

MCNAIR SCHOLARS PROGRAM

**FALL 2019
ACADEMIC JOURNAL**

Table of Contents

Article #1 - Uncharted Waters: A Look at Comorbid Diabetes and Neoplasia	5
Sarah Austin	
Jessica Price, MSN & Dr. Charlotte Webb, Faculty Mentor	
Article #2 - Empty or Full: A Survey of McMinn County's Food Pantries' and Their Abilities to Meet Nutritional Standards	27
Alanis Burton	
Dr. Ben Christmann, Faculty Mentor	
Article #3 - The Psychosocial Effects of Social Media	43
Jhenny Hillery-Collier	
Dr. Michael Sturgeon, Faculty Mentor	
Article #4 - <i>Ayuda en el Camino de la Muerte:</i> Benevolence, Evangelical Churches, and the Caravan of Migrants	60
Elijah Cox	
Dr. Arlie Tagayuna , Faculty Mentor	
Article #5 - Relationship Between Vestibular Dysfunction and Fatigue in Persons with Multiple Sclerosis	98
Alex Gann	
Graham Cochrane and Dr. Jennifer Christy, Faculty Mentor	
Article #6 - A Literature Review on the Benefits of Music Education: Beyond the Scope of Academics	105
Ashley Garner	
Dr. Susanne Burgess, Faculty Mentor	
Article #7 - Characterization of TMEM67 Gene Variant Associated with Joubert Syndrome	114
Alissa Jackson	
Dr. Jonathan Cornett, Faculty Mentor	
Article #8 - An Examination of Presidential Rhetoric Theory	124
Brandyn Kirby	
Dr. Mark Scully, Faculty Mentor	
Article #9 - Factors Influencing College Retention Rate for First Generation College Students: A Literature Review	132
Desiree LaPeer	
Dr. Ruthic Wienk, Faculty Mentor	

Article #10 - Book Banning in Schools: Are Students Suffering in Silence?	143
Sierra Ledford	
Dr. Kevin Brown, Faculty Mentor	
Article #11 - Hashtag Thriving: Religious in Congruence to Flourishing	158
Heather Mellis	
Dr. Bryan Poole, Faculty Mentor	
Article #12 - Humility and Darkness: Self-Knowledge in Walter Hilton's The Scale of Perfection	171
Garret Mikulka	
Dr. Chad Schrock, Faculty Mentor	
Article #13 – Teachers' Perceptions of Trauma	188
Chanmony Miller	
Dr. Kimberly Moffett, Faculty Mentor	
Article #14 - Objectification, Orientalism, and Orthodoxy: Hypatia in Modern Centuries	220
Kaitlyn Morrison	
Dr. Aaron Johnson, Faculty Mentor	
Article #15 - Why Johnny Doesn't Write	234
Brittney Perez	
Dr. Donna Summerlin, Faculty Mentor	
Article #16 - Quest for the Mathematically Ideal Font Using Principal Component Analysis	246
Moises Ponce & Rachel Wood	
Dr. Jason Schmurr	
Dr. Richard Moy, Faculty Mentor	
Article #17 - Establishing Criteria for the Orthodox, the Heterodox and the Heretical	271
Tyler Price	
Dr. Christopher Stephenson, Faculty Mentor	
Article #18 - Lavender Oils Effect on Anxiety Levels in Zebrafish	285
Alyshia Smith	
Dr. Sherry Kasper, Faculty Mentor	
Article #19 - Biblical Literacy and Habits among the d/Deaf	294
Kylie Sommer	
Dr. La-Juan Bradford, Faculty Mentor	

Article #20 - A Balm for Friendship 306

Reese Swistek

Dr. Thomas Pope, Faculty Mentor

Article #21 - Proving That a Prime Number in the Form $4n+1$ Can Be Expressed
as a Sum of Two Squares 313

Japheth Varlack

Dr. Richard Moy, Faculty Mentor

Fall 2019

Uncharted Waters: A Look at Comorbid Diabetes and Neoplasia

Sarah Austin

Jessica Price, MSN, BSN, RN2

Dr. Charlotte Webb, Faculty Mentor

Lee University

Uncharted Waters: A Look at Comorbid Diabetes and Neoplasia

Sarah Austin¹, Jessica Price, MSN², and
Dr. Charlotte Webb, Faculty Mentor³

¹Lee University

Introduction and Background

Diabetes mellitus is a health condition that effects the body in many ways and requires complex medical care to manage it. Diabetes mellitus becomes especially complex when a patient experiences other comorbid conditions, particularly the comorbidity of neoplasia (cancer). Patients with type 2 diabetes and comorbid cancer diagnoses are faced with many challenges in maintaining their blood sugar because the symptoms of cancer and cancer treatment on their body make it hard to manage their diabetic condition. Cancer patients and diabetic patients are both immune compromised and live with cellular regulation imbalances (Giovannucci, et al., 2010; Giddens, 2016). The purpose of this investigation is to explore the relationship between comorbid type 2 diabetes and cancer and the impact that these comorbidities have on patient health. This goal is accomplished through a review of literature on diabetes and cancer, with the intention of discovering practical actions that benefit patient disease-management, and by identifying barriers to effective medical treatment. The solutions found in the literature review are being compared to the absence of those solutions in patient care. The outcome will be a concise report on current effective care practices for these patients. This study is taking place over a four-month time period.

Both populations of patients, those with cancer and those with type 2 diabetes, deal with increased inflammation – for diabetic patient's inflammation is related to their chronic condition and for cancer patient's inflammation is related to the cancer treatment they receive to eliminate the malignant neoplasm (Giovannucci, et al., 2010). Patients receiving treatment for cancer lose their appetite or may be nauseated and refuse to eat, which can cause issues with blood glucose control. These patients may also have increased inflammation related to radiation treatment, which makes maintaining blood sugar levels even more complicated (Giovannucci, et al., 2010). According to Davis, et al., (2018) education related to the management of type 2 diabetes would empower

patients to manage their chronic illness while fighting cancer. Benefits of educating nursing staff, patients, and caregivers include improved health outcomes for patients who are able to effectively manage their diabetes, and reduced anxiety for patients and caregivers related to fewer diabetes related hospital visits (Irizarry, et al., 2013).

Key Concepts

Cellular regulation is the phrase used to describe all the operations accomplished in a cell to preserve homeostasis within the body. Some regulating actions of the cell include its ability to receive signals from outside itself, in the form of hormones, neurotransmitters, and cytokines, and the cell's efficacy in responding to those signals. Cells also use food and water to create energy for the body in various forms and use energy to complete other tasks for the body. Cellular regulation also involves cell reproduction, growth, multiplication, and specialization. These actions of cellular regulation are what promotes healing and balance in the body, so that damaged or dead cells can be removed and replaced. Neoplasm is a term used to describe a type of imbalance in cellular regulation, where abnormal actions and mutations in cell replication, division, and specialization can cause progressive abnormal tissue growth that is either benign or cancerous (malignant) (Giddens, 2016).

The term immunity describes the mechanisms in the body that protect it from disease and allow individuals to be resistant to specific diseases. Appropriate immune function involves the immune system protecting the body from pathogen invasion, noticing and removing mutated cells, and removing dead and damaged tissues. The immune system is made up of multiple organs, including the lymph nodes and vessels; it is also made up of many different types of cells and antibodies, including neutrophils, and immunoglobulins. Abnormal function of the immune system involves an exaggerated immune response, which can be seen in patients with autoimmune diseases like diabetes mellitus, and a suppressed immune response which can be seen in patients with cancer who are being treated by immunosuppressive therapies (Giddens, 2016).

Inflammation is the immunologic response of the body to cell damage, infection, or allergies. This inflammatory response can be protective and promote healing through the repair of cell injury, which is accomplished through a process that involves increased blood flow to the affected area, among other things. Inappropriate immune response, however, can cause damage to the body and exacerbate infections through an exaggerated inflammatory response that leads to more cell damage or through a muted inflammatory response which causes increased vulnerability to infection and chronic inflammation (Giddens, 2016).

Significance of Neoplasia

The National Cancer Institute describes cancer as a disease that is initiated through alterations to genes that are responsible for various cell operations, particularly as it affects cell growth and division. Genetic mutations that lead to cancer formation can be passed down from generation to generation. Genetic mutations that lead to cancer can also be caused by environmental carcinogens that people may encounter throughout life and through lifestyle risk factors. These carcinogens and risk factors lead to cell damage that creates errors in cell division, and growth. (National Cancer Institute, 2019).

According to the National Cancer Institute, "in 2018, an estimated 1,735,350 new cases of cancer will be diagnosed in the United States and 609,640 people will die from the disease." "Estimated national expenditures for cancer care in the United States in 2017 were \$147.3 billion." "In future years, costs are likely to increase as the population ages and cancer prevalence increases." (National Cancer Institute, 2019).

Significance of Diabetes

The American Diabetes Association defines diabetes mellitus as, a chronic disease identified by symptoms including hyperglycemia and involves being unable to effectively use glucose for fuel. Type 1 diabetes is characterized by loss of pancreatic function that results in failure of the pancreas to make insulin. Type 2 diabetes involves impaired pancreatic function, where the pancreas either cannot make enough insulin, or uses insulin incorrectly or ineffectively (American Diabetes Association, 2019).

According to the American Diabetic Association, (2015), roughly "30.3 million Americans, or 9.4% of the population, had diabetes. . . 1.5 million Americans are diagnosed with diabetes every year." And in 2017 alone, "\$327 billion was spent in total for costs of diagnosed diabetes." These expenses included direct medical expenses and losses from reduced productivity (American Diabetes Association, 2019).

Impact of Comorbidity

It is estimated that between 8% to 18% of individuals that are newly diagnosed with cancer already have diabetes (Goebel, Valinski, & Hershey, 2016). This means that somewhere between one in every ten to one in every five patients with a new diagnosis of cancer is already dealing with a preexisting chronic condition of diabetes mellitus. While diabetes and cancer are difficult conditions to

manage on their own, a patient experiencing both diseases and treatments simultaneously is faced with exponentially more complex medical challenges (Irizarry, et al, 2013). Regulating blood glucose levels becomes increasingly difficult as these patients undergo cancer treatments such as radiation, chemotherapy, and, use medications such as glucocorticoids to manage the inflammation caused by those therapies (Giovannucci, et al., 2010, Goebel, Valinski, & Hershey, 2016). The inflammation, and pain, along with blood glucose highs and lows experienced by oncology patients with diabetes lead to fatigue that decrease quality of life for these patients (Goebel, Valinski, Hershey, 2016). Chemotherapy, corticosteroids, and hyperglycemia all put these patients at greater risk for infection, which makes infection prevention very important part of providing quality patient care. A key issue in medical care for patients with diabetes and cancer is the fact that minimal collaboration takes place between oncologists, endocrinologists and primary care doctors in providing care for these patients and determining best practice for each patient's needs (Goebel, Valinski, Hershey, 2016). An appendix has been provided in this literature review, which includes key points from the core articles used in this investigation.

Current Care Interventions

Cancer and diabetes are very complicated conditions to manage and treat on their own, but as comorbidities they pose an even greater challenge to healthcare providers and patients alike (Goebel, Valinski, & Hershey, 2016). There are many variables affecting the management of type two diabetes during cancer treatment. Many of these variables change daily (like energy level, appetite, and glycemia), making it challenging for patients to find stability while caring for themselves in everyday life (Goebel, Valinski, & Hershey, 2016).

