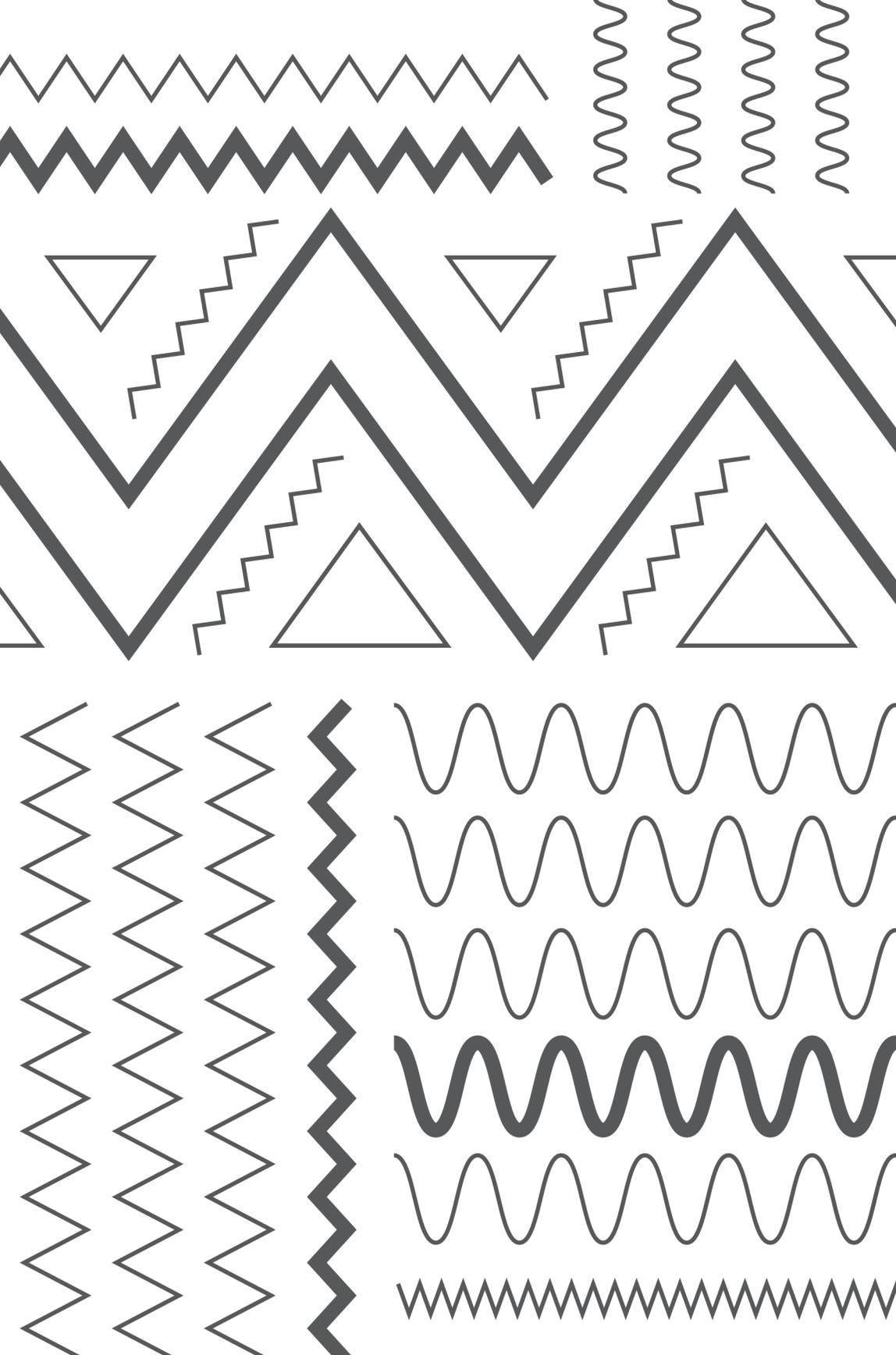
and by positivity of inner product spaces,

$$\mathbf{x}^T \mathbf{x} \geq 0 \Rightarrow \lambda \geq 0$$

Therefore, the eigenvalues of A are non-negative.

References

- [1] Berry, M. W., Dumais, S. T., and O'Brien, G. W. Using linear algebra for intelligent information retrieval. *SIAM Review*, (4), 573, 1995.
- [2] Boley, D. Principal direction divisive partitioning. *Data Mining and Knowledge Discovery*, 2(4), 325–34, 1998.
- [3] Dhillon, I., Dharmendra, M. Concept decompositions for large sparse text data using clustering. *Machine Learning*, 42(1-2), 143-175, 2001.
- [4] Dhillon, I. S., Guan, Y., and Kogan, J. Iterative clustering of high dimensional text data augmented by local search. In *IEEE International Conference on Data Mining, 2002. Proceedings*. 131–138, 2002.
- [5] Drineas, P., Frieze, A., Kannan, R., Vempala, S., & Vinay, V. Clustering in large graphs and matrices. *Proceedings of the tenth annual ACM-SIAM symposium on Discrete algorithms* (pp. 291-299). Society for Industrial and Applied Mathematics, 1999.
- [6] Hamerly, G., Elkan, C., Kalpakis, K., Goharian, N., and Grossman, D. Alternatives to the k-means algorithm that find better clusterings. In K. Kalpakis, N. Goharian, and D. Grossman (Eds.). Presented at the Proceedings of the Eleventh International Conference on Information and Knowledge Management. CIKM, 2002.
- [7] Kogan, J. Hybrid clustering of large text data. In *21st International Conference on Advanced Information Networking and Applications Workshops, 1*, 2007.
- [8] Kogan, J. *Introduction to clustering large and high-dimensional data*. Cambridge New York: Cambridge University Press, 2007.
- [9] Kogan, J., Teboulle, M., and Nicholas, C. Data driven similarity measures for k means like clustering algorithms. *Information Retrieval*, (8) 331-349, 2005.
- [10] Larson, R. *Elementary linear algebra, 7th Ed.* Boston Massachusetts: Brooks/Cole, 2013.
- [11] Reddy, C., Aggarwal, C. *Data clustering: Algorithms and applications*. Boca Raton Florida: CRC Press, 2014
- [12] Wu, J. *Advances in K-means clustering. [electronic resource] : a data mining thinking*. Berlin ; New York : Springer, pages 17-35. 2012.



Brain Mechanisms of Stress-Induced Analgesia:

Exploring the Relationship
Between Pain and Stress

Himadri Patel

Author Bio and Research Journey

Himadri Patel is a recent graduate of UMBC. Himadri graduated in Spring 2017 with a B.A. degree in Biological Sciences and a B.S. degree in Interdisciplinary Studies. She was a URA Scholar and URA award recipient in Spring 2016. After graduating from UMBC, Himadri is currently attending Pennsylvania State College of Medicine and pursuing a MD degree. In regards to her work, Himadri would like to extend her gratitude and appreciation towards Dr. Raimi Quiton, Assistant Professor of Psychology Department, Carrie Sauter, Interdisciplinary Studies Advisor, Dr. Stephen Freeland, Director of the Interdisciplinary Studies Program, Professor Steven McAlpine, and Dr. Michelle Starz-Gaiano, Associate Professor of Biological Sciences Department at UMBC for their continued support and guidance throughout the research and writing process. Himadri's research was funded by the Undergraduate Research Award.

Abstract

Despite several decades of research into the pain-suppression phenomenon of Stress-Induced Analgesia (SIA), mediated by biological and psychological factors, little is known about the underlying role of stress in pain perception. Previous research has established that stress plays an important role in the modulation of pain perception. This research focuses on how pain is modulated by stress, through a different perspective than used in earlier studies. The present study tested the hypothesis that psychological stress leads to a decreased perception of pain through increased activation of the amygdala and orbitofrontal cortex, and decreased activation of the cortical pain network. Eight healthy adults (five females and three males) were given painful heat stimuli before and after they performed a computerized task, and then underwent an fMRI scan. Subjects participated in (1) a control session in which the task was not stressful and (2) an experimental session on a separate day in which the task was stressful. When compared to the non-stress task, the stress task elicited increased activity during pain in the right amygdala ($t = 2.43$, $p < 0.01$) and the left dorsolateral prefrontal cortex ($t = 3.64$, $p < 0.001$), and reduced activity bilaterally in the thalamus ($t = 5.09$, $p < 0.001$), a key pain processing area; however, pain activity was not reduced significantly in the cortical pain network. These findings reveal new information about how stress can change the brain's response to pain, leading to reduced perception.

Introduction

Many individuals experience pain and stress and this research project explores how stress alters pain perception. About 100 million Americans are dealing with the issue of chronic pain, defined as persistent pain that lasts for more than 12 weeks (“Managing Chronic Pain,” 2013). Approximately 75% of American adults report experiencing moderate to high levels of stress in their workplace or home. Although some stress can be good, an extreme amount of stress can have adverse health consequences, affecting the immune, cardiovascular, neuroendocrine and central nervous systems (“Stress by Generation,” 2012).

The fundamentals of stress and pain, two main areas of focus in this study, are defined through several key determinants that affect the overall health of the public. The motivation to study these processes stems from their overarching presence of pain in the daily lives of many individuals in our community and beyond. Earlier work demonstrated that the reduced perception of pain in response to stress is explained, in part by a phenomenon known as Stress-Induced Analgesia (SIA).

For several decades, researchers have been studying this phenomenon in which exposure to intense stress suppresses the perception of pain. From an evolutionary perspective, SIA is part of the adaptive fight-or-flight response mediated by the sympathetic nervous system that enhances an individual's ability to survive a crisis situation; pain suppression is a critical component of this response as it enables individuals to escape a threat even if they have sustained any injury (Butler & Finn 2009). Studies have revealed that pain is associated with activity in a cortical network in the brain that includes the primary and second somatosensory cortex (SI, SII), anterior cingulate cortex (ACC), insula, and prefrontal cortex (PFC) (Duerden & Albanese 2013); pain-related activity in this network is likely altered during SIA. This study seeks to answer the question: How does stress affect pain perception and activity in areas of the brain that process pain in a small sample of healthy adults?

This study may be helpful in understanding how stress alters the brain's response to pain, leading to altered perception. To date little is known about neurological pathways involved in SIA. In this study we use functional neuroimaging to systematically identify brain networks underlying SIA in human subjects. Our results may add to our understanding of the neurophysiology of pain and stress, as well as endogenous pain inhibitory circuits, which may lead to new therapeutic targets for pain and stress-related disorders.

Background

Relevant and Previous Research Work on Stress-Induced Analgesia

Pain is an interdisciplinary concept. In a review article, pain is described through four key points: (1) pain does not always provide a measure of the state of tissues; (2) pain is modulated by many factors across somatic, psychological, and social domains; (3) the relationship between pain and state of tissues becomes less predictable as pain persists; and (4) pain can be conceptualized as a conscious perception when tissue damage occurs (Moseley, 2007). While perception of pain is influenced by many factors, the effect of stress on pain has not been widely studied.

In order to understand the biological basis of pain perception, one must examine brain activity during pain perception. Rodent studies reveal that the endogenous opioid system plays a major role in SIA (Butler & Finn, 2009). They also reveal that several brain areas play a role in mediating SIA, especially the primary somatosensory cortex (SI), amygdala, periaqueductal grey (PAG), hypothalamus, brainstem and anterior cingulate cortex (ACC) (Butler & Finn, 2009).

In humans, only one neuroimaging study of SIA has been conducted to date; this study revealed increased activity in SI, SII, anterior insula and ACC during SIA (Yilmaz et al., 2010). The results of this study require replication, in part because they report greater activity in the cortical pain network areas, whereas previous animal studies show reduced activity in those areas.

The present study aimed to replicate the SIA effect using a different methodology to further explore the relationship between stress and pain. The study's hypothesis is that when psychological stress is induced through a computerized task, it leads to a decreased perception of pain through increased activation of orbitofrontal cortex, a brain area known to activate the endogenous opioid system, and decreased activation of the cortical pain network, as measured by brain imaging.

Introduction of Disciplines of Biology and Psychology

To study the relationship between stress and pain, it is necessary to identify the major disciplines that these concepts draw upon. The primary disciplines involved in this study are Biology and Psychology, which are essential in order to explain the physiological process and activity

of different brain regions. Stress and its direct role in the modulation of pain are interdisciplinary because they draw upon both Biology and Psychology because neither discipline alone can adequately describe the phenomenon of SIA.

Identifying the Biological and Psychological Basis of Pain

While there are several ways to describe pain perception, one approach is to define pain using physiological terms. The perception of pain is a direct result of localized sensation in a specific area of the body. The body contains specialized receptors for pain, known as the primary afferent nociceptors. These nociceptors are present in most body tissues and respond to potentially damaging stimuli. As these nociceptors are activated by a potentially harmful stimulus, they send signals to the spinal cord. From the spinal cord, the second-order pain-transmission neurons relay the message on to the thalamus; thalamic neurons convey the information to higher brain centers, including the cortical pain network (Helms & Barone, 2008).

Another way to explain pain is via the psychology of pain perception. Various psychological processes are involved in pain other than sensation of pain through a physiological stimulus. The emotional/affective and cognitive-evaluative components of pain are just as important as the production and transmission of the painful signal. Thalamic neurons that receive nociceptive information from the periphery also project to brain regions involved in emotional and cognitive processing (Apkarian et al., 2005). According to Moseley, pain perception is not purely biological tissue damage; several psychosocial factors directly modulate it. The emotional/affective component represents an unpleasant feeling or emotional response associated with perceiving pain. The main emotion-processing network of the brain is the limbic system, which modulates the amount of pain experienced after exposure to a given stimulus. Other emotion regulating areas involved in pain modulation are the anterior cingulate gyrus and the prefrontal cortex (Morley, 2008). The cognitive-evaluative component of pain refers to higher cognitive activities (such as appraisal, expectation, cultural values, and attention) that influence the way pain is experienced; these factors can modulate the other components of pain (Vallath, Salons & Kumar, 2013). Brain areas such as anterior cingulate and prefrontal cortices (ACC, PFC) are involved in the cognitive component of pain perception (Apkarian et al., 2005). These different components of pain demonstrate that pain is a *bio-psycho-social* experience that encompasses biological, psychological, and sociocultural factors.

Establishing the Role of Psychological Stress in Pain Perception

Stress has major effects on the health of many individuals. Good health is dependent on maintaining homeostasis, a constant internal body environment. Selye (1956) defined stress as the “effects of anything that seriously threatens homeostasis” (Schneiderman, Ironson & Siegel, 2005). There are different types of stressors, responses to stress and different coping mechanisms for stress. Humans are equipped with homeostatic mechanisms needed to cope with some short-term stressors. SIA is a process that can result from any form of stress, physical or psychological. In this study, we used a short-term, acute psychological stressor to elicit stress when the participant was performing a cognitive task. This task can cause the participant to experience anxiety or other negative emotions surrounding a situation, which they find stressful (Dedovic et al., 2005).

Not only does stress play an important role in degradation of health, it is also implicated with pain through a more complex, bidirectional relationship. Previous research has shown that psychosocial stress is associated with the onset of chronic pain, and that chronic pain serves as a physical and psychosocial stressor. For example, leukocyte telomere length (TL) is a measure of cellular-aging, and relates to age-related disease onset, psychosocial stress and health-related functional decline. In their study, Sibille et al. analyzed the relationship between chronic pain, stress, and TL in 36 ethnically diverse, older adults. They found that cellular aging might be more pronounced in older adults experiencing high levels of perceived stress and chronic pain (Sibille et al., 2012). Additionally, a number of studies analyzed the effect of childhood psychological stress and trauma on the development of various types of chronic pain conditions; these studies found evidence supporting a role for certain key neurobiological substrates, including the hypothalamic-pituitary-adrenal axis, in the association between early-life psychological stress and chronic pain. A strong link exists between psychological stress, altered pain processing in the nervous system, and chronic pain (Burke, Finn, McGuire, & Roche, 2016). Previous research suggesting that psychological stress is associated with pain emphasizes the need to study the mechanisms underlying this relationship in a more systematic way.

Importance of fMRI Applications in Pain Research

Recent advances in functional neuroimaging enhanced the scientific community’s understanding of brain processes underlying pain. Functional magnetic resonance imaging (fMRI) measures activity

of the brain by an indirect evaluation of changes in blood flow and blood oxygenation. fMRI in pain research has been used to look at acute and chronic pain, endogenous pain modulatory processes (e.g., the placebo effect, empathy, attention), and processes underlying affective and motivational components of pain (Borsook & Becerra, 2006). We selected fMRI for this research study to investigate the neurophysiology of pain perception and how stress modulates it to elicit SIA.

Experimental Design and Methodology

This study involved collecting neuroimaging and quantitative perceptual data during pain and stress. The experiment tests the hypothesis that when psychological stress is induced through a computerized task, it leads to a decreased perception of pain, through a change in activity level of certain brain areas. Eight healthy adults (five females and three males) underwent fMRI scans in sessions held on two separate days. In each session, participants rated the intensity of painful heat stimuli before and after performing a computerized task. The two sessions consisted of (1) a control session during which subjects performed a non-stressful computerized task designed to NOT induce SIA and (2) an experimental session during which subjects performed a stressful computerized task designed to induce SIA. The order of the control and experimental sessions was counterbalanced across subjects in an effort to minimize order effects. Subjects were recruited using posted advertisements at the UMBC campus and local community. Once enrolled, each subject went through the procedures described below. The Institutional Review Boards at UMBC and the University of Maryland, Baltimore approved all of these procedures.

Experimental Protocol

In the first session, subjects completed the informed consent process, which included an fMRI safety screening form. Subjects then practiced a computer task and completed questionnaires either on paper or online through a system called Qualtrics. The experimenter then used standard warm and heat pain testing procedures using the Medoc Pathway system, which has a thermode that can be applied to the skin. Heat pain threshold and tolerance were measured on the subject's left calf. The experimenter then determined the temperature that was consistently rated as strongly painful (60–70 on a 0–100 scale) by applying a temperature above the threshold level and asking the subject to rate the pain from 0 (no pain) to 100 (most intense pain imaginable). Based on

this testing, the temperature that the subject consistently rated in the range of 60–70 was identified for use in the fMRI portion of the study, randomized with a painful temperature 1°C lower and a non-painful warm temperature (37°C). Temperatures that the subject rated greater than 80 on the 0–100 scale were not used. The testing conducted in this portion of the protocol was preliminary testing, not used directly in the induction of SIA.

MRI Scan

After the participant lay down in the MRI scanner, an emergency buzzer was placed on the participant's chest where he or she could easily access it to stop the scan if he or she became uncomfortable. The participant held a response button box in the right hand. The fMRI session consisted of an anatomical scan to measure the detailed anatomy of the brain (10 min), a functional scan in which painful heat and nonpainful warm stimuli were applied in randomized order to the subject's left calf (14 min), a functional scan in which the control or experimental computer task was performed (10 min), and a functional scan in which painful heat and nonpainful warm stimuli were again applied to the subject's left calf (14 min). At various points in time participants were asked to rate the intensity of the stimuli using a computerized rating scale presented on a video screen and the response button box to indicate the rating.

In the first fMRI scan (baseline heat pain), participants rated a series of heat stimuli using a computerized rating program while fMRI data were collected. The stimulus series consisted of 18 painful heat stimuli: six presentations each of the three temperatures determined in the previous section, in a randomized order. During the second fMRI scan, subjects performed a computerized task (stressful or non-stressful, as described below). During the third fMRI scan (post-task heat pain), subjects again rated the series of heat stimuli as in the earlier pain-rating session using the computerized rating program.

On a separate day, the exact fMRI scanning procedures were repeated. In the second session, the only difference was the type of computerized task (non-stressful or stressful).

Stress Task

In order to induce psychological stress in the scanner, a computerized cognitive task was presented to the participant. This task is a cognitive conflict task, which was designed to elicit an acute stress response in the neuroimaging environment (Dedovic et al., 2005). The task consisted of a series of computerized sequences in which the participant presses

a response button to indicate the correct answer. The experimenter adjusted task difficulty and time constraints to induce different levels of stress during pilot testing phase of the study. The task was altered so that the participant viewed a series of sequences, each with three numbers of varying sizes and pairs. For example, in the control condition, if the sequence indicated [1 3 3], the correct answer would be 1. A more difficult sequence would be 1 3 3 and the correct answer would still be 1. In either case, the correct answer is always the number that is different from the other two in the sequence. The experimenter, using results from the pilot testing of this stress task, varied task difficulty by decreasing the time limit of each sequence.

Data Analysis and Interpretation

The data were collected over a time period of three months. Two separate and complementary analyses were performed: (1) an analysis of the quantitative perceptual ratings of pain and stress using SPSS statistical software, and (2) an analysis of brain responses to pain in the neuroimaging data using Statistical Parametric Mapping (SPM Version 12) software. The following sections summarize the research findings of the study.

64

Heat Pain Rating Data

TABLE 1. Stress Ratings by each Participant

Stress Ratings			
Participant #	Order (NS task first = 1) (Stress task first = 2)	NS Rating	S Rating
QHP-000	2	0	5
QHP-011	1	1	1
QHP-012	1	1	4
QHP-013	2	2	4
QHP-016	1	2	5
QHP-017	1	4	4
QHP-018	2	1	3
QHP-019	2	0	5
	Mean	1.38	3.88
	Standard Dev.	1.3	1.4

GRAPH 1. Average Stress Ratings vs. Type of Task

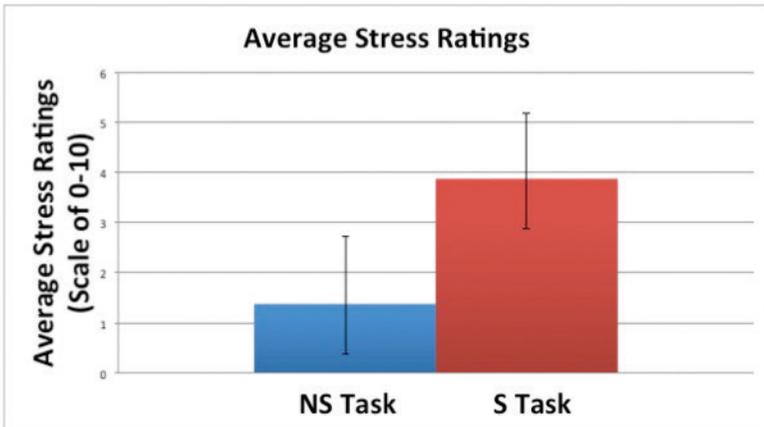


TABLE 2. Task Performance Accuracy Data

Participant ID	Nonstress Task % Correct	Stress Task % Correct
QHP-000	97.50%	56.67%
QHP-011	89.72%	22.00%
QHP-012	91.94%	46.00%
QHP-013	81.11%	26.22%
QHP-016	94.17%	84%
QHP-017	94.17%	80.89%
QHP-018	98.06%	86.89%
QHP-019	90%	92%
Mean	92.08%	61.83%
Standard Dev.	5%	28%

TABLE 3. Heat Pain Rating Data

Participant Pain Intensity Ratings for Painful Heat Stimulation for High Temperature (Another painful temperature and a non-painful temperature were used, randomized with the high temperature to reduce expectation effects. Data analysis for these other two temperatures showed no differences between the scans.)

Pain Intensity Ratings: High Temperature					
Participant #	Order of task given (NS task first = 1) (S task first = 2)	Nonstress Baseline Rating	Nonstress Post Task Rating	Stress Baseline Rating	Stress Post Task Rating
QHP-000	2	7.67	8.00	7.83	6.83
QHP-011	1	8.17	8.50	7.67	7.67
QHP-012	1	8.00	9.00	8.00	9.00
QHP-013	2	6.33	5.67	7.00	7.17
QHP-016	1	6.50	7.00	4.67	3.00
QHP-017	1	5.50	4.33	4.17	3.50
QHP-018	2	6.50	7.00	8.00	8.67
QHP-019	2	3.33	3.83	6.67	7.00
	Mean	6.50	6.67	6.75	6.60
	Standard Dev.	1.6	1.9	1.5	2.2

Heat Pain Rating Data Analysis and Interpretation

The rating data analysis involved looking at differences between heat pain ratings before and after the stress task for the two sessions. A two-way mixed model ANOVA (task order x session) with the dependent measure of baseline heat pain ratings was performed for the high temperature. This tested whether (1) baseline pain ratings differed between the first and second sessions and (2) whether baseline pain ratings differed depending on task order (control task given first or experimental task given first). The test demonstrated that there was not a statistically significant difference in baseline pain ratings between the first and second sessions ($F = 0.383, p = 0.559$). In addition, the task order (whether the control or experimental session was given first) had no significant effect on baseline heat pain ratings ($F = 0.007, p = 0.937$). Identical data analysis of ratings for the second painful temperature and the non-painful temperature also yielded no differences between the sessions or task order ($p > .05$ for all tests).

TABLE 4. Change in Participant Ratings (Post-Task minus Baseline) for High Temperature

Changes in Pain Intensity Ratings: High Temperature			
Participant #	Order (NS first = 1) (Stress first = 2)	Change in NS (post task - baseline)	Change in S (post task - baseline)
QHP-000	2	0.33	-1.00
QHP-011	1	0.33	0.00
QHP-012	1	1.00	1.00
QHP-013	2	-0.67	0.17
QHP-016	1	0.50	-1.67
QHP-017	1	-1.17	-0.67
QHP-018	2	0.50	0.67
QHP-019	2	0.50	0.33
	Mean	0.62	0.69
	Standard Dev	0.3	0.5

67

In order to test whether pain was reduced after the stress task and not reduced after the control task, paired t-tests were conducted using heat pain intensity ratings for the high temperature as the dependent measure. This test yielded no statistically significant results, possibly due to the limited statistical power of the small sample size ($t = 0.08$, $p = 0.938$). Pain ratings did not significantly increase after the stress task.

To test whether the stress task induced more stress than the control task, a paired t-test was conducted using stress ratings as the dependent measure. The results showed that there was a statistically significant difference between the non-stressful (control) task and the stressful (experimental) task ($t = -3.669$, $p = 0.008$), with participants perceiving the stress task as significantly more stressful (data reported in graph 1 and table 1). These results indicate that the experimental design was successful in inducing stress through the computerized task. These findings are supported by the percent of correct responses for each task (control and experimental). In table 2, the task accuracy data demonstrates that participants were actually performing the task in both the control and experimental condition. It also shows that task difficulty was increased in the stress task, and accuracy was lower.

Functional Magnetic Resonance Imaging Data

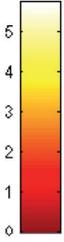
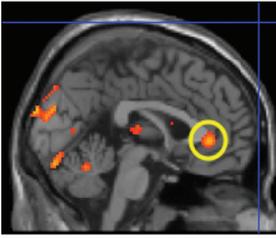


FIGURE 1A. Anterior Cingulate Cortex
(Bottom figure: t-statistic bar)

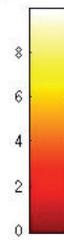
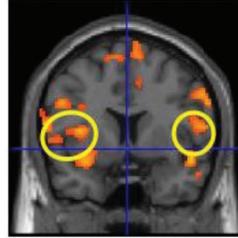


FIGURE 1B. Anterior Insula

68

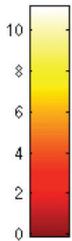
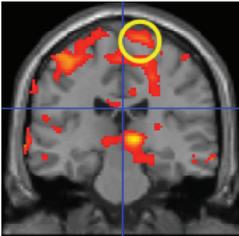


FIGURE 1C. Primary Somatosensory
Cortex (leg area)

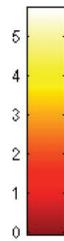
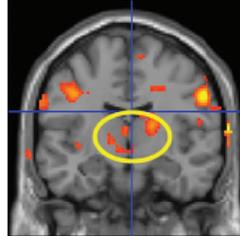


FIGURE 1D. Bilateral Thalami

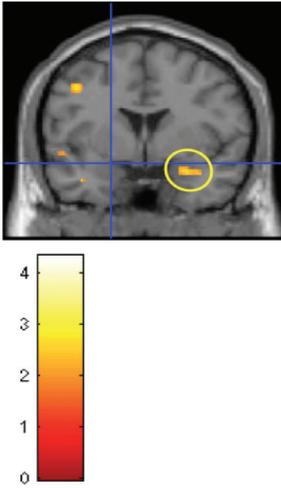


FIGURE 2. Increased right amygdala activity during heat-pain stimulation after the stress task

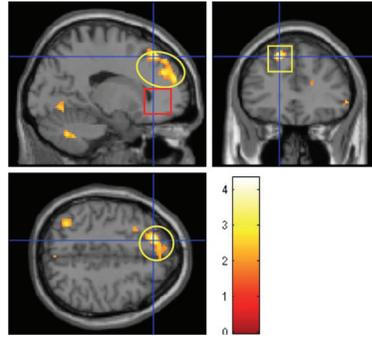


FIGURE 3. Increased left dorsolateral prefrontal cortex activity during heat-pain stimulation after stress task. Red Box represents location of the Orbitofrontal cortex area, which was hypothesized to have increased activation after the stress task.

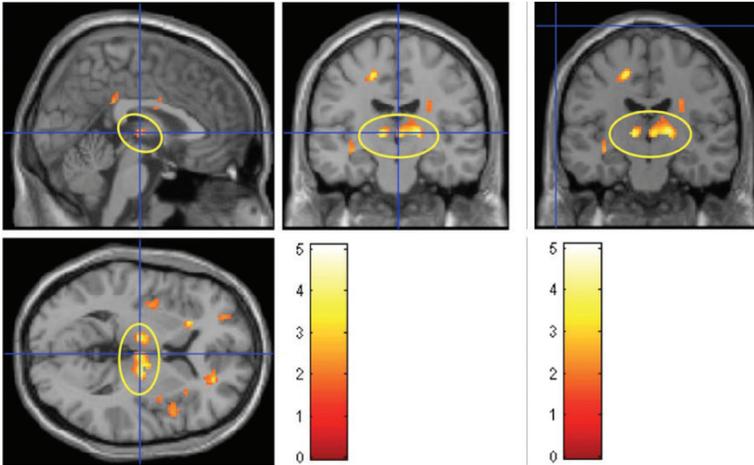


FIGURE 4. Decreased bilateral thalamic activity during heat-pain stimulation after stress task

TABLE 5. Summary of Activity in Brain Areas

Brain areas with significantly altered heat pain-related activity (post - stress task)	Peak Voxel			Cluster - level corrected p-value
	MNI Coordinates (X, Y, Z) for peak voxel	T-statistic	P-value	
Right amygdala	40, -2, -22	2.43	0.014	< 0.05
Left Dorsolateral Prefrontal Cortex	-10, 56, 26	3.64	0.001	< 0.05
Left thalamus	-10, -16, 4	-4.12	0.001	< 0.05
Right thalamus	18, -14, 6	-5.09	0.001	< 0.05

Functional Magnetic Resonance Imaging Data Analysis and Interpretation

The fMRI data was analyzed using SPM12 (Statistical Parametric Mapping, version 12). Each subject's fMRI data for the pain scans underwent standard preprocessing steps to reduce artifacts, physiological noise, and variability due to head motion. During preprocessing, individual subject brain anatomy was transformed into a standard brain space (MNI) to facilitate group level analysis. Then, preprocessed data was analyzed on an individual subject basis to identify pain-related brain activity for each scan (pre- and post-control task scans and pre- and post-experimental task scans). Results of the individual subject analyses were used in second-level (group) analysis to identify areas where pain-related activity differed significantly after the stress task compared to the control task, while controlling for differences in baseline scan activity.

The final images from the analysis were then interpreted. Figure 2 depicts representative examples of key brain areas known to be involved in pain processing. These areas include the primary somatosensory cortex (SI), anterior cingulate cortex (ACC), bilateral thalami, and the insula. This figure demonstrates that heat pain stimuli produced typical patterns of activity in the cortical pain network. Figures 3 and 4 show that the stress task elicited increased activity during pain in the right amygdala ($t = 2.43$, $p < 0.01$) and the left dorsolateral prefrontal cortex ($t = 3.64$, $p < 0.001$). Figure 5 shows that the stress task, as hypothesized, reduced activity bilaterally in the thalamus ($t = 5.09$, $p < 0.001$), a key pain processing area. However, the stress task did not significantly reduce pain-related activity in the cortical pain network. Table 5 lists the brain regions that displayed altered pain-related activity in response

to the stress task, the coordinates of the voxel in each region that had the maximum activity, and the t-statistic and p-value associated with each peak voxel. Although the results did not support the original hypothesis, they indicated a novel finding: stress increased pain-related activity in the amygdala, an area known to be involved in processing both pain and stress, and dorsolateral prefrontal cortex, an area known to release endogenous opioids during placebo analgesia, and inhibited activity in the thalamus, a subcortical pain region.

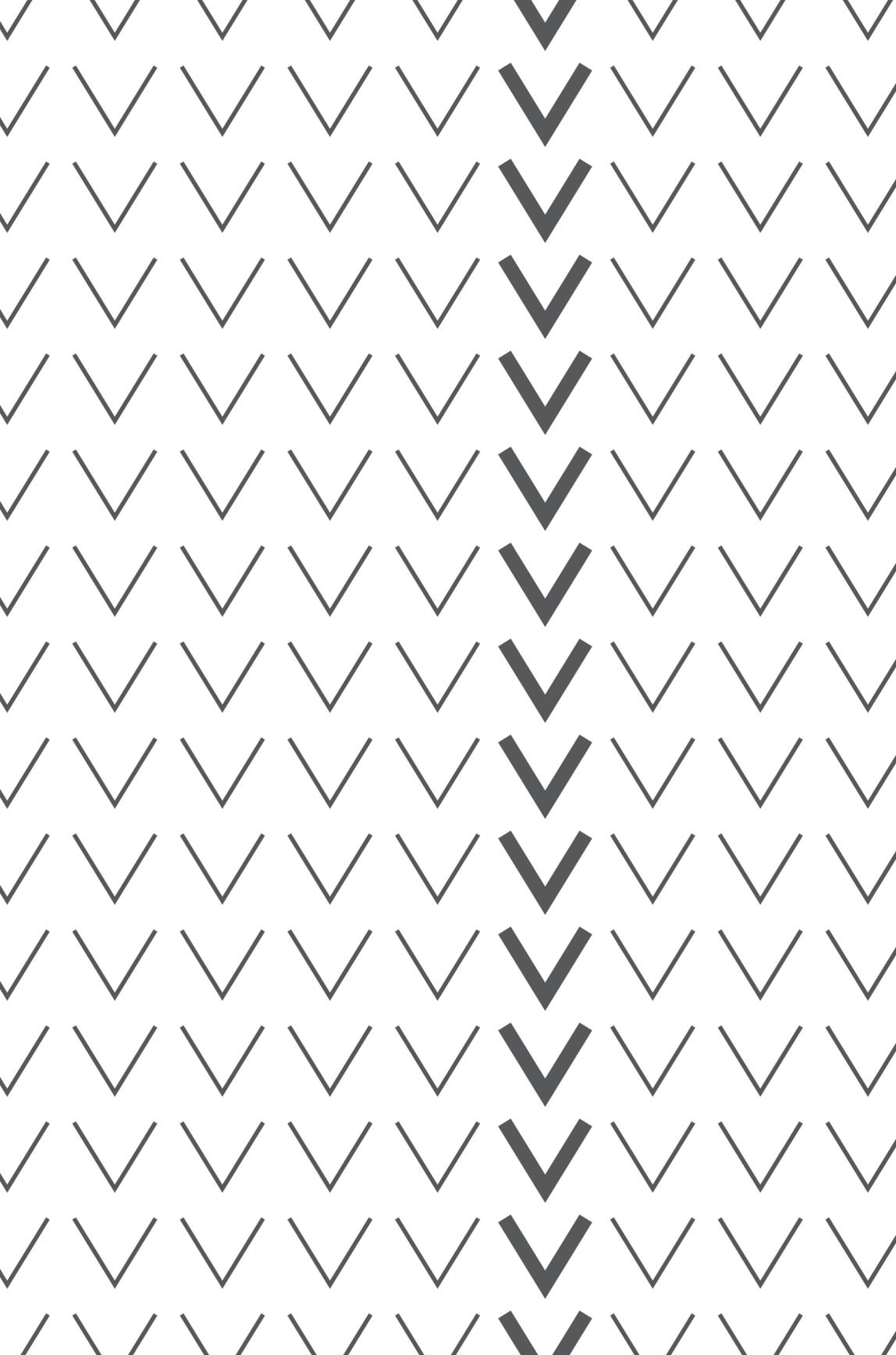
Future Research

The next steps in this research included repeating the experiment with a larger sample. It might also be beneficial to increase the difficulty level of the stress task. In addition, future studies could focus on different factors and aspects of the participant's life, such as demographics, psychosocial factors and lifestyle habits and how they relate to the way participants perceive varying levels of stress and/or pain in the scanner. A more sophisticated analytical approach that could be achieved with a larger sample would systematically identify brain networks underlying SIA in human subjects using functional neuroimaging. Researchers in this field have made no attempt to evaluate the functional connectivity of these areas from a network perspective. Systematic studies of the neural networks involved in SIA in humans are needed to gain a clearer understanding of the underlying mechanisms of this phenomenon and its overlap with other forms of endogenous analgesia. Using a similar experimental design with alterations to the data analysis technique and larger sample size might yield important findings for the pain and neuroimaging research community.