A key issue in providing care for patients with diabetes and cancer is that they tend to prioritize treating cancer over managing their diabetes, therefore diabetes management is put on the “backburner” during cancer treatment (Goebel, Valinski, Hershey, 2016). This is an issue because uncontrolled glycemia can lead to vascular damage throughout the body, causing or exacerbating problems with vision, neuropathy, cognition, kidney function, blood pressure, proprioception and other issues (Davis, et al., 2018). The aforementioned side effects of poor blood glucose management can hinder cancer treatment and decrease the quality of life for patients affected by the type 2 diabetes, cancer comorbidity.

Intentional collaboration, coordination, and effective communication among healthcare providers working within different specialties and scopes of practice, specifically oncology, endocrinology, and primary care, could improve the quality of care provided to patients with these comorbidities (Davis, et al., 2018; Goebel, Valinski, Hershey, 2016). Such collaboration would ensure that the patient is getting accurate information regarding the management of each of

their comorbidities, and that the healthcare providers are up to date on the patient's condition as a whole and are able to make informed decisions about next steps for that patient. Collaboration would also help to prevent diabetes management from being ignored during cancer treatment, which would improve the overall health condition of the patient during that time (Giovannucci, et al., 2010; Goebel, Valinski, Hershey, 2016). Another point to be considered, is found in the study published by Moody, et al. (2017), which recommended replacement of the neutropenic diet with standard food safety guidelines for the immunocompromised patients as a means to improve quality of life and reduce meal-related stress while still preventing neutropenic infections (Moody, et al., 2017).

Select applicable recommendations that were found in previous literature reviews include: the use of glycated albumen as a more accurate measurement of blood glucose than HgbA1C in anemic patients (Kim & Lee, 2012), attacking the high acidity microenvironment around solid tumor cancers with proton pump inhibitors which could also benefit diabetic patients whose pH is trending acidic (Gillies, Pilot, Marunaka, & Fais, 2019), and exercise as a means to relieve fatigue and improve the efficacy of cancer treatment; additionally, exercise aids in maintaining euglycemia (LaVoy, Fagundes, Dantzer, 2016).

Patient Education

The importance of diabetes education for empowering and equipping patients to self-manage their diabetes at home cannot be overstated. Diabetes education is shown to improve health outcomes for the patients who choose to participate in the education and implement the knowledge gained from that training in their own lives (Davis, et al., 2018; Irizarry, et al., 2013). The benefit of diabetes education is gained by patients both in the presence and in the absence of comorbid conditions (Irizarry, et al., 2013). Diabetes education is a surprisingly underutilized tool for many patients with diabetes, and because of this healthcare providers need to intentionally promote and perhaps even prescribe diabetes education for patients with diabetes (Davis, et al., 2018; Irizarry, et al., 2013).

Implications for Further Research

There is still a gap in the research related to comorbid diabetes and cancer; because of this gap more research is needed on these comorbid conditions, so that the diseases can be better treated and managed. Research ought to be conducted on symptom management for patients with diabetes and cancer. There is also a need for research to be conducted on the impact that each disease has on the treatment of the other comorbidity, so that care of these patients can be more effective. There is a need for collaborative efforts between doctors, nurses,

and diabetic educators. Research needs to be done on the efficacy of diabetes education for improving health outcomes in oncology patients with diabetes.

Conclusion

Diabetes and cancer are two complicated medical conditions that require disease treatment and symptom management for patients. Roughly 10% to 20% of patients with a new diagnosis of cancer begin treatment with preexisting comorbid diabetes. In light of this, the sheer prevalence of comorbid diabetes and cancer merits the attention of healthcare professionals, so that providers, nurses, and other members of the healthcare team can engage intentionally with these comorbidities. There are currently no established or evidence-based guidelines for the care of patients with comorbid diabetes and cancer; yet, the development of such guideline could be beneficial to the healthcare team in caring for such patients, as research reveals best practice strategies for the care of comorbidities. These comorbidities are deserving of more consideration as the topic of research to investigate solutions for effective comorbid disease management and treatment.

References

- Altamimi, M. A. M. (2014). The Relationship between Type 2 Diabetes and Cancer: An Integrative Review. *Middle East Journal of Nursing*, 8(2), 31–34.
- American Diabetes Association. (2018). Common Terms. *Diabetes Basics*.
- American Diabetes Association. (2018). Statistics About Diabetes. *Diabetes Basics*.
- American Diabetes Association. (2018). Improving care and promoting health in populations: Standards of Medical Care in Diabetes 2018. *Diabetes Care*, 41(Suppl. 1), S7–S12.
- American Diabetes Association. (2019). Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Medical Care in Diabetes—2019. *Diabetes Care*, 42(Supplement 1), S34–S45.
- American Diabetes Association. (2019). Lifestyle Management: Standards of Medical Care in Diabetes—2019. *Diabetes Care*, 42(Supplement 1), S46–S60.
- Ariaans, G., de Jong, S., Gietema, J. A., Lefrandt, J. D., de Vries, E. G. E., Jalving, M. (2015). Cancer-drug induced insulin resistance: Innocent bystander or unusual suspect. *Cancer Treatment Reviews*, 41(4), 376–384.
- Ariza-Heredia, E. J. and Chemaly, R. F. (2018), Update on infection control practices in cancer hospitals. *CA: A Cancer Journal for Clinicians*, 68, 340–355.
- Brunisholz, K., Briot, P., Hamilton, S., Joy, E., Lomax, M., Barton, N., ... Savitz, L. (2014). Diabetes self-management education improves quality of care and clinical outcomes determined by a diabetes bundle measure. *Journal of Multidisciplinary Healthcare*, 7, 533–542.
- Burke, S., Sherr, D., Lipman, R. (2014). Partnering with Diabetes Educators to Improve Patient Outcomes. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, 7, 45–53.
- Clemente, G., Giorgini, M., Mancini, M., Gallo, M. (2018). Diabetologists and Oncologists attitudes towards treating diabetes in the oncologic patient: Insights from an exploratory survey. *Diabetes Research and Clinical Practice*, 143, 420–427.

- Centers for Disease Control and Prevention. (2017). National diabetes statistics report, 2017. Atlanta, GA: Centers for Disease Control and Prevention, US Department of Health and Human Services; 2017.
- Centers for Disease Control and Prevention (CDC) and the National Cancer Institute (NCI). (2016). United States Cancer Statistics: Data Visualizations The official federal statistics on cancer incidence and deaths. Leading Cancer Cases and Deaths, Male and Female, 2016.
- Centers for Disease Control and Prevention and National Cancer Institute. (2017). U.S. Cancer Statistics Working Group. U.S. Cancer Statistics data visualizations tool. [Chart] U.S. Department of Health and Human Services.
- Centers for Disease Control and Prevention. (2015). U.S. diabetes surveillance system. [Chart].
- Centers for Medicare and Medicaid Services. (2015). Core Quality Measures. Consensus Core Set: Medical Oncology Measures Version 1.0.
- Davies, M. J., D'Alessio, D. A., Fradkin, J., Kernan, W. N., Mathieu, C., Mingrone, G., ... Buse, J. B. (2018). Management of Hyperglycemia in Type 2 Diabetes, 2018. A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetes Care*, 41(12), 2669–2701.
- Ferrari, P., et al. (2018). Managing people with diabetes during the cancer palliation in the era of simultaneous care. *Diabetes Research and Clinical Practice*, 143, 443 – 453.
- Gallo, M., Gentile, L., Arvat, E. et al. (2016) Diabetology and oncology meet in a network model: union is strength. *Acta Diabetologica*, 53(4), 515-524.
- Gallo, M., Muscogiuri, G., Felicetti, F., Faggiano, A., Trimarchi, F., Arvat, E., ... Colao, A. (2018). Adverse glycaemic effects of cancer therapy: indications for a rational approach to cancer patients with diabetes. *Metabolism*, 78, 141–154.
- Gardner, J. R., Livingston, P. M., Fraser, S. F. (2014). Effects of Exercise on Treatment-Related Adverse Effects for Patients with Prostate Cancer Receiving Androgen-Deprivation Therapy: A Systematic Review. *Journal of Clinical Oncology*, 32(4), 335–346.
- Gerards, M. C., van der Velden, D. L., Baars, J. W., Brandjes, D. P. M., Hoekstra, J. B. L., Vriesendorp, T. M., Gerdes, V. E. A. (2017). Impact of hyperglycemia on the efficacy of chemotherapy—A systematic review of pre-clinical studies. *Critical Reviews in Oncology/Hematology*, 113, 235–241.

- Giddens, J. F. (2016). Concept 12 Cellular Regulation. Concepts for Nursing Practice [VitalSource Bookshelf version], (2nd ed., pp. 104-112).
- Giddens, J. F. (2016). Concept 23 Immunity. Concepts for Nursing Practice [VitalSource Bookshelf version], (2nd ed., pp. 218-222).
- Giddens, J. F. (2016). Concept 24 Inflammation. Concepts for Nursing Practice [VitalSource Bookshelf version], (2nd ed., pp. 230-233).
- Gillies, R. J., Pilot, C., Marunaka, Y., Fais, S., (2019). Targeting acidity in cancer and diabetes. *Biochimica et Biophysica Acta (BBA) - Reviews on Cancer*, 1871(2), 273-280.
- Giovannucci, E., et al. (2010). Diabetes and cancer: a consensus report. *Diabetes care*, 33(7), 1674–1685.
- Goebel, J., Valinski, S., Hershey, D. S. (2016). Improving Coordination of Care Among Healthcare Professionals and Patients with Diabetes and Cancer. *Clinical Journal of Oncology Nursing*, 20(6), 645–651.
- Griffiths, R. I., Keating, N. L., Bankhead, C. R. (2019). Quality of diabetes care in cancer: a systematic review. *International Journal for Quality in Health Care*, 31(2), 75–88.
- Hanahan, D., Weinberg, R. A. (2011). Hallmarks of Cancer: The Next Generation. *Cell* 144(5), 646-674.
- Hanahan, D. (2014). Rethinking the war on cancer. *The Lancet*, 383(9916), 558–563.
- Hershey D. S. (2017). Importance of Glycemic Control in Cancer Patients with Diabetes: Treatment through End of Life. *Asia-Pacific journal of oncology nursing*, 4(4), 313–318.
- Irizarry, L., Li, Q. E., Duncan, I., Thurston, A. L., Fitzner, K. A., Edwards, B. J., ... McKoy, J. M. (2013). Effects of cancer comorbidity on disease management: making the case for diabetes education (a report from the SOAR program). *Population health management*, 16(1), 53–57.
- Jiang X, Wang J, Lu Y, Jiang H, Li M. (2019). Self-efficacy-focused Education in Persons with Diabetes: A Systematic Review and Meta-analysis. *Psychology Research and Behavior Management*, 12 (1), 67-79.
- Kim, K. J., Lee, B. W. (2012). The roles of glycated albumin as intermediate glycation index and pathogenic protein. *Diabetes metabolism journal*, 36(2), 98–107.

- LaVoy, E. C., Fagundes, C. P., Dantzer, R. (2016). Exercise, inflammation, and fatigue in cancer survivors. *Exercise immunology review*, 22, 82–93.
- Leak, A., Davis, E. D., Houchin, L. B., Mabrey, M. (2009). Diabetes Management and Self-Care Education for Hospitalized Patients with Cancer. *Clinical Journal of Oncology Nursing*, (2), 205.
- Lee, S. C., Chan, J. CN. (2015). Evidence for DNA Damage as a Biological Link Between Diabetes and Cancer. *Chinese Medical Journal*, 128 (11), 1543-1548.
- McCabe, M., Behrens, L., Browning, S., Vessey, J., Williams, M. J. (2019). The Clinical Research Nurse: Exploring Self-Perceptions About the Value of the Role. *AJN, American Journal of Nursing*, 119(8), 24–32.
- Moody, KM, Baker, RA, Santizo, RO, et al. (2017). A randomized trial of the effectiveness of the neutropenic diet versus food safety guidelines on infection rate in pediatric oncology patients. *Pediatric Blood Cancer*, 65(1) e26711.
- Moses, C., et al. (2018) Hallmarks of cancer: The CRISPR generation. *European Journal of Cancer* 93, 10-18.
- Nagelkerk, J., Thompson, M. E., Bouthillier, M., Tompkins, A., Baer, L. J., Trytko, J., ... Groeneveld, K. (2017). Improving Outcomes in Adults with Diabetes through an Interprofessional Collaborative Practice Program. *Journal of Interprofessional Care*, 32(1), 4–13.
- Nardi, E. A., McCanney, J., et al. (2018). Redefining Quality Measurement in Cancer Care. *Official Journal of the National Comprehensive Cancer Network*, 16(5), 473-478.
- National Cancer Institute. (2018). Statistics at a Glance: The Burden of Cancer in the United States. *Cancer Statistics*.
- National Cancer Institute. (2015). What Is Cancer? Understanding Cancer.
- Neuss, M., et al. (2016). Establishing a Core Set of Performance Measures to Improve Value in Cancer Care: ASCO Consensus Conference Recommendation Report. *Journal of Oncology Practice*. 13(2), 135-140.
- Pettit, S., Cresta, E., Winkley, K., Purcell, E., Armes, J. (2017). Glycaemic control in people with type 2 diabetes mellitus during and after cancer treatment: A systematic review and meta-analysis. *PLOS ONE*, 12(5), 1–17.

- Psarakis, H.M. (2006). Clinical challenges in caring for patients with diabetes and cancer. *Diabetes Spectrum*, 19, 157–162.
- Stevens, C., Dinkel, S., Catanzaro, J. (2011). The Complex Dual Diagnosis of Diabetes and Cancer. *Clinical Journal of Oncology Nursing*, 15 (6), 654-658.
- Tran, M., Elbarbry, F. (2016). Influence of Diabetes Mellitus on Pharmacokinetics of Drugs. *MOJ Bioequivalence Bioavailability*, 2(1).
- Villarreal-Garza, C., Shaw-Dulin, R., Lara-Medina, F., Bacon, L., Rivera, D., Urzua, L., . . . Herrera, L. A. (2012). Impact of Diabetes and Hyperglycemia on Survival in Advanced Breast Cancer Patients. *Experimental Diabetes Research*, 2012, 1–8.
- Visovsky, C., Meyer, R. R., Roller, J., Poppas, M. (2007). Evaluation and Management of Peripheral Neuropathy in Diabetic Patients with Cancer. *Clinical Journal of Oncology Nursing*, 12(2), 243–247.
- Walsh, D., Szafranski, M., Aktas, A., Kadakia, K. C. (2019). Malnutrition in Cancer Care: Time to Address the Elephant in the Room. *Journal of Oncology Practice: Editorial*.1-4.
- Wei, M., Liu, Y., Wang, C., Yu, C., Li, D., Zhou, W., Zhang, Z.-J. (2016). The need for differentiating diabetes-specific mortality from total mortality when comparing metformin with insulin regarding cancer survival. *Acta Diabetologica*, 54(2), 219–220.
- Williams, G. R., et al. (2016). Comorbidity in older adults with cancer. *Journal of Geriatric Oncology*. 7(4), 249 – 257. [Figure 1].
- Wilson, B. J., Zitella, L. J., Erb, C. H., Foster, J., Peterson, M., Wood, S. K. (2018). Prevention of Infection: A systematic review of evidence-based practice interventions for management in patients with cancer. *Clinical Journal of Oncology Nursing*, 22(2), 157–168.
- Yokomichi, H., Nagai, A., Hirata, M., Kiyohara, Y., Muto, K., Ninomiya, T., . . . Yamagata, Z. (2017). Original Article: Survival of Macrovascular Disease, Chronic Kidney Disease, Chronic Respiratory Disease, Cancer and Smoking in Patients with Type 2 Diabetes: BioBank Japan cohort. *Journal of Epidemiology*, 27 [Supplement], S98–S106.

Appendix A

Author, Date (in text citation)	Research Question(s), Hypotheses, Purpose	Methodology, Study sample, Sample characteristics, Tool of measurement	Analysis, Results, Findings	Conclusions, Discussion, Summary	Study strengths, Study limitations
(Davies et al., 2018)	<p>The ADA and EASD convened a panel to update the position statement on the management of type two diabetes in adults.</p> <p>This article is intended to offer practitioners in the U.S. and Europe a resource that concisely communicates a large volume of recent research evidence related to managing hyperglycemia in adult patients with type 2 diabetes mellitus (T2DM).</p>	Consensus Report	N/A	<p>Good glycemic level control leads to significant and lasting reductions in the initiation and development of microvascular complications.</p> <p>The benefits of strict glycemic management occur gradually with time, while the damage done by poor glycemic control is immediate, therefore, patients with a greater life expectancy stand to gain the most from close glycemia management.</p> <p>A reasonable HgbA_{1c} goal for most (nonpregnant) adult patients to gain microvascular benefit is 7% or less.</p> <p>Atherosclerotic cardiovascular disease (ASCVD) is the most frequent cause of death in people with type 2 diabetes mellitus. Diabetes significantly increases ASCVD risk, and a majority of patients with T2DM have additional ASCVD risk factors like dyslipidemia, hypertension, physical inactivity, obesity, chronic kidney disease (CKD), and smoking/nicotine use. ASCVD risk management is a key factor in diabetes management.</p> <p>Glycemic management is usually assessed with the HgbA_{1c} test and is generally an excellent measurement tool. The HgbA_{1c} test does have limitations, and its results may be unreliable in patients with conditions that change RBC turnover, like anemia, pregnancy, end-stage kidney disease, sickle-cell anemia, or other hemoglobin-altering disorder.</p> <p>Consistent self-monitoring of blood glucose can help with</p>	<p>Recommendations in this article can only be applied to adult patients with type two diabetes.</p> <p>While evidence-based, the consensus recommendations within this article are the [expert] opinions of the authors.</p>

				<p>self-management of diabetes, and medication changes, especially in patients taking insulin.</p> <p>Healthcare providers and healthcare systems need to prioritize the delivery of patient-centered care; this includes considering multiple comorbidities, the values and preferences of the patient, and the barriers that the patient faces related to diabetes management.</p> <p>All patients with type two diabetes should have access to ongoing diabetes self-management education and support (DSMES) programs. Patients should also participate in DSMES at particular points in disease progression: at diagnosis, yearly, at any time when diabetic complications occur, and at transitions in life or care.</p> <p>Medication adherence needs to be considered when choosing glucose-lowering medications. Patient preferences should guide the medication selection, to improve adherence.</p> <p>For patients with type 2 DM and ASCVD, medications like SGLT2 inhibitors or GLP-1 receptor agonists that have established cardiovascular benefits are recommended to be included in the blood glucose management plan. SGLT2 inhibitors are recommended for patients with type 2 DM, ASCVD, and heart failure (HF).</p> <p>SGLT2 inhibitors and GLP-1 receptor agonists are able to slow the progression of CKD and should be recommended for diabetic patients with CKD (with or without cardiovascular disease (CVD)).</p> <p>Individualized medical nutritional therapy (MNT) that includes dietary quality and energy restriction, needs to be offered to all diabetic patients.</p>	
--	--	--	--	--	--

				<p>Eating patterns should be selected by the patient and should prioritize eating foods that are nutrient-dense and beneficial to health while also reducing intake of foods that are not beneficial to the body (healthy eating must be possible and sustainable for the patient).</p> <p>Overweight and obese patients need to be educated on the benefit of weight loss on diabetes management and should be advised to become involved in a program of lifestyle diabetes management, which might include some food substitution.</p> <p>Increasing physical activity is shown to improve glycemic control and should be recommended for all diabetic patients.</p> <p>Metabolic surgery is very effective in improving glycemic control and can lead to disease remission for patients with type two diabetes. Metabolic surgery is advised for diabetic patients with a BMI ≥ 40.0 kg/m² or a BMI between 35.0 – 39.9 kg/m² (the BMI can be 32.5 kg/m² or higher for patients of Asian descent) who are not able to lose weight or maintain weight loss, and cannot maintain improvement in their comorbidities with typical non-surgical approaches.</p> <p>Metformin is the first medication recommended for patients with type 2 diabetes as glycemia glucose-lowering therapy.</p> <p>Adding glucose-lowering medications to a patient's treatment regimen over time is preferred to beginning glucose management with the patient on combination therapy from the time of diagnosis.</p> <p>The choice of medication to add to baseline metformin treatment is based on patient preferences and clinical</p>	
--	--	--	--	--	--

				<p>characteristics. Relevant clinical characteristics include the presence of comorbidities, the risk for adverse medication side-effects, risk for hypoglycemia, risk for weight gain, plus the safety, tolerability and cost of a given medication.</p> <p>Intensifying treatment to more than two medications in order to maintain blood glucose level goals must involve consideration of the burden of treatment, medication cost, and "the impact of medication side effects on comorbidities".</p> <p>In patients that require the stronger glucose-lowering effect of injectable medication, GLP-1 receptor agonists are the preferred medication over insulin. However, insulin is recommended for patients with severe and symptomatic hyperglycemia.</p> <p>Patients who cannot meet or maintain glycemic goals on basal insulin in combination with oral medications may have treatment intensification with SGLT2 inhibitors, GLP-1 receptor agonists, or prandial insulin doses.</p> <p>Patient access, cost of treatment, and insurance coverage are all factors that need to be considered when choosing a glucose-lowering medication.</p> <p>Patient-centered care that includes patient-centered choices, patient support, and daily actions to improve diet and exercise continues to be the core of glycemic management.</p> <p>Metformin continues to be the first line treatment for glucose management and should be followed by the addition of glucose-lowering medications with consideration to patient comorbidities and preferences.</p>	
--	--	--	--	--	--

Author, Date (in text citation)	Research Question(s), Hypotheses, Purpose	Methodology, Study sample, Sample characteristics, Tool of measurement	Analysis, Results, Findings	Conclusions, Discussion, Summary	Study strengths, Study limitations
(Giovannucci et al., 2010)	<p>1. "Is there a meaningful association between diabetes and cancer incidence or prognosis?"</p> <p>2. "What risk factors are common to both diabetes and cancer?"</p> <p>3. "What are possible biological links between diabetes and cancer?"</p> <p>4. "Do diabetes treatments influence risk of cancer or cancer prognosis?"</p>	Consensus Report		<p>Diabetes is related to increased risk for certain cancers. Diabetes is related to a decreased risk of prostate cancer. For other cancer types there does not appear to be a relationship between the cancer and the diabetes (example: lung cancer). The correlation between diabetes and certain cancers may be dependent on shared risk factors for these diseases like increased age, obesity, eating habits, and lack of physical activity.</p> <p>Possible risk factors for a direct connection between diabetes and cancer include hyperinsulinemia, hyperglycemia, and inflammation.</p> <p>Balanced diets, regular exercise, and weight management decrease risk and create better outcomes for patients with type 2 DM and some forms of cancer. These activities and lifestyle changes should be implemented for all patients.</p> <p>Patients with diabetes should be encouraged by their healthcare providers to go to age and sex appropriate cancer screenings just as any other patient should.</p> <p>Evidence for specific medications impacting cancer risk is minimal, and observed impact may have been confounded by the indications for certain drugs, effects on various cancer risk factors like weight, hyperinsulinemia, and the complicated progressive course of hyperglycemia, and pharmacotherapy on type 2 DM.</p> <p>Some new evidence suggests that metformin is related to a decreased risk of cancer and that exogenous insulin relates</p>	This particular article offered many, many unanswered questions. This article also lacked a clear conclusion but did offer a summary of its findings.