References

- Amanzio, M., Benedetti, F., Porro, C. A., Palermo, S., and Cauda, F. (2013). Activation likelihood estimation meta-analysis of brain correlates of placebo analgesia in human experimental pain. *Human Brain Mapping*, 34(3), 738-752.
- Amit, Z., and Galina, Z. H. (1986). Stress-induced analgesia: adaptive pain suppression. *Physiological Reviews*, 66, 1091-1120.
- Apkarian A.V., Bushnell M.C., Treede R.-D., Zubieta J.-K. (2005). Human brain mechanisms of pain perception and regulation in health and disease. *Eur. J. Pain Lond. Engl.* 9, 463-484.
- Borsook, D., and Becerra, L. R. (2006). Breaking down the barriers: fMRI applications in pain, analgesia and analgesics. *Molecular Pain*, 2, 30. <http://doi.org/10.1186/1744-8069-2-30>
- Burke, N. N., Finn, D. P., McGuire, B. E. and Roche, M. (2016). Psychological stress in early life as a predisposing factor for the development of chronic pain: Clinical and preclinical evidence and neurobiological mechanisms. *Journal of Neuroscience Research*.
- Butler, R. K., and Finn, D. P. (2009). Stress-induced analgesia. *Prog Neurobiol*, 88(3), 184-202.
- Dedovic, K., Renwick, R., Mahani, N. K., Engert, V., Lupien, S. J., and Pruessner, J. C. (2005). The Montreal Imaging Stress Task: using functional imaging to investigate the effects of perceiving and processing psychosocial stress in the human brain. *Journal of Psychiatry and Neuroscience*, 30(5), 319-325.
- Dedovic, K., Rexroth, M., Wolff, E., Duchesne, A., Scherling, C., Beaudry, T., ... Pruessner, J. (2009). Neural correlates of processing stressful information: An event-related fMRI study. *Brain Research*, 1293, 49-60. <https://doi.org/10.1016/j.brainres.2009.06.044>
- Duerden, E. G., and Albanese, M. C. (2013). Localization of pain-related brain activation: A meta-analysis of neuroimaging data. *Human Brain Mapping*, 34, 109-149. <https://doi.org/10.1002/hbm.21416>
- Helms, J. E., and Barone, C. P. (2008). Physiology and treatment of pain. *Critical Care Nurse*, 28, 38-49. [https://doi.org/10.1016/0002-9343\(56\)90155-3](https://doi.org/10.1016/0002-9343(56)90155-3)
- Gallagher RM. (2004). Biopsychosocial pain medicine and mind-brain-body science. *Phys Med Rehabil Clin N Am.* 15(4):855-882, vii.
- Gatchel, R., Peng, Y., and Peters, M. (2007). The biopsychosocial approach to chronic pain: scientific advances and future directions. *Psychological Bulletin*, 133, 581-624. Retrieved from <http://psycnet.apa.org/psycinfo/2007-09203-002>
- Managing Chronic Pain. (2013). Retrieved March 23, 2017, from <https://theacpa.org/>
- Melzack, R., and Wall, P. (1965). Pain Mechanism: A new Theory. *Science*. <https://doi.org/10.1126/science.150.3699.971>
- Morley, S. (2008). Psychology of pain. *British Journal of Anaesthesia*. <https://doi.org/10.1093/bja/aen123>
- Moseley, G. L. (2007). Reconceptualising pain according to modern pain science. *Physical Therapy Reviews*, 12, 169-178. <https://doi.org/10.1179/108331907X223010>
- Nielson, W. R., and Weir, R. (2001). Biopsychosocial approaches to the treatment of chronic pain. *The Clinical Journal of Pain*. <https://doi.org/10.1097/00002508-200112001-00020>

- Schneiderman, N., Ironson, G., and Siegel, S. D. (2005). Stress and Health: Psychological, Behavioral, and Biological Determinants. *Annual Review of Clinical Psychology*, 1, 607–628.
- Sibille, K. T., Langae, T., Burkley, B., Gong, Y., Glover, T. L., King, C., ... Fillingim, R. B. (2012). Chronic pain, perceived stress, and cellular aging: an exploratory study. *Molecular Pain*, 8, 12. <https://doi.org/10.1186/1744-8069-8-12>
- Stress by Generation. (2012). Retrieved October 1, 2016, from <https://www.apa.org/news/press/releases/stress/2012/generation.pdf>
- Stucky, C. L., Gold, M. S., and Zhang, X. (2001). Mechanisms of pain. *Proceedings of the National Academy of Sciences of the United States of America*, 98, 11845–6. <https://doi.org/10.1073/pnas.211373398>
- Vallath, N., Salins, N., and Kumar, M. (2013). Unpleasant Subjective Emotional Experiencing of Pain. *Indian Journal of Palliative Care*, 19(1), 12–19. <http://doi.org/10.4103/0973-1075.110217>
- Yilmaz, P., Diers, M., Diener, S., Rance, M., Wessa, M., and Flor, H. (2010). Brain correlates of stress-induced analgesia. *Pain*, 151, 522–529. <https://doi.org/10.1016/j.pain.2010.08.016>



Loss of Function Tool Development for N-myc Downstream Regulated 1 (NDRG1)

Manneha Qazi

Author Bio and Research Journey

Manneha Qazi is a rising senior, McNair Scholar, and Honors College student here at UMBC. She has always had an interest in research; she just had no idea about how to get started. The McNair Scholars Program assisted her in finding a mentor and lab that would be a good fit for her and she chose Dr. Brewster's lab after reading about her professional interests on the Department of Biological Sciences website. Manneha began her research as part of the McNair Summer research institute, and expects to graduate with a Bachelor of Arts degree in Biological Sciences in the spring of 2018.

This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.



This article has been removed at the request of the author.

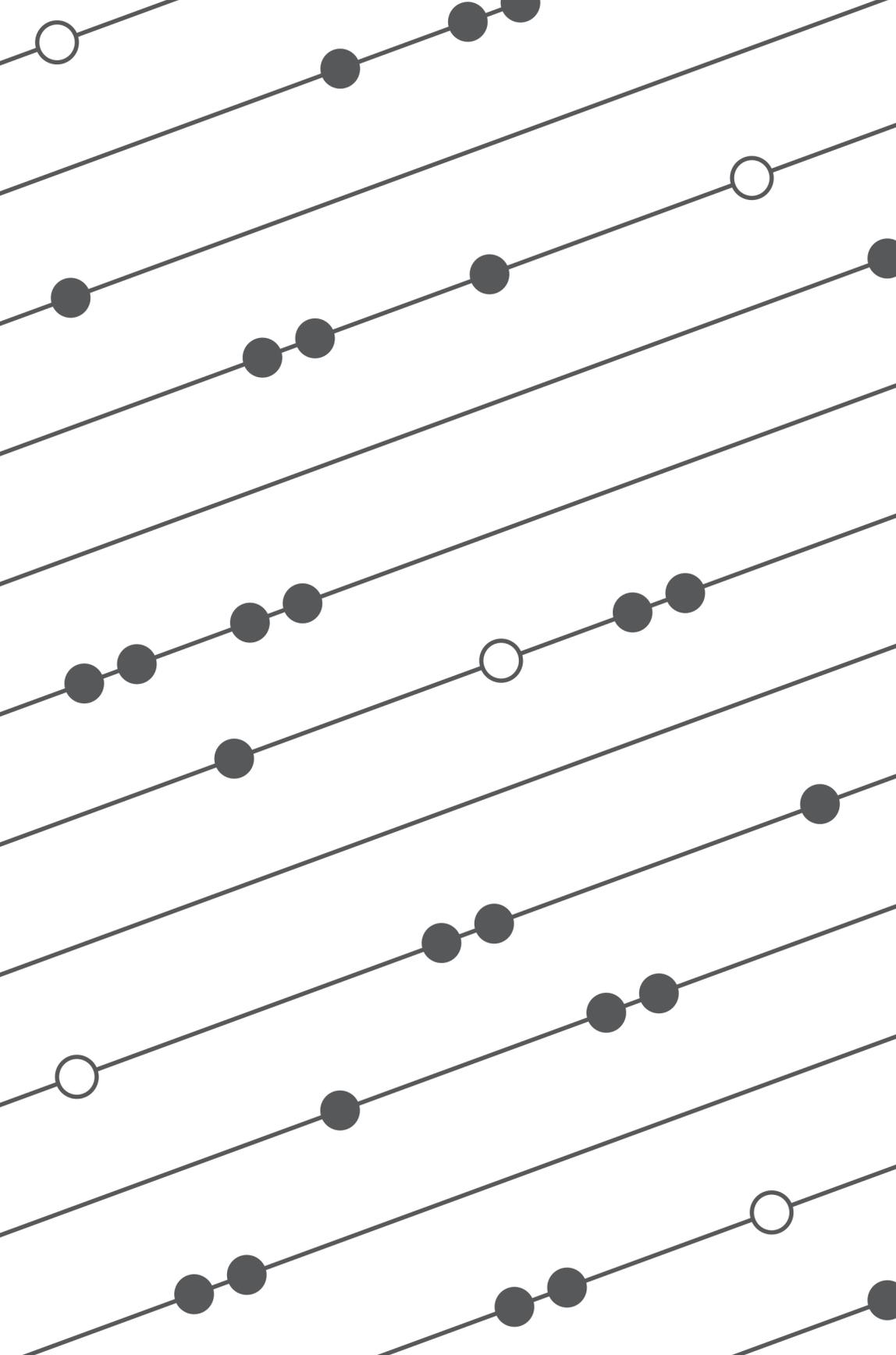


This article has been removed at the request of the author.



This article has been removed at the request of the author.





Pronounced
Leh-nurd Skih-nurd:
Rhoticity and the South
in American Rock Music

Sean Owen

Author Bio and Research Journey

Sean Owen is a Mathematics major, with a minor in Computer Science, and will graduate in May 2018. He is also a member of the Honors College. He will pursue a Ph. D. in mathematics after graduation, concentrating in algebra and number theory. After completing his studies, his plan for the more distant future is to continue his career in mathematical research along whatever avenues God presents to him.

This project was completed as part of Dr. Thomas Field's Sociolinguistics and Dialectology class in spring 2017. It stems from Sean's enthusiasm for rock music, investigating a linguistic variable he had always been curious about: how American singers pronounce the "r" sound after a vowel. He'd noticed that most rock singers drop this sound—but Glenn Frey of the Eagles, for example, usually did not, nor did most country singers. This project took his casual observations as a jumping-off point to delve into the history and culture of his favorite genre, using the framework of Peter Trudgill's similar work on British rock music.

Sean would like to thank his advisor on this project, Dr. Field, as well as two lay experts on 1970's rock music whose consultation proved invaluable: namely, his parents, John and Sherri Owen. Additionally, he thanks Ronnie Van Zant (may he rest in peace), and Steve Perry, the two unique voices he had the great joy of studying, together with their respective bands, Lynyrd Skynyrd and Journey.

Abstract

Pronunciation in popular music is a subject rich in linguistic patterns, and it offers a useful perspective on the social environments that produce it. We investigated the patterning of the *r* phoneme in the lyrics of the American rock bands Journey and Lynyrd Skynyrd, as a window into the linguistic indexing of “the South” in contrast with the rest of the country. Drawing inspiration from Trudgill’s 1984 study on British rock, we gathered data on the frequency of dropping the ‘*r*’ phoneme on all songs from one album by each band, with information on phonological environment. Our results reversed our predicted patterns, but nonetheless yielded useful conclusions about the separate development of Southern rock from its sister genres.

Introduction

One might assume that pronunciation in popular music is largely a matter of acoustics and musical convenience and that singers simply sing with whatever pronunciation is easiest. On the contrary, however, this is a subject rich in linguistic patterns: singers from different regions and different genres have their own distinctive pronunciations, and studying these offers a useful perspective on the people who make and consume their music and the social pressures to which they are responding as they do so. In this paper, we will focus on American classic rock music, and what can be surmised about the linguistic indexing of “the South” in contrast with the rest of the country based on the patterning of the *r* phoneme in their artists’ singing.

This study takes as its initial point of departure a classic paper by Peter Trudgill, “Acts of Conflicting Identity.” In this article, written in 1984 (during the later periods of what we might consider “classic rock”), Trudgill investigated the pronunciation of British rock and roll singers. Regardless of the rules of their spoken dialect, he observed, singers tended to preserve their postvocalic *r*, and to pronounce intervocalic *t* as a flap, among other features. His conclusion was that they were attempting to imitate an American style of speech, since rock and roll was an American music form in origin (p. 144).

It is peculiar, then, to note (as Trudgill himself does) that American rock singers of that era had a strong tendency to drop their *r* when singing, again regardless of their spoken dialect. Dennis DeYoung of Styx (from Chicago) sings that he will “set an open course [cɔs] for [fɔ] the virgin [vədʒɪn] sea...,” Steven Tyler of Aerosmith (a New Yorker) invites us to “sing with me, sing for [fɔ] the year [ji.ə],” and Lindsey Buckingham of Fleetwood Mac (who hails from California) rejoices that “yesterday’s [jɛstədəjz] gone”—though none of them drop *r* regularly when speaking. This is known to be a feature of older Southern American dialects, and of African American English, and it thus reflects the origin of rock music with characteristically Southern and Black musical forms like the blues (pp. 146–7).

Some strains of rock cleave closer to the South than others: there is a distinctive genre of “Southern rock” that covers bands such as the Allman Brothers, Lynyrd Skynyrd, and ZZ Top. It is thus a question worth asking how they use this marker of Southern-ness, and whether they use it differently than rock artists who tie themselves less directly to the genre’s origins. This study set out to answer this question. How does rhoticity in rock lyrics differ between Southern and mainstream singers?

We would expect to find greater and more consistent incidence of *r*-dropping in Southern rock, which is still directly tied to the Southern dialects this feature originates in, than in mainstream or general-audience rock music¹.

Background

As a first step, it is worth examining Trudgill's (1984) paper in more detail. His crucial conclusion is deeper than the mere observation that some British singers exhibited American pronunciations. He explains that, like all linguistic actors, rock and roll singers were seeking to project an identity—to match their pronunciations to what they wish to be and be seen as.² British classic rock singers were aware that rock music was an American genre, and thus that to be proper rock-and-roll musicians it was fitting that they should sound like Americans. The fact that they did not always do a particularly good job of imitating Americans serves to drive the point home: they were not catering to the speech patterns of a target audience, but seeking to imitate a linguistic model that they had only very limited knowledge of, as part of constructing their identity as singers of a foreign-originated type of music (pp. 145–150). In contrast, then we have the example of punk-rock singers, who were more interested in being connected to local working-class audiences—and, as such, adopted pronunciations characteristic of the British urban working class (pp. 154–5).

Simpson (1999) builds on Trudgill's framework, bringing in examples from an additional sixteen years of popular music and more directly observing American music. He notably offers a more detailed view of what factors influence a singer's choice of dialect: he views it as a combination of a pre-existing model that the singer aspires to, the singer's own linguistic background, and the audience the singer is targeting (p. 364).

It's also worth bringing in some work on the Southern dialect itself: if we hope to analyze how a singer uses stereotypically Southern features, we should properly understand those features and their history. Thomas (2004) gives a good overview of the subject, and notes that the realizations of the postvocalic (*r*) variable are in fact a complex and subtle pattern influenced by many social factors. The crucial detail, however, is that its realizations are quite different along socioeconomic and historical lines. Dropping [r] sounds was historically a marker of prestige in Southern English, most common among social elites and imitated elsewhere. However, World War II marks a change in this pattern, after which *r*-ful speech becomes the prestigious variant and

r-less speech begins a slow decline. The exception is African-American English, which continues to use frequent *r*-dropping, a feature that is possibly now an ethnic marker in the South (pp. 317-318). Kretzschmar (2008) elaborates on this dynamic, explaining that the older *r*-less dialect reflects the speech of wealthy plantation owners in the older days of the South, and has been slowly replaced by the *r*-ful speech of the cities and the lower classes as the South urbanizes and moves away from its older agricultural roots.

All of this complicates attempts to connect rhoticity in music by itself to an imitation of Southern speech. We see that both *r*-ful and *r*-less speech can be stereotypically Southern, one reflecting an older form of the dialect of the South (or the dialect of African-Americans), and the other reflecting the new norms. Thus it is difficult to say, in a vacuum, what a given pattern of rhoticity represents, though there are still ways to disambiguate. Zwiers (2015), in the process of drawing parallels between “rural” music in the Netherlands and America, gives a thorough analysis of the persona of the 1970’s rock band Lynyrd Skynyrd. He shows that they made it clear that they insisted on the older *r*-less accent, to the point of exaggerating it when challenged about it, to emphasize their Southern connection, which fit in with other, more explicit shows of affiliation with the region (such as displaying Confederate flags) (pp. 92–93).

It is from this that I derive the theoretical basis for my hypothesis. Mainstream rock music was no longer tied directly to the South by the 1970’s, and its continued usage of an *r*-less dialect was thus not because singers were trying to emulate Southerners, but because they were following a now-ubiquitous idea of what a rock singer should sound like. Following Trudgill’s observations, then, we would expect to find them to hesitate noticeably between this realization of the *r* variable and their native variants. In contrast, artists who are native speakers of Southern dialects themselves, or targeting an audience of Southern English speakers, or otherwise seeking to establish an identity as explicitly Southern, would have greater ability and reason to adopt the feature thoroughly, as Zwiers suggests.

Methodology

My methodology for this study was quite simple. I hoped to demonstrate differences in rhoticity between Southern and non-Southern rock singers, and so I chose to do a pilot study on two 1970’s American rock albums, one by a Southern rock band, and one by a more “mainstream”

rock band. To control for outside variables, I additionally imposed the following constraints in my search.

- To control for variables related to ethnicity or gender, I chose to restrict my search to white, male singers.
- For simplicity, I only considered albums that were largely performed by one lead vocalist.
- For the non-Southern artist, I also ruled out singers from Massachusetts or New York. I am aware that these regions have non-rhotic dialects as well, which I considered to be a potential confounding variable.

I had additionally hoped to choose albums released in the same year. This restriction proved difficult to implement, however: it proved unworkable to find two artists whom I could consider representative of their respective musical styles and who fit my constraints, and who also released albums in the same year. My eventual sample used two albums from two years apart—a gap that I minimized as much as possible, and that I eventually judged would not pose a significant danger to my data. With all these constraints in mind, I eventually made the following selections, based on my own knowledge of the era's music, consultation with others of a similar affinity for the genre, and a pre-investigation of some 20–30 songs of various genres (none of which are included in the sample):

- To represent mainstream rock, I chose Journey's album *Infinity* (1978), with lead singer Steve Perry, a Californian.
- To represent Southern rock, I chose Lynyrd Skynyrd's album *Gimme Back My Bullets* (1976), with lead singer Ronnie Van Zant, of Jacksonville, Florida.

On each album, my process was simply to collect data on the frequency of dropped postvocalic [r] out of all potential occurrences of the sound. To prepare for this process, I acquired reliable written lyrics for each song by creating composite texts from several publicly available lyric sites and then verifying them against the tracks, enabling me to identify ahead of data collection where to listen for dropping or retention of a rhotic. I also used these resources to separate the rhotics in question into categories based on phonological environment: at the end of a phrase, preceding a consonant, or preceding the initial vowel of another word ([r] preceding a vowel in the same word was considered but omitted from the analysis, since it is nearly universally pronounced in the lyrics of both artists). I considered using other categorizations, such as part of

the song (verse, chorus, bridge) and stress (stressed or unstressed syllable), but these proved less useful; it was difficult to say what counted as “stressed” in sung lyrics, and there were no obvious patterns related to the larger structure of the song in general (a difficulty compounded by the fact that the songs used did not all have similar anatomies, especially the Journey tracks—Lynyrd Skynyrd did tend to follow a fairly consistent verse/chorus structure).

TABLE 1. Frequency of r-dropping by song.

Title	Dropped [r]	Total [r]	% Dropped
INFINITY Journey (Steve Perry)	92	114	80.70
1 “Lights”	7	7	100.00
2 “Feeling That Way”	8	9	88.89
3 (“Anytime”)	-	-	-
4 “La Do Da”	3	3	100.00
5 “Patiently”	13	16	81.25
6 “Wheel in the Sky”	14	30	46.67
7 “Something to Hide”	8	8	100.00
8 “Winds of March”	20	21	95.24
9 “Can Do”	5	6	83.33
10 “Opened the Door”	14	14	100.00
GIMME BACK MY BULLETS Lynyrd Skynyrd (Ronnie Van Zant)	104	210	49.52
1 “Gimme Back My Bullets”	8	19	42.11
2 “Every Mother’s Son”	9	25	36.00
3 “Trust”	32	39	82.05
4 “(I Got The) Same Old Blues”	11	18	61.11
5 “Double Trouble”	11	15	73.33
6 “Roll Gypsy Roll”	5	8	62.50
7 “Searching”	4	35	11.43
8 “Cry For The Bad Man”	18	22	81.82
9 “All I Can Do Is Write About It”	6	29	20.69

The data collection process consisted of listening to the songs in question with the written lyrics, and annotating them for pronunciation of postvocalic [r] or lack thereof. Recordings were found on the streaming service Spotify. Taking relative frequencies across various classes of [r] then enables us to search for a variety of different patterns. We can use the total frequency of *r*-dropping as a coarse measure of difference between the two albums, but we also have the ability to examine for subtler correlations. For example, does one singer only drop *r*'s in certain phonetic environments, reflecting an incomplete adaptation to the dialect (rather as Trudgill's British singers were imperfectly capable of imitating American speech and frequently slipped out of the imitation)?

Data

Table 1 shows the general patterns of rhoticity for each song on the two albums. We can already observe some clear patterns from this data. Steve Perry, on *Infinity*, has a largely *r*-less dialect while singing, losing 81% of his [r] sounds. Four tracks out of nine are entirely *r*-less, and four others are nearly so. Most of the instances of pronounced [r] are in a single track, Track 6 "Wheel in the Sky," whose chorus is repeated five times and includes three [r]'s that are usually pronounced; if we were to remove it from consideration, the frequency of *r*-dropping would rise to 93%. (By way of explanation, Track 3 "Anytime" is not considered because most of its lyrics are sung by Journey's secondary lead singer, Gregg Rolie, and Steve Perry's lyrics contain no postvocalic [r]. Track 2 "Feeling That Way" is also split between them, and Gregg Rolie's verses are not counted, though, incidentally, he also has a high rate of *r*-dropping.)

The patterns for Ronnie Van Zant on *Gimme Back My Bullets* are far more complex. The raw frequency with which he vocalizes or otherwise does not pronounce [r] is almost exactly 50%, already a large difference from Steve Perry's singing. However, it is also not at all consistent across songs. On some songs, such as Track 3 "Trust" and Track 8 "Cry for the Bad Man," we see frequencies of *r*-dropping as high as Steve Perry's, but others like Track 7 "Searching" and Track 9 "All I Can Do Is Write About It" are strongly *r*-ful. The remainders span a wide range of frequencies in between.

TABLE 2. Frequency of r-dropping by phonological environment

Pause: [r] preceding a heavy pause or breath in the song; not always the end of a line. *Consonant:* [r] preceding a consonantal sound, either in the same word or the next. *Vowel:* [r] preceding a vocalic sound, always at the beginning of the next word.

Environment	Steve Perry			Ronnie Van Zant		
	Dropped [r]	Total [r]	% Dropped	Dropped [r]	Total [r]	% Dropped
Before pause	17	17	100.00	14	24	58.33
Before consonant	68	82	82.93	86	168	51.19
Before vowel	7	15	46.67	4	18	22.22
TOTAL	92	114	80.70	104	210	49.52

102

A few patterns beyond the overall frequencies are worth noting. In Table 2, I present frequencies of *r*-dropping by phonetic environment for each singer, aggregated across all of their songs, and categorized by what follows the [r] phone in question—a major pause or breath, a consonant, or a vowel in the following word (since, again, [r] preceding a vowel in the same word is consistently pronounced by both singers, and was not considered).³ Here, we see that the two artists have fairly similar trends: [r] is most likely to be dropped before a pause or breath, and least likely to be dropped before a vowel, the latter by a wide margin. Identifying this common pattern proves to be important primarily to keep it from confounding others that are not shared between the two artists.

It is also not the case that repeated lyrics are always pronounced the same way. For example, in *Infinity* Track 2 “Feeling That Way,” Steve Perry’s lyrics are the chorus, which contains three postvocalic [r] instances, repeated three times:

When the *summer’s* gone,
 She’ll be *there* standing by the light,
 What she’s been to, *where* she’s gone to,
 She should know wrong from right.

The latter two instances are pronounced with dropped [r] ([ðe:] ~ [ðeə], [we:] ~ [weə]) on all three repetitions. However, the first (“summer’s”) is pronounced with kept [r] (as [ˈsə.mərz]) the first time, and *dropped* [r] (as [ˈsə.məz]) the other two. Incidentally, the line is sung at a higher pitch and intensity on later occurrences as well, following a natural

pattern of the song's emotional force increasing over its length. We can see this pattern of changing rhoticity in several other repeated lines on both albums (from Journey, *wheel in the sky keeps on turnin'* in "Wheel in the Sky;" and from Lynyrd Skynyrd, *where it will end in* "Same Old Blues," and *Lord take me and mine before that comes* in "All I Can Do Is Write About It"). It could be taken as either musical or linguistic in nature: there is an argument to be made that it is easier to use an r-less pronunciation while singing at high pitch, but equally, it could be taken as the singer cleaving more tightly to the norms of his genre as he tries to project greater emotional intensity. Either way, it is again useful to separate this pattern of rhoticity from others with different causes.

There is also a particularly interesting instance of dropped [r] in *Infinity* Track 8 "Winds of March." This song is the source of most of the dropped sounds before vowels on *Infinity*, from five instances of the phrases *your eyes* and *your arms*. This in itself is unusual, as the prevailing tendency is otherwise for [r] to be pronounced in these positions. But it is also unusual in that, instead of being merely omitted or vocalized, as is more typical, it is replaced with a glottal stop: [jɔ ʔajz], [jɔ ʔa:mz]. We can explain this as a way of avoiding the hiatus that would arise from simply dropping the [r], but, again, the more common way of doing that elsewhere in the data is to just not drop intervocalic [r] to begin with, so this leaves some questions open.

Analysis & Results

I had predicted that a Southern rock singer like Van Zant would display a more consistent pattern of *r*-dropping than a more mainstream rock singer like Perry. This was in part based on an observation by Zwiers (2015) that this was certainly how Van Zant himself spoke in person: he emphasized his *r*-less accent as a way of displaying his pride in his connection to the South (p. 93). And it was also in part based on prior knowledge of some of Lynyrd Skynyrd's better-known songs; for example, in "Gimme Three Steps," from their first album (*Pronounced Leb-nerd Skin-nerd*), Van Zant's pronunciation is distinctly *r*-less.

The reality, however, turns out to be that the non-Southern singer in this case more consistently uses the *r*-less variant. With the exception of one song ("Wheel in the Sky"), Steve Perry almost always drops his non-prevocalic [r] and is about half-and-half on dropping it word-finally before a vowel. Ronnie van Zant, on the other hand, adopts a different pattern in nearly every song, from a distinctly and exaggeratedly *r*-less dialect in "Trust," where *guitar picker* becomes [ˈgi.ta ˈpi.ka]

(with the tense low vowel in “f^ather” replacing the [r] phoneme, rather than the usual schwa), to almost-entirely *r*-ful speech in “All I Can Do Is Write About It.” (This does explain how it could be possible to make an incorrect generalization from limited knowledge of their discography.)

My proposed explanation for this peculiar pattern of usage is similar to that which motivated the original hypothesis. Following Trudgill (1984) and Simpson (1999), a difference in pronunciation patterns in song reflects a difference in the identities the singers are trying to project. Steve Perry’s use of non-rhotic speech, together with other variables (monophthongizing [aj] to [a:], for example), is in keeping with an established sense of what an American rock singer is “supposed” to sound like, and by following it, he marks himself as belonging to the genre. Crucially, however, while this pattern has its origins in Black and Southern dialects, as rock music itself does, bands like Journey are no longer in direct contact with those roots—Journey was formed and based in San Francisco. Under Simpson’s framework, we might say that Journey rather aspires to a *model* of what a commercially successful rock singer sounds like and caters to an *audience* of general American listeners that expects that well-established pattern more than anything specifically Southern (p. 364).

104

But the pressures on Lynyrd Skynyrd are different, and in conflict. They are a Southern band, still very conscious of and attached to their region of origin, and additionally reaching out to an audience from that region. We established while reviewing the literature that there are now *two* very different models of Southern speech active in America. One, the older of the two, is non-rhotic; this is the language of the old, the elites, and the plantation owners, as well as that which gave rise to African-American English. The other, which is rhotic, is the language of the lower classes, associated separately with both the rural regions and the cities. The former is the old prestige dialect, and the latter is the new prestige dialect, but neither is out of use. Zwiers (2015) showed that Van Zant in his spoken dialect clung to the former (p. 93). But in his singing, he seems to hesitate between the two, sometimes preferring to follow the older, non-rhotic pattern, and sometimes preferring the newer, rhotic pattern: vacillating, I suggest, between which model of “Southern-ness” is best for each song. This idea of singers responding to conflicting motivations is well-established; it’s in the very title of Trudgill’s seminal study, and Simpson (1999) elaborates on it, showing that it’s crucial to identify the various pressures on a singer and attempt to see how they add together to produce the observed patterns in his or her speech (p. 357).

This of course raises the question of how he goes about navigating between these “conflicting identities.” Are there commonalities among the most *r*-less songs on *Gimme Back My Bullets*, or the most *r*-ful?

TABLE 3. *Gimme Back My Bullets* ordered by *r*-lessness.

Title	% dropped [r]
3 “Trust”	82.05
8 “Cry For The Bad Man”	81.82
5 “Double Trouble”	73.33
6 “Roll Gypsy Roll”	62.50
4 “(I Got The) Same Old Blues”	61.11
1 “Gimme Back My Bullets”	42.11
2 “Every Mother’s Son”	36.00
9 “All I Can Do Is Write About It”	20.69
7 “Searching”	11.43

There is a little promise in trying to identify musical and thematic patterns. Among the most *r*-ful songs on the album (see table 3 for the ordered list) are “Every Mother’s Son” and “All I Can Do Is Write About It,” which have a great deal in common. Both use instrumentation more reminiscent of country music than blues or rock—twanging, sliding guitars with little distortion, and use of acoustic instruments (banjo, violin, piano, acoustic guitar). So it is tempting to identify Van Zant’s adoption of the *r*-ful dialect in these songs as part of a larger pattern of emulating a lower-class rural identity, something that the themes of the songs (respectively, the ephemerality of wealth and status, and the disappearance of the wild Southern environment in the face of urbanization) might seem to back up. There is precedent for this sort of acting out a persona, as well. Simpson (1999) offers the example of Dire Straits’ “Money for Nothing,” in which Mark Knopfler explicitly adopts the New York dialect of a man he overheard commenting on an MTV showing in a bar, as a way of better presenting the subject material of his song (p. 352). So it is reasonable to make a similar connection for these two songs.

But this simple explanation fails to account for the full range of dialectical variation on the album. The most *r*-ful song on the album is in fact “Searching,” which is a conventional blues-rock track with

little of the mournful tone that characterizes the previously mentioned two songs; and next after those three is the title track, “Gimme Back My Bullets,” which is built on a grinding, distorted rock guitar riff and a heavy rhythm section. There is little thematic or musical unity among these four, so at the very least the pressures that have Van Zant singing all four in a relatively *r*-ful dialect are more varied than “he’s evoking a rural persona.”

Similar explanations have a little more success on the other end of the spectrum. There are noticeable commonalities among “Cry for the Bad Man,” “Double Trouble,” and “Trust,” all of which are strongly *r*-less and express similar negative sentiments toward the wealthy, the powerful, or the forces of the law. This would line up with Zwiers’ (2015) interpretation of Van Zant’s speech and persona as proud, rough-around-the-edges, aggressive “rebel rock”, which he does explicitly connect to *r*-less Old Southern speech (pp. 86–87).

We can thus tentatively connect some of the variation in Lynyrd Skynyrd’s pronunciations to their attempts to act out different aspects of “being Southern” in their music. In contrast, we see a relative unity of pronunciation among Steve Perry’s nine tracks on *Infinity*, and, correspondingly, more nebulous lyrics that are less directly connected to any specific local reality or any discernable persona beyond “rock singer.” One is projecting a variety of very particular identities in each song; the other, a more generalized single identity.

Conclusion

This is, of course, a study of two albums. Rock music is far larger than that, and we can only make so many guesses about what these two albums might mean in a larger context without gathering more data. It would be worth considering more of these two artists’ output to see if the same patterns hold more generally; Simpson (1999) does observe that single singers do not always maintain the same pronunciations (and thus the same desired identification) over time, offering the example of Van Morrison’s shift from an American-influenced model to something closer to his own Irish dialect from the 70’s to the 80’s (pp. 357–9). It would also be informative to examine the pronunciations of other artists from the same period—on one hand, Northern artists like Styx, Fleetwood Mac, and Boston; on the other, Southern-influenced artists like the Allman Brothers or the Eagles (the last of which could be a particularly fascinating case, being a country-influenced band based out of California with one singer from Texas and one from Michigan).

Equally, one variable does not a dialect make. It would be informative to examine other variables than rhoticity, such as the pronunciation of various vowels, to see if there really is a broader divide in dialect between different rock genres—or among different songs by the same artist, as we saw for Lynyrd Skynyrd in the present project. A particularly interesting one might be the vowels affected by the Southern shift. Monophthongizing [aj] to [a] is common in American rock music (Simpson 1999, p. 347) (though, as always, there are exceptions—Billy Joel comes to mind), but the other parts of the shift are a potentially fruitful place to search for differences between or within genres, based on informal observations during the course of the present project.

Despite these limitations, though, we've seen a successful application of Trudgill's framework for pop-music pronunciation in this project. We are able to make some connections between two artists' patterns of pronunciation and the identities they are seeking to project by adopting those pronunciations, and to see how the continued connection of the Southern rock subgenre to the South might be continuing to influence their singing apart from the rest of American music—and all of this despite a near reversal of the expected patterns.

Notes

1. The literature also notes other variables characteristic of Southern English that have found their way into the speech of rock singers, notably the "Confederate vowel": [aj] being realized as [a] (Simpson 1999, 347). This study limits itself to rhoticism, but examining such other variables might strengthen its results. See also the Conclusion.
2. This insight about the social meaning of variation has been developed extensively since Trudgill published his article. Notable refinements include the concepts of speaker design approaches to style (see, for example, Schilling-Estes 2002), and, more recently, indexical fields of meaning (Eckert 2002). We will not need to draw on this more advanced architecture in the present study, but it is of theoretical importance and does not bear omitting.
3. There is a singular exception to this pattern, in Lynyrd Skynyrd's last track, "All I Can Do Is Write About It" (curiously enough, the most *r*-ful song in the sample set): "Carolina" is pronounced as [kə.o.'laj.nə], with the [r] either entirely absent or significantly weakened. On finding this I did a cursory survey of other intervocalic [r] in the sample and found no other such instances, and opted not to consider it further—I have little basis to draw any conclusions from it.

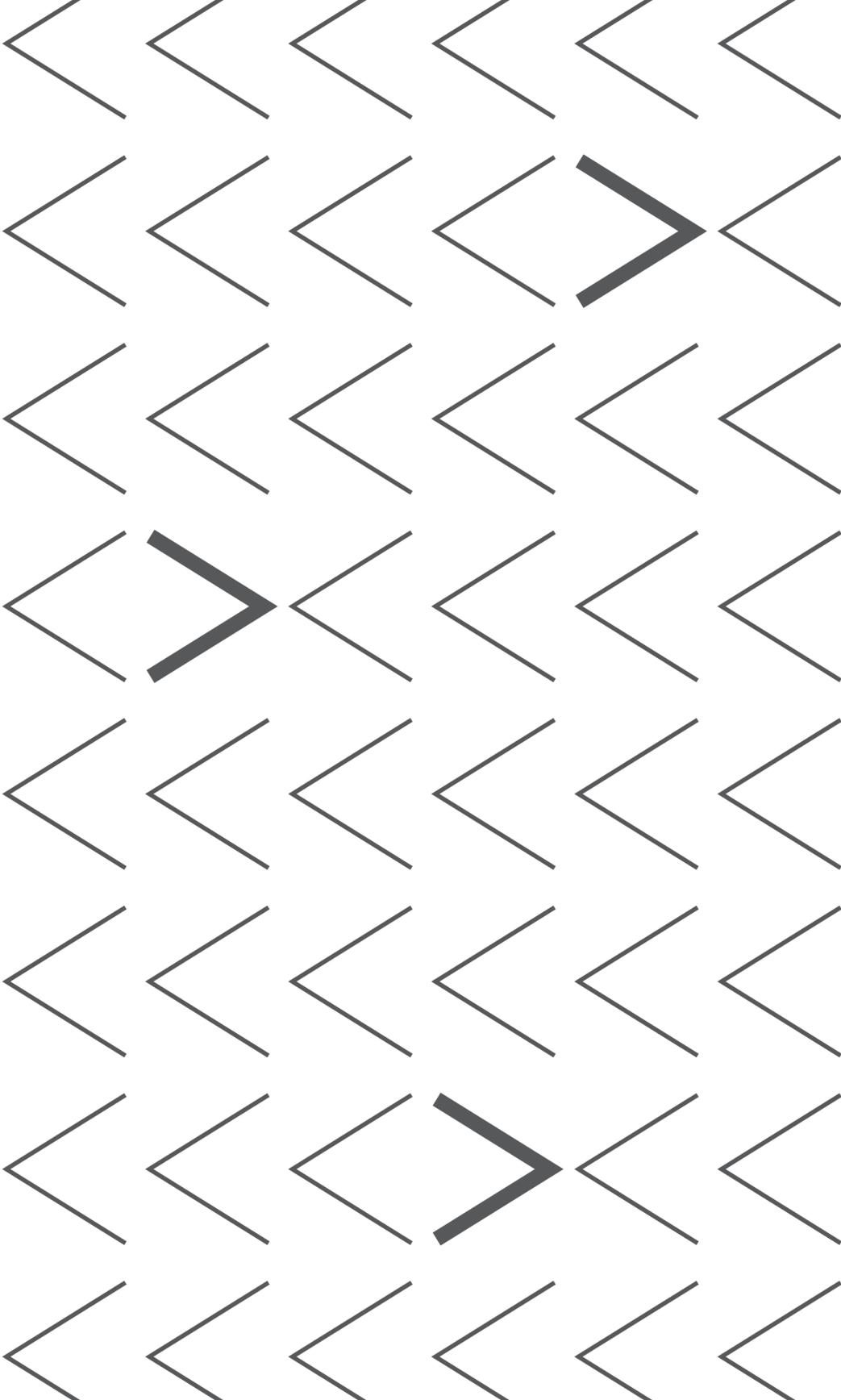
APPENDIX A: The Preliminary Search

The following is a non-exhaustive list of songs that I listened to in the early stages of this project while formulating a research question. Many do not fit the parameters I used to constrain the sample set chosen for the project (such as time period, genre, gender, and region of origin); they were examined to give a general survey of the range of variation in rock and roll pronunciation. They are also not the only songs I surveyed, as I drew on a broad knowledge of rock and roll to formulate this project, but they are the ones I quoted in drafts of the proposals and final paper.