				<p>to a greater risk for cancer. More research is required in order to define these issues and determine if insulin glargine is more directly related with cancer risk in relation to other insulins.</p> <p>Cancer risk should not be a deciding factor in choosing diabetic medications for the average patient. For patients with an extremely high risk for cancer or cancer recurrence, the issue of diabetic medication will necessitate more careful deliberation.</p>	
Author, Date (in text citation)	Research Question(s), Hypotheses, Purpose	Methodology, Study sample, Sample characteristics, Tool of measurement	Analysis, Results, Findings	Conclusions, Discussion, Summary	Study strengths, Study limitations
(Goebel, Valipinski, & Hershey, 2016).	This research seeks to identify problems related to managing diabetes in patients with cancer by exploring the views of oncology providers, nurses, and patients.	<p>This study used six focus groups of nurses, oncologists, and patients who had preexisting diabetes and received chemotherapy for a solid tumor or lymphoma. The study participants were enrolled from two outpatient cancer centers located in Michigan. All discussions of the focus groups were audio recorded, and then analyzed to determine if there were any common themes.</p> <p>Sample: 25 participants in total, 10 oncology providers, 10 oncology nurses, 5 patients. All participants in the study were over 21 years of age, understood and spoke English, and had transportation to study sites. Patients in the study all had preexisting type 2 diabetes for at least 6 months before starting chemotherapy for lymphoma or solid tumors. All patients were receiving chemotherapy or had</p>	<p>Three main themes were recognized by the oncologists, patients, and nurses: "prioritization and responsibility", "care coordination", and "health/self-management". This study identified needs for improvement in the management of preexisting diabetes in patients undergoing chemotherapy treatment. More research is required to test intervention that could increase quality of care coordination and self-management for patients with comorbid diabetes and cancer.</p>	<p>All groups seemed to prioritize treating cancer more than managing diabetes.</p> <p>Determining which healthcare team member should be responsible for managing the patient's diabetes during cancer treatment was a challenge. There was confusion about the responsibilities and roles of healthcare providers when caring for patients with comorbidities.</p> <p>Another issue identified by all participants was the need for improved care coordination and communication across medical disciplines (in this context the disciplines include endocrinology, primary care, and oncology).</p> <p>Symptoms like fatigue, nausea, and vomiting that are often caused by chemotherapy interfere with a patient's ability to self-manage their diabetes.</p> <p>It was noted that patients who had diabetes for a longer amount of time before their cancer diagnosis tended to be better at managing their diabetes during cancer treatment. It was also noted that the degree to which patients were able to self-manage their</p>	<p>Limitations: small sample size, minimal demographic variation, experiences of patients in an inpatient setting were not included in this study, a primarily Caucasian sample decreases the generalizability of the findings, future studies should include Primary Care Providers as they play a key part of the healthcare team.</p> <p>Strengths: the smaller sample size allowed for more thorough group discussion. All patients in the study had the same types of cancers and were being treated in an outpatient setting.</p>

		<p>completed a regimen of chemo within the last three months. All oncology nurses had a minimum of three years of experience providing care to patients being treated with chemo. All oncology providers (oncologists, nurse practitioners, and physicians' assistants) were currently managing adult patients with type 2 diabetes and solid tumor cancer or lymphoma who were receiving chemotherapy treatment.</p> <p>Any prospective participant with a history of dementia, Alzheimer disease, or untreated hearing loss were excluded from the study.</p>		<p>diabetes before starting chemo did not determine how well they would manage while on chemotherapy.</p> <p>This study highlighted the difficulty that the healthcare team faces in determining the origin of certain symptoms like fatigue, numbness/tingling, nausea, and pain in patients with comorbid diabetes and cancer. Understanding the origin of a symptom aids in finding the most effective treatment. Healthcare providers need to keep in mind the possible dual origin of a symptom in a patient with comorbidities.</p> <p>The findings of this study emphasize the importance of taking a more comprehensive approach to caring for patients that considers all their comorbidities. This will allow healthcare providers to find better treatment options for each patient and improve health outcomes for those dealing with comorbid conditions.</p>	
Author, Date (in text citation)	Research Question(s), Hypotheses, Purpose	Methodology, Study sample, Sample characteristics, Tool of measurement	Analysis, Results, Findings	Conclusions, Discussion, Summary	Study strengths, Study limitations
(Irizarry, et al., 2013)	<p>The purpose of this research was to study the impact of comorbidities on disease management. This was accomplished through comparison of prevalence of diabetes education usage among patients with diabetes-cancer comorbidities and diabetic patients without cancer. The influence of diabetes education on</p>	<p>Analysis of administrative claims were used for data collection. The study population included adults that were 60 or older. The participants were on either commercial or Medicare Advantage health plans (This data was taken from a private national database with payer data – this excluded Medicare fee for service and Medicaid patients). Yearly the database contains 5-year longitudinal data with about 4 million patients added each year, of those about 166,931 are diabetic patients who</p>	<p>There was minimal difference in the prevalence of diabetes education use among the two populations; about 3.8% of those who had diabetes without cancer participated in diabetes education; and about 3.5% of those with comorbid diabetes-cancer participated in diabetes education. Of the patients with diabetes alone, 52% were female; and of the patients with diabetes and cancer 42% were female. Other variables assess such as income were not found to differ</p>	<p>As the general population gets older, more attention must be given to managing patients with comorbidities. Diabetes and cancer comorbidities are a burden on patients and their caregivers and become increasingly common in patients as their age increases beyond 60 years. There is a link between diabetes and certain cancers. Obesity appears to be a contributing factor to the development of type 2 DM and several kinds of cancer.</p> <p>The hypothesis was incorrect in the prediction that patients with comorbid DM and CA would be less likely to receive diabetic education than patients who only had diabetes. Patients</p>	<p>Limitations: it is possible that Medicare rules could have reduced the number of patients who chose to receive education. Medicare simply pays for 10 hours of diabetes education during the first year of Medicare service, and then will only pay for two hours of diabetes education every year after that. Another possible limitation is inability of patients to get transportation to and from the in-</p>

	<p>health outcomes was also assessed in a smaller group of patients with the diabetes-cancer comorbidity.</p> <p>Hypothesis: Patients with comorbid cancer-diabetes are less likely to participate in DM education. Among patients with comorbid diabetes-cancer, those who receive education will have better health outcomes (measured by number of emergency department visits, overnight hospitalizations, and costs of medical care).</p>	<p>use commercial insurance, and about 56,345 are diabetic patients who use Medicare. Most participants had the ability to receive reimbursement for their diabetes education. Use of diabetes education was determined by the presence of procedure codes for individual or group education services. Participant health outcomes were evaluated for three years.</p>	<p>significantly between the two cohorts.</p> <p>There was a difference in patients who received diabetes education and those who did not. Patients who participated in diabetes education were more likely to have several HbA1C test a year, less frequent visits to the emergency department (ED), less frequent hospital admissions, and lower diabetes care-associated costs (with the exception of outpatient medication/pharm. costs).</p>	<p>with DM and CA were equally as likely to participate in diabetic education. Two demographic factors seemed to make a difference on diabetes education utilization; younger patients were more likely to receive diabetes education, and female patients were more likely to receive diabetes education.</p> <p>Of the patients with comorbid diabetes and cancer who received diabetes education, a greater percentage of them chose to have their HgA1C tested one or more times over the three years of observation. These patients were more likely to have regular outpatient follow-up visits. These patients also had fewer ED visits and hospital admissions, and lower per month per member healthcare costs.</p> <p>Diabetes education is underutilized, and so it is important for healthcare providers to recommend diabetes education for their patients.</p> <p>More research is needed on these comorbid conditions and on the efficacy of self-management education programs.</p>	<p>person education classes. The overall difference in the number of ED visits between the group that received diabetes education and group that did not, was not statistically significant. The sample size was relatively small. There may have been some confounding variables affecting the study.</p>
Author, Date (in text citation)	Research Question(s), Hypotheses, Purpose	Methodology, Study sample, Sample characteristics, Tool of measurement	Analysis, Results, Findings	Conclusions, Discussion, Summary	Study strengths, Study limitations
(Moody, et al., 2017)	<p>This study looked at the impact of the neutropenic diet (ND) on neutropenic infection rates in pediatric oncology patients. All patients were prescribed a regular diet that followed FDA approved food safety guidelines (FSG), and half of the participants</p>	<p>This study was a "multicenter, prospective, randomized control trial of pediatric oncology patients recruited from six medical institutions across the United States". Approval for this study was confirmed by all Institutional Review Boards before recruitment of patients and consent from patients was received.</p>	<p>One hundred and fifty patients were assigned randomly to dietary restrictions of FSG (n=73) or FSG + ND (n=77). The most common cancer diagnoses among participants were sarcoma (32%) and acute lymphoblastic leukemia (32%). Other diagnoses included lymphoma, and various types of malignant solid tumors. 60% of</p>	<p>Based on the results of this study, there appears to be no additional benefit offered by the neutropenic diet over that of food safety guidelines, in preventing neutropenic infection in pediatric patients undergoing myelosuppressive chemotherapy. The FSG + ND diet did not offer any additional protection against bacteremia. Adherence to the FSG + ND regimen also requires more effort from patients and families. Medical facilities that care for pediatric patients with cancer need to consider</p>	<p>Limitations: This study did not include pediatric patients who were undergoing hematopoietic stem cell transplantation (HSCT), yet, this population of patients is currently the most affected using the neutropenic diet. Because of the exclusion of patients undergoing HSCT, there was a very low</p>

	<p>were assigned the additional diet restrictions of the neutropenic diet. The two groups were compared to determine if there was a change in neutropenic infection rate.</p>	<p>Patients that were eligible for the trial were pediatric patients (age 1–30 years) who were receiving cancer treatment with myelosuppressive chemotherapy. The patients had to be consuming at least 50% of their daily calorie intake by mouth (cannot be fed with formula for more than half their intake). The primary outcome was neutropenic infection, which was defined as (i) the presence of a fever with neutropenia or (ii) hospital admission and treatment for neutropenia and clinical infection.</p> <p>** more details related to participant selection and exclusion can be found in the article **</p> <p>In an effort to minimize bias, study personnel were not made aware of the diet allocation until after consent was received. The patients were not told which group they were in (FSG or FSG + ND), but were simply given a list of guidelines to follow (which were communicated verbally and in writing).</p> <p>Intervention: Food safety guidelines used for this study were taken from the FDA's recommendations for immunocompromised patients. These guidelines include practical tips that reduce foodborne illness with safe food handling, preparation, and consumption. The guidelines are evidence-based, and include directions for safe food shopping, food storage, food preparation, and</p>	<p>participants were male. The median age of participants at enrollment was 11.5 years old (with participants ranging in age from 1 year old to 28 years old). The was no significant difference in the demographics of the two groups. There was no significant difference in percentage of neutropenic infection rates among the two groups. In the FSG group, 33% experienced a neutropenic infection, and 35% of patients in the FSG + ND group experienced a neutropenic infection. Patients on the FSG + ND plan, reported that following the diet required more effort than the patients in the FSG only group. During the course of the study, 71% of FSG participants, and 74% of FSG + ND participants developed grade 4 neutropenia. This level of neutropenia lasted an average of 9.6 days for the FSG group, and an average of 10.5 days for the FSG + ND group. Therefore, there was not a significant difference between the occurrence or length of grade 4 neutropenia among the two groups. Diet adherence for the FSG group was 99.26% ± 4.8%. Adherence for the FSG + ND group was 92.64 ± 15.32%. Patients in the FSG + ND group reported that the diet required much more effort to follow than the patients in the FSG group.</p>	<p>replacing their neutropenic diet guidelines with food safety guidelines. These findings support the results from previous studies that indicate that patients with cancer strongly prefer a FSG (regular) diet over a neutropenic diet, because the regular diet is less restrictive. Further testing is needed to determine the effect of the neutropenic diet on pediatric patients being treated for cancer with hematopoietic stem cell transplantation (HSCT).</p>	<p>rate of reported mucositis. Therefore, any possible benefit of the neutropenic diet for patients with mucositis cannot be determined.</p> <p>This study followed patients through only one episode of severe neutropenia and may have limited the recognition of foodborne infections caused by organisms with long incubation periods.</p> <p>Other limitations: Inability to directly track all patient food intake. Lack of stool cultures to track changes in the GI microbiome of the patients.</p>
--	---	---	---	--	---

		<p>safe food cooking/serving.</p> <p>Control: The neutropenic diet that was used for this study included the following restrictions: avoidance of raw fruits and vegetables (except for oranges and bananas which can be peeled), avoidance of deli meat, fast-food and take-out, raw nuts, unpasteurized milk or juice, aged cheese, and yogurt. All produce must be cooked until well done, and eggs must be hard-boiled.</p> <p>Subjects in the study began their assigned diet once they began the eligible cycle of chemotherapy, and they continued with the diet until the end of that chemo cycle (3-4 weeks). Patients were asked to follow their assigned diet both in the hospital and at home. Adherence to the diet was recorded via a 24-hour recall multiple-pass method which was conducted with parents of patients, or with patients 16 years or older.</p> <p>Thorough documentation was completed on patient complete blood counts, temperature, hospital admission, and neutropenic infection (full history of present illness).</p>	<p>Patients on the FSG + ND diet reported less satisfaction after eating a meal, and that foods appeared less appealing, than the patients on the FSG diet alone.</p> <p>Both groups reported that following their dietary guidelines had no effect on the cost of their food expenses. There was no significant difference between the quality of life score between the two groups.</p>		
--	--	---	---	--	--

Fall 2019

Empty or Full: A Survey of McMinn County's Food Pantries' and Their Abilities to Meet Nutritional Standards

Alanis Burton

Dr. Ben Christmann, Faculty Mentor

Lee University

Empty or Full: A Survey of McMinn County's Food Pantries' and Their Abilities to Meet Nutritional Standards

Alanis Burton¹ and Dr. Benjamin S. Christmann, Faculty Mentor²

¹Lee University

Abstract

This study was conducted evaluating the nutritional quality of food pantries in McMinn County, Tennessee. The study assessed six nonclient-choice food pantries in McMinn county, Tennessee. The assessment process entailed the collecting of data through photographs of the food within pantries. The study assessed the average calorie, carbohydrate, fat, protein, sodium, and potassium levels in the food when normalized to a 2000 calorie diet. The findings confirm that the food pantries at the time of the study did not meet the FDA recommendations. Despite intentions of food banks, the food distributed did have the capacity to negatively affect the recipients.

Introduction

According to recent data (2017), approximately 40 million people in America suffer from food insecurity (Feeding America, 2017) Food insecurity is the lack of consistent access to enough food that has adequate nutrients for an active, healthy, life (Bazerghi, 2016). Approximately 75% of the total population that faces the issue in America reside in rural areas (Campbell, Ross, Webb, 2013). As of 2018, McMinn County, Tennessee was deemed to be a rural area where roughly 13.6% of the entire population suffer from food insecurity (Map the Meal Gap, 2018). As the national average of those facing food insecurity being lower than McMinn county (12.3%), it is evident that this county represents rural counties' great struggle with food insecurity (Bazerghi, 2016) One approach in addressing McMinn County's battle for hunger is by distributing food through food pantries. Though each food pantry has different strategies and motivations for helping, one goal is still constant: *fill bellies*. It is uncertain if such are pantries helping or hurting people with what quality of food they supply. Food pantries may alleviate hunger; unfortunately, it is not uncommon for there to be increasing nutritional disparities.

From the early 1960s, food banks and food pantries have been established across America to assist those who encounter food insecurity (Campbell, Webb, Ross, Hudson, Hecht, 2015). A food bank is a warehouse that stores large volumes of food that is later distributed into communities, while food pantries are the hands that distribute food to those in need in the local community (Philip, Baransi, Shahar, Troen, 2018). Food banks and pantries original intentions of were instituted for events of emergency (Campbell, Ross, Webb, 2013). The aim was to diminish immediate hunger through caloric supplication; however, food banks and pantries have evolved to consistently provide food staples for approximately 12.5% of the country (Feeding America, 2018). It can be predicted that the nutritional quality of food distributed by pantries is not adequate in meeting nutritional standards recommended by the FDA. Food banks and pantries tend to sacrifice nutrient rich foods (dairy, meats, and fresh fruits and vegetables) for nutrient deficient foods that have long shelf lives (foods high in sodium and preservatives) (Campbell, Ross, Webb, 2013). The impact of this outdated system of supplementation on meeting nutritional intake requires further study due to the rising dependence of food pantries and the negative health implications for those who regularly depend on these programs for food staples in their everyday lives.

Research suggests that those experiencing economic poverty and those experiencing food poverty are directly correlated (World Hunger, Poverty Facts, Statistics 2018 World Hunger News, 2018). The most recent census for McMinn county suggests that 22.4% of the total population is in a state of poverty (QuickFacts: McMinn County, Tennessee, 2018), so it can be predicted that these individuals struggle with food poverty as well. To further support this, a survey conducted in 2016 revealed that 19.6% of McMinn County residents required assistance from SNAP benefits (Food Research Action Center, 2013). However, even with the use of SNAP benefits, Feeding America found that 6,880 people (13.1% of the total population) still suffer from food insecurity in McMinn County, Tennessee. Those who suffer from food insecurity are those who at some point in the year lack the financial means to provide food for a healthy, active, life (World Hunger, Poverty Facts, Statistics 2018 World Hunger News, 2018).

As stated before, studies indicate that food pantries have strong impacts on lives, but do not satisfy the requirements of a healthy diet (Philip et al., 2018). This is problematic because chronic malnutrition tends to lead to a declination in the physical, mental, and emotional wellbeing of a person, and this further anticipates lower education and earning wages for those who are already in poverty (Philip et al., 2018). Considering these points, it is important to notice the possible correlation of McMinn County's poverty and hunger rates to the higher than national average obesity and diabetes prevalence, and the lower than national average completion of advanced education (Explore McMinn County's Health, 2019). McMinn County's accessibility to a variety of food pantries made for an ideal location of research. Therefore, this study gives a better

understanding of the nutritional quality of food distributed by food pantries in McMinn County, Tennessee. Additionally, it provides conjectures to the nutritional quality of food pantries for pantries in similar areas or circumstances.

Methods

Participants

Participants in this study included food pantries in McMinn County, Tennessee. The objective was to record data from 20 boxes. The term “boxes” refers to any food distributed to a client despite the container. Participants were excluded from the study if their pantry was client choice (meaning the recipient chose what food was dispensed to them). Participants were informed that the data obtained would be used for analysis only and that no names or locations would be recorded in the data collection process.

Materials

The variables of interest in the food included the quantity of calories, carbohydrates, fat, protein, sodium, and potassium. These are the common macronutrients, and some select micronutrients. Knowing these values allows the quality of the provided food to be compared to the recommendations provided by the FDA. The data was recorded from the desired food pantry by a smartphone camera. After the data was collected, it was processed in Excel.

Procedure

Food pantries in McMinn County were contacted and given an overview and the purpose of the study. The phone calls also determined the validity of the food pantry and the willingness of the food pantry personnel to participate. If the pantry qualified and provided opportunity for contribution to the study, an appointment was scheduled to visit and obtain data from the site. Upon arrival, food pantries were informed the study was anonymous and that there would be no pictures of clients, employees, volunteers, or any other sensitive information recorded.

Pantries were asked to provide the food that would be distributed to one individual. The food was then photographed with intentions to capture the food’s brand, quantity, and nutrition label. When data was collected, the food pantries were recorded in Excel with a number to ensure anonymity (e.g. Food Pantry 1). The food pantry and the subcategories underneath were placed in column A. Under each food pantry title lay the subtitle “Box” (e.g. Box 1). There were to be 20 boxes for each food pantry. Under each Box were the items that were distributed to a person. The values for the total calories,

carbohydrates, fat, protein, fiber, sodium, and potassium (7 variables of interest) were to be determined and recorded for all contents in each box. The variables of interest were placed in columns B-H. the values of the 7 variables of interest were to be totaled and normalized after the calculations of the individual items in the box. To normalize the values in the box, the totals for 6 of the variables of interest (excluding calories) were compared to 2000 calories. This was done by taking the total value for one variable of interest, dividing the value by the total number of calories in the box and then multiplying the found value by 2000. To conserve time, the process was organized in a formula that could be copied and pasted from cell to cell. This is the generic formula used to calculate the data: $(=A21/ \$C\$21)*2000$. The parentheses represent a cell in Excel, A21 represents the cell that held the total value of the nutrient found in the box (ie. total carbohydrates in a box), C21 represents the cell with the total number of calories found in a box. When the formula was copied and pasted to the rows containing the totals for the variables of interest, the generic formula adapts to provide the data desired for the specific variable of interest. When the calculations were complete for each box in the food pantry, the averages for normalized data were calculated. When the averages for each food pantry were recorded, the averages of all the food pantries were calculated. These values were then compared to recommendations suggested by the FDA. It was predicted that the data obtained would surpass the FDA recommendations for carbohydrates and sodium. Three of the food pantries provided access to the nutritional labels to be photographed. Two of the food pantries provided access to the food's brand and quantity (without the nutrition labels) to be photographed. Food's nutritional values were This required later investigation of the food's nutritional values by searching online for the brand's nutritional label. One food pantry provided a generic list of the foods distributed. These nutritional values also required further investigation, but these values were calculated by searching the generic food in the USDA (United States Department of Agriculture) food database. Though all nutritional values were obtained, many of the of the foods distributed did not provide all six variables of interest. If the values were not provided, the value was assumed to be 0.