"Gimme Three Steps"	Lynyrd Skynyrd (Ronnie Van Zant)	1973	Florida
"Desperado"	Eagles (Don Henley)	1973	Texas
"Dream On"	Aerosmith (Steven Tyler)	1973	New York
"You're No Good"	Linda Ronstadt	1975	Arizona
"Hotel California"	Eagles (Don Henley)	1976	Texas
"More Than A Feeling"	Boston (Brad Delp)	1976	Massachusetts
"Carry On Wayward Son"	Kansas (Steve Walsh)	1976	Georgia
"Don't Stop"	Fleetwood Mac (Lindsey Buckingham, Christine McVie)	1977	California
"Heartache Tonight"	Eagles (Glenn Frey)	1979	Michigan
"Burnin' For You"	Blue Oyster Cult (Donald Roeser)	1981	New York
"This Must Be The Place"	Talking Heads (David Byrne)	1983	Scotland, Ontario, Maryland
"God Gave Rock And Roll To You"	Petra (Greg X. Volz)	1984	Illinois
"We Didn't Start The Fire"	Billy Joel	1989	New York
"December"	Collective Soul (Ed Roland)	1995	Georgia

Bibliography

- Coupland, N. (2011). Voice, Place and Genre in Popular Song Performance. *Journal Of Sociolinguistics*, 15(5), 573-602. doi:10.1111/j.1467-9841.2011.00514.x.
- Eckert, Penelope (2008) Variation and the indexical field. *Journal of Sociolinguistics* 12(4), 453–476. doi:10.1111/j.1467-9841.2008.00374.x.
- Kretzschmar, J. A. (2008). Language in the Deep South: Southern Accents Past and Present. *Southern Quarterly*, 45(2), 9-27.
- Schilling-Estes, N. (2004). Investigating Stylistic Variation. In J. Chambers, P. Trudgill, N. Schilling-Estes (Eds.), *The Handbook of Language Variation and Change* (pp. 375-401). Malden, MA: Blackwell.
- Simpson, P. (1999). Language, Culture and Identity: With (Another) Look at Accents in Pop and Rock Singing. *Multilingua: Journal of Cross-Cultural And Interlanguage Communication*, 18(4), 343-367. doi:10.1515/mult.1999.18.4.343.
- Thomas, E. R. (2004). Rural white Southern accents. In Schneider, E. W., & Kortmann, B. (Eds.), *A handbook of varieties of English: a multimedia reference tool* (Vol. 1, pp. 300-324). New York: Mouton de Gruyter.
- Trudgill, P. (1984). Acts of conflicting identity: The sociolinguistics of British pop-song pronunciation. In P. Trudgill (Ed.), *On Dialect: Social and Geographical Perspectives* (pp. 141-160). Oxford: Basil Blackwell.
- Zwiers, M. (2015). Rebel Rock: Lynyrd Skynyrd, Normaal, and regional identity. *Southern Cultures*, 21(3), pp. 85-102.



**Latin American
Immigrant Health
in the Baltimore Area:**
Provider Perspectives
of Alternative Remedies

Nimasha Fernando

Author Bio and Research Journey

Nimasha Fernando graduated from UMBC in 2017 with dual degrees in Interdisciplinary Studies (INDS): Intercultural Health and in Biology and earned an Anthropology minor. She is currently working towards a Masters of Public Health with a Global Health concentration at the University of Maryland, School of Medicine on her path to becoming a physician helping to create culturally appropriate health programs in limited-resources areas.

Her idea for this research began with the design of her INDS degree in Intercultural Health. From volunteering at the Esperanza Center, taking Medical Anthropology, researching how a plant compound could be applied for pharmaceutical purposes one summer, and studying abroad as a Gilman Scholar in Peru, she learned more about the use of natural and alternative remedies and community health beliefs. Through the INDS program, Nimasha established an ongoing research collaboration with Dr. Wendy Camelo Castillo and Dr. Dr. Eberechukwu Onukwugha at the University of Maryland, Baltimore School of Pharmacy, whose research also involved Latin American immigrants as part of a “Transitions of Care” project.

Nimasha would like to thank Dr. Bambi Chapin for her tremendous support, Dr. Wendy Camelo Castillo and Dr. Eberechukwu Onukwugha for introducing her to the transitions of care topic, and Dr. Fizza Gulamali-Majid for her wisdom throughout the research experience. She is sincerely grateful to Ms. Jill Wrigley and the INDS program for facilitating the Capstone experience. She also thanks the Undergraduate Research Award for funding the work. Finally, Nimasha extends sincere gratitude to the generous research participants who allowed her to share their voices and to the countless other individuals who influenced the research.

Abstract

Immigrant groups in the U.S. have been found to use complementary or alternative medicine (CAM), but little is known about biomedical health care providers' perspectives on alternative remedy use and whether providers' perspectives affect patient care. This research aimed to investigate health care provider perspectives on alternative remedy use within the Latin American immigrant community in the Baltimore area. The author conducted semi-structured audio-recorded interviews with five providers regarding their experiences working with immigrants during the transition from hospital-to-home care for chronic disease treatment. Using an anthropological approach to transcription, analysis revealed that embedded in the ways providers discussed their experiences with alternative remedies were clues to their perspectives on the patient population's use of alternative remedies. Furthermore, these perspectives have implications for doctor-patient communication and health care delivery. Systematic coding demonstrated that providers expect patients to follow certain "Health Rules" that are drawn from the American biomedical system. Providers see immigrant patients' alternative remedy use as breaking those "Health Rules," since alternative remedies are viewed as originating from the patient's home culture not the American medical system, and patients cannot combine behaviors or beliefs from both sides. This understanding of culture as mutually exclusive may lead providers to suggest that patients must choose between their cultural beliefs and compliance with the American medical system, possibly inhibiting communications with patients who wish to express beliefs or undertake practices from outside the American medical model. If providers adopted a broader understanding of culture, they might be able to deliver more culturally appropriate integrative care and improve their interactions with diverse patients.

Introduction

The Latin American immigrant population in the U.S. and Baltimore has been growing in recent years. An immigrant's experience of adaptation and acculturation can be complicated by a chronic health condition necessitating long-term care. For immigrants who must enter the hospital, culturally appropriate care may not be easily available or accessible. As a result, immigrants who enter the hospital are more likely than the general population to be readmitted, meaning they return to the hospital two or more times for the same condition. Hospital readmission is one factor contributing to increased wait times in hospitals, strain on medical resources, and increased health care and insurances costs. Understanding the causes of these readmissions is vital for improving the efficiency of the health care system. By better understanding the challenges patients face after leaving the hospital and the types of care they receive, the health care system can better address the needs of patients after discharge and work to reduce hospital readmission rates.

When patients leave the hospital and attempt to continue their care at home, they experience what is known as the "transition in care period." During this window of time, immigrants may utilize alternative remedies or methods not prescribed or overseen by a medical physician to manage their health or well-being.

In order to explore this topic, five health care providers in the Baltimore area were interviewed regarding the use of alternative remedies within the Latin American immigrant population, focusing on the period of time when patients are transitioning from hospital-to-home care for chronic disease treatment. As I will describe, the analysis of these interviews revealed clues to how healthcare practitioners perceive the patient populations; these clues are embedded in the ways providers talk about their experiences with alternative remedies. Ultimately, providers seem to conceptualize the alternative remedies that patients may use as incompatible with their own treatment recommendations, a view that has implications for communication and care of the patients.

Background

In order to provide necessary background for this project, I will begin by defining key terms used throughout the discussion:

Provider: An individual who assists Latin American immigrants during their experience with the U.S. health care system. The provider may be a formal employee of the U.S. health care system or an individual not formally affiliated with the system who still assists patients with health matters.

Provider perspectives encompass what providers think about the patients they serve. Previous research has shown that providers' perspectives or attitudes affect their interactions with patients. Weerasinghe and Mitchell (2007) concluded that immigrant women's disagreements with their health care providers stemmed from their different cultural views of health that often conflicted with the biomedical perspective. Other sources recognize that providers are responsible for integrating both biomedical understandings of health and an individual's understanding of their own well-being, a complex bridging of realms that manifests in the art of medicine (Kirsch, 1984). Further research on integrative and holistic care, including alternative remedy use, promises to contribute knowledge to the limited information on how providers' perspectives affect their communication and care of patients.

Alternative Remedies: Any strategy or method not overseen by a biomedical health care provider that is used for the purposes of promoting health or well-being. Examples include herbal remedies such as teas, plant extracts or juices not used for cooking or flavoring purposes, or medications not prescribed by a trained biomedical provider.

Within the broader medical field, there is increasing interest in the prevalence of Complementary and Alternative Medicine (CAM) and the potential for integration with biomedical methods. Forms of alternative remedies have been suggested to be potential elements of sustainable self-care (Mills, 2011). Thus alternative remedies could be beneficial for patients in need of long-term care such as those with chronic conditions. Although alternative remedy use is critiqued for promoting only placebo effects, research suggests that these effects could still have positive implications for overall patient care (Kirsch, 2008).

Latin American Immigrant Population: Individuals who migrated to the U.S. any time in the past from Mexico, Central America, or South America.

With the increasing population of Latin American immigrants in the U.S., more research is focusing on the health disparities this population may face and the array of factors that may affect this population's

risk for suboptimal health outcomes or disproportionate rates of illness (Derose, Escarce, & Lurie, 2007). For example, research investigating the Latino Health Paradox explores why Latino immigrants may have longer life-expectancies in the U.S. compared to their native-born counterparts, although Latino immigrants are expected to face additional challenges and health barriers because of their immigrant experience (Galvez, 2011p. 2–3).

While there are increasing efforts to address immigrant health disparities, further research is still needed to inform strategies for specific locations. Baltimore is notable among other cities because of its classification as a Sanctuary City aiming to welcome immigrants despite a dynamic political climate with heightened focus on immigration policy. Other research has shown that in the face of anti-immigration policy, immigrants perceived they were receiving hostile treatment when trying to obtain help (Cleaveland & Ihara, 2012). This suggests that changing political policies could influence immigrants' perceived access to health resources. As the Baltimore area's demographics and policies evolve, options for accessible health resources may also fluctuate, necessitating further community-based research within this specific location and the local immigrant population.

Additionally, research has found that Latin American populations within the U.S. are using alternative health remedies (Gardiner et al., 2013; Howell et al., 2006; Kochhar et al., 2010). Some researchers argue that these practices may promote non-compliance or non-adherence to U.S. health culture's dominant biomedical methods (Timmermans & Freidin, 2005). Other studies touch on providers' perspectives of alternative remedies. Findings of this limited research reveals that Latin American patients may not communicate all of their herbal remedies to providers, leading to the conclusion that providers should proactively ask patients about use of herbal remedies to offer counsel until further studies determine the safety or efficacy of such remedies (Kochhar et al., 2010).

Transitions in Care: A patient's experience of transitioning to care at home following a hospitalization.

This time period is especially critical for patients with a chronic disease because they will require continual care at home to live with their long-term illness and may face additional barriers. Hospital readmission refers to when a patient who was hospitalized and then discharged later returns to the hospital because they fell ill again. Readmission rates could be a measure of the quality of patient care, but they are also a costly factor influencing the broader medical system (Peterson et al., 2012; Phillips et al., 2004).

Research Process

This research aimed to gather provider perspectives by using a qualitative approach including semi-structured interviews and thematic analysis. The Institutional Review Board (IRB) of the University of Maryland, Baltimore County approved the independent Capstone Research portion of the work, and the IRB of the University of Maryland, Baltimore (UMB) approved the larger UMB School of Pharmacy Department of Pharmaceutical Health Services Research “Transitions of Care” (TOC) project into which my research was incorporated. Interview guides were developed as a collaboration between myself and the UMB research team in order to investigate my aims regarding alternative remedy use, within the context of the broader health care experiences of Latin American immigrants during transitions of care which the UMB team sought to investigate.

Participant Recruitment

In order to recruit participants, the UMB research team established a collaboration with a local health system to contact providers and request their participation. We contacted local health agencies and community organizations to find individuals knowledgeable about Latin American health in the Baltimore area with experience assisting immigrants after a stay in the hospital. Five participants were recruited as a convenience sample. A representative sample was not necessary for this project as we aimed to collect a variety of perspectives regarding Latin American immigrant health to be used for pilot research that would inform later, more focused investigations.

Participant Profile

Eligibility criteria for provider participants included: having experience assisting adult immigrants after their hospitalization due to a chronic condition; experience working with the Latin American community in the Baltimore area; and availability for an approximately one hour long interview in English or Spanish. All participants also had to be 18 years of age or older and give informed consent to participate before having their interviews audio recorded for research purposes. Exclusion criteria included providers or community members with experiences not specific to working with immigrants with chronic conditions; experience not specific to assisting patients after hospitalization; or lack of experience with the Latin American immigrant population in the Baltimore area. Three of the participants held degrees in the health professions, one worked in the health care setting but did not have

a clinical degree, and one had no formal medical training or employment. Providers' roles included medical interpreters, physicians, nurses, and community advocates.

Interview Procedures

The aim of the interviews was to gather information about the provider's perspectives of alternative remedy use within the Latin American immigrant population, but also to inquire about their experiences working with immigrant populations and their perceptions of health barriers within the community. To achieve these aims, semi-structured interviews were conducted based on an interview guide consisting of open-ended questions. We chose these open-ended questions to promote a conversational format allowing participants to explore topics of interest to them and of relevance to the research. Broad questions requesting participants to provide lengthier responses or explanations were included earlier in the interview allowing researchers to gain context that would allow them to focus latter portions of the conversation. Brief hypothetical scenarios were also introduced to encourage participants to focus on the researchers' specific interests in the transition of care experience or to expand a participant's discussion. For example, the researchers posed hypothetical situations where funding would not be a barrier to ideal intervention measures the participant was asked to describe. Some participants demonstrated a more creative and engaged response style, guiding the interviewers through their own thought processes, while others offered more direct answers to questions requiring more probing to collect additional details and context.

Before starting the formal research interviews, the study's purpose was explained and participants were asked to read the UMBC IRB consent form, ask any questions about participation to researchers who would answer all questions, and sign the form if they consented. Participants were specifically asked if researchers could audio-record the interviews before we began recording. Paper surveys were also administered to four of the five participants, either before or after the interview, to collect additional demographic information. Interviews were conducted in English or Spanish based on the participant's preference: four interviews were conducted in English and 1 was conducted in Spanish.

Analysis

My preliminary analysis was largely influenced by the Five Lenses strategy for qualitative research based on Coralie McCormack's (2000) publication "From Interview Transcript to Interpretive Story:

Part 2 – Developing an Interpretive Story.” The Five Lenses approach involves reviewing interview transcript data as one would read an interpretive story, with specific focus on the narratives, language, context, and comments that arose during the interview and alternative stories not discussed (McCormack, 2000). By utilizing this approach, an investigator can understand the multiple voices embedded within the data in context without fractioning the narratives, and also consider the alternative voices not represented by the interviewees’ perspectives (McCormack, 2000).

After preliminarily reviewing the interview transcripts, I began to identify the chunks of text that pertained specifically to alternative remedies. I highlighted these chunks within the full interview transcript to leave them in context for a more accurate interpretation of the participant’s voice, as recommended for ethnographic interviewing (Pelto, 2013). I then began to identify themes of interest that arose from the sections focusing specifically on provider perspectives on alternative remedies. These themes included family, food/nutrition, herbs, instructions, time, descriptions of patients, and decisions about care.

Through analysis of these themes, I came to see clues about providers’ perceptions of the patient population that were embedded in the ways that providers discussed their experiences with alternative remedies. In order to draw out these perceptions, I generated codes to categorize them such as Health Rules, Inclusive vs. Exclusive, Culture, and Acculturation, which I used to systematically tag segments of interview transcription. Throughout this process, I was continually developing my analysis through conversations with mentors, information from literature, and preliminary presentations of the research. By analyzing the clues embedded in the ways providers talk about their experiences with alternative remedies providers’ perspectives of the patient population were revealed; I was able to suggest possible implications these views could have for communication and care of the patients.

Findings: Clues to Providers' Perspectives on Latin American Immigrant Patients and Alternative Remedy Use

Health Rules

Through their use of specific words, providers communicate that patients should follow a set of instructions the providers share with them. I refer to these sets of instructions and guidelines as “Health Rules.”

Interview data illustrates how providers communicated these Health Rules to patients as information being taught, instructions or directions to follow, or information to be understood. For example, one provider said, “So you try to teach them what the right thing is to do.” Another said that providers “teach the patient” and for example “tell them” about diabetes. Providers communicate Health Rules as information that is being taught to patients so that patients can apply the information in their own lives. Providers state that they are trying to “teach” or educate the patient about their condition, such as diabetes, and the “right thing” to do when a person has this ailment.

Providers also state that they are trying to communicate the “importance” or gravity of the patient’s condition in order to persuade them about “taking care” of a health issue or to take action regarding their condition. Consider for example one provider’s statement: “But again it’s educating people to the importance—the importance not only of taking care of that particular health issue but following the directions correctly to take care of that health issue.” Teaching a patient about “importance” is an additional step in conveying the “directions” a patient must follow to be healthy, such as directions for taking medications.

Overall, providers suggested that they were communicating “everything” patients needed to know, or all of the Health Rules, in order for patients to manage their health condition. As one interviewee said simply, “We teach them everything.” In these statements, we see that these rules are taught by providers to patients as important items to execute for their health although they may not be explicitly communicated as rules.

Instructions or Directions to Follow

The second way providers communicate Health Rules is as more specific instructions or directions for a patient to follow. Providers talked about making sure that patients were “following the instructions.”

While describing what was important for patients, one provider said, “So going to the doctor and taking the medicine and making sure you follow the directions, you know making sure you don’t take it too often or don’t forget to take it, but this is very important that you follow these instructions.” Another participant commented that “following the medication regimen” was of utmost importance, adding “I think that is a huge thing of what I see that makes people go back to the emergency room a lot. If the medication fixes, you know, what they initially went in for.” Providers explained that patients are expected to abide by the information they are given, an expectation often communicated as “following the instructions” or “directions.” These rules again may not be explicitly communicated as rules, but as a set of behaviors a patient is expected to “follow” such as the “medication regimen.”

Again providers state that they are trying to persuade patients to follow these rules by communicating the importance of following the instructions they are given. One provider emphasized “how important it is to follow-up with the medication with the care.” Another provider reported “I think if it’s explained to them that they really need to do this um for their wellbeing” that they would follow the instructions. Here we see the Health Rules communicated as something very “important” to do, or something “they [the patient] really need to do,” demonstrating that the rules are not always communicated as explicit instructions or directions.

Ultimately, however, providers saw that it was up to patients to decide to follow their instructions or not. Participants commented that they expect patients to act on the information the providers “give them,” such as a phone number the provider gives upon discharge with the expectation that the patient will call to seek follow-up care. In one instance, a provider also commented that these rules were part of the “long term care” a patient was expected to “adhere to” and continue, suggesting that providers expected Health Rules to be followed for an extended period of time. In another comment, the participant further stated that the Health Rules were being communicated as “suggestions” that the patient was still expected to be “amenable to” and follow. She remembered one of her past clients, recalling that “He was very amenable to suggestions and following because he had a family so he was determined.” The term “suggestion” in particular connotes that the participant can decide to accept or refuse the information given, although the provider actually wanted the patient to be “amenable” to the information and follow the information they were communicating as instructions or rules.

In the above examples, it is apparent that providers communicate their Health Rules as instructions, directions, or even suggestions that a patient is expected to follow for their own health purposes.

Understanding

The third way that providers communicate their Health Rules is as information the patient needs to understand. Participants' statements communicated that they want patients to understand the information or Health Rules that are being delivered to them. Providers stated that patients need to "understand" the expectations the health care professionals were communicating, such as when to follow-up with a provider after an operation. When asked about patients greatest barriers to health after hospitalization, the participant responded, "Understanding, I think, what is the follow-up care—what are the expectations. Pretty much across the board, people say when someone is discharged from the hospital go see your primary care within five to seven weeks depending on what it is." He continued his explanation saying, "Or if you had a procedure done, an operation or something, you need to follow-up with whoever did the surgery within however many days are expected. That's understanding that piece."

122

Other interviewees also talked about the importance of understanding. One participant explained that patients must understand how to use any medical devices or equipment provided, for example a person requiring insulin injections must "understand how to use a needle or not." Another participant declared that one could take all of the barriers to care immigrants encounter and "lump them into social pieces—social or the ability for them to understand—did they receive instructions that are in their language. Does it help? And even then if they received it in their language are they literate enough to read it?" A third participant attempted to quantify the percent of the immigrant population that would understand their health needs and care, estimating only "fifteen, eighteen percent...can understand what their care options are," further explaining that this "small segment" of the population were the ones who "would get it."

Providers saw significant problems when patients lacked understanding. Without understanding, patients would not take action on the information they received, such as making dietary changes in response to receiving nutrition information. When discussing challenges associated with making dietary changes, a provider reported "that was the kind of thing that I am convinced many of them [immigrant patients] do not understand" despite the providers multiple attempts to inform

the patients about diet changes. Providers suggested that if a patient did not understand their health or an aspect of their treatment, they would take no action or be non-compliant.

In some cases, providers believed that patients did understand, but still did not follow the instructions. One provider described patients in this category as those who "know what they are supposed to do but they just don't." He went on more expansively, explaining his strategies to try to help patients understand the severity of their condition or risk behaviors:

They don't care, it hasn't hit them. They haven't had the complications of diabetes. Their smoking hasn't precipitated to COPD so bad that they have to carry oxygen. I would scare them. We had stop smoking classes as well—not well attended. But they would continue to smoke and to drink in spite of knowing what they shouldn't do. And then there are those that either were too inebriated or the education that they have is so limited that they didn't understand nor did they do anything about it.

Overall, providers recognized that Health Rules needed to be understood by patients, but there was recognition that not all patients understood the Health Rules, sometimes because they picked the option providers perceived as wrong or appeared to not abide by the Health Rules given.

The above evidence demonstrates that providers are communicating Health Rules as information that is taught, instructions or directions to follow, and information to be understood. Analysis of the clues embedded within these data lead us to uncover the first element of Health Rules that providers communicate: Health Rules can be followed or broken. By communicating that Health Rules include information that a patient is taught, a patient can also voluntarily or involuntarily fail to accurately internalize the information being shared. If a patient is taught and internalizes the Health Rules, they can follow the rules, but if a patient does not accurately learn the information they may also break the rules. Additionally, by communicating that Health Rules are instructions or directions that can be followed, providers also imply that patients can break the rules if they do not adhere to the care regimen or accept the providers' suggestions. Lastly, providers recognized that patients must understand the Health Rules they are given; if they do not understand, they will not apply the information to their lives in the way providers expect and thereby will also be breaking the Health Rules.

In this analysis, it is clear that clues about how Health Rules are communicated are embedded in providers' statements. These clues demonstrate that medical information is taught, instructions or directions are meant to be followed, and information is provided to help patients' understand. These clues reflect providers' view that Health Rules can be followed or broken.

To Take/*Tomar* or To Eat/*Comer*

In addition to communicating specific rules, providers' word choice when describing the medicines they prescribe versus alternative remedies reflects further features about their beliefs regarding the Health Rules patients are expected to follow. Providers' patterns of using the phrasing "to take" and "to eat," or in Spanish "tomar" and "comer" respectively, reflects their Health Rules or beliefs that certain types of consumed substances are intended to have direct and recognizable effects on a person's health, while others substances are not expected to cause such effects. Discussions of alternative remedies use these same patterns of phrasing and reveal providers expected efficacy of the consumed substance.

Interview data demonstrates that providers refer to alternative remedies as substances that are "taken," just as providers say that prescribed medications are "taken" and not "eaten." The word to take ("tomar") is used to describe the action of ingesting medicines as well as herbal remedies. For example, providers use the phrasing "taking medicine" or to "take pills" or the Spanish phrase "tomen los medicamentos." They use the same verb, to take ("tomar"), to discuss the alternative remedies including "herbal or non-prescription medications they [the patients] are taking" or natural infusions being used such as to "take clove with cinnamon" ("tome clavo de olor con canela").

The action of "taking" a prescribed medication is associated with an expected effect, such as if the patient takes his medications the effects will be things the "medication is supposed to do." A provider interviewed worked to explain this effect of medications to her clients reporting that "I won't say it's easy but perhaps it is okay to talk about this is what this medication is, this is how often you need to take it, and this is what this medication is supposed to do." One provider also acknowledged the potential for medications to cause "adverse effects," describing that the effects of taking a substance were not always positive. On the contrary, a provider noted how the beneficial effects of medication adherence ended when the patient became non-compliant with the regimen. While telling a narrative about one patient with mental illness, she stated "And the medicine was crucial. If he didn't take it he would

backslide and end up in his—one of his schizophrenic episodes.” The connection between to take (“tomar”) and an effect demonstrates that providers believe to take a substance is to expect an effect.

On the other hand, providers used the verb to eat (“comer”) when referring to foods consumed. With foods that are eaten, as opposed to medications or remedies that one takes, providers do not expect a direct effect other than an observable dietary change. For example, providers use to eat (“comer”) to describe patients’ diets: “Today they are going to eat broccoli and tomorrow they will eat lettuce, the following day a mix of lettuces with radishes, the next day probably they are going to eat another type of leaves” (“Van a comer brócoli y mañana comerán lechugas, pasado mañana mezclaran sus lechugas con rabanitos, al otro día probablemente vayan a comer otro tipo de hojas.”). Providers’ use of the verb to eat (“comer”), indicates that they do not expect these dietary changes to have any short-term direct effect on a patient’s day to day health. The provider further contrasts the patient’s diet in the hospital when they are given “salad every day” (“ensalada todos los días”), to their diet when they return home and “do not eat salad every day, they eat rice or pasta” (“no comen ensalada cada día, comen arroz o pasta”). This provider highlights the difference in diet between the home and hospital but does not mention any expected effects of the different foods consumed. Another provider states “I would try my best to tell people about the change in diet because there’s a high starch ah diet in in many of the diets that we [Hispanics] love to eat. Arroz con pollo—...—it’s just rice filled with a lot of good juice, and a lot of other things.” His statement again emphasizes the change in diet and less healthful aspects of common high starch foods, but he reports no expected effect of consuming the less healthful foods he described. This distinction between “taking” something to have an effect and “eating” food without a specific health effect is further demonstrated in another provider’s statement that a patient both needed to watch what he “ate” and be “taking his medicine.” The participant distinguished between the food that was eaten and the medicine that was taken: “He did not have an obesity problem, so that was good to begin with. . . And then watching what he ate and taking his medicine regularly.”

Using the wording to take (“tomar”) with alternative remedies suggests that providers assume these remedies should cause an effect just as medications that are also taken cause direct effects on the patient’s body. Providers describe medications, herbal remedies, and non-prescription medications as things that were being taken. For example, one provider describes the process of obtaining the “medications [that] have been

reconciled to what they [the patients] were taking before they came in” and clarifies his definition of medications stating that “under medications I’m going to include any herbal or non-prescription medications that they were taking.” Providers state their expectations of both medications and alternative remedies that are taken within the same breath, such as a provider who describes that when a patient enters a physician’s office they are asked “what are your prescribed medications that you are taking, what are the herbal medications that you are taking, whether it’s tea, whether it’s lemon juice.” Again to take (“tomar”) is used to describe both medications and alternative remedies consumed. Another participant also applied the verb to take (“tomar”) in both the situation of taking Metformin medication (“tomando metaformina”) and taking the alternative remedy of cloves with cinnamon (“tome clavo de olor con canela”). The provider completed her statement by including the patient’s expectation of the alternative remedy that “since cinnamon is hypoglycemic it would lower blood glucose” (“Osea la canela es hipoglicemica, osea le hace bajar la glicemia”). Based on the evidence presented, providers communicate their expectation that something that is taken should have a health effect. This consumption is distinct from something that is eaten which is not expected to have an effect other than a dietary change. By referring to alternative remedies as substances that are taken, providers imply that they should have a direct effect on the patient’s body and health.

Since providers believe that things that are “taken” should have an effect, they express disapproval when patients’ alternative remedies that are also “taken” have no direct effect they can recognize. One participant refers to a patient’s “famous pills” that the patient routinely took because he believed they would help keep him healthy even though he was still ill in the hospital. The participant continued to explain that when such alternative remedies “don’t work,” the patients end up back in the hospital, declaring that “Because, when they [the alternative remedies] don’t work they [the patients] come back to the emergency [room] (*laughing*) and then that’s where I [the provider] see them.”

Providers also communicated that alternative remedies were “never recommended” by doctors because they were not “proper care” that had true positive effects on patients’ health. When asked if some providers might “be okay” with patients using alternative remedies, one participant responded “No they they don’t recommend. They never recommend. They advise them to have their own doctors’ care and start doing the tests and doing the follow up...to have the proper care.” Another provider described how one nurse was scolded for suggesting the “Sugar

Buster” product as an alternative remedy the patient could use. The nurse reportedly believed the products were effective and that the “stuff actually works.” The provider explained that this was one example of false information being spread through the community because there is a “belief piece” where patients may be inclined to take information from sources including “someone in the community, whether it’s a family member or not” or even a website or infomercial. From his perspective, the provider’s responsibility is “to try to get as accurate information out there as possible,” something which is made even more challenging by the “internet age—[since] you know you can check things on your telephone.”

One participant did allow that natural remedies, a form of alternative remedies, might at some point be reasonably used in place of a medication, stating “Maybe once it’s stabilized [the patient’s medical condition] the natural remedy could be put in place.” This exchange of the medication for an alternative remedy was only acceptable after the “proper care” of medications had resulted in an effect potent enough to make the patient’s condition “stabilized.” Use of alternative remedies was not appropriate prior to achieving the stable condition because “the medical condition that they [the patients] have might require the medicine as opposed to the natural remedy,” suggesting that the alternative remedies would not have a great enough effect to stabilize an ill patient.

This evidence regarding the verbs that providers use to talk about medicines, alternative remedies, and food suggests that providers have the expectation or Health Rule that items that are “taken,” including both medicines and alternative remedies, should have a direct effect on the patient’s health. However, since providers do not believe that alternative remedies are actually effective, these remedies break the Health Rules and are not incorporated into an effective treatment protocol.

Patients are Different from Us (Providers) - Patients as Others

Providers communicate that they “other” patients, or place them into a social group different from their selves, through their use of certain phrases. For example, one provider stated that a patient “left the country [the U.S.] to go back...to his home country.” The provider referred to the patient’s country of residence prior to migration as their “home country,” suggesting that the patient does not belong or is not at home in the U.S. Another provider emphasized that patients have different physical characteristics and language preferences than U.S. providers. He specified that “it’s also important” that patients see a provider who “looks like them” or “speaks their language” instead of saying ‘looks like

us’ or ‘speaks our language’ which would indicate a sense of collective inclusion instead of separating distinction.

One provider was distinct from the other participants in that she used more inclusive language such as “we” instead of “they and seemed to share experiences with the patients. She used phrases such as “when we come here” (“cuando venimos aquí”), suggesting that she shared the migrant experience of entering a new country. Furthermore, she expressed the sentiment that returning to the country of residence prior to migration made her and her community feel like “we were misfits in our country” (“fuéramos desadaptados en nuestro país”), emphasizing the shared feeling of not belonging to the country she and the community claimed as their own. This provider considered herself part of the Hispanic community, saying “we Hispanics” (“nosotros los hispanos”) while describing challenges such as becoming accustomed to unfamiliar foods in the new country that her immigrant patients also experienced. The use of “we” (“nosotros”) reflects this provider’s inclusion of herself in the patient population, in contrast to the four other providers who separated themselves from the patients even if they indicated on the written survey that they were of Hispanic heritage.

This evidence demonstrates that providers generally viewed themselves as belonging to a social group that is separate from patients, with the exception of one provider who included herself in the patients’ community. Providers generally communicated that they were different from patients, a difference that was greater than any shared country of birth or previous residence.

Alternative Remedies are from a Different Culture

Providers talked about alternative remedies as originating from a culture outside of their own. One participant considered alternative remedies, specifically natural remedies, to be part of the patients’ upbringing in “their country” and items the patients have “grown up with,” suggesting that a patient’s experience of being raised in another culture made them accustomed to these remedies. Another provider commented that patients from Central American countries are familiar with the experience of going to a “Spanish store” and buying things from “their country” also because they were “used to that” or accustomed to that norm from Central American culture. She described that “especially people from Central America...when they get sick they go to the Spanish store and they buy medicines there from their country...because they’re used to that.” Another provider commented that Central American pharmacies are run differently than those in the U.S., with fewer restrictions and

formalities controlling medication sales. He described that, depending on a patient's degree of access to pharmacies in "their country," the patient may be unaccustomed to "the pills that we [Americans] use [and] the other substances" or medications that are accepted within American culture but not accessible in parts of the country of origin.

Other participants also commented on the issue of patients' obtaining alternative remedies from different sources, but expanded their explanations to state that U.S. health care providers wanted patients to conform to "their own" U.S. health practices. For example, one participant reported U.S. doctors would "never recommend" alternative remedies from another country because they wanted to have their "own doctors [in the U.S.] administer "proper care." Another provider verbalized the same belief that patients should seek care from qualified U.S. biomedical practitioners. The participant commented that while "the Latin American population is accustomed to going to the drug store, [or] the Spanish market" to find their healing methods, these stores or "botiquerias" needed to be put out of business because they did not meet U.S. expectations of being a licensed pharmacy:

I'll tell you a worst problem. You just made me think of something. "Los botiquerias," the Spanish markets...I'm convinced that many of them give medicine just like they do in Latin America. You don't need a doctor to prescribe antibiotics—you go to the pharmacy they give you a drug, try this...I think it happens less in this country, but still the Latin American population is accustomed to going to the drug store, a Spanish market, and getting these medicines. And we [U.S. health care providers] had a campaign to put 'em out of business because they're practicing medicine without a license.

129

In this case, the cultural practice of seeking healing methods from a source that was not formally accredited was so different from the Health Rule that said that healing remedies must be from the U.S. health system with appropriate biomedical accreditation procedures, the participant concluded that the source had to be terminated by being put out of business. This rejection of methods other than those issued by the provider is consistent with existing literature that asserts that providers label any therapies besides their own as not truly effective at targeting medical diseases, having only a placebo effect where any patient outcomes are attributed to the power of their own beliefs and not an actual result of the therapy (Kirsch, 1984).

The rejection of cultural practices deemed ineffective inhibits attempts to offer an integrative plan of care deriving methods from multiple cultural sources. The rejection further suggests that providers see cultures as separate frameworks or binaries instead of syncretic, interpenetrating spheres that can be mixed and molded based on the patient's migration experience and process of acculturation. One provider stated his view of cultures as separate by referring to populations as "immigrant or non-immigrant," suggesting that the categories of immigrant (of another culture) and non-immigrant (of the native-born culture) were two distinct and non-overlapping categories. This binary fails to account for individuals who may be experiencing the acculturation process and adapting to life in a new country. The participant continues to state that "how acculturated" a person is to the United States affects whether they would want to "deal with" alternative remedies such as "non-prescription herbs, vitamins, ah that type of thing," seeming to recognize that even as a person move across physical borders, cultural borders may still be in place.

In summary, the participants suggested that if a patient is using an alternative remedy, they are using a method from their culture and are not acculturated to the providers' U.S. health system and culture. This belief that acculturation promotes compliance with conventional U.S. health beliefs is acknowledged within the Latino Culture of Error argument (Timmermans & Freidin, 2005), although conflicting literature exists regarding the association between acculturation and preference for certain health methods.

Discussion

The interviews conducted as part of this research reveal clues about providers' expectations and instructions for a patient's health, differences in expected efficacy of substances as indicated in the use of to take ("tomar") and to eat ("comer"), and providers' understandings of themselves as a "we" distinct from the "they" of their patients. These clues embedded within providers' statements about alternative remedies indicate that providers have Health Rules they expect patients to follow, although these rules can also be broken. These rules include the expectation that patients should follow the instructions of the providers and that any substances taken for health purposes should have a direct, recognizable effect that is determined by a provider. Furthermore, providers' statements establish that they generally see themselves as coming from a different population than their patients, perceiving both their

patients and the alternative remedies they use as belonging to a different culture. Since alternative remedies are from a different culture, they break the Health Rule that only a biomedical provider within the U.S. health system should give healing remedies. Providers' rejection of alternative remedies due to the perception that alternative remedies are from a different culture, reflects providers' view of cultures as separate not syncretic. Providers believe patients need to belong to one culture or another and adopt those culturally specific methods; patients cannot mix and meld aspects of two different cultures.

Providers' understanding of cultures as separate not syncretic has implications for their communication and care with patients. A provider's diction may suggest that a patient belongs to a separate culture and is thereby not welcomed to partake in the American health system from which they are seeking care. By using language such as 'your culture' or 'your country' with patients, reflecting the phrases 'their culture' or 'their country,' providers are othering their patients. By separating patients from the U.S. healthcare system, providers are also separating patients from the health system's resources and health promotion opportunities. If patients feel excluded from resources, they may be less likely to seek appropriate care, and thereby experience less than optimal health outcomes. Not seeking appropriate care or accessible resources could also contribute to immigrant patients' high re-admittance rates following hospitalizations, especially if they have chronic conditions that require continually accessing health services and resources to manage the condition.

Additionally, providers' view of cultures as separate not syncretic could prevent them from offering the integrative care suggested for optimal health outcomes. The World Health Organization (WHO) specifically suggests that providers must offer integrative care to help developing populations achieve their health goals (Mhame et al.). Anthropologist Arjun Appadurai is cited within WHO publications for his definition of culture as fluid and evolving, helping the organization expand its understanding of culture in order to advance the health field (Europe, 2015). WHO recommends an understanding of culture to help deliver integrative care to diverse areas with suboptimal health outcomes, such as rural areas of the African continent where traditional medicine is a main source of health care (Mhame et al.). The WHO specifically states: "In order to maximize health care coverage there is a need for formalization of traditional health services through the *integration* of traditional medicine into health systems" (Mhame et al. emphasis added). While the WHO statement was focused on helping limited-resource nations reach their vulnerable populations, the principle that this

statement clearly communicates is the need for providers to deliver integrative care by melding healing methods from different sources. This principle is widely applicable to health programs serving diverse populations, including programs serving immigrant communities in the U.S.

If providers see culture as self-contained with different cultures being distinct from one another, they will only utilize methods from one culture or the other. However, if providers expand their understanding of culture, such as by adopting Appadurai's definition, and recognize that they can select and combine methods from the different cultures, they will be better able to offer integrative care. By incorporating a fluid definition of culture into provider socialization and training, providers would be better equipped to serve culturally diverse patients.

Limitations

One of the limitations of this study stems from the data collection process. This research involved five semi-structured interviews with health care providers in the Baltimore area. Follow-up interviews were not conducted and participants were not asked to comment on the accuracy of the interpretation of their statements or analysis of the findings. Furthermore, the chosen sample was not intended to represent all providers' perspectives as the results of this investigation are not meant to be generalizable. Instead the results serve to provide a potential starting point for a future larger project to build upon.