Results

Six food pantries in McMinn County qualified for the study. All six were contacted and provided opportunity of data extraction for one distribution period. Due to the pantries' different methods of distribution, not all data was presented or expressed in the same manner.

The food pantries distribution schedule ranged from distributing food weekly, biweekly monthly, and every three months. Due to the pantries' schedules, the values from the collected data expressed a wide range of values. For the data to be reasonably analyzed, the data had to be normalized to 2000 calories. It

was assumed that the box distributed was for one client. Also, it was assumed the client ate all the contents within the box. It was predicted that the food distributed would not provide adequate sources to meet the daily recommendations suggested by the FDA. It was further assumed that the food would surpass the daily recommendations of carbohydrates and sodium. After normalization of the data to reflect values when compared to 2000 calories, not only did carbohydrates and sodium surpass the expected values, but that all values surpassed the daily recommendations provided by the FDA (Tables 1 and 2 and Figures 1 and 2).

Macronutrients	Carbohydrates(g)	Fat (g)	Protien (g)	Fiber (g)
FDA Values	300	65	50	25
Average Normalized Date of Pantries	872	107	145	124

Table 1. Values of Micronutrients

Macronutrients	Sodium(mg) 1.5cm	Potassium(mg)
FDA Values	2400	2700
Average Normalized Date of Pantries	6503	16841

Table 2. Values of Micronutrients

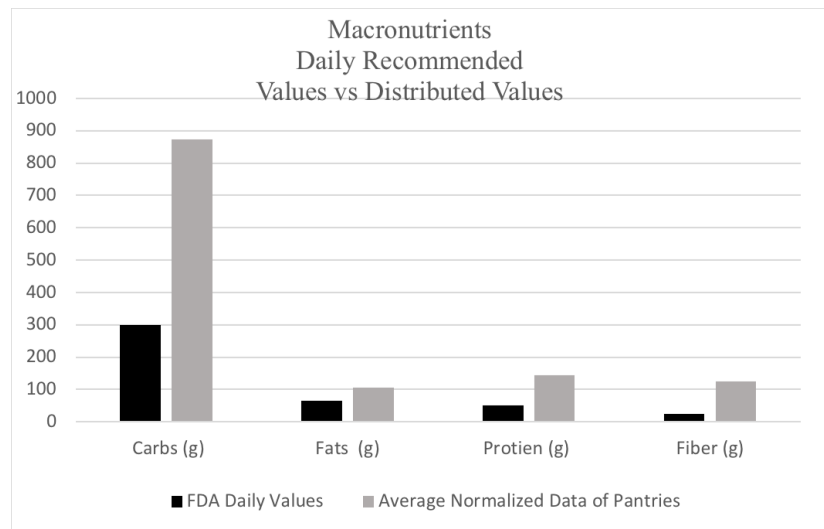


Figure 1: Macronutrient Bar Chart

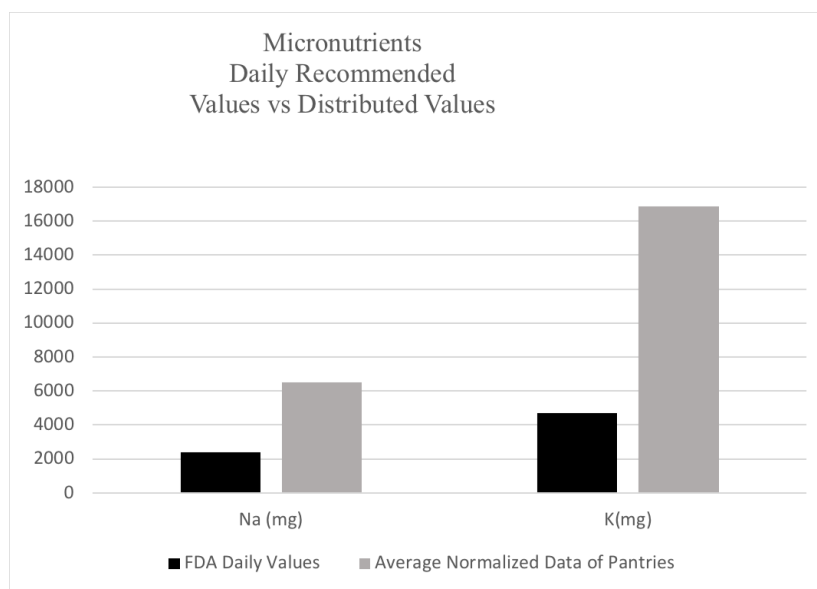


Figure 2: Macronutrient Bar Chart

Table 1 and Figure 1 display the collected values of macronutrients in comparison to the recommendations. Carbohydrates content were 191% higher, fat content was 64.6% higher, protein content was 190% higher, and fiber was an immense 396% higher. Table 2 and Figure 2 display the collected values in comparison to the recommendations. Sodium content was 171% higher and potassium content was 524% higher than recommended.

Many food pantries provided plausible factors for their nutritional quality. One pantry stressed that the food was purely a method of supplication and not intended to meet FDA recommendations. Many pantries were run but volunteers who had little knowledge of nutrition. All food pantries expressed the predicament of the lack of storage for more food, especially conventionally nutritious foods like dairy and produce. Also, all food pantries within the study emphasized the desire to provide healthier food but explained that their foremost goal was to prevent clients from being hungry.

Discussion

The purpose of this study was to analyze the nutritional quality of food pantries in McMinn, Tennessee. The initial prediction stated that the food provided would not only fail to meet the standards recommended by the FDA, but that the quantity of carbohydrates and sodium would surpass the daily recommendations. The data confirmed the anticipation was an accurate assumption;

the contributions from the food pantry would not meet the daily recommendations. However, the foods failed by exceeding the daily recommended amounts. The data was expected to reveal an excessive amount of carbohydrate's and sodium, yet, the findings revealed an excessive amount of every variable of interest. It was assumed that the carbohydrates and sodium levels were higher due to nutrients typically found in shelf stable foods. The unexpected levels of fat were primarily contributed by the vast amount of desserts provided. The levels of protein were primarily contributed by the unexpected frozen meat distributed. The higher levels of fiber could be explained by the vast amount of Fiber One Bars donated to the food pantries. There did not seem to be any single factor in the elevated potassium levels.

While it may seem that more may be better in some respects, this is not the case in adequate nutrition practices. It is a common misconception that excessive carbohydrates, fats, and sodium are the causes of poor diets, conversely, it is the habitual practice of undernutrition or overnutrition of any nutrient in a diet leads to health risks (Monteiro, Conde, Popkin, 2004). Habitual consumption of an immoderate diet is associated with obesity, mineral, and vitamin deficiencies. These tend to lead to a high risk of chronic diet-related diseases including diabetes, heart disease, and high blood pressure. (food aid quality correlates) The findings in this study were consistent with past research by the results displaying a lack of nutritional quality of the food provided, however this study differed from past research in how the lack of quality was concluded. As of 2016 none of the studies between 2006 and 2011 investigated the nutritional quality of food pantries (Simmet, Dipl.-Ges, Depa, Tinnemann, Stroebele-Benschop, 2016).

Limitations

While there are components to this research that are based on definite findings, there were limitations that prevented this study from attaining absolute data. The first limitation was assuming that the box given was given to one person. Each food pantry was asked to give the food (or list of food) provided for one individual, but some pantries did not have this information. There are no concerns of the number of people the box serves, because the gross values were normalized to 2000 calories. The second limitation was assuming that the individual consumed all the food in the box. Since the research did not incorporate a survey of the clients and what they chose to do with the food, there is no way to determine the true amount consumed. Also, even though the collected data and nutrient values in the study are verifiable, the data may not display an adequate reflection of the nutritional quality of the food pantries, for the time frame of the study allowed for data calculation of one distribution period for each food pantry. Because the distributed food changes every distribution period, a longer study would have given a more accurate representation of the quality of the food pantries. Another limitation of the study was that if the food label did not provide information for the nutrient (i.e. the label did not provide

fiber content), the value was assumed to be 0. Finally, some foods did have a label, so the foods and their data were collected from the USDA food data base. This could be problematic due to the judgement of food sizes (e.g. One medium banana may be deemed as a one small banana to another perceiver) causing overall uncertainty of the nutrient values in the food.

Food pantries are greatly needed and have the capacity to impact lives. It is important to understand the negative aspects of these assistance programs to enhance the quality and therefore lives impacted by them. The results of this study indicated that the food distributed to those in need do not necessarily provide the nutrients suggested by the FDA, but the study does not indicate that these assistance programs are not needed. Therefore, further study and interventions are required to better the programs in not only McMinn County, TN, but any place that provides for those who cannot adequately provide the food for themselves. Food pantries' ultimate goal is to help those in need. Food pantries are currently aiming to meet the goal to fill the bellies of those without food, but now is the time to raise the standard to better provide for these people. The new goal should be to focus on the clients holistically by providing them with foods full of necessary nutrients to enhance life rather than to merely sustain life.

Future Research

Research on the quality of food pantries could continue in many directions. One of which could apply the same methods used in this study over a longer period. Further research would be valuable if clients receiving the food were interviewed. Additionally, a study investigating food banks that distribute to food pantries could evaluate the food quality and what foods are contributed by local communities. Because most food pantries are run by volunteers, few workers have proper knowledge of nutrition, therefore, further examination could test the effects of providing basic nutrition education to food pantry workers to enhance distribution practices. Continuing of the proposal of education, further research testing the effects of nutritional education for the clients. This education could entail food preparation, conservation, moderation. Finally, further study could test what other adjustments can be made to make a difference in the nutritional quality. These changes could be inspired from past research and past changes made in rural places in similar situations as McMinn County, TN.

References

- 11 Facts About Food Banks. (2015). Retrieved April 17, 2019, from DoSomething.org website: <https://www.dosomething.org/us/facts/11-facts-about-food-banksfn11>
- Bazerghi, C., McKay, F. H., Dunn, M. (2016). The Role of Food Banks in Addressing Food Insecurity: A Systematic Review. *Journal of Community Health*, 41(4), 732–740. <https://doi.org/10.1007/s10900-015-0147-5>
- Bhattacharya, J., Currie, J., Haider, S. (2004). Poverty, food insecurity, and nutritional outcomes in children and adults. *Journal of Health Economics*, 23(4), 839–862. <https://doi.org/10.1016/j.jhealeco.2003.12.008>
- Bublitz, M. G., Hansen, J., Peracchio, L. A., Tussler, S. (2019). Hunger and Food Well-Being: Advancing Research and Practice. *Journal of Public Policy Marketing*, 38(2), 136–153.
- Byker Shanks, C. (2017). Promoting Food Pantry Environments that Encourage Nutritious Eating Behaviors. *Journal of the Academy of Nutrition and Dietetics*, 117(4), 523–525. <https://doi.org/10.1016/j.jand.2016.12.020>
- Bryan, A. D., Ginsburg, Z. A., Rubinstein, E. B., Frankel, H. J., Maroko, A. R., Schechter, C. B., Lucan, S. C. (2018). Foods and Drinks Available from Urban Food Pantries: Nutritional Quality by Item Type, Sourcing, and Distribution Method. *Journal of Community Health*, 44(2), 339–364. <https://doi.org/10.1007/s10900-018-0592-z>
- Campbell, E. C., Ross, M., Webb, K. L. (2013). Improving the Nutritional Quality of Emergency Food: A Study of Food Bank Organizational Culture, Capacity, and Practices. *Journal of Hunger & Environmental Nutrition*, 8(3), 261–280. <https://doi.org/10.1080/19320248.2013.816991>
- Campbell, E., Webb, K., Ross, M., Crawford, P., Hudson, H., Hecht, K. (2015a). Nutrition-Focused Food Banking ACKNOWLEDGMENTS. Retrieved from <https://nam.edu/wp-content/uploads/2015/06/FoodBanking1.pdf>
- Campbell, E., Webb, K., Ross, M., Hudson, H., Hecht, K. (2015). Nutrition-Focused Food Banking. *NAM Perspectives*, 5(4). <https://doi.org/10.31478/201504a>
- Coleman-Jensen, A., Rabbitt, M. P., Gregory, C. A., & Singh, A. (2017). Household Food Security in the United States in 2017. Retrieved April 27, 2019,

from USDA website: <https://www.ers.usda.gov/publications/pub-details/?pubid=90022>

Community Nutrition Initiatives — Hunger and Health. (2014). Retrieved from Hunger and Health website: <http://healthyfoodbankhub.feedingamerica.org/diabetes-project>

Eicher-Miller, H., Wright, B., Guenther, P., McCormack, L., Stluka, S., Remley, D., . . . Vasquez-Mejia, C. (2019). Nutritional Quality of Vegetables, Fruits, Protein Foods, and Sodium Distributed in Client Food Bags Is Positively Associated with Client Diet Quality in Rural Food Pantries (P04-138-19). *Current Developments in Nutrition*, 3(Supplement_1).