The strength of this type of research methodology is its potential to reveal responses that more accurately represent participants' perspectives and priorities, rather than what researchers anticipate is of importance to the participant population. Utilization of semi-structured interviews allowed the researchers to gather the focused information needed for the aims of this investigation, but also permitted participants to share their individual priorities or areas of interest relevant to the research topic. This broadened scope would not be possible with a more structured interview or survey methodology alone that would more strictly guide participants' responses.

Although this investigation explores only the providers' perspective of alternative remedy use during the hospital-to-home transition in care, the transition in care experience is a story with great polyvocality, meaning there are multiple voices intertwined within the story that this research could not capture. Further research is needed to amplify the voices of patients having this experience and to represent the other perspectives that shape this period of time and complex story.

Future Research

Considering the limitations of this investigation and the alternate stories still unexplored, this research creates multiple opportunities for future investigation. Since the findings were based on interviews with five participants, more providers from different positions in the healthcare system should be interviewed. Within this discussion I also did not fully explore how differences in English and Spanish phrasing could affect a person's understanding of health or have implications for medical translation; this could be a topic for further analysis. Additionally, based on the main finding that providers may have a separate rather than syncretic view of cultures, this specific topic could be the focus of more in-depth interviewing. Fieldwork and participant observation could also be incorporated to better suggest whether providers' perspectives actually appeared to be influencing the quality of communication and depth of care they offer patients.

To overcome the major limitation that this investigation only captures in part the provider side of a polyvocal, complex topic, it is imperative that the patient perspective also be captured. By asking providers and patients to create social maps of their health care experiences, researchers could further understand the different resources patients and providers utilized throughout their chain of care. Researchers could then utilize a more purposive sample to better represent the different actors that are part of the immigrant health care experience. These potential future steps would help inform the gap in literature about provider perspectives of immigrant patients and barriers specific to the immigrant population during the hospital-to-home transition in care.

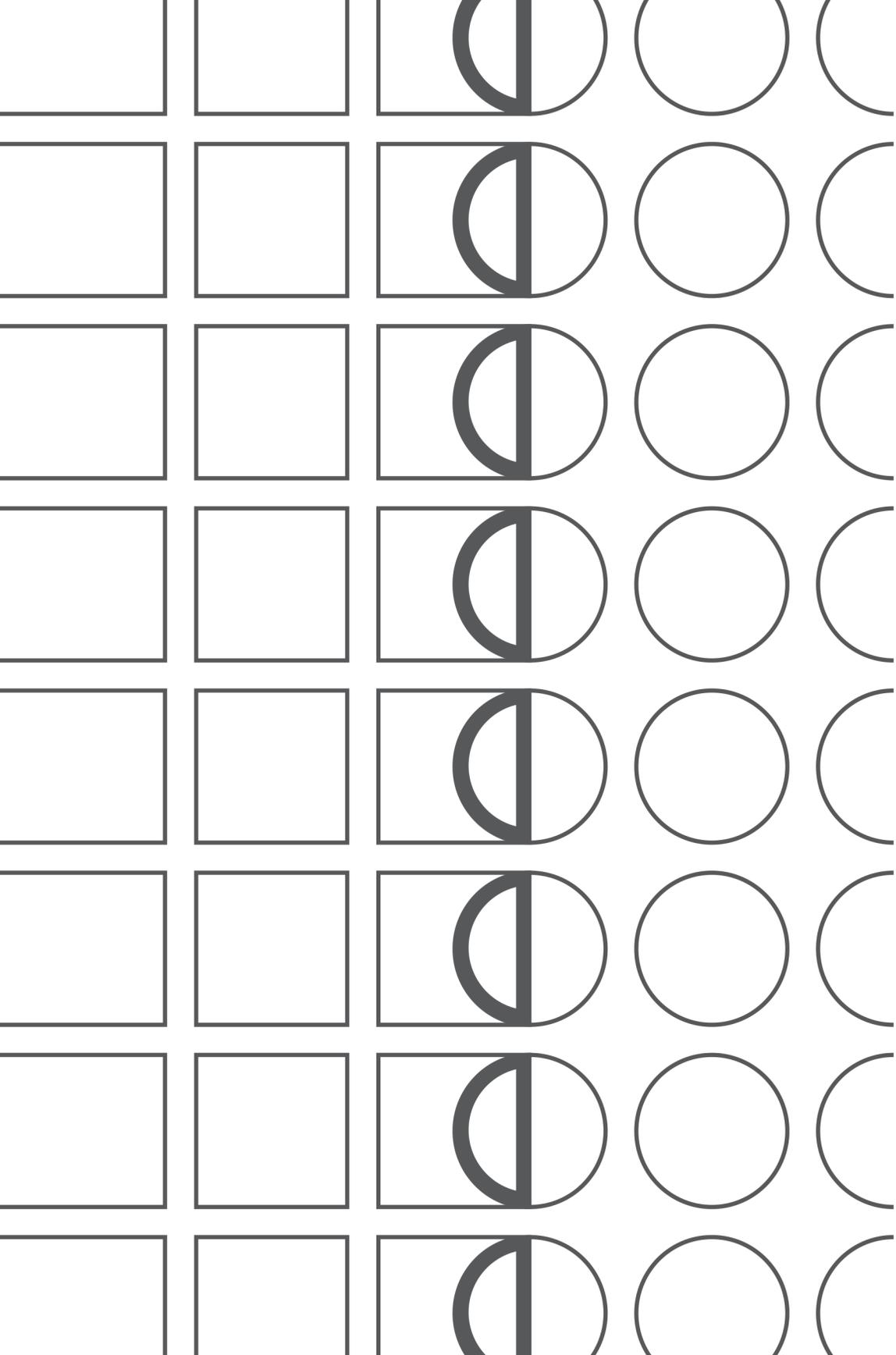
Conclusion

This discussion described the investigation of provider perspectives on alternative remedy use within the Latin American immigrant population in the Baltimore area experiencing the transition in care from hospital-to-home during chronic disease treatment. The interviews conducted offered clues to reveal providers' views of the patient population that are embedded in the ways those providers talk about their experiences with alternative remedies. It is also evident from the interviews that the providers' views have implications for patient communication and care. The main findings included that providers have a set of Health Rules that they expect patients to follow and that alternative remedy use breaks the Health Rules because providers view these remedies

as originating from patients' cultures and not from the U.S. health system. Findings reflect providers' understanding of cultures as separate not syncretic, which has implications for providers' effective communication and ability to offer integrative care for patients from diverse backgrounds. Providers could benefit from understanding anthropologist Arjun Appadurai's definition of culture as fluid and evolving which would allow them to blend healing methods from different cultures to provide optimal care to the Latin American immigrant population.

References

- Cleaveland, C., & Ihara, E. S. (2012). "They Treat us Like Pests." Undocumented Immigrant Experiences Obtaining Health Care in the Wake of a "Crackdown" Ordinance. *Journal of Human Behavior in the Social Environment*, 22(7), 771-788. doi:10.1080/10911359.2012.704781
- Derose, K. P., Escarce, J. J., & Lurie, N. (2007). Immigrants and Health Care: Sources of Vulnerability. *Health Affairs*, 26(5), 1258-1268. doi:10.1377/hlthaff.26.5.1258
- Europe, W. H. O. (2015). *Beyond bias: Exploring the cultural contexts of health and well-being measurement*. Retrieved from http://www.euro.who.int/__data/assets/pdf_file/0008/284903/Cultural-contexts-health.pdf
- Gardiner, P., Whelan, J., White, L., Filippelli, A., Bharmal, N., & Kaptchuk, T. (2013). A Systematic Review of the Prevalence of Herb Usage among Racial/Ethnic Minorities in the United States. *Journal of Immigrant & Minority Health*, 15(4), 817-828 812p. doi:10.1007/s10903-012-9661-z
- Howell, L., Kochhar, K., Saywell, R., Zollinger, T., Koehler, J., Mandzuk, C., . . . Allen, D. (2006). Use of herbal remedies by Hispanic patients: Do they inform their physician? *Journal of the American Board of Family Medicine*, 19(6), 566-578.
- Kirsch, I. (1984). Art, science, faith and medicine: the implications of the placebo effect. *Sociology of Health and Illness*, 6(1), 61-73.
- Kirsch, I. (2008). The placebo effect in complementary medicine. *Methods and Strategies*.
- Kochhar, K., Saywell, R. M., Jr., Zollinger, T. W., Mandzuk, C. A., Haas, D. M., Howell, L. K., . . . Reger, M. K. (2010). Herbal remedy use among Hispanic women during pregnancy and while breastfeeding: are physicians informed? *Hispanic Health Care International*, 8(2), 93-106 114p. doi:10.1891/1540-4153.8.2.93
- McCormack, C. (2000). From Interview Transcript to Interpretive Story: Part 2-Developing an Interpretive Story. *Field Methods*, 12(4), 298.
- Mhame, P. P., Busia, K., & Kasilo, O. M. *Clinical practices of African traditional medicine*. Retrieved from <http://www.who.int/sites/default/files/ahm/reports/35/ahm-issue-13-special-complete-edition-clinical-practices.pdf>
- Mills, S. (2011). Herbal medicines for sustainable self-care. *Journal of Holistic Healthcare*, 8(2), 43-47.
- Pelto, P. J. (2013). *Applied Ethnography: Guidelines for Field Research*. Walnut Creek, CA: Left Coast Press.
- Peterson, P. N., Campagna, E. J., Maravi, M., Allen, L. A., Bull, S., Steiner, J. F., . . . Masoudi, F. A. (2012). Acculturation and Outcomes among Patients with Heart Failure. *Circulation-Heart Failure*, 5(2), 160-166.
- Phillips, C. O., Wright, S. M., Kern, D. E., Singa, R. M., Shepperd, S., Rubin, H. R., . . . Rubin, H. R. (2004). Comprehensive discharge planning with post-discharge support for older patients with congestive heart failure: a meta-analysis. *JAMA: Journal of the American Medical Association*, 291(11), 1358-1367.
- Timmermans, S., & Freidin, B. (2005/08/13/2005 Annual Meeting, Philadelphia). *Does Latinos' Use of Alternative Medicine Cause Non-Compliance in Childhood Asthma?*
- Weerasinghe, S., & Mitchell, T. (2007). Connection between the meaning of health and interaction with health professionals: caring for immigrant women. *Health Care for Women International*, 28(4), 309-328 320p.



Faith and Feminism:

An Exploration of

Intersecting Identities

Susannah Jones-Hochmuth

Author Bio and Research Journey

Suz Jones-Hochmuth, a recent Class of 2017 graduate of UMBC, studied Gender and Women's Studies and Environmental Studies with a minor in Music. As a student of Gender and Women's Studies, Suz was given the space to think about social justice issues in an academic setting, supported by excellent faculty. She could not have asked for a better education from UMBC, and with her new critical understanding of the world, she has gone on to complete a year of service through the Episcopal Service Corps in Baltimore and is considering going into ministry as an Episcopal priest.

Her four-year membership of the Lutheran-Episcopal Campus Ministry on campus allowed her to ask critical questions about her faith and identity as a Christian. In her own experience as a feminist Christian, she felt a tension in Christian spaces as a feminist and in feminist spaces as a Christian. She felt like she did not completely belong in either place, although she knew in her heart that both of those identities made sense together. She decided to act on her curiosity to see what she could find out about this topic. This research project on the compatibility of feminism and Christianity was born from her initial curiosity and became the capstone project for her Gender and Women's Studies major. She would like to thank Dr. Amy Bhatt of the Gender and Women's Studies department for supporting her in this research paper and in her presentation at URCAD.

Abstract

This goal of this project was to explore the relationship between feminism and Christian beliefs among people who identify as followers of Christianity and as feminists. How do people who identify as Christians and feminists form these identities together? Can people have beliefs from both identities? Although there has been some scholarship in the field of feminist theology, there has not been much intersection of faith and feminism elsewhere. Historically, there has been dissonance between feminism and faith, and this has caused both communities to be apprehensive about the other. Using feminist methodologies, four original oral history interviews were conducted with people of different backgrounds who identify as feminists and also believe in the gospel of Christ. From a group that expressed interest over social media, interviewees were chosen who vary in age, gender and racial identity and Christian tradition. The goal of this research was to explore identity intersections and offer an often-overlooked perspective into why Christians do or do not identify as feminists. This intersection is important for feminists to broaden their concepts of identity formation and for Christians to broaden their acceptance and understanding of social justice issues.

Introduction

Throughout history, women have not been fully welcome in Christian religious spaces. Women have been excluded from being ordained as priests, have not been included in decision-making processes of the Church, and have not been represented in Church leadership positions. The Christian religion, as a result of patriarchal values and practices, has also been used to regulate women's lives. Societal perceptions of the Church have been tainted because of the exclusion and oppression of women in Christianity, and some people believe that feminism is not compatible with Christianity. Such distorted perceptions have created a misunderstanding that the religion is inherently sexist and anti-feminist. However, I argue that feminist beliefs and Christian beliefs are compatible.

Feminist scholarship is always attempting to better understand and include all intersections of identity. However, spirituality and religion are not generally included in feminist discourse. Thus, understanding the connection between Christianity and Feminism would add to the existing research. Furthermore, understanding the intersection between these two sets of beliefs could allow the Christian community to further understand and begin to accept feminist beliefs, and the feminist community to begin to be more open to religious beliefs.

Ultimately, this research studies identity formation. Specifically, I examined the process through which people develop and connect their feminist ideals and Christian ideals. How do people form their feminist ideas and their Christian ideas in a way that they coincide? Do people form one identity before the other? Do they form them together? In this paper, I argue that the long history of patriarchy in the Christian religion has led to the widespread belief Christianity and feminism are mutually exclusive, when in fact feminism and Christian beliefs are compatible because they share more commonalities than differences.

Literature Review

Past researchers have explored the relationship between feminism and Christianity in many contexts. Some researchers have specifically looked at the tension between the two identities caused by societal influences on the religion, while others have examined the core beliefs that overlap between feminism and Christianity. Many scholars, overall, recognize the need for to critically examine the teachings and practices of Christianity using a feminist lens. Scholars have also focused on understanding the

process of identity formation, specifically how seemingly contradictory identities are formed. The following sections will further detail past research conclusions to understand how, theoretically, Christian and feminist identities are similar and can be jointly formed. This will take place in three areas: 1) the historical tension between Christianity and feminism, 2) how these tensions have been addressed, and 3) the process of formation of conflicting identities.

Differentiating between religious teachings and societal influence

Through Biblical study, it is clear that Jesus interacted with people differently than was expected by his society. In the Biblical book of John chapter four, verses one to twenty-six, Jesus meets a Samaritan woman at a well. The woman has been labeled as a “sinner” because she had married multiple times and was currently with a man to whom she was not married. Regardless, Jesus treats her with respect when asking for a drink and interacting with her. It is clear, through this story and other examples in the Bible, that Jesus redefined how women should be treated.

During the spread of Christianity, however, male dominated societies were in control of spreading the message and teachings of the Bible. These societies influenced the way the Bible was taught and made the religion seem less feminist and more misogynistic as a result of their cultural influence. Thomas Aquinas, a voice of authority on the subject of Christian theology, was one of the scholars responsible for portraying Christianity as incompatible with feminism. Influenced by the conservative medieval European culture of his time, he believed that women were biologically inferior to men from birth and did not possess the same level of intellect or reason. He therefore concluded that women were not capable of preaching in church or being ordained (Johnson, 2002). Furthermore, Aquinas used the argument that women were naturally and biologically inferior to justify the belief that women should be “governed by others [men] wiser than herself” (Johnson, 2002). Aquinas’ writings greatly influenced the Catholic Church and perpetuated patriarchal behaviors and views towards women. According to scholars, Aquinas’ influence is just one example that “illustrates how powerfully androcentric [male-centered] thought functions to legitimate patriarchy” (Johnson, 2002). Aquinas’ and other scholars, in effect, reinterpreted Christianity using a patriarchal lens and their lasting interpretations perpetuated the impression the Christian religion is not feminist. Through these writings, it is clear that the patriarchy and other societal systems greatly changed the way Christianity was perceived, specifically in regards to its treatment of women.

In addition to scholarly writing, another way in which patriarchy in the Christian religion manifests itself is through the patriarchal language used in the faith. Men were the dominant group, and they used their power to create language that excluded women. Women were “robbed of the power of naming, of naming themselves, the world, and ultimate holy mystery; having instead to receive the names given by those who rule over them” (Johnson, 2002). Now, masculine language is the standard language used in the faith, and women are subject to that standard. This is another way in which the outside appearance of the religion is clouded by patriarchy and therefore perceived as anti-feminist.

The patriarchal influences on the Church translated to a lack of women-centered stories in the dominant Christian narrative. Women’s narratives of participation and resistance did exist, but the men that dominated the documentation of the religion frequently excluded these stories. In doing so, men effectively marginalized women in the Church, and it became harder for feminists to see a place for themselves in the Church (Bernal, Corley, & Blessing, 2006). Instead, feminism “opens the door for the study of women and their alternative means of proclaiming their relationship with God” and is “a way of recovering an often-overlooked aspect of the Church, of including other voices that dominant religious history may seek to silence or treat as peripheral” (Bernal, Corley, & Blessing, 2006). Jule and Pederson use a feminist lens to address androcentrism in Christianity and the exclusion of women in ministry, but also to seek out the marginalized voices of women and raise them up. The male-centered language and lack of including women’s voices in the Christian religion has given the impression that the faith is inherently anti-woman. Using a feminist perspective provides the opportunity to point out oppressive aspects of the way the Christian faith has been practiced, and to say that it is not supposed to be that way.

Feminist theology challenges misconceptions

Although there are misconceptions about Christianity and feminism that imply they are not compatible identities, there is a substantial portion of literature that makes the argument that they are compatible. There is extensive literature on the theme of feminist theology, in which scholars have looked critically at the Church, representation of women, and interpretations of the Bible. Feminist theology has three main goals: to “critically analyze inherited oppressions;” “search for alternative wisdom and suppressed history;” and “risk new interpretations of the tradition in conversation with women’s lives” (Johnson, 2002).

The interpretations from feminist theology show that there is a theoretical link between feminism and Christianity, and this theory frames both this research and previous related research.

Another theme that presented itself throughout reviewing the literature is the common idea that sexism is a sinful concept. In addition to being principle of feminist theology, the perception that sexism is not in line with Biblical teachings is acknowledged by many scholars (Pederson, 2006; Johnson, 2002; Tutu, 2004; Ruether, 1993). Desmond Tutu, a South African theologian and clergy person, asserts that sexism is a divisive mindset that is not in God's plan for humanity. In his book "God Has a Dream: A Vision of Hope for Our Time," Tutu talks about God's hope that Christians will exist in harmony with one another and with the world. He explains that sexism and racism inhibit harmonious societies, and thus those types of mindsets are not in God's plan for humanity (Tutu, 2004). Ruether (1993), another author in the field of feminist theology, and Desmond Tutu further state that sexism and the marginalization of women disrespect God's creation. All people are created in God's image, so it is "blasphemous" that communities or individuals are treated as inferior to others (Tutu, 2004; Ruether, 1993). Tutu states that treating "a child of God as if he or she were less-than; this is not just wrong, which it is; is not just evil, as it often is; not just painful, as it often must be for the victim: it is veritably blasphemous, for it is to spit in the face of God" (Tutu, 2004). Ruether (1993) similarly claims that sexism does not acknowledge the full humanity of women. Sexism, thus, "denies, diminishes, or distorts the full humanity of women [and] is, therefore, appraised as not redemptive." Overall scholars agree that anything that stops the full humanity of a person from being acknowledged, such as sexism or marginalization of women, is going against God. This line of thought shows that Christian and feminist beliefs actually can exist together and be formed together.

While theory shows that Christianity and feminist beliefs overlap, past researchers also acknowledge that feminism has become a lens through which Christians can look at their faith critically. Feminism allows Christians the space to think about the root of the issues that marginalize women and question how to move forward to follow Christ in a way that is not harmful to others. This feminist lens has been used to understand the historical contexts of religious texts to better understand the faith. Sedgwick (1999), for example, uses a feminist lens to make a distinction between the historical context in which the Old Testament of the Bible was written and then the teachings of Jesus Christ himself. In the period of history in which the Bible was written, people

were nomadic and procreation was essential for their survival. Sexuality was regulated in a way that only left room for sex for reproduction. However, Jesus, in his teachings, focused on the concept of hospitality. Through his teachings, the basis of the relationship moved from the focus of just reproduction to a focus on mutual care for one another. Sedgwick (1999) asserts that “this meant turning from a narrow focus on the importance of progeny back to mutuality—to a companionship not as given in kinship but as the embrace and care of the other as an end in him or himself.” Using feminism in this way has allowed researchers to identify the core teachings of Jesus Christ, as well as to show that Christianity at its core shares similar values with feminism and understand the ways in which these teachings can be misconstrued.

Feminist theory has also been applied to critically examine how Christian faith is practiced in modern times. Scholars such as Cahill (2015) have reinterpreted the teachings of Thomas Aquinas through a feminist lens to make it more accessible in the modern times and address some problematic teachings. In this way, feminist theory can also be used to revitalize the Church. McDougall (2008), for example, asserts that feminist theory can be used to redefine Christian symbols, recognize androcentrism in different Christian traditions, and elevate the voices of women. This use of a critical feminist lens is for the good of the Church because it can revitalize the community in the way that different perspectives are being included therefore allowing the Church to change with the times.

Formation of Conflicting Identities

In the literature on identity formation, scholars have widely explored the concept of forming joint identities that are seemingly inconsistent with one another. Scholars recognize that some identities do in fact conflict, and they explore how people handle the dissonance when forming these identities. For example, there is some dissonance between the formation of Islamic, Christian, or Orthodox Jewish beliefs with LGBTQ identities because religious teachings have been used to oppress LGBTQ communities. This type of dissonance is known as “identity incongruity” (Liboro, 2015). When faced with identity incongruity, people commonly sever all ties with their religion completely. Individuals dealing with this dissonance might also participate in activism against the religious oppression, abandon their religion for spirituality, or become a part of another religion that is more accepting. If individuals still identify with both communities, they use several coping mechanisms to deal with marginalization. LGBTQ folk, for

example, might de-emphasize one part of their identity depending on which community they are with at the time. If they are in a religious space, they might de-emphasize their sexual identity, and in a space friendly to LGBTQ community members, they might de-emphasize their religious identity.

Surprisingly, religion might also be a very important part of the way individuals find their place in the world. Liboro (2015) states that there are four “stages of Identity Incongruity Resolution.” First, there is reflection, in which the individual realizes that the religious beliefs are not accepting of sexuality. After this is rejection, where the person feels the need to choose one identity or the other and then reconstruction, in which the individual attempts to reintegrate religion with sexuality because of a desire for spirituality. The final step, resolution, occurs when a person finds reconciliation between two clashing identities and experiences identity integration (Liboro, 2015). These stages are likely similar to the process by which individuals form their feminist and Christian beliefs.

Scholars have also noted that the relationship between one’s religious beliefs and consistency with their attitudes and behaviors is different in different situations. While individuals have “the tendency to assume consistency in [their] religious beliefs, attitudes, and behaviors across contexts and situations...they are in fact highly variable” (Read and Eagle, 2011). More specifically, there is an assumption and perception that all religious people will behave the same way in every situation based on their religious beliefs. However, when there are competing intersecting identities, scholars believe that one identity takes precedence over the other. This complicates the congruence between the individual’s religious beliefs and their attitudes and behaviors. Thus, a competing identity will affect the way that one interacts with their religious beliefs. In the context of this research, a Christian may be expected to behave a certain way in terms of their sexuality, but their feminist identity could change their behavior in an unexpected way.

Methodology

This research is a qualitative study. Oral histories are used as a source of data to support research claims about identity formation and compatibility between Christianity and feminism. To collect oral histories, interviews are conducted. In this method, the personal narrative of the interviewee is considered valuable experiential knowledge about a subject. Oral history is frequently used as a part of feminist research

to lift up the voices of marginalized and underrepresented individuals. Oral history lays out a space in which women can get their thoughts across without worrying about androcentric ways of communicating (Minister, 1991). Oral history as a research method is a way to subvert patriarchal power structures that have prevented women from being able to speak out about important issues. Oral history is specifically used as a tool to lift up the voices of religious feminists because this intersection of identity is not always acknowledged in Christian and feminist spaces. In this research, oral history was specifically used to highlight the ways in which Christianity has been hurtful to women in the past.

Feminist research also seeks to challenge expectations of what research is supposed to be like. Generally, there is an expectation that the researcher and the subject must be separate so that there is a degree of objectivity. In feminist research however, this degree of separation does not exist. Oral history and having a personal connection to research is part of valuing experiential knowledge in feminist research. Kathleen Blee (1994) notes that feminist scholars are “seeking to ways to dissolve the traditional distinction between historian-as-authority and informant-as-subject and to create what Judith Stacey calls ‘an egalitarian research process characterized by authenticity, reciprocity, and intersubjectivity between the researcher and her ‘subjects.’” Thus, I have chosen to use my own experiences as the starting point for my project. The figure below gives a visual representation of the main components of feminist research: using oral history as a research method, elevating marginalized voices, and using a feminist perspective to examine the research.

I used social media to gain a pool of volunteer participants for the interviews. Out of the seventeen people who said they would like to talk about their identities as Christians and feminists, I chose four volunteers to ensure that I received diverse perspectives on the topic. Three out of four were college students. One was a transgender person of color who believes in the Gospel of Jesus but does not practice Christianity in an organized fashion. Another was a white Catholic college student, and the third was a college-age woman of color who identified as a non-denominational Christian. The last participant was a white female Episcopal priest. All four participants also identified as feminists. Their names, in this research, were changed for the purpose of anonymity. The interviews were recorded on a cell-phone and took the format of a free-form conversation. A list of guiding questions was prepared ahead of time, but additional questions were asked based on the direction of the

conversation and potentially relevant topics that arose. The interviews were transcribed after they were conducted, and then common themes were identified.

In the context of this research study, Christianity is defined as the bare basics of the faith. I looked for people who believe that Jesus is the Son of God who came to earth to preach about how to treat one another rather than people from specific Christian traditions. Since the purpose of research is not to understand the relationships between feminism and specific denominations of Christianity, differences in denomination were unimportant. While the interviews did cover specifics on feminism in different denominations, this only served to make the project more interesting.

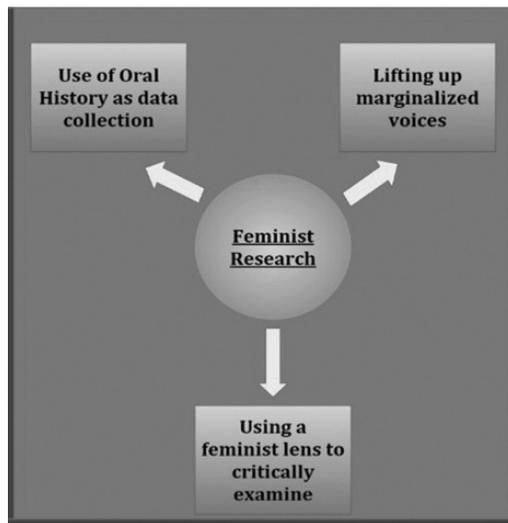


FIGURE 1. The components of feminist research as outlined in the text.

Data Analysis

The research for this project presented a few major claims in terms of the intersection of Christianity and feminism. They are as follows: 1) there are more commonalities between these two identities than previously understood, and 2) there are misunderstandings and miscommunications around these identities, resulting in the perceptions that Christianity is antifeminist and that there is no space for Christianity in feminist spaces.

Commonalities, not differences

A common theme in the interviews was that the participants did not see many tensions between Christian and feminist beliefs in their own lives. It seemed obvious to them that the two identities could go together logically. A Catholic woman I interviewed, Jane, did not “think you [could] be a Christian and not a feminist” (Jane, personal communication, April 2, 2017). Additionally, another interviewee, Rose, discussed how feminism and Christianity were a logical match. She noted that, “it almost made it easier to accept feminism because of my faith. It made the concepts make sense because I saw how they fit into my beliefs. It was like, I can believe these things about society because I believe these things about like my existence. I definitely think it helped strengthen my relationship with my faith if anything” (Rose, personal communication, April 2, 2017). Rose and Jane presented evidence that commonalities between these identities exist, because they were able to understand this intersection so easily.

Another theme that arose from the interviews was the idea of sexism as a sin. This theme, which was common in previous research, was also supported by the belief of some interviewees that the denial of full humanity of a person disrespects God. Rose, echoing the thoughts of Ruether and Tutu, wrestled with gender identity and sense of belonging as a transgender woman of color. In her interview, she discussed what she thought were some of the tensions between Christianity and feminism. The following is a quote relaying some of her thoughts:

I think like another disconnect I see that's happening now is like younger Christians are like accepting of other identities but still view the identity in itself as something bad. So I definitely feel like that causes an issue because it's like, if you don't see me as like a whole human...If you don't see me as a full embodied person, and see that something I was born with is something inherently bad, I'm not going to want to engage with you in that way...It's like your way of existing is better than my way of existing (Rose, personal communication, April 2, 2017).

As noted by Rose, there are some Christians still influenced by patriarchy and misogyny who value certain identities over identities like Rose's. If there are Christians that believe some identities are inferior to others, this perpetuates the perception that Christianity and feminism, which preaches equality of men and women, are incongruent. According to the research in both the literature and in her interview however, this

denial of humanity is not consistent with Christian values and is sinful. Therefore, the relationship between Christianity and feminism is stronger than perhaps perceived. Sexism is a sinful concept in the eyes of Christian religious teachings, and sexism is similarly opposed in feminism. Despite the misunderstanding that Christianity and feminism are at odds with each other, it is clear that feminism and Christianity have similar values.

Interestingly, another common theme in some of the interviews was the idea that God created men and women differently, and that men and women are meant to have different roles. However, interviewees made it clear that these roles are equal and one is not superior to the other. Jane, a Catholic woman, explained in her interview that God does not see men and women as unequal:

Men and women are fundamentally different, but that doesn't mean that we can't achieve the same under God's eyes. There are some things in the world that we can't actually achieve the same, which makes sense. Like, men can't have children without extenuating circumstances. So it's like, okay there are differences, but under God's eyes, we're all the same. It's not like there is that gender barrier. We all love God in our own ways and we have a relationship with him but there's nothing that your gender says that says you can't be closer to God because you're a woman (Jane, personal communication, April 2, 2017).

149

The roles that men and women play are equally important in the life of a follower of Jesus, and they are all valued the same amount by God. God's creation was made perfectly, and differing roles of people in the Church are a part of how people can live together in Christian community. This logic Jane explained in her interview was also mentioned in Michelle's interview. Like Jane, Michelle discusses how differing roles for men and women were equal:

I do believe that those are things that are outlined in the Bible and there is a role for a woman and there's a role for a man, things like that. But that doesn't mean that...that because a woman has become...this woman has a specific role in her family, that role is no greater or less than a role of a man. You know what I mean? That doesn't mean...that doesn't mean that a woman...quote-unquote... 'women's work' is greater or less than a man's (Michelle, personal communication, April 13, 2017).

Michelle and Jane both believed that God's idea for Christian community involves men and women having different but equally appreciated roles. These interviews, thus, show that many people believe that God does not value men above women, and this aligns with the feminist belief that men and women should be valued equally in society. The interviews supported the idea that, when separated from the assumptions of an inherently patriarchal religion, Christian beliefs have more in common with feminism than people generally perceive.

In some of the interviews, participants boiled down their feminist and Christian beliefs down to one concept: respect. Rose mentions this idea in her interview, saying "my thing is like if we all have the ability to go in and connect with God, and God is in all of us, like everyone needs to be treated with a certain amount—not even a certain amount, but like with respect and love—like generosity because that's how you would treat God. It's like, seeing the light and the God within everyone, like makes it that much easier to accept what feminism says about intersectionality, about addressing people's specific needs" (Rose, personal communication, April 2, 2017). For her, treating people with dignity and respect is how one would treat God. This also fits in nicely with the arguments of Johnson, Ruether, and Tutu where people are created in the image of God and disrespecting them is disrespecting God. Additionally, Jane discusses respect as a basic commonality between feminism and Christianity stating, "In the case of that passage, it just means that we have to be respectful of who we're with at all times. And knowing that, their voice matters, and that they need to be heard. And if you're not giving them that respect, then there's a problem there, and you're not doing what Jesus taught and you're not loving your neighbor as yourself" (Jane, personal communication, April 2, 2017). The Bible passage she references talks about women submitting to their husbands. For Jane, this does not mean women being less than men. Rather than "men feeling that's the justification for a superiority complex...Jesus taught...[us that] being obedient does not mean being less" (Jane, personal communication, April 2, 2017). Her explanation of the passage revolves around the idea that people should respect one another no matter what, and that this idea is one that Jesus teaches. This idea, when simplified to the basics, is also a building block of feminist beliefs. Again, this illustrates the claim that feminism and Christianity have more in common than previously understood.

Evelyn, an ordained Episcopal priest, had to sort out the patriarchal influence on the Church and separate that from what she knew to be acceptable by God. In her interview, Evelyn discussed growing up in

a family and a church environment where women were not welcome in the Episcopal priesthood. In her interview, she talks about wanting to be a priest because she felt God called her to this ministry at a very young age, but not being able to answer that call because of her gender. She talks about her identity-formation journey when asked about her identities as Christian and feminist:

So I think what's clear for me is that the first development—the first one of those that was developed was really my Christian thought. And so I would not have identified as a feminist I think until my twenties. And really...and this might be kind of interesting for some folks...but really the development of my feminism came out of being raised in a church that didn't ordain women and being someone who was called and having to sort out how that could possibly be. And experiencing the radical equality of God and God's love. And so as I began to experience that radical equality, I actually began to think more about well what does it mean to be a feminist and am I a feminist? So the very project that you're doing, I had to begin to think about that for myself (Evelyn, personal communication, April 9, 2017).

151

This example illustrates the claim that there are more things in common between Christianity and feminism, but also that there are misconceptions between the two that have prevented feminism and Christianity from being understood as compatible ideas. Evelyn was very clearly being called into the ministry where she thought women were not welcome. It is clear that the misogynistic arrangement of organized religion almost kept her from her calling. Evelyn also had to distinguish between the patriarchy and male-dominated society that almost prevented her from fulfilling her calling from God. This is an important distinction to make in terms of navigating religion with feminism because the misconstrued aspects of the faith might give the idea that Christianity is antifeminist, but when one listens to the teaching and will of God, one will find that this is inconsistent with the perceived nature of the religion. Evelyn's story is an example of how organized religion has acted in a way that created misunderstandings and miscommunications about what it really means to be a Christian and what God expects of God's followers.

Misunderstandings and miscommunications

One theme that came up consistently in all of the interviews was the theme about Biblical texts being distorted and changed by those in charge, thus illustrating how misunderstandings about Christianity were created. Rose talks about this in her interview:

I mean, I think that if you look around, the Gospel has been twisted to mean like the opposite of what it actually says somehow, and it just is so wild to me that so many people can subscribe to that, like can read the same text that I'm reading, and like just see something completely different, and so I think that's where a lot of it comes from and the interpretations of the Gospel aren't feminist. And so by default, the people that are following that Gospel aren't going to be feminist either if what they're being told isn't feminist and that sucks (Rose, personal communication, April 2, 2017)!

Rose's comment about the misinterpretations of the Bible shows how these misinterpretations can perpetuate negative and false ideas about the faith. Rose grew up with the teachings, but not the religion. She was raised to believe in the Gospel but did not attend church or other organized religious spaces. This is an interesting case because she was able to form her feminism around the actual bare-bones ideas and teachings of Christianity and was not directly exposed to the patriarchal or misogynistic misinterpretations that might have changed her view of the religion. These misinterpretations create assumptions about either side that lead to misunderstanding when there is misinformation being spread. An assumption made about another belief system often creates a barrier to understanding another point of view. Thus it is important to recognize the miscommunications and misconceptions involved with the intersection of Christianity and feminism to prevent creating a barrier to understanding each perspective.

In order to gain the most from this project and get the most well rounded account of this particular intersection of identity, the most diverse group of voices were included. One woman, an Episcopal priest, gave a very helpful explanation of the influence of the Roman Empire on the Christian religion.

Well I think in the early Church, not necessarily in the days of the historical Jesus but some time as the Church began to spread throughout the Roman Empire and particularly to Hellenistic areas. There was a culture—there were cultures

who did not value equality between men and women and in order for Christianity to take hold in those areas, compromises were made in order to spread the Christian doctrine. So that in the earliest pieces of the Church, I think that's where some of the tension was created. Once the Roman Empire co-opted Christianity as part of its national religion and began to mingle Church and state together, then you have a hierarchy of males in the Roman Empire who are co-opting that religion and therefore putting their male hierarchy onto Church structure as it develops (Evelyn, personal communication, April 9, 2017).

Her explanation of the influence of the Roman Empire illustrates how dominant groups manipulated the religion leading to the misinterpretation that the religion is inherently antifeminist and exclusive. Evelyn's comments about this androcentric society influence on Christianity also bring up an interesting point about being critical and not taking what is taught at face value. Being critical and using a feminist lens to look at Christian history and biblical texts allows space to recognize these negative influences and to see how they are not necessarily connected to the teachings of the Church. This critical lens is helpful for both feminists and for Christians to separate the core principles of the religion and prevent further assumptions that Christianity is exclusive and antifeminist.

153

Another particularly interesting theme in the interviews was the assumptions made about the interviewees based on their own personal Christian identity. This assumption is connected to the idea that the religion has been misconstrued and the ideas about Christians are perpetuated by the distortion of the Christian religion. For example, several interviewees talked about the fact that other people assumed they were judgmental because of their Christian identity. Evelyn discusses her experiences with people making assumptions about her based on her identity:

I have encountered people and questioned them: that one of the first things they'll think is that I'm judgmental...And that I'm somebody who makes assumptions about who they are and that's really one of the more difficult countercultural realities of being female clergy because in fact I really work hard at not being that person. So that's one assumption they make. They also generally assume that I'm overly serious and stiff. And I've maybe worked too hard to make that clear that that's not true but that I'm somebody who doesn't enjoy life, that I'm not fun

or playful because you know we're serious judgmental people who are just hard. So you know I've had enough of that kind of feedback...or, I shouldn't say feedback because it's not based off what I say or do, it's assumptions that I know that's the reality (Evelyn, personal communication, April 9, 2017).

Evelyn's story provides an example of the characteristics people presume Christians have. These presumptions of Christian character being judgmental are the opposite of characteristics of a feminist. Thus, these presumptions feed the misconception that Christianity is antifeminist. Too many misunderstandings and miscommunications are perpetuated by assumptions people make about each other, which becomes a hindrance to any potential learning opportunities.