Explore McMinn County's Health. (2019). Retrieved July 25, 2019, from US News website: <https://www.usnews.com/news/healthiest-communities/tennessee/mcminn-countyfood-nutrition>

Feeding America. (2016). Map the Meal Gap 2018. Retrieved from https://www.feedingamerica.org/sites/default/files/research/map-the-meal-gap/2016/child/TN_AllCounties.CDs_CFI.2016.pdf

Feeding America. (2017a). 41 Million People in the United States Face Hunger — Feeding America. Retrieved July 2, 2019, from Feedingamerica.org website: <https://www.feedingamerica.org/about-us/press-room/new-data>

Feeding America. (2017b). What Is Food Insecurity in America? — Hunger and Health. Retrieved July 2, 2019, from Hunger and Health website: <https://hungerandhealth.feedingamerica.org/understand-food-insecurity/>

Feeding America. (2018a). Rural Hunger Facts — Feeding America. Retrieved July 2, 2019, from Feedingamerica.org website: <https://www.feedingamerica.org/hunger-in-america/rural-hunger-facts>

Food Research Action Center. (2013). Retrieved April 28, 2019, from Food Research Action Center website: <http://www.frac.org/snap-county-map/snap-counties.html>

Gu, Y., Yan, S., Gunen, B., Poirier, L., Ali, S., Adams, L., . . . Gittelsohn, J. (2019). Association Between Nutrition-related Intentions and Food Selections Among Food Pantry Clients in Baltimore City (P04-046-19). *Current Developments in Nutrition*, 3(Supplement_1). <https://doi.org/10.1093/cdn/nzz051.p04-046-19>

Health Affairs Article: A Pilot Food Bank Intervention Featuring Diabetes-Appropriate Food. (2017, September 26). Health Affairs Article: A Pilot Food Bank Intervention Featuring Diabetes-Appropriate Food — Hunger

and Health. Retrieved July 19, 2019, from Hunger and Health website: <https://hungerandhealth.feedingamerica.org/resource/health-affairs-article-a-pilot-food-bank-intervention-featuring-diabetes-appropriate-food/>

How Do Food Banks Work? — Feeding America. (2000). Retrieved April 27, 2019, from Feedingamerica.org website: <https://www.feedingamerica.org/our-work/food-bank-network>

Huerbin, S., Strauch, J., Brecht, C., Zwolenik, K. A., Lenhart, C. M. (2019). Helping or Harming? Review of Nutrition Quality of Monroe County Food Pantry Holdings. *Journal of Hunger Environmental Nutrition*, 1–11. <https://doi.org/10.1080/19320248.2019.1615592>

Kirkpatrick, S. I., Tarasuk, V. (2008). Food Insecurity Is Associated with Nutrient Inadequacies among Canadian Adults and Adolescents. *The Journal of Nutrition*, 138(3), 604–612.

Appendix A

Box 1	Calories	Carbs(g)	Fats (g)	Protein(g)	Fiber(g)	Na (mg)	K(mg)
Fiber 1 Oats and Peanut Butter*	1500	270	50	30	90	1150	0*
Great Value Mini Chocolate Chip Cookies (2 Packages)	260	36	12	2	0	80	72
Austin Cheddar Cheese Crackers (2 Packages)	380	46	20	6	< 3	700	200
Splash V8 Orange Pinapple (20 fl oz)	640	160	0	0	0	160	160
Glacier cherry Powerade (12oz)*	50	13	0	0	0*	270	75
Monterey Mushrooms Slice White Mushrooms (8oz)	60	6	0	6	3	105	900
Marketside Ceasar Chopped Salad Kit	540	21	42	18	6	1140	540
Large Tomato (1 tomato)	33	7.1	0.4	1.1	2.2	9	431
Roma Tomato (1 tomato)*	36	7	0.5	1	1	4	0*
Tasteful Selections Sea Salt and Balsamic Vinegar Mini Sweet Potatoes	300	75	0	6	9	2100	1077

Spanish onion (7 onions)	280	65.1	0.7	7.7	11.9	0	0*
Yoplait Wild Berry Mickey Mouse Yogurt (4 servings)*	400	60	2	12	0	200	600
Siggi's Individual Yogurt*	110	7	4	11	0	50	0*
Walmart Chocolate Cake Donut Holes	1680	259	70	14	7	1470	560
Walmart Sesame Seed French Bread	1120	184	20	40	8	2400	0
2.95 lb. (13381.g) of Beef Center Cut Back Ribs* (about 12 servings)	1296	12	348	239.6	0	476	0*
Total	10125	1516.2	587.6	442.4	138.1	12945	5035
Normalized Data		299.4962963	116.0691358	87.38765432	27.27901235	2558.81415	994.5679012

Table 3. Food Pantry 1 Contents and Nutritional Values of Contents

Box 1	Calories	Carbs (g)	Fats (g)	Protein (g)	Fiber (g)	Na (mg)	K (mg)
Black Beans* (5lbs.)	1530	288	0	99	108	0	0*
Cut Green Beans (3-16 oz cans)*	503	83.91	0	16.73	34	0	0*
Creamed Corn (5-16oz cans)	1271	272.4	18.16	36.32	54.5	5448	0*
Cranberries (5-2 lbs. bags)*	503	83.91	0	16.73	34	0	0*
Lentiles (3-2 lb bags)*	5957	1615.1	0	680	764.3	435	0*
Mixed Fruit (5-16 oz cans)*	1407	341.4	0	0	20.4	204	0*
Cling Peaches (5-16 oz cans)	1095	262.7	0	0	0	10	124
Canned Pork (4-24 oz cans)*	5760	0	384	432	0	7200	0*
Spaghetti Sauce (5-16 oz cans)*	1271	272.4	18.2	36.32	36.2	4903	0*
Total	34730	7119.79	420.36	1300.37	1245.1	18200	124
Normalized Data	1406.378	83.03407	256.86321	245.9457 *	3595.062	24.49383	

Table 4. Food Pantry 2 Contents and Nutritional Values of Content

Appendix B

Gross Data Collected from Pantries (Before Normalization)

Pantry Num- ber	Calories	Carbohydrates (g)	Fat (g)	Protein (g)	Fiber	Sodium (mg)	Potassium (mg)
1	208259.5	31568.8	6625.7	6603.27	17802.4	298948.1	111199.6
2	442240	71944	11244	12308	4388	1004060	331710
3	117200	24350	1220	2770	1900	43085	41030
4	1076870	179021	27477.5	25868	13204	1474270	748057
5	454165.3	80436.6	9948.5	14384.6	13391.8	762794.6	366160
6	69400	142395.8	8407.2	26007.4	24902	364000	2480
Average Values	4988889.1	88286.0	10820.5	14656.9	12598.0	657859.6	266772.8

Table 5. Total Nutrient Values of all Boxes Collected from Each Pantry

Pantry Num- ber	Calories	Carbohydrates (g)	Fat (g)	Protein (g)	Fiber	Sodium (mg)	Potassium (mg)
1	10354.5	1578.4	327.7	471.8	905	14947.4	5560
2	22112	3597.2	562.2	615.4	219.4	50203	16585.5
3	5860	1217.5	61	138.5	95	2154.25	2051.5
4	53843.5	8951.1	1373.9	1293.4	660.2	73713.5	37402.85
5	24074.02	4270.6	519.58	928.085	709.489	40375.53	19569.63
6	34730	7119.79	420.36	1300.37	1245.1	18200	124
Average Values	25367.08	5236.327	641.4214	868.9706	746.964231	39019.53	101046.5

Table 6. Average Nutrient Values of Boxes Collected from Pantries (Before Normalization)

Volume 3

Article 3

Fall 2019

The Psychosocial Effect of Social Media

Jhenny Hillery-Collier

Dr. Michael Sturgeon, Faculty Mentor

Lee University

The Psychosocial Effect of Social Media

Jhenny Hillery-Collier¹, Dr. Michael Sturgeon, Faculty Mentor²

Lee University

Abstract

The purpose of this study was to determine the association between Social Media (SM) dependence, anxiety, and depressive symptoms. The study was based on the theoretical framework of the Use and Gratification theory. The research conducted was a quantitative and quasi-experimental research study. The sample size was n=102 persons that do or do not use Facebook and/or Instagram. Of the sample 22% were male and 78% were female. To assess depression and anxiety, the survey entailed question pertaining to loneliness, feeling left out, social interactions, and comfort in certain settings, to mention a few. Additionally, questions were posed to indicate the users dependence on Social Media. The questions were developed from various resources, one of which is where questions were adapted from the Social Media Addiction Test. The collected data were subjected for analysis by descriptive statistics where SPSS was utilized. The results illustrate that there is an association between Social Media dependence and depression as well as SM dependence and anxiety issues. The findings strongly indicate that excessive Social Media use is associated with depressive symptoms in users of a variety of ages, ethnicities, and sexes.

Introduction

In a time where nearly everything is easily accessible online; some find, it is difficult to be a self-disciplined and to limit their Internet use. Observably, technology has been, and continues to be, seen as a tool for efficiency and advancements. However, a worthy question to frequently pose is with the efficiency, advancements, and capabilities we use in technology, are there unforeseen risks people could experience? Although we have access to innovative technologies that make life easier and sometimes richer, there may be less than positive aspects of which users are not aware or familiar with.

According to Morrison and Gore (2010), The internet has become an essential part of modern lives: it provides many benefits when it comes to living and working flexibilities. (p.122) It is used in a wide variety of everyday life, from communicating and networking, to online video entertainment. To say that the

possibilities of the internet are seemingly endless, would be an understatement. One might ask however, are there properties of it that could become toxic for some users? Social Science researchers have been assessing the impact of the use of social media since the mid 2000s.