Michelle's interview provides further examples to illustrate the misconceptions and assumptions about Christians that exist. In response to my question about whether she felt there were any negative perceptions about her because of her identity as either a Christian or a feminist or both, she revealed that "to feminists I'm a sellout, and to Christians I'm a heathen" (Michelle, personal communication, April 13, 2017). It is an interesting quote because it very clearly shows that both group presume characteristics about the others. She talked more in detail about how feminists have labeled her as judgmental:

Now from the feminist perspective, I've met some feminists who automatically think I'm judgmental. Or automatically think I'm judgmental or condemnatory or anything like this because of the fact that I'm a Christian which isn't the case. I'm not...well I can be some of those things sometimes, but I would like to believe that I'm neither of those things ninety-two percent of the time. So, or that I'm homophobic or something like that. Yeah that doesn't make sense. No. (Michelle, personal communication, April 13, 2017).

Michelle was adamant that this assumption was not true for her, and seemed frustrated that people might believe she was judgmental or homophobic. Michelle also provides a couple of comments in her interview that describe assumptions and misconceptions about feminist identity from the Christian perspective. When relaying a story about dating a Conservative Christian man who did not understand her feminist identity, she stated, "I feel like to Christians, they have—some Christians, certainly not all Christians, but a percentage of Christians have an expectation that I am—that there's a way, a certain way that

a feminist looks and there are certain things that feminists do which is not true. It's not true for Black people, it's not true for Christians, it's not true for feminists" (Michelle, personal communication, April 13, 2017). Her partner at the time made assumptions about her that she was "burning bras and walking around with pitchforks" because that is the stereotype he had about feminists (Michelle, personal communication, April 13, 2017). It is clear, as Michelle points out, that not all members of a group fit the stereotype or assumptions of that group. Assuming this for each member of a group is unfair and unreasonable, because it perpetuates misconceptions about the group. Instead, it is important to understand that the intersection between identities, particularly feminism and Christianity, is nuanced and different for everyone, as shown through Michelle and the other interviews.

Conclusions

My goal in this research was to gain an understanding about the intersection of two identities not commonly understood to be compatible, to challenge the thinking of feminists and Christians alike, and to expand understanding of identity formation. As a Christian and a feminist myself, I also wanted to help create more of a space where religion and feminism can exist. It is clear, based on an analysis of feminist theology, that Christianity and feminism are in fact compatible. The actual teachings of Christianity support the same beliefs about equality and respect that are core values of feminism. The patriarchal influences on the religion created a barrier between Christianity and feminism, because the religion became misconstrued as unequal and exclusive towards women. Thus, rather than Christianity itself, societal influences misconstrued the religion and created the outward appearance that it is inherently antifeminist and exclusive.

Differentiating between the core teachings and societal influences shows that feminism and Christianity can co-exist. Outside influences on the religion prevent commonalities from being widely recognized, but the goal of my project was to reveal these commonalities. In a world where there are so many divisions and binaries, Christianity and feminism share core beliefs that allow people to jointly form these identities. For feminists, who are seeing to learn more about, intersectionality and identity formation, and Christians, who are seeking to be more inclusive and more critical of their faith, it is important to understand that feminism and Christianity are not at all mutually exclusive.

Since this project has only focused on a few interviewees' experiences of the intersection of faith and feminism, one of the limitations of this study is that not every person's relationship with these identities is represented by or described in my research. The stories of those interviewed in this project illustrate the possibility that the intersection of feminism and Christianity can exist without difficulty. However, some people have been hurt by the Church and have turned into anti-religious feminists. Though they have different perspectives, their voices are still valid in providing an understanding of the relationship between Christianity and feminism. Further research might include specific interviews with people of different denominations of Christianity to understand their individual relationships to feminism, or even interviewing people who are feminists but not Christians (and vice versa) to understand their identity formation process. In addition, it would be interesting to further understand the intersection in a nonwestern, non-American context.

One of the most beautiful things about doing this research was hearing the stories of those who formed their identities as Christians and as feminists. Each one was a different story with a different perspective on what those identities mean to them. This brought me to a conclusion about identity and identity formation: identities and belief systems are very much formed based on experience, meaning that Christianity and feminism are going to represent something different to everyone. Not only is this intersection not understood widely, but it is also more nuanced than it is given credit for.

Ultimately, keeping an open mind and seeking to understand things that seem to conflict with one's own beliefs is good practice in terms of breaking down barriers. It is also important for understanding complicated nuances of things that challenge our understanding of the world. It is important because it shows us that assumptions and stereotypes are irrelevant and a barrier to increased understanding and ways of knowing. Looking at the intersection of Christianity and feminism and keeping an open mind about it will only increase understanding and challenge our thinking. This challenge can only bridge gaps in our incredibly diverse and divided world.

Works Cited

- Bernal Corley, L. & Blessing, C. (2008). Speaking Out: Feminist theology and women's proclamation in the Wesleyan tradition. *Being Feminist, Being Christian: Essays from Academia*. (127-56). Basingstoke: Palgrave Macmillan.
- Blee, K. M., (1993). Evidence, empathy, and ethics: Lessons from oral histories of the Klan. *The Journal of American History*, 80(2), 596-606.
- Cahill, L. S. (2015). Renegotiating Aquinas. *Journal of Religious Ethics*, 43(2), 193-217.
- Johnson, E. A. (2014). *She Who Is: The Mystery of God in Feminist Theological Discourse*. USA: Crossroad.
- Liboro, R. M. (2015). Community-level interventions for reconciling conflicting religious and sexual domains in identity incongruity. *Journal of Religion and Health*, 54(4), 1206-1220.
- Mcdougall, J. A. (2008). Keeping feminist faith with Christian traditions: A look at Christian feminist theology today. *Modern Theology*, 24(1), 103-24.
- Minister, K. (1991). A feminist frame for the oral history interview. *Women's Words: The Feminist Practice of Oral History*, 27-41.
- Read, J. G. & Eagle, D.E. (2011). Intersecting identities as a source of religious incongruence. *Journal for the Scientific Study of Religion* 50(1), 116-132.
- Ruether, R. R. (1993). *Sexism and God-talk: Toward a Feminist Theology*. Boston: Beacon.
- Sedgwick, T. F. (2008). *The Christian Moral Life: Practices of Piety*. Church Publishing, Inc.
- Stacey, J. (1988). Can there be a feminist ethnography?. *Women's Studies International Forum* 11(1), Pergamon.



Paying Dividends:
Universal Basic Income,
Income Inequality, and
Public Opinion

Jacob Street

Author Bio and Research Journey

Jacob Street is a Political Science major with a minor in Chemistry. For the last six years, Jacob was a professional card player before returning in spring 2017 to finish his undergraduate studies. He is planning to graduate in winter of 2018 and is in the process of applying to doctoral programs in Political Science with a focus on International Relations. He plans to work in academia, where he can mesh a love for solving problems with a passion for teaching others.

Income inequality, and how to tackle it, has interested him for some time. Rather than public awareness, problems stem from the lack of consensus on the best solution for inequality. Jacob was curious what public opinion looked like on the topic of Universal Basic Income (UBI), the idea that the state should provide a baseline level of income to all individuals regardless of work status. Upon finding that public opinion polling was hugely lacking, his idea grew into a question: what arguments for UBI are persuasive in the public eye?

Jacob's grant proposal to examine public opinion on the topic of universal basic income was fully funded by UMBC's Undergraduate Research Award. Furthermore, this work would not have been possible without the mentorship and support that he received from the UMBC Political Science Department, specifically Dr. Cynthia Hody and Dr. Ian Anson. Jacob would also like to thank his partner, Richard Woods, for both his overall support as well as his technical skill in aiding Jacob's analytical journey.

Abstract

Since public awareness of inequality is generally widespread, the debate over economic inequality does not lie in the question of its existence. Instead, the debate is more centered on finding agreement on what solution best fits. One of the proposed solutions to income inequality is universal basic income (UBI), or a fixed income given to every individual regardless of their work. Surprisingly, compared to the extensive theoretical literature on UBI, American public opinion polling regarding UBI is lacking. This paper seeks to lay the groundwork for future research into UBI by testing public opinion of UBI through survey questions with several issue framings compared to a control. Collecting original polling data from Amazon's Mturk, I find that, in the overall sample population, using an excerpt from the Universal Declaration of Human Rights is the only statistically significant framework that results in a change in support levels. Drilling down into just respondents that identify as conservative, however, demonstrates that the strength of a given framing is not universal; the resonance of each was impacted strongly by political persuasion.

Introduction

The extent of a government's responsibility to its citizens is a fundamental question of political science, with income inequality, and the related challenge of tackling poverty, just as firmly rooted in the discipline. More contentious is the debate on what role, if any, the government should have in addressing this issue. The degree to which a society is willing to tolerate income inequality is a substantial question that lies outside the scope of this paper, but here, I will discuss more empirical elements of this problem. Fully exploring all of the contours of income inequality and its impacts would be a massive undertaking that eclipses the main discussion at hand. Instead, I will present a few highlights to set the stage for examining the core question explored in this paper: does public support for basic income vary based on the presence of related information, such as global concerns over inequality, and how much do these arguments move the needle on public support?

Income inequality can be measured and described in a myriad of ways. In 2013, the richest 20% of American families owned 88.9% of all wealth, with the top 1% of households holding 38% of all stocks (Wolff 2014). From 1948 to 2012, net productivity gains were 241%, but real hourly compensation began to diverge in the 1970's, overall rising only 108% over the same period (Reich, 2015, 116). The 2008 financial crisis, and subsequent recovery, exacerbated this existing inequality, as the first three years of the economic recovery saw the top 1% of earners capture 95% of income increases. This trend is not limited to the United States either, as 8% of the global population earns half of worldwide income (Stiglitz 2015, 15–119). This can partly be attributed to the fact that the majority of jobs created during those years of recovery were in low-wage sectors such as retail and food preparation (Jaimovich and Siu 2012; Ford 2015, 48–9).

Beyond mere numeric description, concerns over inequality have continued to grow in recent years. Conducted by the World Economic Forum, the 2017 Global Risks Perception Survey rated persistent income inequality as the number one destabilizing trend in terms of perceived importance (World Economic Forum 2017). A 2011 study found that during several years between 1972 and 2008 when income inequality was more pronounced, the bottom 40% of earners in the United States reported lower levels of happiness compared to years of relatively less pronounced inequality. What makes this study especially interesting is that the authors controlled for the relatively lower incomes earned in those less-equal years and still observed a downtick in happiness.

The reduction was not simply a matter of unhappiness stemming from low income, but instead sentiments were strongly correlated with reduced perceptions of fairness and trust (Oishi, Kesebir & Diener 2011, 1097–8). This illustrates a key, and recurrent, point: income inequality can have consequences not just for the individual, but also for society at large. Erosion of trust and perceived fairness are not trivial concerns; these challenges can damage the very fabric of society.

Basic income, the idea that governments should provide some guaranteed floor of income for all individuals regardless of working status, is an idea that has gained cachet in left-leaning intellectual circles over the years as a possible solution to income inequality, or at least a means to combat poverty within a system of inequality (BIEN 2017; Caputo 2008; Groot 2004; Zucker 2004; Ford 2015). Despite this level of attention, public opinion polling on the subject of basic income, or even an agreement on how to best measure support for basic income, exposes a significant gap in the literature. This paper represents a small step in filling the void.

What is Basic Income?

At its core, basic income (BI) is an attempt to address the enduring problem of income inequality and poverty through the streamlined approach of providing a population, typically at the state level, with a guaranteed source of income. This income would be sourced from state coffers, though the scale of such programs varies considerably by proposal. One thread, universal basic income (UBI), is a form of BI that is paid to everyone in a population without exception. As defined by the *Basic Income Earth Network* (BIEN), UBI has the following properties:

- paid at regular intervals
- is a cash payment
- paid on an individual basis (instead of a per household basis)
- no means test (i.e. paid to everyone in a population regardless of economic status)
- no requirement to work or need to demonstrate willingness to work (BIEN 2017).

Other proposals have different structures, but the general idea of cash transfers to wide swathes of the population has been debated for centuries. For example, in 1797, Thomas Paine proposed a “citizenship grant” that is awarded in a one-time lump sum at the age of majority

(Paine 1797). In 1962, Milton Friedman advocated for a related BI policy called a Negative Income Tax (NIT), which would provide monthly tax credits to certain members of the population and guarantee that all participants receive at least a certain minimum level of income. These tax credits would phase out as income rises, making NIT proposals means-tested, though the drop off slope and the attendant marginal tax on earned income are not as steep as many traditional welfare systems (Moffitt 2003; Friedman 1962).

Support for BI proposals can be found across disparate schools of economic and political thought, though the lion's share resides in the liberal range of the political axis. In general, support for social welfare programs is lower amongst conservatives; those that do support state aid tend to advocate a narrative of self-help by tying work requirements to such assistance programs (Epstein 1997). Thus, conservatives are doubly unlikely to strongly support a state assistance program in the vein of BI that does not impose employment preconditions.

Some left-libertarians argue that BI is a means for maximizing individual freedom and that capitalism, with its attendant gains in productivity, is the best choice for maximizing the economically feasible level of BI (Caputo 2008, 150–152). Others argue that consumers are part of the economic community that determines the value of a product, and that all members of said community should be entitled to some measure of the national income (Zucker 2004). While this philosophy still advocates for a capitalistic market economy, it also emphasizes communal rights and the idea that a democracy should safeguard economic rights alongside political rights (Caputo 2008, 153–154). Others focus more on a question of justice within a system of persistent unemployment (Groot 2004). That said, BI is not just an issue championed by the political left; some of the conceptual building blocks have gained traction on the right as well. Interestingly, one the more prominent ideas involves the taxation of pollution.

This potential method for building a BI is through use of a “carbon dividend,” though it represents a more financially limited approach compared to a full BI that would cover all basic needs. The idea of a carbon dividend is that pollution would be taxed, but the revenue collected would be returned via tax credits to all Americans at an equal rate regardless of income level. This makes the proposal “revenue neutral”: a tax is levied but the funds are disbursed directly instead of retained by the government. A formulation such as this can be pitched as not representing a net tax increase, and this proposal has managed to garner support from prominent conservative figures (Baker, et al. 2017).

Opportunities and Choices: State Assistance and Incentive Structures

BI represents a significant paradigm shift for modern economies. While the “more government” versus “more free market” argument is a false dichotomy (all economic systems rely on political frameworks, the real challenge is picking the right incentive structures), it is worthwhile to consider what kind of economy best fulfills the goals of the society that it serves (Reich 2015).

A common criticism of the welfare state is that government assistance engenders laziness and denies recipients the “dignity” of work. Franklin D. Roosevelt himself described welfare as a “narcotic” and claimed, “continued dependence upon relief induces a spiritual and moral disintegration” (Roosevelt 1935). This characterization has continued to be a powerful force in American politics: decades later Ronald Reagan claimed that state assistance entrenches poverty by failing to encourage responsibility, resulting in a “sinful waste of human spirit and potential” (Reagan 1986). A narrative of personal responsibility is a key thread to exploring attitudes on poverty: the government is seen as having a role in supporting the poor, but unconditional support is far less palatable to the public (Gilens 1999). Though conservatives tend to generally express lower levels of support for state assistance programs, the idea that welfare should be conditional on work is common across the ideological spectrum (Zelleke 2005).

These narratives can be described in the language of framing. Conceptually, framing is the presentation of an issue alongside some amount of contextual information. This information can take many forms, from statistical analysis to narrative explanation, but the critical element of framing is that information is *selectively* presented (Iyengar 1991; Nelson, Oxley and Clawson 1997). Two broad categories of framing exist: logically equivalent statements that cast an issue in different light (i.e. “30% mortality rate” versus “70% survival rate”) and issue framing, which presents some amount of information that is a subset of all available information on a subject (Druckman 2004).

Issue framing is not just a matter of “spin;” it is also a practical consideration. For example, if I wanted to discuss DNA replication, I would selectively present information that I considered relevant, as opposed to providing a deluge of detailed scientific data. Similarly, many questions of public policy contain significantly complex levels of detail such that discourse cannot be truly comprehensive; some information will inevitably end up on the cutting room floor.

While framing is a useful cognitive shortcut that aids in navigating a complex world, choices about how to frame a given issue can be more politically motivated than pragmatic. Elites can deliberately create framing effects by selectively presenting facets of an issue that they believe will resonate with their constituents. However, such framings have significant limitations: the credibility of the elite in question, as well as the political affiliation of the speaker relative to their audience, are strong predictors of how powerfully a given frame will resonate and overpower the overall salience of the framed issue itself (Druckman 2001; Hartman & Weber 2009).

Within the context of BI, the strength of issue framing, or even what frames are worth considering, is unknown. One advantage of examining BI issue framing is that the social policy of BI is not widely discussed in American political circles. Thus, the frames explored will not be as likely to contend with extant belief structures regarding BI. That said, there is significant information regarding the impact of framing in other areas of poverty policy.

While public support for state welfare programs cannot be distilled down to a single variable, the frame of personal responsibility—i.e. perceptions of how much control potential welfare recipients have over their circumstances—has been a significant predictor of welfare support levels. Groups that are seen as having less control over their poverty, such as the elderly, disabled, or sick, consistently score as more deserving recipients of welfare than those that are “only” unemployed (Larsen 2006, 47-8). Prior research has found connections between “episodic” individual framing, such as specific programs to alleviate poverty or case studies of poor individuals, and heightened perceptions of the poor being held personally accountable for their socioeconomic status. This is juxtaposed with more general “thematic” poverty framings, such as asking what responsibilities the state has to the poor writ large, that result in respondents believing that poverty flows from flaws in the wider economic environment beyond individual control (Jacoby 2000; Iyengar 1991). Unfortunately, these framings are significantly marred by racial bias.

The stereotype that African-Americans are “lazy,” alongside disproportionate media portrayals of welfare recipients as black, precipitates a racially charged view of state assistance: blacks are the face of poverty, yet are “lazy” and thus “undeserving” of the welfare that they receive. These racial attitudes are strongly correlated with attitudes on Americans’ support for welfare spending (Gilens 1999; Peffley, Hurwitz, & Sniderman 1997). Such biases are further echoed in the *prima facie*

paradoxical research that finds consistently high levels of support for government spending to combat poverty and homelessness, but a preference for reduced spending on programs that are perceived to be utilized disproportionately by black Americans, such as welfare and food stamps (Gilens 1999, 28). More recently, the racialization of welfare attitudes has been investigated in light of immigration perspectives as public perceptions of illegal immigrants as welfare beneficiaries has grown (Hussey and Pearson-Merkowitz 2013). This is an example of powerful framing at work: Americans profess strong support for helping the poor, yet reverse their position when presented with frames that ask about specific programs despite evidence that assistance programs are indeed beneficial.

A study examining the impact of unconditional cash transfers to poor households in Kenya found that the payments had no effect on the proportion of household members active in the labor market compared to the 12 months prior. Households used the funds for durable improvements, such as a new roof, income diversification, such as livestock, and other consumer goods, yet temptation goods, such as alcohol and tobacco, did not see an observable consumption increase (Haushofer and Shapiro 2016, 2025–8). Despite public perceptions that the poor make irresponsible financial decisions, the economic choices of these households were decidedly pragmatic. Nor is a lack of correlation between cash assistance and increased temptation goods purchases limited to just this study.

The World Bank directly assayed 19 cash transfer assistance programs, as well as an additional 11 surveys that asked respondents about their usage of assistance funds, to determine if there was a linkage between temptation goods purchases and cash assistance. These studies spanned Latin America, Africa, and Asia, and in all but two cases the purchase of temptation goods either decreased, or there was no significant effect (Evans and Popova 2014). While it remains possible that some recipients of cash assistance will use the funds for frivolous, or even self-destructive, expenditures, the evidence strongly suggests that, writ large, recipients of cash assistance are responsible with their newfound liquidity.

A key difference between these studies and typical welfare programs is that of “unconditionality.” Most state-run welfare programs phase out benefits as participants receive employment wages. This de-facto additional marginal tax on earnings does create a disincentive to work by decreasing the payoff for doing so. In early American welfare systems, this marginal tax was 100%: for every dollar earned,

a dollar of state assistance was rescinded. Some programs were even more binary, with income above a key threshold completely disqualifying one from an entire assistance program (Marinescu 2017). Over time, the powerful employment disincentive engendered by such a steeply sloping marginal tax was acknowledged and welfare programs were gradually revised. However, such revision led to a system of patchwork benefits with varied phase out rates, transforming calculations of marginal tax on new dollars earned a challenging, if not Sisyphean, endeavor at best (Haskins 2012).

Because of these systemic differences, the outcomes above are not going to be entirely transferrable to the extant welfare systems of developed states. However, the unconditional cash transfers used in Kenya do resemble a UBI paradigm, allowing us to predict that unconditional transfers have the potential to avoid some of the pitfalls of traditional means-tested welfare. Just as importantly, these studies illustrate that welfare and laziness are by no means inextricably linked.

An oft-acknowledged limitation of these studies is their constrained time frame. Programs would run, perhaps for years, and then the payments would cease. Participants were aware that today's cash transfers came with a defined expiration date, thus limiting how much we can extrapolate about economic behavior in the indefinite scenarios attendant with UBI (Widerquist 2005). As always, incentive structures must be taken into account.

The Limitations of Employment as a Solution to Poverty

Setting aside the question of dignity, simply being employed is not always enough to subsist without the assistance of the state. For a number of low-paying jobs, the percentage of U.S. workers enrolled in at least one major state assistance program remains striking: 52% of fast food workers, 46% of child care workers, 48% of home care workers, and 25% of part-time college faculty (Jacobs, Perry, and MacGillivray 2015). Despite the focus of American polling rhetoric on employment as the solution to poverty, citizens are ambivalent about the state's role in ensuring employment opportunities. In 1986, only 34.2% of Americans considered "seeing to it that everyone that wants a job can have one" as an essential responsibility of the government, compared to 78.9% in Italy and 54.6 in the United Kingdom (Smith 1987, 417). A similar, more recent, question on the American National Election Studies

(ANES) survey asks respondents if the government should see to it that every individual has a job and good standard of living, or if each person should simply chart their own course. Even looking at numbers before, during, and after the financial crisis show that support for Washington's role is low, with 31% in 2004, 27% in 2008, and 28% in 2012 seeing this responsibility more within the sphere of government as opposed to the individual (American National Election Studies, Table 4a, 4b).

Automation has the potential to dramatically shift this paradigm. If jobs become scarcer and labor devalued, it is conceivable that public opinion will change from perceiving unemployment as a choice to being a circumstance largely beyond individual control. The logic of new industries and their attendant jobs being spawned by technological advancement breaks down when the sum total of jobs available falls short of the working population by a significant margin.

When one thinks of automation technology, specifically in the context of replacing human labor, it is easy to assure oneself that the only jobs truly at risk are low skill, menial professions, with the rest of the job market safe. Indeed, some researchers claim that such low skill jobs are primarily the ones that will be impacted by automation (Frey and Osborne 2013). Others disagree, asserting that a far greater range of professions may be on the digital chopping block (Ford 2015).

As evocative as it is to imagine robot factory workers deposing blue-collar workers, the greatest impacts from automation are likely to be in the realm of software and analytics instead of the far more complicated world of robotics (Ford 2015). Ever increasing volumes of information are created, stored, uploaded, categorized, and analyzed in the course of our daily activities. Though the term "big data" has entered the vernacular, the truly staggering amounts of information involved are hard to conceptualize. If we were to divide all the information in the world and give every person an equal share, each human would have a trove 300 times greater than the amount of information believed to have been stored in the Library of Alexandria (Cukier and Mayer-Schoenberger 2013, 28). Such comparisons border on purple prose, but having some mental model for the quantities of data being discussed is useful. Even more important than the scale of information available in the modern world is the fact that it is digitized; searching vast caches of electronic records is far easier, and far more subject to automation, than an analog examination of physical files.

Automation also does not have to eliminate all jobs to cause a significant disruption. A 2013 Oxford University study estimated that 47% of the total U.S. workforce is at risk from automation (Frey and

Osborne 2013). Even if off by an order of magnitude, the potential spike in unemployment would be significant if such changes came to pass. The counterargument that technology eliminates some jobs while creating others falls on its face when one considers that the technology sector requires relatively few workers overall. A useful example is contrasting the workforces of General Motors and Google. After adjusting for inflation, General Motors in 1979 earned \$11 billion with a workforce of 840,000, and Google earned \$14 billion in 2012, but only employed 38,000 individuals (Ford 2015, 76). The phrase “doing more with less” does not do justice to the incredible reduction in personnel possible within the modern tech industry.

Experimentation with BI

The most financially impactful dalliance with BI proposals in the United States was the NIT experiments of the 1960’s and 70’s. Programs were established in six states, involved thousands of recipients, and the most generous of the trials provided the equivalent of \$25,900 (in 2013 dollars) in guaranteed income (Marinescu 2017, 9–10). Compared to control groups, NIT recipients on average worked slightly less (two weeks) per year, and the children of parents receiving the NIT treatment had higher rates of school attendance as well as increased test scores (Marinescu 2017, 3–4). However, these experiments baked in a series of methodological limitations. Sample selection was not random (only families below 150% of the poverty line were enrolled), long term responses to NIT treatments were not measured (experiments only lasted a few years), those with greater extant incomes were assigned to more generous programs in order to reduce the overall cost of the experiment (the NIT phased out as income increased, but at a rate of less than dollar for dollar), and the NIT levels studied were far more generous than the welfare programs that, in theory, they were replacing (Widerquist 2005, 57–8). Changing political winds eventually undermined these NIT experiments in North America. Support withered under the public perception that groups receiving the NIT treatment had much higher divorce rates, but this was discovered, much later, to be a statistical error (Forget 2011).

Another example in the conceptual realm of BI is the Alaska Permanent Fund. Created in 1976, the Fund provides a yearly dividend check from oil proceeds to each permanent resident of Alaska, regardless of income level (Smith 1991; Hsieh 2003). The amount is not enough to solely survive on without other sources of income (it ranges from

\$1,000–\$2,500 per year, depending on the price of oil), but the program has operated for decades with no perceptible end in sight, save for the depletion of the underlying oil reserves.

Alaska also provides a natural case study to explore the impact of unconditional, but of varying size, cash payments over time. From the available data, it appears that consumption patterns are not sensitive to the size of the dividend: household spending is not very elastic *vis a vis* the amount of the dividend (Hsieh 2003). Though it is, quite literally, an isolated example of unconditional income in America, the Alaska experience does offer evidence that BI funds would not be, in aggregate, frivolously spent.

Political Challenges

Of the many challenges to implementing BI, the timeline for a successful transition is especially difficult to navigate. Implementing a full-fledged BI system overnight would be a dramatic, inadvisable economic shock, even if the political will to do so existed. Instead, most proposals on the subject advocate a gradual, piecemeal transition to “full” BI (Groot 2004, 118–21). While this gradual strategy may very well be best in the long term, it presents the challenging problem of sustaining political will long enough to see the project to fruition.

Further complicating the implementation of any policy requiring a long maturation cycle is found in the very nature of political parties. Since many parties identify themselves by the policies they support or oppose, a single party taking up a cause may prevent others from following suit in the name of differentiation (Wispelaere & Nogura 2012, 23). This is especially detrimental to protracted projects like BI; a change in political leadership could scuttle progress mid-stream. However, if public support for BI is significant, there is less incentive for any given political party to differentiate themselves via opposition.

Not all political considerations are barriers to BI implementation. One positive element is a reduction in bureaucratic overhead. A 2011 study found that Brazil’s Bolsa Familia program, which provides cash benefits to low income individuals, saved significantly on administrative costs: the program cost 30% less per person when compared to traditional welfare structures (Tepperman 2016, 41). Direct cash transfer programs like the Brazil model are more resilient to corruption as well: if every individual knows how much they should receive, skimming becomes painfully obvious (Tepperman 2016, 42).

Such ample academic discourse on BI provides fertile ground to explore public opinion. The pathway explored here is to investigate the utility of different issue framings on public support levels for BI. Determining underlying “baseline” support levels for BI was not the goal, though research along that vein would be useful to the field writ large. Instead, we will explore how much we can nudge public opinion with a series of arguments that should, in theory, bolster support for BI. Ideally, this research can then be used as a guide for future work, or as a touchstone for those seeking to engage the public on the topic of BI.

Each framing was designed to address a potential concern regarding BI, from the objection that individuals simply need to try harder to find work and helping those unwilling to put forth effort is not the government’s role, to inequality not being a major problem and, even if it was, UBI has not been tested. To counter these positions, framings are presented that cite the potential of automation to impact large swaths of job-seekers, state obligations under the United Nations Universal Declaration of Human Rights, a report highlight the systemic dangers of income inequality, and a program in the U.S. that is working on field trials of UBI.

172

Before analyzing the data collected, I expected that the automation argument would significantly bolster support, and that the framing emphasizing the dangers of income inequality would demonstrate a similarly powerful effect. For the former, I expected the automation argument to make the respondent reflect on the possibility that they may need to make use of UBI themselves in a job-scarce future. Regarding instability, I framed the issue as income inequality being a threat to national security in hopes of tapping into a desire to support what might be perceived as a security-increasing public policy.

Each respondent was randomly assigned, with equal weight, to one of the treatment groups. Table 1 displays the question wording, which was either a control group or the text of the control treatment along with a framing issue related to UBI. To this author’s knowledge, the only large-scale public opinion survey of BI attitudes to date is the E28 pan-European omnibus survey. As there is no established standard for explaining BI in the context of a survey, the language used for the **Control** is replicated from that study (Jaspers 2016).

Survey Methodology

TABLE 1.

Experimental Grouping	Question Wording
BI Control	A basic income is an income unconditionally paid by the government to every individual regardless of whether they work and irrespective of any other sources of income. It replaces other social security payments and is high enough to cover all basic needs (food, housing etc.)
BI Pilot	Currently, scientists in the United States are building a pilot program to directly study what happens when individuals are given a basic income. + BI Control
BI UN	Article 25 of the United Nations Universal Declaration of Human Rights states: "1. Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control." + BI Control
BI Automation	Advances in technology have allowed many workers to be replaced with automated systems. Some industry experts predict that even high skill jobs, such as medical doctors, could be replaced in the near future, and that 47% of all jobs are potentially vulnerable to automation. + BI Control
BI Inequality	Some consider income inequality to be a significant threat to national security. Persistent income inequality was listed as the #1 global risk in the 2017 Global Risks Perception Survey produced by the World Economic Forum. + BI Control
BI CitDiv	A citizen's dividend is an income unconditionally paid by the government to every individual regardless of whether they work and irrespective of any other sources of income. It replaces other social security payments and is high enough to cover all basic needs (food, housing etc.)

The framings were selected to cast a wide argumentative net: state obligations to citizens in the context of international organizations, concerns about income inequality, the specter of job losses to automation, and real world BI experiments. While subgroup analysis may uncover framings that are more, or less, effective at influencing opinion compared to the aggregate data set, none of the issues presented argue *against* BI.

Thus, our first hypothesis is:

H1: No framing will decrease mean BI support below that of the control treatment.

Among the treatments, **BI Automation** is predicted to have the strongest impact upon support levels: by playing to a force beyond individual control, it should overcome some reservations based upon perceptions of personal responsibility

H2: BI Automation will exhibit the strongest treatment effect.

As a final experiment, one group had all instances of “basic income” replaced with “citizen’s dividend”, but otherwise were exposed to the same treatment wording as the control, in order to assay any difference arising from nomenclature alone. Previous studies have examined, and confirmed, the impact of issue framing on questions of government spending; the question we will explore is how effective these frames happen to be (Jacoby 2000).

Respondents were then asked, on the same page as the explanatory text and framing, “what is your opinion of basic income/a citizen’s dividend” (as appropriate) with options ranging on a 7-point scale from “like a great/moderate/little” to “dislike a little/moderate/great” along with a neutral option in the middle. Results were coded from 1–7, with higher values corresponding to higher levels of support for the policy. As much as possible, overt partisan cues were avoided in the construction of each frame. Political parties and figures are not mentioned, and, after much deliberation, no links to external sources were provided in an attempt to limit bias rooted in the provenance of the information presented in each frame.

By exploring different framings of the BI question, we can investigate the comparative resonance of each argument with our respondents. The sample collected is not fully representative of the general American population, with respondents being comprised of a self-selected group that decided to complete the survey via Amazon’s Mturk platform for monetary compensation. That said, Mturk respondent diversity, and response quality, is at least as good as generic (also non-representative) Internet polling samples (Buhrmester, Kwang, and Gosling 2011).

Knowing this in advance shaped the experimental design: baseline levels of support for BI would not be the primary mode of analysis. Instead, the delta between the Control treatment and each framing could be explored via independent sample *t-tests* in order to find statistically significant differences. Using such a design will allow us to search for resonant arguments at a relatively low cost (less than \$1/respondent after payments and service fees) before advancing promising framings

to more rigorously representative, and more expensive, survey collection methods. In essence, we are using Amazon Mturk as an executable rapid prototype on which future research can be built (Jones and Richey 2000, 64–5).

Particular attention will be paid to arguments that decrease support levels below that seen in the **Control** grouping. Each of the framings is designed to present an argument in favor of BI, so any framing that manages to do the opposite merits additional focus. This is true for the entire sample, as well as for subgroups of significant size.

Following the BI treatment, respondents were asked to indicate what they believed the impact(s) of implementing UBI would be. Within seven categories (national security, creativity, productivity, health, income inequality happiness, and trust in the government) there were options to indicate that the category would improve or get worse as a result of UBI. All fourteen state changes were presented in a random order, and each respondent could select as many, or as few, as they felt appropriate.

Overall, there were few concrete *a priori* hypotheses regarding the outcomes of this survey. The state of BI public opinion research is so sparse that very little can be predicted with any degree of certainty. Instead, this piece will lay some rudimentary groundwork for research.

Survey Results & Discussion

Respondents were aggregated by group, and their mean support levels for BI from 1–7 (1= least support, 7= most support, and 4= indifferent) were plotted for figure 1. Surprisingly, the impact of the **BI Automation** treatment was weak ($p = 0.123$, $\Delta_{mean} 0.24$). Initially, this treatment was hypothesized as likely to be the strongest framing. Automation technology's impact on employment has received significant media coverage in the last year (Gillespie 2017; McFarland 2017; Isidore 2017; Mahdawi 2017; Quart 2017). Given widespread dissemination, the assumption was that concerns regarding automation would resonate and significantly bolster support for UBI. A larger sample size might have allowed us to make a more definitive claim, but from the data collected the impact of the **BI Automation** framing appears minimal.

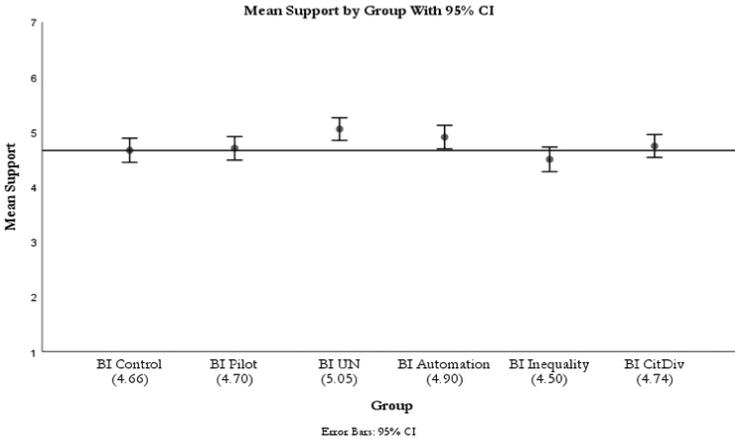


FIGURE 1.

Examining the data set as a whole, only one framing resulted in a highly significant difference in mean support levels: **BI UN** ($p = 0.012$, $\Delta_{mean} 0.39$). The basis for this treatment was text from the United Nations Universal Declaration of Human Rights (UDHR), a foundational document in the international human rights regime adopted by the General Assembly in 1948 (UN General Assembly 1948). The language of the Declaration was targeted at the common individual, and there were significant efforts to make it comprehensible to an audience of non-experts. Key inputs were sourced from hundreds of pages of state constitutions, consultations with various nongovernmental organizations, and UN representatives from 18 states. After a period of substantial debate, it was decided that greater consensus could be achieved by making the document a completely nonbinding declaration as opposed to a treaty (Morsink 1999).

Lacking the heft that accompanies treaties, the UDHR is more akin to an affirmation of norms within international customary law that arises from “common consent of civilized communities,” though it should be noted that the UDHR disproportionately represented the views of Western states: decolonization had yet to run its course in 1948 (Steiner & Alston 2000, 65; Morsink 1999). Within the context of an opinion poll, the UDHR was selected for its clarity despite it representing a weak institutional obligation to states. Though it is easy to dismiss the impact of international organizations (IO), there is evidence that even in the realm of international security, the area least likely to see effective IO action, the actions taken by the UN have had an impact on

public opinion (Chapman 2009). Data collected here seems to support the idea that IOs do matter in the arena of public opinion, though we must be cautious to not overstate our claims.

To further elucidate opinions on UBI, respondents were asked to select what they perceived as the likely impacts of implementing UBI. Each respondent was presented a randomly ordered list of outcomes, both negative and positive (i.e. “productivity will go up” and “productivity will go down”) and asked to mark all that they saw as likely outcomes of a UBI being adopted. Then, the percent that indicated a decline in a given category were subtracted from the percent that indicated an improvement. This data presentation is similar to the method of reporting the net favorability of a political figure, with a negative number indicating a net disfavor among respondents (Lavrakas 2008). The goal was to see if there were any strong connections between a given frame and its perceived impacts.

Table 2 illustrates these perceived impacts of UBI. Across treatment groups, the concern that UBI would reduce productivity was a key trend. This tracks with the results of the E28 survey, where 43% of respondents found the idea that UBI could encourage individuals to quit their jobs as a compelling argument against basic income (Jaspers 2016). Notably, **BI UN** was the only framing that lacked a net negative belief that UBI would cause productivity to drop. This treatment also scored the highest on impacts to creativity, health, happiness, and government trust.

TABLE 2.

	Net Perceived Impacts of UBI (total n = 2068)						
	(Percent Indicating Improvement Minus Percent Indicating Decline)						
	Productivity	Creativity	Natl. Sec.	Health	Equality	Happiness	Gov. Trust
BI Control	-21.1	4.5	3.4	29.8	38.2	47.6	38.0
BI Pilot	-12.0	11.1	6.3	35.0	37.7	49.1	41.3
BI UN	1.5	20.3	7.1	45.1	43.3	56.4	42.0
BI Auto	-9.8	11.3	9.2	36.9	47.3	45.8	38.9
Bi Inequal	-17.6	7.9	8.5	31.9	39.6	40.2	30.5
BI CD	-17.0	7.9	8.8	32.6	36.7	49.6	35.2

Indication of at least one negative impact of UBI was a very strong ($p < 0.001$) predictor of UBI support levels below the overall mean; the same was true for those that indicated at least one positive impact and support above the overall mean ($p < 0.001$). This suggests that support for UBI is not widely seen as a tradeoff; indeed, those that had “mixed” indications (defined as indicating at least one positive effect and at least one negative effect) had significantly ($p < 0.001$) lower support levels ($n = 539$, $mean = 4.20$) than those not indicating a mixed outcome ($n = 1528$, $mean = 4.95$).

Given this information, it is not surprising that the strongest framing would also correlate with strong beliefs about the positive effects of UBI. However, the tone of our framings adds a cautionary note to our analysis. While **BI Pilot** and **BI CD** are neutral framings, **BI Inequal** and **BI Auto** are both negative: they describe threats or concerns that UBI might be a solution to. **BI UN** is the only framing that could be construed as positive in describing the obligations of states to their populace. Research suggests that negative framing can be more effective at arousing emotive responses, but there is also evidence that, given two logically equivalent framings of the same information, negative framing can reduce overall support for an underlying issue (Anson 2016; Ito et al. 1998; Druckman 2004). The framings investigated here were not functionally equivalent, but it is still possible that the relatively positive wording of **BI UN** played a role in elevated support levels.

Also noteworthy is the last line in the **BI UN** treatment: “...circumstances beyond his control.” Earlier discussion touched on significant linkages between welfare support and notions of control over circumstances, so some or potentially the majority of the observed treatment effect could be attributed to this linkage. Curiously, the other treatment exploring circumstances beyond individual control, **BI Auto**, did not result in a significant support level increase. One potential explanation, buoyed by the only framing with an observable effect being the one that contained language regarding “circumstances”, is that respondents did not implicitly consider job losses via automation as a force beyond individual control. **H2** was based on automation representing the largest paradigm shift away from individual culpability; the data suggests control played a role, but not as anticipated, and **H2** was incorrect. Further research may reveal however, under more explicit framing, individuals reacting to a relationship between control and job automation.

As discussed earlier, support for social welfare programs is generally lower amongst conservatives (Epstein 1997). This trend is likely to hold true within the context of this survey as well, but it is possible that some

arguments for BI will be more persuasive than others despite overarching conservative skepticism of welfare. Any framing that is significantly resonant with conservatives thus merits extra attention, especially if that framing does not perform poorly overall. Even if such a framing had a weaker, but still positive, resonance with other groups it would be worth investigation for the potential to recruit conservative holdouts. Figure 2 and table 3 display results from those coded as conservative (5,6,or 7 on a 1 to 7 scale from liberal to conservative, $n = 596$).

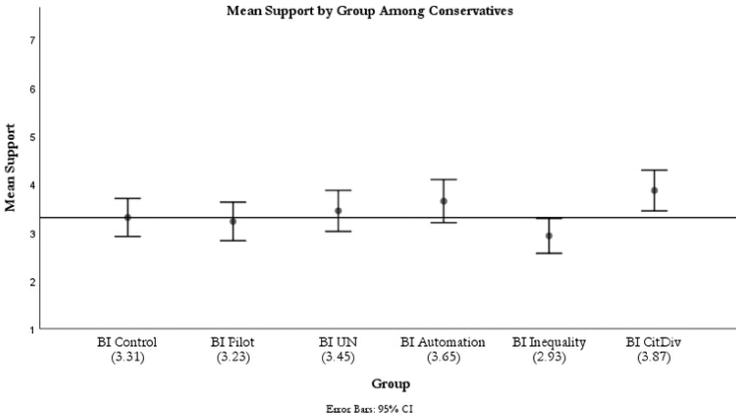


FIGURE 2.

Unfortunately, sample size restrictions limit the conclusions that we can draw from the Conservative subgroup. The data does align generally with our expectations: conservatives express a dramatically lower support for UBI across all treatment groups ($p < 0.001$), with no framings able to bring support levels above neutral. Curiously, the **BI Inequality** treatment reduced support below that of **BI Control**, but our n is simply too small to say anything definitive about the significance of the resultant data ($p = 0.16$ $\Delta_{mean} 0.38$). H1 holds true, though follow-up research is warranted in order to explore the effect of **BI Inequality** amongst conservatives.

Declines in productivity were the strongest concern in all groups for conservatives. Notably, only the **BI Inequal** treatment resulted in net negative impacts on equality and happiness, both of which could benefit from future investigation with a larger sample size. Here we can observe a disconnect between a survey about a theoretical BI and an operational program.

TABLE 3.

	Net Perceived Impacts of UBI by Conservatives (total n = 596)						
	(Percent Indicating Improvement Minus Percent Indicating Decline)						
	Productivity	Creativity	Natl. Sec.	Health	Equality	Happiness	Gov. Trust
BI Control	-70.9	-33.0	-14.6	-8.7	7.8	7.8	13.6
BI Pilot	-51.0	-16.7	-10.8	-6.9	6.9	13.7	29.4
BI UN	-59.8	-28.7	-12.6	4.6	0.0	12.6	12.6
BI Auto	-58.2	-29.7	-7.7	-3.3	15.4	2.2	16.5
Bi Inequal	-70.2	-44.7	-16.7	-5.3	-7.0	-3.5	0.0
BI CD	-52.0	-28.0	-2.0	7.0	11.0	25.0	19.0

180

As mentioned earlier, the Alaska Permanent Fund is a universal program for residents, though the cash payouts are too small to subsist fully on. Politically, Alaska is fairly conservative, with only 23% of the population identifying as liberal in a 2014 study (Religious Landscape Study 2014). Despite this, a different study found only 16% felt the Fund had a negative impact on a willingness to work (Harstad 2017). This finding may encourage UBI advocates, as some opposition to a plan on paper may evaporate upon program implementation.

Overt partisan cues were actively avoided in the construction of each frame. However, there is evidence that subtle cues that align with extant worldviews can be quite powerful in activating partisan bias (Anson 2016). This effect could explain the result seen in the **BI CitDiv** frame. Representing the smallest divergence from the wording of **BI Control**, this treatment still managed to have a moderately significant ($p = .056$ $\Delta_{mean} 0.56$) impact on mean support levels. Data from the E28 survey can help us elucidate a potential reason for this shift: 34% of respondents in that survey found “foreigners might come to my country to take advantage” a compelling argument against UBI (Jaspers 2016). By wording the proposal as a “citizen’s dividend”, it is implied that UBI would only be provided to citizens, and not instead to all residents, which may have ameliorated concerns along the immigration lines seen in the E28 survey. This result also reinforces recent survey work that Americans perceive immigrants as disproportionate recipients of state assistance (Hussey and Pearson-Merkowitz 2013).

Conclusion

Much work remains to be done in the realm of BI public opinion research. As a policy choice, basic income is still very much in its infancy, with many questions of both efficacy and popular support remaining unknown. It is also important to moderate our expectations as to what a program like BI can accomplish. BI is not a panacea for the difficult problem of income inequality, much less the world's wider economic struggles. A future with a fully implemented BI could still grapple with poverty and vast wealth disparities if only elites are able to secure jobs in a world rife with automation. Such techno-feudalism is more dystopian than idealistic, and by some accounts a very real danger in coming decades (Ford 2015). Yet we cannot stop the unrelenting march of technology, nor should we seek to. Increases in productivity and more efficient resource utilization may not usher in a post-scarcity society anytime soon, but they have the potential to create a less scarce tomorrow. As the value of labor continues to decrease in light of ever more versatile capital, the social contract between citizens, their governments, and the corporations wedged in between will have to be amended, if not entirely rewritten.

181

Citations

- American National Election Studies (www.electionstudies.org). THE ANES GUIDE TO PUBLIC OPINION AND ELECTORAL BEHAVIOR. Ann Arbor, MI: University of Michigan, Center for Political Studies. http://www.electionstudies.org/nesguide/top/table/tab4a_4b.htm
- Anson, Ian G. 2016. "Just the Facts? Partisan Media and the Political Conditioning of Economic Perceptions" *Political Research Quarterly*. 69(3): 444-456.
- Baker, James A., Henry M. Paulson Jr, Martin Feldstein, George P. Shultz, Ted Halstead, Thomas Stephenson, N. Gregory Mankiw, and Rob Walton. "The Conservative Case for Carbon Dividends" *Climate Leadership Council*.
- BIEN. 2017 *About Basic Income*. <http://basicincome.org/basic-income/>.
- Buhrmester, Michael, Tracy Kwang, and Samuel D. Gosling. 2011. "Amazon's Mechanical Turk: A New Source of Inexpensive, Yet High-Quality Data?" *Perspective on Psychological Science*. 6(1):3-5
- Caputo, Richard K. 2008 "Standing Polanyi on His Head: The Basic Income Guarantee as a Response to the Commodification of Labor." *Race, Gender & Class* 15 (3/4): 143-61
- Chapman, Terrence L. 2009. "Audience Beliefs and International Organization Legitimacy." *International Organization* 63, no. 4: 733-64.
- Cukier, Kenneth, and Viktor Mayer-Schoenberger. 2013 "The Rise of Big Data: How It's Changing the Way We Think About the World." *Foreign Affairs* 92 (3): 28-40.
- Druckman, James N. 2001. "On the Limits of Framing Effects: Who Can Frame?" *The Journal of Politics* 63, no. 4 (2001): 1041-066.
- Druckman, James N. 2004. "Political Preference Formation: Competition, Deliberation, and the (Ir)relevance of Framing Effects." *The American Political Science Review* 98, no. 4: 671-86.
- Epstein, William M. 1997. *Welfare in America: How Social Science Fails the Poor*. Madison: University of Wisconsin Press.

- Evans, David K. and Anna Popova. 2014 "Cash Transfers and Temptation Goods: A Review of Global Evidence" *Office of the Chief Economist, Africa Region*. The World Bank.
- Ford, Martin. 2015 *Rise of the Robots: Technology and the Threat of a Jobless Future* New York: Basic Books.
- Forget, Evelyn L. 2011. "The Town with No Poverty: Using Health Administration Data to Revisit Outcomes of a Canadian Guaranteed Annual Income Field Experiment" *Canadian Public Policy* 37(3): 283-305.
- Frey, Carl Benedikt and Michael A. Osborne. 2013. *The Future of Employment: How Susceptible Are Jobs to Computerisation?* University of Oxford, Oxford Martin School Working Paper.
- Friedman, Milton. 1962. *Capitalism and Freedom*. Chicago: University of Chicago Press.
- Gilens, Martin. 1999. *Why Americans Hate Welfare: Race, Media, and the Politics of Antipoverty Policy*. Chicago: University of Chicago Press.
- Groot, Lock. 2004 *Basic Income, Unemployment and Compensatory Justice*. Boston: Kluwer Academic.
- Harstad, Paul. 2017. "Executive Summary of Findings from a Survey of Alaska Voters on the PDF" The Economic Security Project. <http://basicincome.org/news/2017/07/us-survey-shows-majority-support-for-permanent-fund-dividend-amid-continued-legal-controversy/>
- Hartman, Todd K., and Christopher R. Weber. "Who Said What? The Effects of Source Cues in Issue Frames." *Political Behavior* 31, no. 4 (2009): 537-58.
- Haskins, Ron. 2012. "Testimony of Ron Haskins, Co-Director of the Center on Children and Families, Brookings Institution" *U.S. House of Representatives Committee on the Budget*. April 17. <https://www.brookings.edu/testimonies/means-tested-programs-work-incentives-and-block-grants/>
- Haushofer, Johannes, and Jeremy Shapiro. 2013 Policy Brief: Impacts of Unconditional Cash Transfers. *Massachusetts Institute of Technology*.
- Haushofer, Johannes, and Jeremy Shapiro. 2016 "The short-term Impact of Unconditional Cash Transfers to the Poor: Experimental Evidence from Kenya." *Quarterly Journal of Economics* 131 (4): 1973-2042. doi: 10.1093/qj/eqlqjw025
- Hsieh, Chang-Tai. 2003. "Do Consumers React to Anticipated Income Changes? Evidence from the Alaska Permanent Fund." *The American Economic Review* 93, no. 1: 397-405.
- Hussey, Laura S. and Shanna Person-Merkowitz. 2013. "The Changing Role of Race in Social Welfare Attitude Formation: Partisan Divides Over Undocumented Immigrants and Social Welfare Policy". *Political Research Quarterly*. 66(3): 572-584.
- Isidore, Chris. 2017. "Robots Could Wipe Out Another 6 Million Jobs" *CNN*. Last modified May 19. <http://money.cnn.com/2017/05/19/technology/future/retail-job-robots/index.html>
- Ito, Tiffany A., Jeff T. Larsen, N. Kyle Smith, and John T. Cacioppo. 1998. "Negative Information Weighs More Heavily on the Brain: The Negativity Bias in Evaluative Categorizations." *Journal of Personality and Social Psychology* 75 (4): 887-900.
- Iyengar, Shanto. 1991. *Is Anyone Responsible? : How Television Frames Political Issues*. Chicago: University of Chicago Press.
- Jacobs, Ken, Ian Perry, and Jenifer MacGillvary. 2015. "The High Public Cost of Low Wages" *University of California, Berkeley Labor Center*. April 13. <http://laborcenter.berkeley.edu/the-high-public-cost-of-low-wages/>
- Jacoby, William G. 2000. "Issue Framing and Public Opinion on Government Spending." *American Journal of Political Science* 44, no. 4: 750-67. doi:10.2307/12669279.
- Jaimovich, Nir and Henry E. Siu. 2012 "The Trend is The Cycle: Job Polarization and Jobless Recoveries" *National Bureau of Economic Research* working paper no. 18334. <http://www.nber.org/papers/w18334>
- Jaspers, Nico. 2016. "What do Europeans Think About Basic Income?" *Dalia Research Report*. http://www.basicincome.org/wp-content/uploads/2016/05/EU_Basic-Income-Poll_Results.pdf.
- Jones, Toni Stokes, and Rita C. Richey. 2000. "Rapid Prototyping Methodology in Action: A Developmental Study." *Educational Technology Research and Development* 48, no. 2: 63-80.
- Larsen, Christian Albrekt. 2006 *The Institutional Logic of Welfare Attitudes: How Welfare Regimes Influence Public Support* Hampshire: Ashgate Publishing Limited
- Lavrakas, Paul J. 2008. *Encyclopedia of Survey Research Methods*. Thousand Oaks, CA: Sage Publications, Inc. doi: 10.4135/9781412963947.
- Mahdawi, Arwa. 2017. "What Jobs Will Still be Around in 20 Years?" *The Guardian*. Last modified June 26. <https://www.theguardian.com/us-news/2017/jun/26/jobs-future-automation-robots-skills-creative-health>

- Marinescu, Ioana E. 2017. *No Strings Attached: The Behavioral Effects of U.S. Unconditional Cash Transfer Programs* New York: Roosevelt Institute, 2017. http://www.marinescu.eu/Marinescu_BI_review_2017.pdf
- McFarland, Matt. 2017. "What Happens When Automation Comes for Highly Paid Doctors?" *CNN*. Last modified July 14. <http://money.cnn.com/2017/07/14/technology/business/radiology-doctors-artificial-intelligence/index.html>
- Moffitt, Robert A. "The Negative Income Tax and the Evolution of U.S. Welfare Policy" 2013 *Journal of Economic Perspectives* 17(3):119-140.
- Morsink, Johannes. 1999. *The Universal Declaration of Human Rights: Origins, Drafting, and Intent*. Philadelphia: University of Pennsylvania Press.
- Nelson, Thomas E., Zoe M. Oxley, and Rosalee A. Clawson. 1997. "Toward a Psychology of Framing Effects." *Political Behavior* 19, no. 3 (1997): 221-46.
- Oishi, Shigehiro, Selin Kesebir, and Ed Diener. 2011 "Income Inequality and Happiness." *Psychological Science* 22, no. 9: 1095-100.
- Paine, Thomas. 1797 *Agrarian Justice*.
- Peffley, Mark, Jon Hurwitz, and Paul M. Sniderman. 1997. "Racial Stereotypes and Whites' Political Views of Blacks in the Context of Welfare and Crime." *American Journal of Political Science* 41, no. 1: 30-60. doi:10.2307/2111708.
- Quart, Alissa. 2017. "Automation is a Real Threat. How Can We Slow Down the March of the Cyborgs?" Last modified August 8. <https://www.theguardian.com/us-news/2017/aug/08/humans-v-robots-defending-jobs>.
- Reagan, Ronald. 1986 "Message to the Congress on America's Agenda for the Future" *The American Presidency Project*. <http://www.presidency.ucsb.edu/ws/index.php?pid=36768>
- Reich, Robert B. 2015. *Saving Capitalism: For the Many, Not the Few*. New York: Random House LLC.
- Religious Landscape Study. 2014. *Religion & Public Life*. Pew Research Center. <http://www.pewforum.org/religious-landscape-study/state/alaska/political-ideology/>
- Roosevelt, Franklin D. 1935 "Annual Message to Congress" *The American Presidency Project*. <http://www.presidency.ucsb.edu/ws/index.php?pid=14890>
- Smith, Peter J. 1991. "The Politics of Plenty: Investing Natural Resource Revenues in Alberta and Alaska." *Canadian Public Policy / Analyse De Politiques* 17, no. 2: 139-54. doi:10.2307/3551025.
- Smith, Tom W. 1987. "A Report: The Welfare State in Cross-National Perspective." *The Public Opinion Quarterly* 51, no. 3: 404-21.
- Steiner, Henry J. and Philip Alston. *International Human Rights in Context: Law, Politics, Morals*. Oxford: Oxford University Press.
- Stiglitz, Joseph E. 2015 *The Great Divide: Unequal Societies and What We Can Do About Them*. New York: W.W. Norton & Company.
- Tepperman, Jonathan 2016 "The Rise of Big Data: How It's Changing the Way We Think About the World." *Foreign Affairs* 92 (3): 34-44.
- UN General Assembly. 1948. "Universal Declaration of Human Rights". GA/Res/217A. <http://www.un.org/en/universal-declaration-human-rights/>
- Widerquist, Karl. 2005. "A Failure to Communicate: What (If Anything) Can We Learn from the Negative Income Tax Experiments?" *The Journal of Socio-Economics* 34(1):49-81.
- Wispelaere, Jurgen De, and Jose A. Noguera. 2012 "On the Political Feasibility of Universal Basic Income: An Analytic Framework." In *Basic income guarantee and politics: international experiences and perspectives on the viability of income guarantee*, ed. Richard Caputo. 17-34. New York: Palgrave Macmillan.
- Wolff, Edward N. "Household Wealth Trends in the United States, 1962-2013: What Happened Over the Great Recession?". *National Bureau of Economic Research Working Paper Series*.
- World Economic Forum. 2017. *Global Risks Report 2017*. www3.weforum.org/docs/GRR17_Report_web.pdf
- Zelleke, Almaz. 2005. "Basic Income in the United States: Redefining Citizenship in the Liberal State." *Review of Social Economy* 63, no. 4: 633-48.
- Zucker, Ross. 2004 "On the Future of Justice Debates" *The Good Society*, 13(1): 67-82.



**Maternal Depression
and Other Possible
Barriers to Early Head
Start/Head Start
(EHS/HS) Enrollment
in Baltimore, Maryland**

Marina Mizell

Author Bio and Research Journey

Marina Mizell obtained degrees in Biological Sciences (B.A.) and Interdisciplinary Studies (B.A.), a History minor, and Honors College certificate in Spring 2017 from UMBC. During her time at UMBC, she held a research assistantship with University of Maryland, School of Medicine, Department of Pediatrics, Growth and Nutrition Division where she regularly administered surveys on behalf of Children's HealthWatch (CHW). She is currently a Medical Student (MS1) at Pennsylvania State University College of Medicine in Hershey, PA. She plans to pursue a residency in Pediatrics or Otolaryngology following Medical School. Marina thanks her mentors, Dr. David Eisenmann, Biological Sciences, Ms. Carrie Sauter, Interdisciplinary Studies, and Dr. Eileen O'Brien, Psychology for their support and mentorship throughout the research process. She also thanks Dr. Maureen Black, Department of Pediatrics, Growth and Nutrition Division at the University of Maryland, School of Medicine for allowing Marina to utilize her data for this study, for without it, this study would not have occurred.

Abstract

This data analysis aimed to determine what relationship, if any, existed between maternal depression and enrollment of children under the age of four in the Baltimore City Early Head Start/Head Start (EHS/HS) programs. Previous research supported a correlation between preventing the delay of cognitive development and increasing readiness to learn with the implementation of early childhood education programs, causing concern for the large number of eligible, non-enrolled children. It was expected that mothers who reported depressive symptoms would be less likely to enroll their child in the EHS/HS programs than mothers who did not report depressive symptoms. Data was obtained from a total of 7,926 Children's HealthWatch surveys administered to mothers between 1998 and 2015. In addition to maternal depression, eight other variables were analyzed using a Chi-squared analysis within SPSS. An equal number of mothers reporting depressive symptoms (1.0 percent) and reporting no depressive symptoms (1.2 percent) enrolled their child in the EHS/HS programs (Chi-squared = 0.439; $p < 0.508$). The data indicated there was no statistically significant relationship between EHS/HS enrollment and maternal depressive symptoms. Possible explanations for this finding included lack of random sampling and exclusion of male caregivers.

Introduction

According to the Federal Office of Head Start website (2016), Early Head Start and Head Start (EHS/HS) programs help to promote the school readiness of young children from low-income families through local programs that support the mental, social, and emotional development of children from birth to age five (Office of Head Start Enrollment, 2016). Despite these benefits, a 2012 study reported that only 42% of children eligible for the Head Start (HS) program were actually enrolled; just 4% of eligible Early Head Start (EHS) children participated in the program (OEC, 2014).

EHS/HS programs aim to support the growth and development of children by specifically targeting social skills, emotional well-being, language, and concept development (Office of Head Start Enrollment, 2016). EHS/HS programs offer information about healthy child eating and exercise habits and ensure that all enrolled children receive health and development screenings and well-child physical examinations on the recommended schedule.

In 2000, Faith Lamb-Parker, a researcher at the Bankstreet College of Education in New York, administered a survey to mothers of children eligible for the New York HS program; they identified 27 barriers to parental participation in EHS/HS (Lamb-Parker et al., 2000). A significant barrier was maternal depressive symptoms, with 47.1% of the mothers reporting often feeling sad, “down,” or depressed, and 16.2% identifying depressive symptoms as a barrier to their own participation in EHS/HS activities.

Depression is a “chronic mental illness that is characterized by depressed mood, anhedonia, irritability, concentration difficulties, and abnormalities in appetite and sleep” (Wang et al., 2016). Throughout the paper, “depressive symptoms” will be used to mean having any of the above symptoms, as reported by the caregiver to the 3–4 questions in Appendix A, although some caregivers may also have a diagnosis of clinical depression.

Children’s HealthWatch (CHW), a nonpartisan network of pediatricians, public health researchers, and children’s health and policy experts, aims to improve government financial assistance programs by researching the growth, nutrition, and development of children whose families currently receive assistance. They coordinate with five hospitals nationwide to administer surveys to caregivers of infants and toddlers under 48 months of age. After completing the survey, caregivers are given information on additional assistance programs, such as housing

assistance, mental health services, and employment training. Maryland EHS/HS programs typically serve over 10,000 children every year, but not all eligible children enroll or remain enrolled (Head Start Program Facts Fiscal Year, 2015). At the University of Maryland Medical Center (UMMC), the CHW survey results show a low level of EHS/HS enrollment (1.2%). This surprising statistic motivated the analysis reported here.

The subsequent data analysis aimed to answer the following questions:

1. What relationship, if any, exists between maternal depressive symptoms and enrollment of children under the age of four in the Baltimore City EHS/HS program?
2. What is the relationship between mothers who report depressive symptoms and enrollment of children under the age of four in a child-care center other than EHS/HS?
3. What is the relationship between employed mothers and enrollment of children under the age of four in the Baltimore City EHS/HS program?
4. What is the relationship between employed mothers and enrollment of children under the age of four in a child-care center other than EHS/HS?
5. What is the relationship between mothers who report fair/poor physical health and enrollment of children under the age of four in the Baltimore City EHS/HS program?
6. What is the relationship between children in excellent/good health and enrollment of children under the age of four in the Baltimore City EHS/HS program?
7. What is the relationship between children with emotional, behavioral, or developmental problems and enrollment of children under the age of four in the Baltimore City EHS/HS program?
8. What is the relationship between children in families who have moved in the last 12 months and enrollment of children under the age of four in the Baltimore City EHS/HS program?
9. What is the relationship between children who have been homeless or living in a shelter and enrollment of children under the age of four in the Baltimore City EHS/HS program?

My hypotheses were that:

1. Mothers who report depressive symptoms are less likely to enroll their child in the Baltimore City EHS/HS or another program than mothers who do not report depressive symptoms.
2. Employed mothers are more likely to enroll their child in EHS/HS or another program than those who are not employed;
3. Mothers who report fair/poor physical health are more likely to enroll their child in EHS/HS than those who report excellent/good physical health;
4. Children in excellent/good health are more likely than those in fair/poor health to be enrolled in EHS/HS;
5. Children with emotional, behavioral, or developmental problems are more likely to be enrolled in EHS/HS than those without emotional, behavioral, or developmental problems;
6. Children in families who have moved in the last 12 months or have been homeless/living in a shelter are more likely to be enrolled in EHS/HS than those who have not moved/been homeless; and

190

I used an interdisciplinary approach to address these questions. The disciplines of biology, psychology, and sociology offer differing explanations for a lack of Early Head Start and Head Start enrollment within eligible populations. Each discipline explains limited reasons behind refraining from EHS/HS enrollment, but together, the three disciplines reveal the complex nature of barriers to EHS/HS enrollment. The following sections, divided by discipline, provide background information on the above variables based on the discipline in which each variable is best explained. With the exception of depressive symptoms, each variable is confined to a single discipline. Depressive symptoms are examined by all three disciplines because of its biopsychosocialⁱ nature.

The Discipline of Biology

Biological Foundations of Depression

The biological basis of depression is an area of interest for medical professionals who provide clinical treatment of this mental illness. The clinical symptoms of depression result from a number of biopsychosocial causes, which can be explained by the biogenic amine hypothesis, characterized by a decreased density of serotonin receptors in the mesiotemporal cortex (MTC)ⁱⁱ of the brain or by serotonin receptor dysfunction.

In 2016, Wang et al. demonstrated a significantly decreased density and binding of serotonin receptors in the MTC in clinically depressed individuals (Wang et al., 2016). In depressed individuals, specific areas of the brain may be impaired, giving rise to the changes in memory and mood characteristic of depression. For example, while the hippocampus, a brain region involved in learning and memory, has long been thought to play a role in depression, Nestler et al. implicated that multiple brain areas mediate the symptoms of depression (Nestler et al., 2002). Specifically, the team noted that the “neocortex and hippocampus may mediate cognitive aspects of depression, such as memory impairments and feelings of worthlessness, guilt, doom, and suicidality.” Wang et al. called for increased sample sizes in future studies in order to increase statistical power; with increased statistical power, researchers may be better able to understand the pathophysiological mechanisms of depression.

Maternal Physical Health

The data in this analysis suggest that mothers in poor physical health may be more likely to enroll their child in an early childhood education program. Mothers who report being in poor/fair physical health frequently reported being unable to work because they were disabled. Without the ability to work, some mothers rely on income from Social Security Disability or the Temporary Cash Assistance Program (TCA), which income-qualifies them for the Child Care Subsidy Program. Parents receiving TCA, regardless of voucher receipt, would be more likely to utilize EHS/HS programs for child care because the \$0 cost incentivizes EHS/HS for families on fixed incomes.

191

The Discipline of Psychology

Psychological Foundations of Clinical Depression

There are many psychological theories of depression, including those related to learning and helplessness theory. Learning theory describes behavior in terms of the context in which it takes place rather than by cognitive processes that elicit certain behaviors (Ramnerö, Folke, & Kanter, 2016). In the context of depression, learning theory posits that depression stems from multiple factors, including the absence of social reinforcement, reinforcement of depressive behaviors, and helplessness (Ramnerö, Folke, & Kanter, 2016).

Early models of depression noted that depressed individuals tend to withdraw from social interaction. Because social interactions provide social support and reinforcement of acceptable social behavior,

by withdrawing from social interaction, depressed individuals deprive themselves of this social reinforcement. Furthermore, even when depressed individuals maintain some degree of positive reinforcement via social interaction, they have been shown to exhibit a reduced response to positive reinforcement patterns and problems integrating reinforcements over time. Individuals who experience chronic stress also exhibit reduced reward responsiveness, making stress one of the leading causes for depression. While short-term stressful events, like the death of a loved one or becoming unemployed, have been implicated in depression, chronic stressors such as marital conflict and prolonged health problems have a bigger impact on the development of depressive symptoms (Ramnerö, Folke, & Kanter, 2016).

According to a study by Ramnerö, Folke, & Kanter, (2016) positively reinforced depressive behaviors like complaining and negative affect typically elicit genuine support from others (Ramnerö, Folke, & Kanter, 2016). But, over time, these behaviors can result in negative responses from others, worsening depression. For example, a depressed individual's complaints may initially be met with active listening and support, just as weariness is met with reassurance and offers of help with their responsibilities. But as time progresses and the depressed individual does not appear to recover, others may begin to respond negatively, causing the depressed individual to avoid further interaction with them. This learned adverse reaction to voicing concerns and feelings can ultimately lead to feelings of helplessness on the part of the depressed individual.

Helplessness theory is the foundation of hopelessness theory (Ramnerö, Folke, & Kanter, 2016). In Seligman's (1967) landmark experiment, dogs who at first attempted to escape the unavoidable shocks administered by the experimenters eventually ceased any attempt to avoid the shocks, even after an escape was made available (Seligman & Maier, 1967). Helplessness theory proposes that "repeated exposure to uncontrollable and aversive stimuli leads gradually to the belief that the aversive situation is inescapable, and a sense of helplessness ensues regarding the situation" (Liu, Kleiman, Nestor, & Cheek, 2015). This response leads to depression. While helplessness theory explains why some individuals become depressed when confronted with uncontrollable aversive stimuli, it does not explain why others are able to cope and do not develop depression.

Hopelessness theory builds on helplessness theory in that it proposes "those who attribute a negative event to internal, stable and global causes were at greater likelihood of developing depression," meaning

that only individuals who interpret the stressor to be inescapable would have an increased risk of becoming depressed (Liu, Kleiman, Nestor, & Cheek, 2015). Additional research on these theories is necessary in order to bridge gaps in literature and validate their clinical relevance (Liu, Kleiman, Nestor, & Cheek, 2015).

Child Emotional, Behavioral, and Developmental Problems

Child emotional, behavioral, and developmental problems may affect how well a child performs in the classroom, both academically and behaviorally. Head Start addresses these problems by using a “whole child” model that enhances development through educational, health, and nutritional services to children and families (Miller, Farkas, & Duncan, 2015). Many Head Start services are designed to help children from low-income families who are at risk for cognitive development, socio-emotional development, health, and family functioning problems. The implementation of these services is intended to help at-risk children gain the necessary skills to seamlessly enter kindergarten. While low-income children and Black/African American children have been identified as at-risk populations, according to a study by the National Institute for Early Education, Head Start is successful at preparing these children for kindergarten (Youn, 2016). According to Youn’s analysis (2016), children who attended Head Start for two years showed a higher level of cooperative classroom behaviors and fewer problematic behaviors in kindergarten. Moreover, these effects were strongest for children raised in families categorized with high risk factors.

193

The Discipline of Sociology

Sociological Foundations of Depression

According to a study by Ferlander et al., depressive symptoms are reported more often by women than men and are related to a multitude of causes including alcohol consumption, economic situation, and lack of social capital (Ferlander et al., 2016). Women who had little contact with relatives, or who were divorced or widowed had higher odds of reporting depression than those with more family contact according to Ferlander. The investigators also found that women who usually engaged with non-family members of differing ages also reported higher rates of depression than those with less regular contact. This study suggests that social capital may have differing effects on the individual depending on the types of interactions and the characteristics of those with whom the individual interacts, though follow up studies are needed. Specifically,

the data suggests that lack of interactions with family members and frequent interactions with non-family members of varying ages are mentally distressing.

Maternal Employment

A 2005 study by Chang, Huston, Crosby, and Gennetian investigated the impact of parental employment and welfare participation on their child's participation in the Head Start program (Chang, Huston, Crosby, & Gennetian, 2005). The study found that participation in the welfare program or employment increased parental usage of center-based child care, but decreased Head Start enrollment; that is, despite increased child care needs, working parents did not use Head Start to meet this need.

Homelessness and Moving Residence

In 1993, Koblinsky and Anderson studied the characteristics of homeless children enrolled in the Head Start program (Koblinsky & Anderson, 1993). They found that some parents were reluctant to enroll their child in Head Start due to embarrassment about their wearing ill-fitting clothing or being homeless, and that homeless parents often experience higher levels of anxiety and depression. Consequently, Head Start can link parents to community outreach workers, employment opportunities, and social services in order to help them become more self-sufficient and increase well-being.

Head Start programs actively recruit homeless children via routine contact with shelters, welfare hotels/motels, and transitional housing programs (Koblinsky & Anderson, 1993). Their goal is to enroll and maintain enrollment of children who are homeless. In Montgomery County, Maryland, local shelters contact Head Start whenever an eligible child arrives. In order to help parents maintain their child's attendance in Head Start, many programs also offer van or bus services that run from nearby shelters to the program's location.

Methodology

Study data was compiled from Children's HealthWatch surveys administered in the University of Maryland Medical Center's Pediatric Emergency Room between 1998 and 2015. Eligibility criteria for the survey included that the patient was under four years of age, was not in critical condition, and had not participated in the survey in the last sixth months. This data was provided to the investigator

in a de-identified format, and saved as a data file readable by SPSS Statistics software (Statistical Package for the Social Sciences). Because data from depression screening questions is collected only from biologically related maternal caregivers, data from interviews with paternal and non-biologically related caregivers was excluded. After adjusting for biologically related maternal respondents only, data from a total of 8,080 interviews was included in the analysis.

The total number of surveys used in each cross tabulation varies based on the question used to measure a specific variable. Approximately 52.5% of mothers had children who were female, 85.4% identified as Black, non-Hispanic, and 5.7% spoke a second language at home. 26.9% of mothers had less than a high school education, 42.6% had obtained their high school diploma or GED, 30.5% had taken at least one college course, and 20.6% reported experiencing depressive symptoms.

This report focuses on nine variables: maternal depressive symptoms; EHS/HS enrollment; child care center enrollment; maternal employment; maternal physical health; child physical health; child emotional, behavioral, or developmental problems; moving residence; and homelessness.

All information was verbally self-reported by the respondent, except the child's current height and weight, and birth weight, which were collected from the medical record or physically taken by the interviewer. Maternal depressive symptoms were established by asking a series of questions (See appendix A). From the depression screening questions shown in in appendix A, a positive response for two or more of the questions is a reliable measure of the caregiver experiencing depressive symptoms (Kemper, 1992).

All variables used in the analysis were the original variables, except responses to the question, "Who looks after the child on a regular basis?" Responses were split into two different variables: one for EHS/HS enrollment, coded into a "yes/no" response, and one for child care enrollment, also coded into a "yes/no" response.

All cross tabulations and chi-squared analyses were then completed using SPSS.

Results and Discussion

Table 1 presents the relationship between EHS/HS enrollment and maternal depressive symptoms. An equal number of mothers reported depressive symptoms (1.0%) and reporting no depressive symptoms (1.2%) enrolled their child in the EHS/HS program (Chi-Squared=0.439; $p < 0.508$). The 0.2% enrollment difference between mothers reporting depressive symptoms and those reporting no depressive symptoms is not statistically significant, and fails to reject the null hypothesis. Therefore, no relationship was found between EHS/HS enrollment and maternal depressive symptoms.

TABLE 1. The Relationship Between Early Head Start / Head Start Enrollment and Maternal Depressive Symptoms (CHW 1998-2015, N=7926)

Early Head Start / Head Start Enrollment	Maternal Depressive Symptoms	
	Yes (%)	No (%)
Yes	17 (1.0)	78 (1.2)
No	1618 (99.0)	6213 (98.8)
Total	1635	6291

Note: Chi-Squared=0.439; $p < 0.508$

Table 2 summarizes the relationship between child care center enrollment and maternal depressive symptoms. An equal number of mothers reporting depressive symptoms (13.2%) and reporting no depressive symptoms (14.0%) enrolled their child in a child care center (Chi-Squared=0.739; $p < 0.390$). The 0.8% enrollment difference between mothers reporting depressive symptoms and those reporting no depressive symptoms is not statistically significant, and fails to reject the null hypothesis. Therefore, no relationship was found between childcare center enrollment and maternal depressive symptoms.

TABLE 2. The Relationship Between Child Care Center Enrollment and Maternal Depressive Symptoms (CHW 1998-2015, N=7926)

Child Care Center Enrollment	Maternal Depressive Symptoms	
	Yes (%)	No (%)
Yes	216 (13.2)	883 (14.0)
No	1419 (86.8)	5408 (86.0)
Total	1635	6291

Note: Chi-Squared=0.739; $p < 0.390$

Table 3 shows the relationship between EHS/HS enrollment and maternal employment. Mothers reporting employment (3.2%) were more likely than those reporting unemployment (1.1%) to enroll their child in the EHS/HS program (Chi-squared=9.496; $p < 0.002$). The 2.1% enrollment difference between mothers reporting employment and those reporting unemployment is statistically significant based on definition of statistical significant of $p < 0.05$. The null hypothesis can be rejected; the data supports the research hypothesis. This data suggests that employed mothers are more likely to enroll their child in Early Head Start/Head Start than unemployed mothers.

197

TABLE 3. The Relationship Between Early Head Start/Head Start Enrollment and Maternal Employment (CHW 1998-2015, N=1772)

Early Head Start/Head Start Enrollment	Maternal Employment	
	Yes (%)	No (%)
Yes	26 (3.2)	11 (1.1)
No	777 (96.8)	958 (98.9)
Total	803	969

Note: Chi-Squared=9.496; $p < 0.002$

Table 4 depicts the relationship between child care center enrollment and maternal employment; 23.7% of employed mothers enrolled their child in a child care center compared with 9.9% of unemployed mothers (Chi-squared=61.374; $p < 0.0001$). Again, the 13.8% enrollment difference between mothers reporting employment and those reporting unemployment is statistically significant. The null hypothesis can be rejected; the data supports the research hypothesis. Therefore, employed mothers are more likely to enroll their child in a childcare center than unemployed mothers.

TABLE 4. The Relationship Between Child Care Center Enrollment and Maternal Employment (CHW 1998-2015, N=1772)

Child Care Center Enrollment	Maternal Employment	
	Yes (%)	No (%)
Yes	190 (23.7)	96 (9.9)
No	613 (76.3)	873 (90.1)
Total	803	969

Note: Chi-Squared=61.374; $p < 0.0001$

Table 5 presents the relationship between EHS/HS enrollment and maternal physical health; 1.0% of mothers who reported excellent/good physical health enrolled their child in EHS/HS, compared with 2.1% of mothers in fair/poor physical health (Chi-squared=11.676; $p < 0.001$). The 1.1% enrollment difference between mothers reporting excellent/good physical health and those reporting fair/poor physical health is statistically significant. The null hypothesis can be rejected; the data supports the research hypothesis. Therefore, mothers who report fair/poor physical health are more likely to enroll their child in EHS/HS than those who report excellent/good physical health.

TABLE 5. The Relationship Between Early Head Start/Head Start Enrollment and Maternal Physical Health (CHW 1998-2015, N=7918)

Early Head Start / Head Start Enrollment	Condition of Maternal Physical Health	
	Excellent/Good (%)	Fair/Poor (%)
Yes	164 (1.0)	31 (2.1)
No	6352 (99.0)	1471 (97.9)
Total	6416	1502

Note: Chi-Squared=11.676; $p < 0.001$

Table 6 summarizes the relationship between EHS/HS enrollment and the child's physical health. An equal number of children in excellent/good physical health (1.2%) and in fair/poor health (0.7%) enrolled in EHS/HS (Chi-squared=1.817; $p < 0.178$). The 0.5% enrollment difference between children in excellent/good physical health and children in fair/poor physical health is not statistically significant, and fails to reject the null hypothesis. Therefore, no relationship was found between EHS/HS enrollment and the condition of child physical health.

199

TABLE 6. The Relationship Between Early Head Start/Head Start Enrollment and the Child's Physical Health (CHW 1998-2015, N=8080)

Early Head Start / Head Start Enrollment	Condition of Child Physical Health	
	Excellent/Good (%)	Fair/Poor (%)
Yes	90 (1.2)	5 (0.7)
No	7243 (98.8)	742 (99.3)
Total	7333	747

Note: Chi-Squared=1.817; $p < 0.178$

Table 7 displays the relationship between EHS/HS enrollment and child emotional, behavioral, or developmental problems. An equal number of children who have emotional, behavioral, or developmental problems (2.9%) compared with those who do not (2.1%), enrolled in EHS/HS (Chi-squared=0.248; $p < 0.619$). The 0.8% enrollment difference between children who have emotional, behavioral, or developmental problems and those who do not have emotional, behavioral, or developmental problems is not statistically significant, and fails to reject the null hypothesis. Therefore, no relationship was found between EHS/HS enrollment and child emotional, behavioral, or developmental problems.

TABLE 7. The Relationship Between Early Head Start/Head Start Enrollment and the Child Emotional, Behavioral or Developmental Problems (CHW 1998-2015, N=1767)

Early Head Start / Head Start Enrollment	Child Emotional, Behavioral or Developmental Problems	
	Yes (%)	No (%)
Yes	2 (2.9)	35 (2.1)
No	66 (97.1)	1664 (97.9)
Total	68	1699

Note: Chi-Squared=0.248; $p < 0.619$

200

Table 8 depicts the relationship between EHS/HS enrollment and moving residence in the last 12 months. A similar number of mothers reporting moving residence in the last 12 months (1.3%) and reporting not moving residence in the last 12 months (1.1%) enrolled their child in the EHS/HS program (Chi-squared=0.300; $p < 0.584$). The 0.2% enrollment difference between mothers reporting moving residence in the last 12 months and those reporting not moving residence in the last 12 months is not statistically significant, and fails to reject the null hypothesis. Therefore, no relationship was found between EHS/HS enrollment and moving residence in the last 12 months.

TABLE 8. The Relationship Between Early Head Start/Head Start Enrollment and Moving Residence in the Last 12 Months (CHW 1998-2015, N=8077)

Early Head Start / Head Start Enrollment	Moving Residence in the Last 12 Months	
	Yes (%)	No (%)
Yes	25 (1.3)	70 (1.1)
No	1908 (98.7)	6074 (98.9)
Total	1933	6144

Note: Chi-Squared=0.300; $p < 0.584$

Table 9 shows the relationship between EHS/HS enrollment and being homeless or living in a shelter for any period of time. A similar number of mothers reporting living in a shelter for any period of time (3.1%) and reporting never having lived in a shelter (2.0%) enrolled their child in the EHS/HS program (Chi-squared=1.056; $p < 0.304$). The 1.1% enrollment difference between mothers reporting living in a shelter for any period of time and reporting never having lived in a shelter is not statistically significant, and fails to reject the null hypothesis. Therefore, no relationship was found between EHS/HS enrollment and being homeless or living in a shelter for any period of time.

201

TABLE 9. The Relationship Between Early Head Start/Head Start Enrollment and Being Homeless or Living in a Shelter (CHW 1998-2015, N=4463)

Early Head Start / Head Start Enrollment	Being Homeless or Living in a Shelter	
	Yes (%)	No (%)
Yes	5 (3.1)	84 (2.0)
No	156 (96.9)	4218 (98.0)
Total	161	4302

Note: Chi-Squared=1.056; $p < 0.304$

Conclusion, Limitations and Further Research

A very small number of mothers in the study enrolled their child in the EHS/HS program. Because no statistically significant differences were found in enrollment between mothers who did and did not report depressive symptoms, there appears to be no relationship between EHS/HS enrollment and maternal depressive symptoms. The non-random sample utilized in the study may explain this finding. Patients who seek medical care at the University of Maryland Medical Center's Pediatric Emergency Room comprised the sample; the sample includes only biological mothers actively seeking medical care for their child under age four. Because interviewers administered the depression screening only to biologically-related maternal caregivers, this data analysis excluded all male caregivers, omitting over 1,000 surveys.

There was no statistically significant relationship between childcare center enrollment and maternal depressive symptoms (Table 2); 13.2%, for those reporting depressive symptoms, compared to 14% enrollment for those reporting no depressive symptoms.

202

Employed mothers were more likely to enroll their child in Early Head Start/Head Start than unemployed mothers (Table 3). This statistically significant result (Chi-squared= 9.496; $p < 0.002$) may be explained by the fact that in order to maintain employment, parents must have access to reliable child care during the day. Similarly, employed mothers were more likely to enroll their child in a childcare center than unemployed mothers. Previous data suggest that parents did not use EHS/HS to meet their child care needs, but this analysis did not support the earlier finding (Chang, Huston, Crosby, & Gennetian, 2005).

Mothers who reported fair/poor physical health were more likely to enroll their child in EHS/HS than those who reported excellent/good physical health (Table 4). Parents who have existing health conditions may be unable to care for their children on their own while also attending doctor appointments or keeping other commitments. No relationship was found between EHS/HS enrollment and the child's physical health.

No relationship was found between EHS/HS enrollment and moving residence in the last 12 months (Table 8), which may be explained because there are many EHS/HS Programs in each county. No relationship was also noted between EHS/HS enrollment and being homeless or living in a shelter for any period of time. This finding may be due to the fact that shelters typically have social workers or other assistants who

help families find child care, employment, or sustainable housing, such as the Grassroots Crisis Intervention Center in Howard County, MD.

In order to study a sample that better represents the Baltimore population, future research studies should include a random sample of Baltimore children, if possible. Because the EHS/HS programs serve children up to the age of five, it would also be helpful to alter the eligibility information to include children up to the age of five, as opposed to only those up to the age of four. Additionally, paternal primary caregivers should be included in future studies.

This was a secondary data analysis and the CHW survey questions were not tailored to this study. In future studies, a new survey designed specifically for this purpose could allow for discovery of unforeseen barriers and provide more focused data for analysis. For example, availability of program enrollment spots may affect child enrollment statistics should be included. As free programs, EHS/HS programs often have long waitlists, and any given program may or may not be accepting additional families. This factor was not examined in this study because of limited data availability.

Qualitative interviews with randomly selected parents whose children are eligible for EHS/HS programs, but who choose not to enroll them might be useful in order to obtain a more holistic understanding of why a caregiver may choose to or choose not to enroll their child in EHS/HS. A 2001 study by D'Elío et al. examined barriers to enrollment other than caregiver depression, including: caregiver unwillingness to participate in Head Start family activities; cultural or ethnic reasons; inadequate hours; lack of full-day services; apprehension due to the stigma of Head Start; and the perception that Head Start does not prepare children for the public-school system (D'Elío et al, 2001). Still, the barriers in the study by D'Elío et al. are far from comprehensive.

Ideally, once more barriers to enrollment have been identified, a multi-pronged approach to overcome these barriers can be designed and implemented. Because mothers may have more than one reason for refraining from enrolling their child in EHS/HS, enrollment programs need to target these individual reasons.

In conclusion, further comprehensive research is necessary to fully understand the complex nature of barriers to EHS/HS enrollment. Such future research should include qualitative interviews with parents of eligible children.

Notes

- i. The biopsychosocial approach integrates biological (biochemical), psychological (personality and behavior), and social (cultural and socioeconomic) factors into a more comprehensive explanation.
- ii. The MTC houses the hippocampus and limbic system, which are responsible for regulating memory and emotion.

Appendix A

1a. Would you say that you have ever felt depressed?

- a. Yes
- b. No
- c. Don't Know / Refused

If the respondent answers “yes” to the above question, the interviewer is triggered to ask the contingency question below:

1a. How many times in the past week has this statement been true for you? I have felt depressed...

- a. 0 days
- b. 1-2 days
- c. 3-4 days
- d. 5-7 days
- e. Don't Know / Refused

Regardless of the respondent's answer to question 1, the following two questions are asked:

2. In the past year, have you had 2 weeks or more during which you felt sad, blue or lost pleasure in things you usually cared about or enjoyed?

- a. Yes
- b. No
- c. Don't Know / Refused

3. Have you had 2 or more years in your life when you felt sad most days, even if you felt okay sometimes?

- a. Yes
- b. No
- c. Don't Know / Refused

Appendix K: The Interdisciplinarity of Barriers to Early Head Start/Head Start Enrollment

What topic does this research address?

The accompanying paper investigates the barriers to Early Head Start/Head Start (EHS/HS) enrollment of children under the age of four in Baltimore, MD. The purpose of this secondary paper is to elucidate the interdisciplinary scholarship involved in the work.

The main paper relies on the premise that early enrollment in EHS/HS is especially beneficial to children from low-income families. According to the Federal Office of Head Start website (2016), EHS/HS programs help to promote the school readiness of young children from low-income families through local programs that support the mental, social, and emotional development of children from birth to age five (Office of Head Start Enrollment, 2016). It is crucial that children from low-income families are enrolled in some form of licensed child care because high quality educational childcare can overcome the devastating effects of childhood poverty, as evidenced by the 1984 Abecedarian Project (Ramey & Campbell, 1984).

Given these advantages, it is curious that more low-income parents do not enroll their children in EHS/HS programs. Various factors could play a role, however a number of studies suggest that parental depression is one of the primary barriers to EHS/HS participation (Lamb-Parker et al., 2000). Depressive symptoms, such as avoidance, make it hard for many parents to get out of bed in the morning, and therefore make it hard for them to work and take their new children to daycare or EHS/HS, etc. (Springer, 2011).

205

Disciplinary Perspectives

The main text investigates the barriers to Early Head Start/Head Start (EHS/HS) enrollment of children under the age of four in Baltimore, MD through nine specific research questions and hypotheses exploring seven possible barriers. These barriers, and the accompanying hypotheses, invoke the disciplines of biology, psychology, and sociology. Each discipline helps to clarify the link between individual variables and their effect on EHS/HS enrollment (Table 1).

TABLE 1. Disciplinary Categorization of Barriers to Enrollment

Barrier to Enrollment	Sociology	Psychology	Biology
Maternal Depression	(Ferlander et al., 2016)	(Ramnerö, Folke, & Kanter, 2016)	(Wang et al., 2016)
Maternal Physical Health	X	X	(Dhanaraj 2016)
Child Physical Health	X	X	(Mapping the Early Attendance Gap, 2015) (Wiseman & Dawson, 2013)
Child Emotional, Behavioral, and Developmental Problems	X	(Miller, Farkas, & Duncan, 2015) (Youn, 2016)	X
Maternal Employment	(Chang, Huston, Crosby, & Gennetian, 2005)	X	X
Homelessness and Moving Residence	(Koblinsky & Anderson, 1993)	X	X

Contributions of Biology, Psychology and Sociology to Understanding the Causes of Low EHS/HS Enrollment

Table 1 shows that each discipline addresses different aspects of a larger, underlying problem. The purpose of my project was therefore to seek a more comprehensive solution through an interdisciplinary lens. In particular, my project employs an approach known as “instrumental interdisciplinarity,” which is defined as “a pragmatic approach that focuses on research, borrowing, and practical problem solving” (Repko, 2012). For my project, the problem in question is that of low EHS/HS enrollment rates among children from low-income families.

Individually, the disciplines of biology, sociology, and psychology each describe one aspect of life that could cause a mother to refrain from enrolling her eligible child in EHS/HS. But, together, the three disciplines reveal the multi-faceted nature of barriers that may lead to low enrollment.

Having identified constituent disciplines and their insights, the next step is to identify the relationships between each discipline’s insights. According to table 1, the disciplinary overlap is especially apparent for the subtopic of maternal depression. In regards to this subtopic, the discipline of biology describes depression as a “chronic mental illness that is characterized by depressed mood, anhedonia, irritability, concentration difficulties, and abnormalities in appetite and sleep”

(Wang et al., 2016). The discipline of biology also explains depression in terms of the biogenic amine hypothesis. From the discipline of psychology, depression is explained through learning theory and helplessness theory (Ramnerö, Folke, & Kanter, 2016). Lastly, the discipline of sociology focuses research on depression around three causes: alcohol consumption, economic situation, and lack of social capital (Ferlander et al., 2016).

Because all three disciplines seek to explain the causes of depression, their integration exemplifies a “biopsychosocial” model, which allows physicians to focus on clinical treatments while integrating all three disciplines (Schotte, Van Den Bossche, De Doncker, Claes, & Cosyns, 2006). This biopsychosocial model of depression is what scholars of interdisciplinarity refer to as a compound concept—terms “that bridge domains and that summarize and stand for some integrative understanding” (Miller and Boix-Mansilla, 2004).

Beyond maternal depression, table 1 makes it clear that different disciplines each address a different aspect of low EHS/HS enrollment. Maternal physical health is best described by the discipline of biology (Dhanaraj 2016). The data in this study suggests that mothers in poor physical health may be more likely to enroll their child in an early childhood education program. Biology also contributes an explanation of the impact of Child Physical Health on EHS/HS attendance (Mapping the Early Attendance Gap, 2015; Wiseman & Dawson, 2013).

Psychology, meanwhile, contributes an explanation for the effect of child emotional, behavioral, and developmental problems. (Miller, Farkas, & Duncan, 2015; Youn, 2016).

Finally, the discipline of sociology contributes explanations for the effect of maternal employment on EHS/HS enrollment (Chang, Huston, Crosby, & Gennetian, 2005) and homelessness (Koblinsky and Anderson, 1993).

Challenges for Discipline Integration

Table 1 makes clear that the disciplines of Biology, Sociology, and Psychology overlap in explaining the causes of maternal depressive symptoms, and each offers one explanation for why a parent may choose to enroll or not to enroll their child in the EHS/HS program. Because none of these reasons are all-encompassing or applicable across disciplines, it is necessary to assess each eligible child’s family situation individually for all possible barriers to enrollment. This situation calls for a “bridge building strategy” (Miller and Boix Mansilla, 2004) to connect disciplines that offer complementary insights (Repko, 2012).

Integration

An appropriate tool for assessing individual situations is qualitative interviewing between social workers and a parent of eligible children. Through these interviews, researchers may gain a more holistic understanding of a particular family's barriers to enrollment, which must be overcome before the child can consistently attend EHS/HS activities.

Qualitative interviews are preferred over quantitative interviews in order to account for barriers not previously anticipated by the researcher. However, because questions for the quantitative interviews used in this study were predetermined, not all possible barriers are discussed with interviewees. Even so, the results of such interviews revealed the presence of statistically significant relationships for some of the hypotheses tested in the present analysis. This supports the notion that lack of enrollment in EHS/HS is attributable to multiple causes. Indeed, researchers who have studied the process of integrating different disciplines refer to this same idea of “building a complex, multi-causal explanation” which “involves borrowing concepts and findings from a variety of disciplines to construct complex explanations of a phenomenon under study” (Miller and Boix-Mansilla, 2004). In the case of EHS/HS enrollment, a single barrier to enrollment cannot explain the lack of EHS/HS enrollment, and thus a complex, multi-causal explanation is necessary in order to cover all causes. The additional effort required to enact this more comprehensive approach is far outweighed by the educational benefits afforded to the children whom EHS/HS serves.

This analysis identified maternal physical health as having a statistically significant influence on EHS/HS enrollment; mothers who report fair/poor physical health are more likely to enroll their child in EHS/HS than those who report excellent/good physical health. By attributing lack of EHS/HS enrollment to maternal physical health alone, one limits this complex explanation to that which can be defined in terms of only biology—that mothers who need to take care of their own health seek EHS/HS as a source of child care more often than healthier mothers. By taking into account both maternal physical health and other possible barriers together, the disciplines of biology, psychology, and sociology are integrated, providing a more holistic understanding of barriers to EHS/HS enrollment.

Integration Strategies

Having identified the challenge as building a complex and multi-causal explanation, interdisciplinarians suggest several strategies for the ensuing act of “bridge building” between constituent disciplines. From among

these, my project uses the technique of “bridging the explanation-action gap,” according to which, “one or more domains to define the nature of a problem, while knowledge from another domain may be used to guide interventions, implementations, or solutions” (Miller and Boix Mansilla, 2004). In terms of my project, all three disciplines combine to offer the complex explanation for low EHS/HS enrollment, while the discipline of sociology provides the necessary solution. The proposed solution would be similar to the comprehensive counseling EHS/HS programs and social workers already used to increase attendance for homeless children, a previously identified subset of the low-income, at-risk group.

Because mothers may have more than one reason for refraining from enrolling their child in EHS/HS, enrollment programs need to target these individual reasons. Moreover, because the situation of each family is different, a single algorithmic program would be inadequate. Instead, parents should be counseled by a social worker on a case-by-case basis, adding bits and pieces from different pre-existing governmental programs as needed. If this comprehensive approach was used to recruit and maintain enrollment of every eligible child, rather than solely those identified as homeless, this might lead to higher enrollment and attendance statistics. In this case, an existing multi-pronged sociological based approach would be used to address the biological, sociological, and psychological barriers to EHS/HS enrollment.

In conclusion, future studies should focus on more specific barriers to enrollment across the disciplines of biology, sociology, and psychology. Once all, or almost all, barriers to enrollment have been identified, a sociological-based multi-pronged approach utilizing the professional field of social work can be designed and implemented with all eligible children.

References

- Chang, Y. E., Huston, A. C., Crosby, D. A., & Gennetian, L. A. (2007). The effects of welfare and employment programs on children's participation in Head Start. *Economics of Education Review*, 26(1), 17-32.
- D'Elio, M. A., O'Brien, R. W., Grayton, C. M., Keane, M. J., Connell, D. C., Hailey, L., & Foster, E. M. (2001). *Reaching out to families: Head Start recruitment and enrollment practices* (United States, Department of Health and Human Services). Washington D.C.: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research & Evaluation.
- Dhanaraj, S. (2016). Effects of parental health shocks on children's schooling: Evidence from Andhra Pradesh, India. *International Journal of Educational Development*, 49, 115-125.
- Ferlander, S., Stickley, A., Kisliutsyna, O., Jukkala, T., Carlson, P., & Mäkinen, I. H. (2016). Social capital—a mixed blessing for women? A cross-sectional study of different forms of social relations and self-rated depression in Moscow. *BMC Psychology*, 4(1).
- Head Start Program Facts Fiscal Year 2015 [PDF]. (n.d.). Head Start.
- Kemper KJ, Babonis TR. Screening for maternal depression in pediatric clinics. *Am J Dis Child*. 1992; 146: 876–878.
- Koblinsky, S. A., & Anderson, E. A. (1993). Serving homeless children and families in Head Start. *Children Today*, 22(3), 19-24.
- Lamb-Parker, F., Pietrkowski, C. S., Baker, A. J., Kessler-Sklar, S., Clark, B., & Peay, L. (2000). Understanding Barriers to Parent Involvement in Head Start: A Research-Community Partnership. *Early Childhood Research Quarterly*, 16, 45-51. Retrieved September 18, 2016.
- Liu, R. T., Kleiman, E. M., Nestor, B. A., & Cheek, S. M. (2015). The Hopelessness Theory of Depression: A Quarter-Century in Review. *Clinical Psychology: Science and Practice*, 22(4), 345-365.
- Miller, E. B., Farkas, G., & Duncan, G. J. (2016). Does Head Start differentially benefit children with risks targeted by the program's service model? *Early Childhood Research Quarterly*, 34, 1-12.
- Miller M. and Boix Mansilla V. (2004). "Thinking Across Perspectives and Disciplines." Interdisciplinary Studies Project, Project Zero, Harvard Graduate School of Education. GoodWork Paper 16. Cambridge, MA.
- Nestler, E., Barrot, M., DiLeone, R., Eisch, A., Gold, S., & Monteggia, L. (2002, March 28). Neurobiology of Depression. *Neuron*, 34, 13-25. Retrieved October 17, 2016.
- OECD (2014). *OECD Economic Surveys: United States 2014*. Retrieved October 23, 2016.
- Office of Head Start: Head Start Programs. (2016, August 8). Retrieved January 23, 2017
- Ramey, C. T., & Campbell, F. A. (1984). Preventive Education for High-Risk Children: Cognitive Consequences of the Carolina Abecedarian Project. *American Journal Of Mental Deficiency*, 88(5), 515.
- Ramnerö, J., Folke, F., & Kanter, J. W. (2015). A learning theory account of depression. *Scandinavian Journal of Psychology*, 57(1), 73-82.
- Repko, Allen (2012). *Interdisciplinary Research, Process, and Theory*. Second Edition.
- Schotte, C. K.W., Van Den Bossche, B., De Doncker, D., Claes, S. and Cosyns, P. (2006), A biopsychosocial model as a guide for psychoeducation and treatment of depression. *Depress. Anxiety*, 23: 312–324. doi:10.1002/da.20177

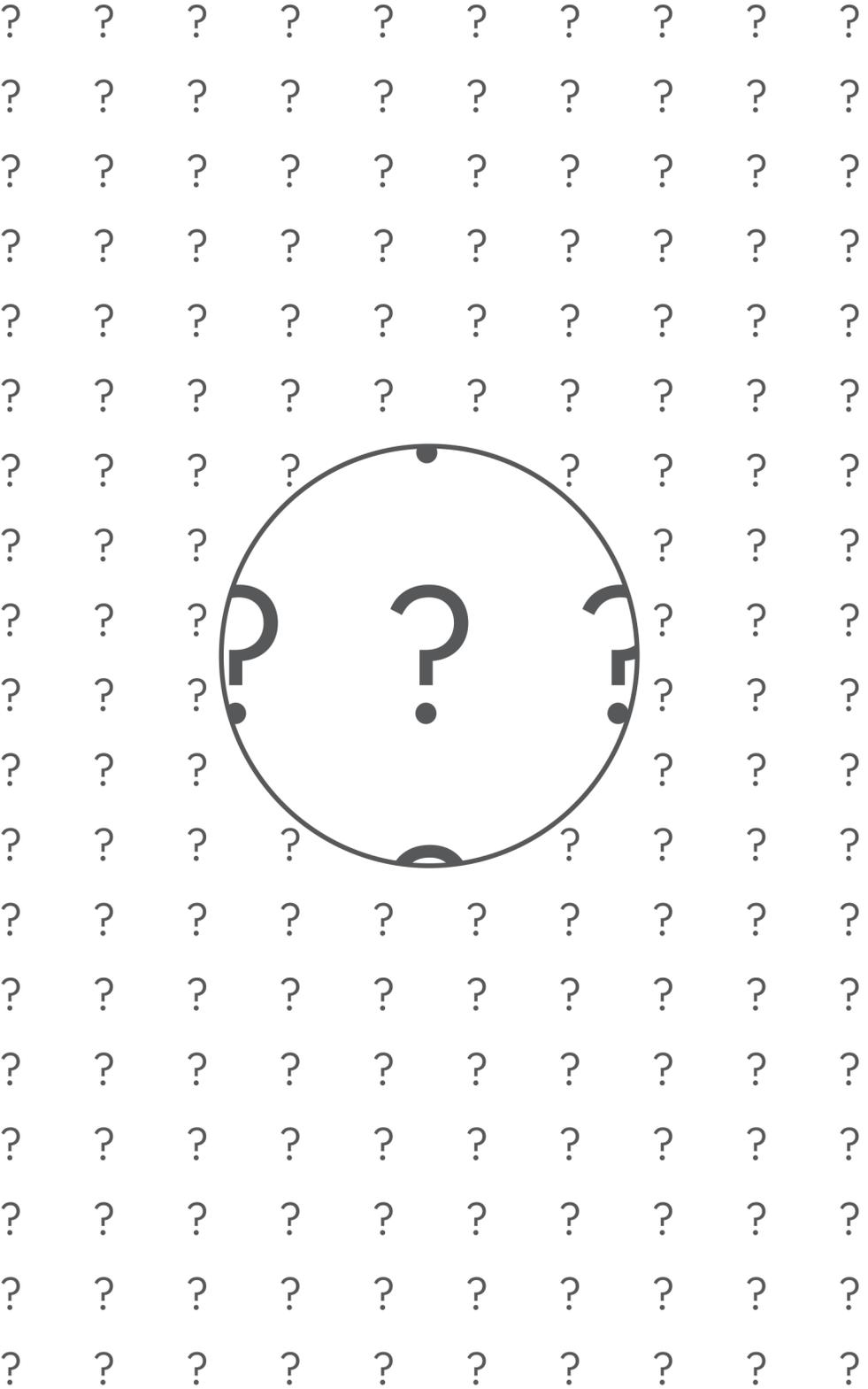
Seligman, M. E., & Maier, S. F. (1967). Failure to escape traumatic shock. *Journal of Experimental Psychology*, 74(1), 1-9.

Springer, D. W., Rubin, A., & Beevers, C. G. (2011). *Treatment of depression in adolescents and adults*. Hoboken (NJ): Wiley, John Wiley & Sons.

Substance Abuse and Mental Health Services Administration. *Depression in Mothers: More Than the Blues-A Toolkit for Family Service Providers*. HHS Publication No. (SMA) 14-4878. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014.

Wang, L., Zhou, C., Zhu, D., Wang, X., Fang, L., Zhong, J., . . . Xie, P. (2016). Serotonin-1A receptor alterations in depression: A meta-analysis of molecular imaging studies. *BMC Psychiatry*, 16(319). Retrieved October 17, 2016.

Youn, M. (2016). The Effects Of Head Start Duration On The Behavioral Competence Of Socially Disadvantaged Children. *Journal of Community Psychology*, 44(8), 980-996.



**The Question of
'Left-Wing Fascism'
within the British Union
of Fascists in the 1930s**

Alexander Sievers

Author Bio and Research Journey

Alexander Sievers was a history major at UMBC, and graduated this past May 2017. In the Spring of 2016, Alex began a research project that earned him the Undergraduate Research

Award (URA), which generously provided the funding for his research. He then went on to present his research at URCAD 2017. Now graduated, Alexander is serving in AmeriCorps for the 2017-2018 school year, and will then come back to UMBC to continue his education in the History Department's Graduate program.

Alexander was introduced to his research topic by his mentor, Dr. Dan Ritschel, a professor in the History Department at UMBC who specializes in the study of ideologies. Because he needed access to the British Online Archives for an extended period of time, he spent the majority of his research stipend on paying for the subscription to access the complete collection of British Union of Fascists newspaper collection.

He would like to thank all his professors and teachers who helped foster his love of learning, specifically Dr. Meringolo and of course Dr. Ritschel whose unending patience and encouragement helped propel these research efforts. Dr. Ritschel, in particular, has been an invaluable source of support and knowledge to him throughout his time at UMBC. He would also like to thank his friends and family, with a special shout out to Morgan and Ellie, whose friendship and love has been such a blessing and has kept him going far past his regular limits.

Abstract

Fascist movements in interwar Europe, like the infamous Nazi Party and Mussolini's Fascists, are generally positioned on the far right of contemporary political culture. Yet, the small but significant fascist movement in England was led by Sir Oswald Mosley, a former minister in the Labour government in 1929–30, and attracted a significant number of other defectors from the Labour party. Some historians have come to describe these men as "left-wing fascists," a term that is meant to indicate the paradoxical nature of Mosley's movement, since fascism is generally held to be an ideology from the right edge of the political spectrum. My research will seek to place this notion of "left-wing fascism" under a critical lens by compiling a database of fascist recruits from the Labour party and the wider Left in order to determine where they truly fell on the political spectrum. By examining their published works and statements before, during, and after their association with Mosley's movement, I believe that I will be able to show that those who whole-heartedly embraced fascism were never truly "left-wing" at all, and those who were genuinely trying to look out for the proletariat were only temporarily misled into supporting fascism and quickly jumped ship once the more conservative aspirations of the fascist party were revealed.

Introduction: The Question of “Left-Wing Fascism”

While fascism is commonly categorized as an ideology of the far-right, its exact relationship to socialism, the ideology usually located at the other end of the political spectrum, remains a deeply contested issue. Sir Oswald Mosley represents one of the most prominent examples of an apparently significant cross-over between the two ideologies. He was the founder and leader of the British Union of Fascists (BUF), the most significant fascist political party in Britain in the 1930s. Yet Mosley’s previous position of prominence within the socialist Labour Party has led some historians to believe that Mosley’s fascism incorporated significant elements of the more progressive, and even socialist, ideologies of twentieth-century British politics. Further confirmation is often found in the fact that when Mosley parted ways with the Labour Party to form his short-lived New Party in 1931 and then the BUF in the following year, several of his formerly socialist associates followed to help him establish his own brand of populist fascism. Some historians have treated their membership of the BUF as evidence that Mosley’s fascist movement contained a strong element of “left-wing fascism.”¹ This study will examine the ideological background and significance of these so-called “left-fascists” to determine if it is indeed appropriate to label Mosley’s ex-socialist followers as such.

216

Concerning “Left-wing Fascism”

The suggestion that the BUF had a significant left-wing component is put forward most prominently by historian Philip M. Coupland. Coupland argues that the Marxist “thirties dogma” that fascism was best defined as a “terrorist dictatorship of capitalism in extreme decay” never quite fit Mosley’s brand of fascism, and he seeks to offer a more nuanced explanation of the ideology behind the BUF. The result of his research leads Coupland to conclude that the BUF was something of a synthesis between the left and right, making it more of a centrist version of fascist ideology. He argues that the “apparently incongruous ‘left-wing’ aspect of a ‘reactionary’ movement” was represented in the rhetoric and actions of “former socialist activists” within the BUF.²

Coupland assembles a great deal of evidence that many in 1930s believed that Mosley was a committed socialist, and that not a few also believed that his “fascist discourse contained elements in common with

left-wing parties.”³ H. G. Wells is cited as having said that Mosley had “Communist leanings” when he was new to the Labour party in 1924.⁴ One of Mosley’s close associates until 1931, George Catlin, also believed “the objects of Sir Oswald Mosley were—and about this I can venture to speak with some assurance—frankly socialistic.”⁵ However, Coupland’s main argument for “left-wing” nature of British fascism relies mainly on the fact that a number of political figures formerly on the left in the 1920s came to be attracted to Mosley’s fascism in the next decade. This host of “left-wing” recruits, several of whom will be investigated in greater detail later in this paper, is crucial to Coupland’s argument that the BUF contained significant elements of left-wing ideology.

The Problem of Ideology

There are several problems with Coupland’s interpretation of “left-wing fascism.” The first is the way he defines “socialism” in 1930s Britain. He urges that it “might be understood” as consisting of two major components: “First, the betterment of the lives of working people by engendering full employment and through measures later spoken of collectively as the ‘welfare state’; secondly, the fostering of a new relationship between persons by dissolving class conflicts and inequalities.”⁶ The problem with this definition is that the first half describes a goal that was, in different degrees and guises, widely shared among a number of contemporary ideologies across the political spectrum, including progressive Liberals and “radical Tories” among Conservatives. It, thus, cannot be attributed solely to socialism. Very few modern political ideologies would claim not to aim to improve the lives of the working people, but it is their precise solutions that help define their relative ideological position. Simply saying that “the betterment of the lives of working people” is a goal of an organization does not mean that organization is particularly socialist or left-wing, unless of course the answer included the core socialist aims of redistribution of wealth, socialization of capital, and empowerment of the workers. Furthermore, it is simply ahistorical to discuss 1930s socialism in terms of the “welfare state,” a concept that did not acquire its meaning about until the Second World War, and even in that sense the “welfare state” represented a sharp retreat from traditional socialist ideology. The same problem confronts the other element of Coupland’s definition of socialism: “dissolving class conflicts and inequalities.” Dissolution of “class conflicts” may be said to have been the aim of Conservative and right-wing assaults on British trade unions and the Labour party itself, both of which were blamed

by right-wing opinion for fostering social divisions. Similarly, lessening of “inequalities” was part of all meritocratic ideological rhetoric that, again, stretched from the far-right to the far-left. The real distinctions lay in the precise details and methods proposed to achieve these goals.

This paper will seek to deploy a more precise definition of socialism or “left-wing” opinion in interwar Britain to evaluate Coupland’s claim of “left-wing fascism.” Scholars generally agree on the nature of socialist ideology in interwar Britain. Broadly speaking, the socialist domestic agenda focused on the abolition of class society through redistribution of wealth, emancipation of workers by schemes of workers’ control of industry, state control of the economy, and progressive socialization of capital. The Labour party, comprised of both trade unionists and socialists, sought to empower the working-class by strengthening the power of the trade unions. In addition, intellectuals within the Independent Labour Party (ILP), a Labour-party affiliate that constituted the party’s “think-tank” in the 1920s, developed detailed schemes for redistribution of income and wealth through progressive taxation and a state-mandated “living wage.” Socialists also looked forward to implementing centralized economic planning based on the administrative techniques of “war socialism” that had been implemented during the First World War. Finally, British socialists remained convinced internationalists, stressing workers’ solidarity and co-operation among nations as a core socialist value in foreign policy. Unless some of these elements were present in a political position, it cannot be said to have had serious socialist content.⁷

To properly differentiate between the two ideologies, we also need to establish the ideological nature of interwar British fascism. Again, there is general consensus in recent scholarship. Mosley’s British fascism was highly critical of the chaos and inefficiency of capitalist individualism, and demanded state controls over the economy and society. While this may be viewed as similar to the centralized planning of socialism, British fascist ideology explicitly defended private ownership of industry and rejected the socialist remedy of workers’ control. Instead, it stressed the need to impose authoritarian state controls over both the workers and the capitalist system, designed to deliver the productivist goals of “maximum” production, employment and consumption. Mosley’s Corporate State similarly proposed to institutionalize the established class hierarchies within industry and politics, though management was to be left open to promotion according to merit. Additionally, fascism was a nationalist movement that sought to promote an “us vs. them” mentality in terms of global competition and

defense of the British Empire. Perhaps the starkest contrast between the two ideologies is to be found in the fact that the explanatory role played in socialist ideology by the charge of capitalist exploitation of the workers was replaced in Mosley's fascism by a vicious anti-Semitism that used a paranoid conspiracy-theory to explain all of Britain's problems, from mass unemployment and the destruction of small businesses at home, to international hostilities abroad. It must also be remembered that British fascism was explicitly authoritarian. While the BUF proposed to acquire power through democratic means and promised to maintain a semblance of an electoral system through functional representation within the Corporate State, it also proposed to eliminate the substance of both the democratic party-system and Parliamentary government. The BUF championed a single-party state, with the fascist executive vested with absolute authority and unrestrained by the Corporate parliament. In short, while Labour socialists believed in the power of the people to choose their government and to establish a more egalitarian society through collectivist planning and workers' control in their workplace, British fascism sought authoritarian rule by the fascist state in order to promote higher economic growth, but also to protect existing class society and the Empire from the alleged menace posed by the "international Jewish conspiracy."⁸

Socialist Recruits to Fascism

The main component of Coupland's argument in his case for "left-wing fascism" rests on the former socialists who bolstered the ranks of the BUF in the 1930s. Coupland assumes that, by virtue of their previous affiliation, they must have brought with them elements of left-wing ideology and influenced the BUF in a leftward direction. This argument is problematic on several counts. First, the relative proportion of former ILP or Labour Party members within the BUF was actually quite small in proportion to its formerly Conservative recruits, and the general party composition fell much more in line with the traditional understanding of where fascism lies on the political scale. An important study done by W. F. Mandle very neatly organizes what he calls the "leading members" of the British Union of Fascists by factors of age, military service, professional occupation and, most importantly, political affiliation. This study has been a crucial resource for investigating the question of "left-wing fascism," as it provides a thoroughly researched list of the members of the BUF, including those who had formerly had substantial connections to the Labour Party. Upon reading through Mandle's

results of the 103 prominent members of the BUF whom he identified as its leaders, it is striking that only eleven of those men came from a Labour background of some sort. This equates to roughly ten percent of the “leading members” who can be considered “left-wing” by their previous political beliefs or affiliations. Mandle did not discuss at length the eleven men, but I have reviewed and confirmed all of his profiles with additional research in secondary and primary sources.⁹

However, even if we accept that the eleven recruits from the Labour party had disproportionate influence on BUF ideology and policy, Coupland’s thesis faces an even more significant challenge. First, many of the “left-wing fascists” ended up leaving the BUF very shortly after its formation in 1932. Most left in evident disillusionment with the direction of BUF policy and activity, which suggests that they did not find what they were looking for in Mosley’s fascism. For the handful that remained, further examination of their writings and beliefs calls into question either their understanding of Mosley’s fascist goals or their alleged earlier commitment to socialism.¹⁰

For this essay, I have chosen to focus on four of the most important figures from this group, each representative of a certain category of a Labour recruit to the BUF. The four are individuals who, by Coupland’s argument, can be considered “left-fascists,” based on the fact that they were previously affiliated with the Labour Party and had at one point or another displayed socialist inclinations. However, rather than simply accepting their previous left-wing affiliation as proof that their left-wing ideology managed to survive when they became fascists, this essay will look deeper at what these men actually said and believed, during both their previous stay within the Labour party and in their published works and statements within the BUF.

Dr. Robert Forgan: The Unwary Opportunist

We can place Dr. Robert Forgan in the category of an unwary convert who followed Mosley out of personal loyalty and financial dependence, but appeared mostly unaware of the ideological implications of his decision to join the BUF. Forgan was one of the two ex-Labour Members of Parliament (M.P.s) to join the BUF. He became Mosley’s deputy-leader within the BUF, and this leadership position is frequently cited as evidence of left-wing influence on British fascism. However, there is very little to indicate that Forgan had any real influence on policy decisions,

and no identifiable ideological perspective is discernible from his available BUF publications. Prior joining the BUF, Forgan had been an army medical officer in the Great War, and after the war he made his mark on the medical field by becoming a leading international authority on the treatment of venereal diseases. Forgan was elected as an ILP M.P. for the Western Renfrewshire constituency in 1929. However, for much of his time in Parliament, he displayed little interest in any political or economic questions. Though he aligned consistently with Labour's left-wing, there is nothing in his record to suggest any serious policy thought on his part until he left the party to join Mosley's open rebellion in 1931. His speeches and statements in the press were restricted almost entirely to non-controversial questions of health policy and advice on the benefits of Vitamin D and how to avoid toothaches and chilblains.¹¹ Forgan's most prominent political initiative before his resignation from the Labour party came in December 1930, when he joined a group of 20 Labour MPs who signed a call for "better ventilation" in the House of Commons.¹² Nevertheless, it is true that in the same month he also joined the small group of Labour MPs around Mosley who began their open protest against the evident failure of the second Labour government to address the country's deepening social and economic crisis. He was also one of only five MPs who then resigned from the Labour party in March 1931 to join Mosley's break-away New Party. Yet there is also strong evidence that Forgan had developed a strong personal relationship with Mosley during their time in the ILP, and that he may have followed him into the New Party and then the BUF from what Mosley's own biographer calls "personal rather than political loyalty."¹³

221

Within the BUF, Forgan served as Mosley's second in command for its first two years. Mosley used Forgan's reputation as a former MP to help validate the BUF as a burgeoning political party. Forgan also oversaw outreach effort to more respectable opinion, and was responsible for recruiting several other former left-wingers, including John Beckett and J. Barney.¹⁴ However, his growing disillusionment with fascism and an apparent falling out with Mosley led to Forgan's abrupt retirement in October 1934.¹⁵

Beyond his propaganda and recruiting value, however, Forgan again appears to have had little political impact during his two-year stay within the BUF. He was neither an ideologue nor a great orator like his friend Mosley. His only major speech reported in BUF publications was given at an opening of a "Mixed Canteen" in the fascist headquarters in London, in which the only discernible ideological component was that he urged that it was important that the establishment did not

discriminate by gender.¹⁶ Other than a brief profile on Forgan in the *Fascist Week* in December 1933 and a handful of articles written by himself, Forgan's activities were not mentioned in BUF news publications.¹⁷ One of his few significant articles was a critique of a speech made by Stanly Baldwin, in which Forgan used the speech as an opportunity to bring up the status of Britain's air defenses and public health in the slums. The two seemingly unrelated problems were connected by his attack on the "old gangs' of politicians," who had "talked year after year of slum clearance," but had done nothing to address urban conditions. They had similarly neglected Britain's air forces, so that "any day an armada of the skies may drop poison gas on London." While this article did feature a clever play on the words against Baldwin, who had earlier said that the people of Britain can enjoy their freedom as easily as they can breathe the air, Forgan's comments again spoke more to his inclinations as a medical doctor than they did to his past left-wing association or current membership of the BUF.¹⁸

Forgan's lack of serious interest in fascist ideology was demonstrated most clearly in his eventual departure from the BUF. Evidence surrounding his departure shows that the primary reasons for Forgan's discontent with the direction Mosley was taking the BUF by 1934 was due to his "opposition to the ever more prominent position then being given to anti-Jewish prejudice and rhetoric," as well as "the abandonment of radicalism consequent upon Mosley's short-lived alliance with Lord Rothermere in the first half of 1934."¹⁹ Mosley's relationship with the ultra-Conservative Lord Rothermere was troubling to at least one other ex-ILPer, Alexander Miles, and the "abandonment of radicalism" that so bothered Forgan could seem to indicate that the more left-leaning members of the BUF were feeling shut out by the far more significant influx of young, right-wing recruits who cared little for the welfare of the working-class and were obsessed instead with their anti-Semitic beliefs. Curiously, despite the rising anti-Semitic sentiment within the BUF, Mosley had tasked Forgan with building some form of a relationship between the BUF and the Anglo-Jewish community. In the summer of 1934, Forgan was sent to meet with leaders of the Jewish community, the Council of Jewish Deputies (CJF), with plans for negotiating a "Jewish-Fascist agreement." However, Forgan had already made up his mind to leave the BUF by this time and, rather than advocating for cooperation between the two institutions, he made it clear to the CJF that the BUF was an anti-Semitic movement and that he himself was preparing to leave because of its increasingly anti-Semitic sentiments. In a private meeting with Neville Laski, the chairman of the CJF, Forgan

even went so far as to offer to inform on the BUF in return for a salary or another job, to which Laski responded, “We do not buy opponents.” Forgan’s offer suggests that his original entry into the BUF may have had partly economic motives. He had been employed by Mosley since the days of the New Party, and he now appeared genuinely worried about the consequences of giving up his salaried position within the BUF. Curiously, Laski notes that during the interview, Forgan “spoke agreeably of Mosley as a man,” indicating that despite his offer to spy on the BUF, Forgan still respected the friendship with Mosley.²⁰

Bill Risdon: “A True Ideological Convert”

A long-standing member of Mosley’s inner circle, Wilfred “Bill” Risdon had been with the movement since the foundation of the New Party, and continued to support the BUF well into 1938, making him one of the longest-lasting members who came from a socialist background. Risdon had been a divisional organizer for the ILP in the Midlands in the 1920s and had been a candidate for Parliament for the Labour Party in 1924.

223

Risdon’s early political views were heavily influenced by the fact that he came from a working-class family, worked for a time as a miner and held other decidedly working-class jobs, and quickly came to the same conclusion that the capitalist system of the time was doing a great disservice to the British working-class. Described by his biographer as an “evangelist for socialism,” Risdon did, for a time, believe in the power of the trade unions and advocated for the empowerment of all workers. However, Risdon became very frustrated with the Labour Party as it foundered once in power in the 1920s. Risdon’s biggest criticism of the Labour Party was its ineffectiveness as an advocate for the interests of the working class. As evidence, he cited Labour’s failures during the General Strike in 1926 and other labour disputes. He also took issue with its moderate strategy of parliamentary socialism (mocked by Risdon as the “gradualness of inevitability”), which Risdon really just felt like was an excuse for lethargic inactivity by Labour governments and M.P.s in Parliament.²¹

Such views aligned closely with Mosley’s, and Risdon helped launch the New Party and subsequently British Union of Fascists in 1932. Within the BUF, he applied his political talents in a number of positions, and held a “succession of posts” within the party, including

first Director of Propaganda, Deputy Director of Political Organization, Deputy Director General, and chief political agent. Risdon's writings were featured mostly in *Blackshirt*, where he expressed strong support for the Corporate State, writing extensively on the possibilities for industry when "every great industry will be controlled by a corporation, conferring upon that industry the powers of economic self-government."²²

While Risdon's biographer does manage to make a convincing case for Risdon as a dedicated socialist prior to his time in the BUF, Risdon's own words once in the BUF show that he modified his socialist ideology so profoundly that it hardly resembled its original form. Certainly, though Risdon continued to display vehemently "anti-capitalist" views and his focus on working-class interests did seem to be genuine both in tone and frequency, he also made it very clear that he no longer had his former faith in socialist remedies. In one article he wrote, "[Socialism] is not an alternative to Capitalism, but merely a negative to Capitalism—the obverse to the same coin, so to speak. It is imperative, therefore, that we seek for the true alternative to the decaying Capitalist State."²³ One instructive example is offered by his views on trade unions and strikes, both of which were to be outlawed under a BUF government. In an article entitled "Power of Fascism," Risdon expresses his disdain for the strike tactic, stating that "a strike is able to achieve little or nothing which will be of benefit to the workers concerned," and even went as far to say that "the attack of a 'general strike' is an attack upon the State, not an attack upon the employers of a given industry." He also offered the standard BUF argument that the detrimental effects of strikes resulted in loss of national productivity, which would do little to improve the status of the workers. In line with the BUF position, Risdon counseled the alternative of "class collaboration" in the Corporate State, where the interests of the workers were to be safeguarded by an authoritarian fascist regime.²⁴

Like several of the other "left-wing fascists," Risdon explicitly rejected other core principles of his former socialist faith, including internationalism and socialisation of capital. In an article from *Action* in 1937, Risdon very neatly summarized how his disillusionment with socialism led him to his fascist ideological stance:

We found that Nationalism was essential as opposed to Internationalism. We found that class collaboration was essential on a national basis, as opposed to class antagonism on an international basis. We found that the preservation of the rights of private property, carrying with it new obligations for the owners of private property, was essential, as opposed to the abolition of private property rights.²⁵

The importance of this excerpt cannot be overstated as it demonstrates exactly how Bill Risdon shifted his allegiance from socialism to fascism. The three points he makes in this quote are an accurate summary of the key differences between the two ideologies. The first point emphasized fascist prioritization of nationalist solidarity over international cooperation. The point about “class collaboration...on a national basis” represented the fascist rejection of the socialist dedication to the principle of class struggle in favor of class collaboration within the Corporate State. Likewise, the preference for “new obligations for owners of property” over “abolition of private property rights” signaled fascist defense of private ownership of capital and the existing social order, so long as employers obeyed the directions of the authoritarian fascist state. Risdon statement effectively drew a line in the sand between socialism and fascism, making it clear which side he stood on.

The national interest was also threatened, according to Risdon, by the presence of an alien element within the British nation. Risdon’s anti-Semitism was relatively restrained when compared to some of Mosley’s other followers, but was still quite evident. In his regular column, simply called “Industry,” Risdon claimed that in the fascist Corporate State “the employees would be able to legislate their own wage rates and conditions of labour, and heaven help the employer—Jew or Gentile—who sought to evade such legislation.”²⁶ In this quote Risdon displayed the customary disdain for the middle-class that was indicative of the radical left, but by adding the “Jew” element to his rhetoric, he also implied that he accepted the anti-Semitic ideology of the BUF.

The combination of Risdon’s explicit rejection of key elements of socialist ideology in favor of characteristically fascist principles, his anti-Semitic rhetoric, and his continued membership of the BUF throughout the 1930s, means that he should not be considered as evidence of an ideological cross-over from socialism to fascism, but in fact as a genuine convert to Mosley’s new ideology.

W. J. Leaper: A Genuine Left-Fascist?

While there is relatively little information about Leaper prior to his joining the BUF, his published works in BUF literature give us some insight into his personal motivations for being a BUF member. A journalist by trade, Leaper spent the 1920s writing for the Conservative *Yorkshire Post*. However, it can be surmised from his writings for the BUF that he had at the same time supported the ILP and identified strongly with the working-class. He certainly claimed to have joined the BUF because

he believed that it was genuinely committed going to improving conditions for the British worker. In one of his articles from *The Fascist Week* in 1937, Leaper began with, "I am working class and I am proud of it," and loudly proclaimed his proletarian inclinations:

I am a member of my trade union which is definitely linked up with the whole of the trade union organization. I am also a member of a co-operative society, a creation of the working class in rebellion against the regime of high prices... We workers demand the right to live, the right to economic justice, and we are determined to achieve it. We demand the abolition of poverty, and we are determined to abolish it.²⁷

Leaper regularly affirmed his primary allegiance to the working-class by saying that "if Fascism in Britain were antagonistic to the interest of the workers, then I would be a bitter opponent of the Blackshirt movement."²⁸ Yet his articles frequently seemed out of place in BUF publications. Almost all of his articles were featured exclusively in the *Fascist Week*, which, in comparison to *Blackshirt*, was clearly aimed at a more educated readership. His articles tended to be lengthy, well-researched, and some of the clearest written samples of BUF literature. However, key tenets of BUF policy and ideology were frequently absent from Leaper's work. On occasion, *The Fascist Week* featured some of Leaper's articles on its front page, with positively left-wing titles like "The 'Blackleg' is an Enemy to Society," and "Man Was Not Born To Preserve The Present Civilization." Leaper had a penchant for muck-racking but, compared to writers like Risdon, his writings were often missing the usual heavy-handed pitch for fascism. At best, the reader got a very left-wing interpretation of Mosley's intended policies, including statement such as, "The British Union of Fascists is the logical outcome of trade union unity." In another case, Leaper appeared to speak out against a core principle of BUF doctrine when he accused a leading figure in the Labour party of calling for near dictatorial control of the British government. Most likely, the only reason the piece was allowed to be printed was because of the extremely negative way Leaper portrayed the Labour opposition, but the article was buried so deeply in the paper that it would have been difficult to stumble across.²⁹

There is no better evidence of how estranged Leaper became from mainstream BUF opinion than the response of readers of *The Fascist Week*, who, on multiple occasions, wrote in to complain about the inflammatory language Leaper employed in discussing class relations. *The Fascist Week* handled its letters to the editor in a section called, "They Say," and the week after Leaper's "Blacklegs" article ran the editors

published a letter entitled, “Mr. Leaper’s Rubbish,” in that week’s edition of “They Say.” The crux of the reader’s complaint was that he saw “Mr. Leaper” lining up on the wrong side of the class struggle by the antagonistic manner in which he portrayed the upper-classes. “Such articles will not do the BUF a ha’porth of good,” wrote T. Redmund, the author of the angry letter. “If the Blackshirt movement is to make the headway...all this cant about the Upper and Middle Classes must cease.” While the motivation of the editors for publishing this letter cannot truly be determined, it is likely that it was included to cover their bases by including dissenting opinions in “They Say.” However, the fact that it was the first letter listed indicates that the editors may have been trying to remind Leaper of their core readership, and that he made them all uncomfortable with his “rubbish.”³⁰

If there was a genuine “left-fascist” to be found in Mosley’s circle, Leaper would be the only one to qualify. Based on his writings in the BUF publications, it would appear that he did retain a significant amount of his left-wing ideology from his time in the ILP. However, it is also clear that Leaper was not a common representative of the type of ideologue to join the BUF, based on the fact that his left-wing style and rhetoric were unique among the other converts from the Labour party, and that his writings were clearly unpopular among BUF readership. Therefore, while Leaper demonstrated that an ideological hybrid between socialism and fascism was possible, his isolation also proves that it was most certainly not representative of the BUF as a whole.

227

John Beckett: The Ideological Attack Dog

In his biography of John Beckett, his son Francis struggles to answer the question, “what could make a man like my father put on a black-shirt and call himself a fascist?” Indeed, John Beckett, a longstanding ILP activist and, besides Forgan, the only other former Labour MP (1929–31) in the BUF, was an unlikely convert on paper. It was obviously not unheard of for an ex-ILPer to join up with the BUF, but the strict “heel-clicking and petty militarism” that was expected from the organization’s members should have been incompatible with a man like Beckett, who was best known as a rebellious left-winger in the 1929 Parliament, and described by those who knew him as “irreverent, spontaneous, funny” and someone who “loathed accepting orders” regardless of who was giving them.³¹

Francis Beckett attributes his father's ideological shift primarily to John being tossed about in the tempestuous conditions and politics of interwar Britain. John Beckett did indeed lead a turbulent life, bouncing around from one romanticized radical "cause" to the next, married three times and engaged in several different occupations, and frequently forced to move due to his political dealings or financial troubles. His life and career easily qualify him as a prime example of what Mandle defines as a category of "restless" individuals within the BUF leadership. However, the writings Beckett produced for the BUF do not support the image of a man who was a victim of fate or circumstances. Instead, his literary efforts show a man who was a polished propagandist with a serious axe to grind against just about the entire British political system. As one of the most featured and active of the ex-Labour Party members in the BUF, there is a significantly larger number of published sources by Beckett than by any of the rest of his former socialist colleagues. As such an important representative of the left-wing convert, Beckett's ideological views serve as a key test of the relevance of left-wing attitudes within the BUF.

Beckett was ever a man in search of the right cause to which he could dedicate himself completely—the problem was that he never seemed to truly find it. Beckett came out of the First World War with a deep-seated anger about the condition of the working-class and the treatment of veterans, and found himself drawn to political movements that would allow him to express his radical discontent.³² The first cause to which he decided to devote his energies was the founding of the National Union of Ex-Servicemen (NUX) in 1919. Beckett sought to create an organization that would "maintain that spirit of comradeship which existed among us while we were together in the Services."³³ As president of the NUX, he shaped it into a quasi-trade union that advocated for better pensions and jobs for ex-servicemen, as well as for "reform of the hated court martial system which had summarily condemned so many men to death."³⁴

After the NUX collapsed early in the 1920s, Beckett wandered around the Labour movement in the 1920s, attaching himself to one cause after another, and refining his skills as a writer and orator. He served as a communications officer for the London Labour party, and grew close to the young Clement Attlee, the future party leader. As an MP after 1924, Beckett was torn between the honor and fame that came with being the youngest Labour candidate ever elected to Parliament, and feeling that the moderate nature of the Labour party was preventing him from pressing for the changes he so badly wanted to see.

What drove the biggest wedge between Beckett and the Labour party leadership was the latter's mismanagement of the General Strike in 1926. This was a wound that festered in the minds of many of the former Labour men who found their way into the BUF, and it was a complaint that was mentioned often in all of their writing at one point or another. For Beckett, the General Strike represented a betrayal of everything Labour had promised to the British people after the war.

Yet, while his radicalism and working-class loyalties are indisputable, the socialist nature of Beckett's views after the 1929 election is questionable. Fenner Brockway, a leading figure in the ILP, appears to have had Beckett figured out rather well. He describes Beckett in amicable terms as "young, enthusiastic, dynamic [and] a tremendous worker," but he also felt that Beckett was not a very thoughtful or committed socialist noting, "there was no policy in his speeches, just punch and hit. A boxer."³⁵ Indeed, Brockway was struck mainly by Beckett's oppositional tendencies, pointing out how "he was contemptuous of the Labour majority," and how he liked to make grand displays of his dissatisfaction with the party leaders. None was more dramatic than when Beckett seized the ceremonial House of Commons Mace, and attempted to flee with it to the restroom where he intended to "place its head in one of the magnificent porcelain receptacles."³⁶ This infamous episode was in response to a vote to suspend Brockway himself, but was viewed by all, including Brockway himself, as a horribly embarrassing affair, since no one but the Speaker of the House had laid hands on the Mace since Oliver Cromwell. This outrageous gesture only cemented Brockway's view that Beckett "wasn't really a socialist—he was a rebel."³⁷

Beckett lost his seat in the General Election of 1931, and spent the next three years out of politics. He only joined the BUF in 1934, a much later entry when compared to most of his fellow ex-socialists who had also converted to fascism, such as Forgan or Leaper. The one reason he may have sought to revive his career as a politician was because he had attempted to operate a West-End theater, while simultaneously pursuing a career as an actor on the same stage, and had managed to run both dreams into the ground. As his son so eloquently states, "the sad and stupid fact is that he was suddenly bankrupt and entirely without resources, and Mosley offered him a salary."³⁸ But Beckett also credited a trip to Italy in the summer of 1930 where he observed the way the fascist regime was "achieving all those things which I had hoped for from the Labour Party in this country."³⁹ In this sense, it appears that Beckett had gotten swept up in the fascist "utopianism" that Coupland attributes to left-wingers in the BUF, at least in the sense that, having been

disappointed with the Labour party, he came to see genuine potential in the fascist movement to address the major grievances that he had long been battling. However, there is also evidence that Beckett was drawn to the BUF's anti-Semitism, which became increasingly prominent in his own mind in the 1930s. Regardless of which reason was predominant, Beckett took to his new allegiance in earnest, and immediately began applying the skills, which had made him so successful in his earlier political career: his harsh words and sharp wit.

Once in the BUF, Beckett took with renewed vigor to his old methods of assaulting the opposition through vitriolic speeches and writings. First as a public speaker, then taking up the mantle of the editor of the BUF's two major news publications, *Blackshirt* and *Action*, Beckett was finally unchained from any conventional standards of propriety to attack the political system and institutions that he believed had failed the British people. Years of his pent-up anger at British politics exhibited themselves in vicious headlines meant to discredit Labour, and articles that uncovered great government conspiracies, Communist machinations, and the "threat of International Finance." Until mid-1934, Mosley had been cozying up to the Conservative opinion in the hopes of getting a foothold in conventional politics and securing additional finances for the movement. Lord Rothermere, the owner and publisher of the influential *Daily Mail*, was the most significant figure to endorse the BUF. However, after several months of open support, Rothermere abruptly withdrew his endorsement, confirming the separation between the fascists and Conservative opinion. In this sense, Beckett's arrival was most timely, as Mosley now green-lit BUF publications to begin bashing the Conservative party as harshly as the other major opposing parties. Beckett was more than happy to oblige, attacking both the Conservative and Labour parties with equal vigor.

To Beckett, the best way to advertise for fascism in Britain was not only to loudly point out all the faults of the current administration, but also to berate any political rivals by showing that they were so infiltrated by Jewish interests that they would never serve the interests of the British people. His treatment of the Labour party was a perfect example of this tactic. In the early issues of *Action*, Beckett ran a column called "Our Press Lords," in which he attempted to show his readership just how much the "political left" influenced the public through daily newspapers. He addressed the predominance of left wing or socialist bias in the press as an example of the "wrong-headedness of our so-called freedom of the Press." Beckett was convinced that the main sources of information were so contaminated by "Jewish-Bolshevik falsehoods" that people could not formulate their own views.⁴⁰

Beckett's polemical style tended to rely on mocking the targets of his disdain—the politicians and bureaucrats who stood in the way of the BUF—in an effort to inspire his readers to stand up against those who would keep them down. In a sweeping gesture, he likened the current political climate to the ineffectiveness of Victorian politics, indicating that “the Right [is] struggling vainly against new ideas just because they were new, and the Left, ill-equipped and badly led, [is] clamouring that the way to secure plenty for the many is to take away the little from the few.”⁴¹ It is clear from this statement that Beckett had no love for Conservatives, but that he was equally critical of his former party, believing that its misguided demands for redistribution of wealth would lead to an even more catastrophic economic situation. In that same June 1936 article, Beckett described in significant detail the economic scandal that awaited Britain if the country's administration was allowed to fall prey to a socialist-led “Popular Front” coalition against fascism, like the one just assembled by Leon Blum and his “circus of charlatans” in France. Blum, the socialist Prime Minister of France, was a target of opportunity for Beckett's severely anti-Semitic rhetoric, and allowed him to express his distrust of international socialist movements. He described Blum as “the head of a motley collection of political job-hunters drawn from every section of the alleged ‘Left’” that was far too close to falling victim to what he claimed to be a Jewish-Communist “The Way of the East.”⁴² This article demonstrates Beckett's tactic of identifying an issue, over-selling the significance of the problem with allegations of Jewish predatory influences or conspiracies, then bringing it all back to how the BUF in power would eliminate such dangers. The incredible detail Beckett was able to drum up to debase and ridicule figures like Blum was meant to agitate the readership against socialist and communist movements generally, but also to draw attention away from the fact that Beckett rarely went into any specifics about how the BUF itself was going to make things better.

It seems fairly clear that Beckett had earlier been drawn to socialism more as a protest movement than an ideology or specific program during his time in the Labour party, and that he did not bring anything resembling a left-wing ideology to the BUF. Instead, the one ideology he did display enthusiastically within the BUF was his constant antagonism to the establishment and vicious anti-Semitism. Beckett's biographer argues that John picked up his anti-Semitism as a result of the company he kept in the BUF, and that prior to the death of his mother, who was herself Jewish before being disowned by her family for marrying Beckett's father, John displayed no anti-Semitism at all, presumably out of filial respect.⁴³ Regardless of whether it was a result of peer-pressure

or a deep-seated resentment finally unchained, John Beckett was most certainly an anti-Semite. As an active writer and editor for the BUF, Beckett rarely missed an opportunity to remind his readership of the threat to British society that was “International Finance” or simply “the Jewry.” No example can better represent the level of animosity Beckett had come to feel for British Jews than his article entitled, “What the Jew Did in the Great War.” Distinguishing between the “white citizens of the Empire” and “Jews”, Beckett attempted to draw attention to the “good fortune” of the “privileged guests” because they took far fewer casualties during the First World War.⁴⁴ Reading his diatribe, one gets a real sense of the spite that Beckett felt for the Jewish people and the apparent pleasure he took in his efforts to turn the general population against them.⁴⁵

Beckett represented the kind of “left-wing fascist” who once appeared to symbolize left-wing radicalism in Britain, but who was more of a malcontent than an ideologically committed socialist. The precise depth of Beckett’s earlier understanding of socialism is debatable, but his career within the ILP indicates that he was devoted less to socialism and far more to a radical assault on the country’s traditional institutions and leadership. Whatever his ideological position was before fascism, once he joined the BUF Beckett enthusiastically endorsed its militant right wing and anti-Semitic rhetoric. While men like Forgan abandoned the BUF soon after joining, Beckett relished the opportunity to further develop his reputation as a muckraker and scandal-monger, now targeting communists and Jews who he had no doubt were in league to bring Britain to its knees. Beckett’s son, who very much downplays his father’s anti-Semitism in his biography, claims that fascism took the “idealist, burning with righteous rage on behalf of the underdog,” and twisted him into a tool of an organization that used him for his skills as a propagandist by directing his anger at targets that would turn him into a “racist bigot.”⁴⁶ I would argue that Beckett enthusiastically allowed himself to be so used, and that it was precisely his combination of angry radicalism and virulent anti-Semitism that drew him to Mosley and the BUF.

Conclusion

It is indisputable that some of the BUF’s propaganda can come across as left wing in nature; at least as far as an organization that is supposed to be hyper-conservative is concerned. However, the ideology of the group was far closer to modern day populism than to socialism

or the progressive left, if populism is defined as the exploitation of genuine popular grievances by explanations based on conspiracy theories and grandiose promises of quick remedies by charismatic and authoritarian leadership.⁴⁷ It is true that, when reading through the BUF's periodicals, *Action* and *Blackshirt*, one cannot help but notice that a number of the articles written mostly by its ex-Labour members have a distinct tone that was designed to appeal to the grievances of working-class readers. However, they almost always concluded with critiques of socialist remedies and explanations that attributed all problems to Jewish subterfuge and conspiracies in a way that made the rest of the article seem insincere. The impression is that the editors attempted to make the BUF look better to working-class readers by discussing their complaints and challenges, in order to persuade them that only fascism could remedy those problems. In fact, Mosley and the BUF, including his ex-socialist followers, continued to diagnose problems associated with the socialist critique of capitalism—low wages, unemployment, exploitation of the workers—but they offered extreme-right solutions to those problems: anti-Semitism, corporatism, imperialism. Above all, all the solutions relied on absolute empowerment of, and trust in, Mosley and the BUF.

The handful of ex-socialists in the BUF did write on topics that hinted at their left-wing past. However, they wrote infrequently and did not always discuss left-wing issues. Here it is also important to distinguish between their political motivation and issues that were important to them, versus the ideological solutions they offered to solve the issues. On some level, the men who followed Mosley into the BUF all signed on to the idea of an authoritarian-style government that would preside over an extremely constrained representative system within the Corporate State. Other than Forgan, they also all adopted the movement's anti-Semitic attitude, some, like Beckett, with the kind of enthusiasm that suggested that this racist sentiment may have drawn them to the BUF in the first place. Both the issues of authoritarian government and anti-Semitism alone would likely be enough to dismiss these men from having any claim on their former socialist ideology. In addition, the fact that so few of them remained with the movement beyond 1936 suggests that their previous political affiliations had little impact whatsoever on BUF policy. There is also little evidence that the BUF actively pursued recruitment from the left beyond those who initially joined. Instead, the fascist movement attracted—and was overwhelmingly comprised of—men of a Conservative, right wing, and/or a military background.⁴⁸

As for Mosley, the question remains what did he get out of holding on to these men who came attached with an “ex-socialist” label? Two reasons come to mind, the first of which is that after he left the Labour Party in 1931, Mosley effectively burned all bridges that linked him with the political left, and the men who came with him into fascism helped lend an air of left-wing credibility to a new political organization, especially since the BUF otherwise received most of its recruits from among former supporters of the Conservative Party. However, after the loss of any hope of mainstream Conservative support in 1934, Mosley doubled down on the use of the remaining ex-socialists and left-wingers to attempt to tap into the working-class audience for support. At this stage, the literature coming out of the BUF did seem to contain elements of the left-wing “utopianism” that Coupland has identified within the BUF. However, it seems more likely that this was more an effort to amass a group of supporters who would blindly follow their “leader” and voluntarily give up their rights, leading to “an Orwellian dystopia of ‘a world of rabbits ruled by stoats.’”⁴⁹

Endnotes

234

1. Philip Coupland, “Left-wing Fascism in Theory and Practice: The Case of the British Union of Fascists,” *Twentieth Century British History*, 13 (2002), 38-61; Coupland, “Blackshirted Utopians” *Journal of Contemporary History*, 33-32 (1998), 255-272; Salvatore Garau, *Fascism and Ideology* (Routledge, 2015) p. 240; Martin Pugh, *Hurray for the Blackshirts* (2007), 198-202; Mark Burrows, “The Left-Wing Road to Fascism: An Investigation of the Influence of ‘Socialist’ Ideas Upon the Political Ideology of the British Union of Fascists.” (PhD diss., University of Sheffield, 1998)
2. Philip M. Coupland, “‘Left-Wing Fascism’ in Theory and Practice: The Case of the British Union of Fascists,” 38-40.
3. *Ibid.*, 40.
4. It should be noted that Wells himself espoused some very unorthodox views on socialism. See Coupland, “H.G. Wells’s ‘Liberal Fascism,’” *Journal of Contemporary History*, 35/4 (2000), 541-558; C.E.M. Joad, “Superseding Socialism,” *New Leader*, June 15 1928.
5. *Ibid.*, 39.
6. *Ibid.*, 40.
7. Michael Freeden, *Ideologies and political theory: A conceptual approach*. Oxford University Press on Demand, 1996; Daniel Ritschel, *The Politics of Planning: The Debate on Economic Planning in Britain in the 1930s* (1997), 97-143; Geoffrey Foote, *The Labour Party’s Political Thought* (1997).

8. See Daniel Ritschel "Why Was There No Keynesian Revolution Under the Second Labour Government?" in John Shepherd; Jonathan Shaw Davis, and Chris Wrigley, eds. *Britain's Second Labour Government, 1929-31: A Reappraisal*. Manchester University Press, 2011., pp. 55-84; D. Ritschel, *The Politics of Planning*, pp. 50-96; D.S. Lewis, *Illusions of Grandeur: Mosley, Fascism, and British Society, 1931-81*. (Manchester University Press, 1987); Richard C. Thurlow, *Fascism in Britain: From Oswald Mosley's Blackshirts to the National Front*. (IB Tauris, 1998).
9. W. F Mandle, "The Leadership of the British Union of Fascists." *The Australian Journal of Politics and History*, 360-383.
10. Mandle, 360-383
11. See Robert Forgan, "How to Live to be a Hundred" in *Milngavie and Beardsden Herald* (Oct 11, 1929); "Death Control and 125-year Life for All," *Nottingham Evening Mail* (May 5, 1930); *Sheffield Daily Independent* (Oct 28, 1929); *Motherwell Times* (Jan 9, 1931 and Feb 13 1931).
12. *Nottingham Evening Post* (Dec 6, 1930).
13. Robert Skidelsky, *Oswald Mosley* (1979), 342.
14. Ibid; Coupland, "Left Wing Fascism," 50.
15. Geoffrey Alderman, "Dr. Robert Forgan's Resignation from the British Union of Fascists," *Labour History Review*, Vol 57, No.1, Spring 1992, 37-41.
16. "Dr. Forgan Opens Mixed Canteen," *Blackshirt*, March 9-15, 1934, 3.
17. "Men in Fascism: Robert Forgan," *The Fascist Week*, December 15-21, 1933.
18. Robert Forgan, "'Free to Breathe' Mr. Baldwin Pours Fourth Good Soul Stuff," *Fascist Week*, May 18-24.
19. Alderman, 37.
20. Neville Laski, "Notes of Interview" July 28, 1934, published in Alderman, "Dr. Robert Forgan's Resignation."
21. J. L. Risdon, *Black Shirt and Smoking Beagles*, (Wilfred Books, online ed., 2014), 1-14.
22. Wilfred Risdon, "Which Will You Have—The Power of Fascism or the Farce of Modern Day Politics?" *Blackshirt*, November 29, 1935.
23. William Risdon, "Can A Marxist Become a Fascist? Socialism Is Torn By Internal Dissension," *Action* No. 60, April 10, 1937.
24. Risdon "Which Will You Have—The Power of Fascism or the Farce of Modern Day Politics?"
25. Risdon, "Can A Marxist Become a Fascist?"
26. Bill Risdon, "Industry," *Action*, February 19, 1938.
27. W.J. Leaper, "Fascism, Trade Unions and The Workers: The 'Blackleg' is an Enemy to Society," *The Fascist Week*, February 2-8, 1934.
28. Ibid.
29. W.J. Leaper, "Britain Must Be A.I. Again! Eighty Per Cent of Our Young Men Below L.3 Standard," *The Fascist Week*, April 13-19, 1934; Leaper, W.J., "Man Was Not Born To Preserve The Present Civilization: Revolts Against the Slavery and Horrors of To-Day," *The Fascist Week*, April 13-19, 1934; Leaper, W.J., "Fascism, Trade Unions and The Workers: The 'Blackleg' is an Enemy to Society," *The Fascist Week*, February 2-8, 1934.
30. T. Redmund, "They Say — Mr. Leaper's Rubbish," *The Fascist Week*, February 9-15, 1934.
31. Francis Beckett, *Rebel*, 11-12.
32. Beckett, Francis, *The Rebel Who Lost His Cause: The Tragedy of John Beckett, MP*, London, England: London House, 1999, 18.
33. John Beckett, quoted in Francis Beckett's *The Rebel*, 23.
34. Francis Beckett, 24.
35. Fenner Brockway, quoted in Francis Beckett's *Rebel*, 83.
36. John Beckett, quoted in Francis Beckett's *Rebel*, 92.
37. Francis Beckett, *Rebel*, 80-93.
38. Ibid, 119.
39. John Beckett, quoted in Francis Beckett's *Rebel*, 124.
40. John Becket, "Our Press Lords- No. 3: The Beaverbook Press," *Action* No 5, March 19, 1936
41. John Beckett, "World Revolution, France and Britain Must Choose Their Road Now," *Action* No. 19, June 25, 1936.
42. Ibid.
43. Francis Beckett, *Rebel*, 108-125.
44. John Beckett, "Shot and Shell for Fascists: What the Jews Did in The Great War," *The Blackshirt*, December 14, 1934.
45. Francis Beckett, *Rebel*, 120.
46. Francis Beckett, *Rebel*, 125.
47. Jan-Werner Muller, *What is Populism?* (2016).
48. Mandle, "The Leadership of the British Union of Fascists."
49. Coupland, "Blackshirt Utopians," 265.

Editor & Designer Biographies

Ioana Petricel Editor

Ioana Petricel is a senior member of UMBC's Honors College pursuing a dual degree in Biology and Health Administration and Public Policy, with a focus in public health. After graduating in spring 2018, she intends to pursue a career in public health, hopefully allowing her to apply her knowledge of biology to evidence-based public health policy research. Serving as the STEM Editor for the 19th Edition of the *UMBC Review* has been an incredible experience and she would like to thank her team for their relentless support. She would like to thank Dr. Susan McDonough for her guidance and patience throughout the editing process, and would also like to thank Dr. April Householder for her dedication. Ioana would also like to extend her thanks to the staff of the Division of Undergraduate Academic Affairs (UAA), including Mr. Devon Fick and Mr. Michael Mower for their assistance in the publishing of this volume. Lastly, Ioana would like to thank her co-editor, Ms. Manisha Vepa for her advice during this process, as well as the designer, Mr. Samuel Buettner, for his hard work and dedication to this publication.

Manisha Vepa Editor

Manisha Vepa is a senior Sondheim Public Affairs Scholar and member of the Honors College. She is majoring in Economics and Global studies and minoring in Music. After graduation, she is looking to pursue graduate studies in International Affairs. As a second time editor for the arts, humanities, and social sciences, Manisha could not have asked for a better publishing team. She would first like to thank Dr. Susan McDonough for her advice throughout the process and her support in finding outside reviewers and editing papers. She is also grateful to co-editor, Ms. Ioana Petricel, whose interdisciplinary perspective knowledge diligence were essential in successfully creating the latest volume, and to Mr. Samuel Buettner, who worked hard to make the volume look polished and consistent. Manisha also extends her thanks to the Division of Undergraduate Academic Affairs (UAA), specifically Dr. April Householder and Mr. Devon Fick, for their tremendous dedication to furthering and promoting the *UMBC Review*.

Samual Buettner Designer

Samual Buettner is a Linehan Artist Scholar. He graduated from UMBC in December 2017, earning a B.F.A. in Graphic Design and a minor in Environmental Science. He currently works as a designer in the Baltimore area. As a first time designer for the *UMBC Review*, Samual wishes to thank Ms. Guenet Abraham for the tremendous opportunity to work on such a distinguished publication, as well as her guidance along the way. He would also like to applaud the dedication of the editors, Ms. Ioana Petricel and Ms. Manisha Vepa, who, with the support of Dr. Susan McDonough, helped to smooth the transition from editing to design. Samual also wishes to thank Dr. April Householder, Mr. Devon Fick, and the entire staff of the Division of Undergraduate Academic Affairs (UAA) for promoting and facilitating the production of this unique, interdisciplinary publication. He is grateful to have been a part of the process and hopes that the *UMBC Review* continues to support the diverse, inquisitive minds of UMBC students to come.



UMBC

AN HONORS UNIVERSITY IN MARYLAND