According to a census study by Rideout (2016), children aged eight to eighteen spent an average of nine hours per day viewing a screen. Additional studies found that users spent 23% to 28% of their online time on Social Media (Huang, 2017). Nielsen (2018) also conducted a study that indicated that American adults spent up to 11 hours per day interacting with media. From 2016 to 2018, the amount of time spent using social media or screen viewing increased vastly. These data indicate that the use of social media should be approached with great caution and deserves continued and expanded research. This study was conducted with the intention to investigate Social Networking Services (SNSs) use and how they may or may not be associated with social and / or psychologically debilitating issues such as depression, self-esteem, life satisfaction, anxiety, and addiction.

Over the past decade those in the mental health and research field have recognized what has been termed as Facebook Depression (Roberts, 2015; Simoncic, Kuhlman, Vargas, Houchins, & Lopez-Duran 2014). Researchers that have studied, and many concur, that Facebook Depression is a real matter of concern. Some studies suggest that participating on Facebook and receiving a like may cause ones brain to release dopamine to their system (Kircaburun & Griffiths, 2018). If the individual decides to stop using Facebook, they may experience a sense of depression and thereby prompting them to become active on Facebook again. Another aspect of Facebook Depression is that the outcome of watching the lives of others and their updates are often impressive and exciting. This can cause one to feel inferior and less than adequate in their own life. Users often do not feel that they are up to the par with their peers and either become competitive or anxious and depressed.

The theoretical model on which this study will be based is the Uses and Gratifications Theory (U&G). The U & G theory suggests that individuals choose their preferred media based on their needs (Wu, Wang, & Tsai, 2010). According to Weiyan (2015) the core of this theory is to better understand why, how and with what purpose people chose the media in which they prefer. According to this author, U & G theory was brought into the public in the 1940, but did not merit its popularity until the late 1950s and early 1960s. Many did not consider this theory as a legitimate theory at first due to the lack of empirical distinction between need and motivation along with obstacles faced in measuring the gratification of needs (Ruggiero 2000). However, in an attempt to give a better understanding to the public, Rosengren (1974) suggested that certain basic needs interact with environment of individuals and personal characteristics to produce perceived problems and solutions (as sited in Ruggiero 2000). Though this theory has a shaky start, many researchers are applying it to re-

search that investigates SNS use (Ershad & Aghajani, 2017; Niemz, Griffiths, & Banyard, 2005; Roberts, Yaya, & Manolis, 2014;).

Many authors have different interpretations of what the gratifications individuals obtain by their preferred medium of choice. McClung and Johnson (2010) for example, suggest that the three aspects that draws individuals to a particular medium would be entertainment, communication and convenience. Chung and Kim (2015) on the other hand advocates that the motivational aspects would be entertainment, education, escape, companionship, habit and convenience. According to authors Krause, North, and Heritage (2014) there are three uses and gratification underlying using Facebook. These three uses and gratifications include communication, entertainment, and habitual diversion. Though many authors have many different interpretations of the gratifications an individual might get from their medium of choice, there is a pattern; when looking at the different gratifications one can see that the three that stands out would be communication, escaping or diversion from reality and entertainment. This suggest that the reason why individual use social media sites would include the desire to communicate with online friends, the desire to be entertained and diversion from reality.

Though Facebook is arguably the leading SNS, to better understand the scope of how SNSs effect the lives of those who use them, this study will also factor in Instagram as well. Though Facebook, Twitter and Instagram are considered the three most used SNS, this study will be concentrating on Facebook and Instagram since Twitter does not fit into this studies scope. According to Hu, Manikonda, and Manbhampati (2014) Instagram had more than 150 million registered users as of its launch in 2010. According to The Times of India (2019), more than 126 million users who log into Twitter on a daily basis. According to Hampton, Goulet, Rainie and Purcell (2011), the number of people using SNSs has nearly doubled since 2008. Though people use different SNSs for different reasons, Facebook (52%) and Twitter (33%) users engage with the platform daily according to this study.

According to a study conducted by Blease (2015), Facebook had 1.23 billion active users in its former year. Another study conducted by Kross, et al. (2013), suggests that Facebook was associated with a lower sense of well-being. In this study, researchers sent five text messages to participants every-day for two weeks to examine how they reacted to Facebook uploads. The results suggested that Facebook predicted negative shifts on both the well-being and life satisfaction of the participants. The more people used Facebook the worse they would feel. A great question to ask would be why do people keep returning to a substance that only causes them to have negative affective emotions?

Hadaway and Coombs (1998) wrote, *Rat Park Chronicle* which covered a study conducted by Alexander researching what addiction truly is and is not and what it could do to one's perceptions and health. This study suggested

that isolation is a motivation and often initiates addictive tendencies. At the beginning of this study, researcher Alexander allowed the rats to choose between regular water and sweetened morphine solution. The rats would habitually return to the morphine solution more often than the water, sometimes out of complete boredom and their isolation. After observing this, Alexander created a rat park to observe how a community would affect addiction. Alexander suggests that when given a community of peers, addicted rats would rather interact with their peers than with their addiction. Though it was criticized by some, this study has transformed the approach of addiction. Though pertaining to drug addiction, this study may also provide insight to the reason(s) of why individuals return to SNSs, even after the negative affect and negative emotions they experience. Isolation and low-self-esteem seem to be the motivation for the influx and high volume of SNSs users.

Another great question that should also be asked is if depressed people are more drawn to social media platforms or do these social media platforms cause depression. In a study conducted by Ershad and Aghajani (2017), results suggested variables such as neuroticism, Alexithymia, avoidance and ambivalent attachment style, could predict addiction to Instagram. Is the web a niche for those who want to stay hidden behind the shadows of their screens, or does it cast a net that brings them into a dark place. This research overview attempted to answer this daunting question by extracting the appropriate information from previous studies. Later, a study was conducted to see the effects SNSs have on its population and determine if it is the symptom or the disease itself.

Literature Review

The ways in which SNSs might correlate with negative effects such as sadness and even depression have ruminated in the psychology research realm so much that many are considering aspects such as Facebook Depression and overuse of SNSs an epidemic, (Kraut, et al., 1998; Kross, et al., 2013). Other researchers on the other hand are not as concerned (Jelenchick, Eickhoff, & Moreno, 2013). One thing that is clear however, is that this is a discussion that needs to be had. The life-altering effects of social media, while helpful can also be potentially dangerous for the well-being of its participants. This literature review examines the subject of not only Facebook Depression but the overuse of SNSs in general and how they have affected its associations.

It seems that since the internet entered its genesis, researchers have questioned and investigated its correlation with emotional well-being. One of the first research study conducted on this subject was by Kraut, et al. (1998) which demonstrated that there was a significant association between depression and Internet use. Though a ground-breaking study on precautions for using the Internet, many researchers criticize the plethora of inferences made in this research study. Another study conducted by Kross, et al. (2013) in which participants

received text messages five times per day over the span of 14 days asking slightly suggestive questions. Questions such as how worried are you right now? and how lonely do you feel were asked along with how much time participants spent on Facebook that particular day. Participants would answer the questions on a Likert Scale. This study suggests, based on the data collected, that the lack of face to face contact is aversive to one's well-being. This study also suggests that the use of Facebook predicted negative shift on both well-being and life satisfaction of the participants.

Addiction

There are many researchers who have published material concerning Internet addiction. The study conducted by Morrison and Gore (2010) was one of the more interesting research works on this subject. Though not yet recognized as a syndrome in the International Classification of Diseases, Tenth Revision (ICD-10) or Diagnostic and Statistical Manual volume IV (DSM-IV), according to Morrison and Gore (2010) some people have developed what they and others recognize as compulsive tendencies towards internet use. These tendencies would include physiological arousal and psychological withdrawal, which are also symptoms that mirror signs of addictive behavior. There is also a focus on how internet addiction may stem from frequent use of social media. Murali and George (2007), for example wanted to examine if internet addiction comes from an individual's attempt in escaping reality, or if it is just a byproduct to the instant gratification that is achieved with the unnatural reinforcement that it provides. In this overview of the literature on internet addiction, authors explore a variety of possible influential factors.

According to Roberts, Yaya, and Manolis (2014) research suggests that time spent on SNSs using cell-phones indicates cell-phone addiction. Research from authors Rothen, et al. (2018) also suggests that the tendency to update Facebook status is an important predictor of problematic use of Facebook. These suggest that the continuous use of SNSs may lead to addiction. The continuous act of returning to the SNS may develop an impulsive or compulsion to using it.

One subject that is explored is the concept of what the addicts are actually addicted to. Though not fully clear, some possibilities suggested are the mellifluous process of typing, the information gaining process or the convenience of communication (Murali & George 2007). Another interesting point brought by the authors mentioned above, is the fact that internet addiction is rarely the only psychiatric disorder in a patient. Disorders such as impulse-control disorders, personality disorders and other addictive disorders are usually also present in patients. This brings the researchers to suspect that psychiatric comorbidity is at play. This interesting observation begs the question of if certain individuals are more prone to falling into internet addiction, leading to SNS dependency. Rothen, et al. (2018) also suggested that specific impulsivity traits may have

problematic involvement in Facebook. As mentioned above, Ershad and Aghajani (2017), suggests that neuroticism, Alexithymia, avoidance and ambivalent attachment style, could predict addiction to Instagram.

Self-Esteem

Another subject that is observed when it comes to Facebook Depression would be self-esteem. According to Vogel, Rose, Roberts, and Eckles (2014) there are at least two different factors in self-esteem. There is upwards social comparison where one compares themselves with a superior other, who have positive characteristics. There is also downward social comparison where one compares themselves with an inferior other, who has negative characteristics. According to Vogel, et al. (2014) there can be benefits to upwards social comparison when it comes to finding inspiration or a target goal of where to improve in life. However, both upwards and downwards social comparison can be destructive when it comes to negative affect, the feeling of inadequacy and self-evaluation.

In the study conducted by Vogel, et al. (2014) 145 undergraduates from a Midwestern university, participated and the study was completed using MediaLab computers. The study consisted of a two-part self-reporting survey. The first part was to see how Facebook effected one's self-esteem. The second one was to distinct between upwards and downwards social comparisons. This study suggests that participants who spent more time on Facebook tended to evaluate themselves more poorly. The more time an individual spent on Facebook the more they were prone to making social comparisons on Facebook including both upwards and downwards social comparisons.

According to Harter (1993) self-esteem is crucial in childhood to the development of a mature personality in adulthood. Low self-esteem may result from the absence of a strong parental or peer support, which can culminate in feelings of inadequacy and worthlessness. Murali and George (2007) suggests that this might lead individuals to turn to the internet as a way of escaping reality. The internet presents an environment in which people feel less threatened and challenged, which Murali and George believes could be the haven those with self-esteem problems are drawn towards.

A study conducted by Armstrong, Phillips, and Saling (2000) suggests that self-esteem is a strong predictor of Internet addiction and the amount of time spent on the Internet per week. Another study conducted by Stapleton, Luiz, and Chatwin (2017) however, found that although Instagram did not directly affect self-esteem, the intense use of Instagram had more influence on individuals whose self-worth is contingent on the approval of others. These research studies along with other research mentioned appear to suggest that there are in fact, people who are more prone to overusing the internet and develop an addiction or compulsion to using SNS.

Mental Health

Another study conducted by Morrison and Gore (2010) investigated the correlation between internet addiction and depression. This study applied three questionnaires with the total of 1,319 participants to see what (if any) correlation there were between depression and internet addiction. This study suggests that there was indeed a close relationship between internet addiction tendencies and depression. Internet addicted participants responded more depressed compared to non-addicted participants. This study also suggests a significant difference between the sexes, with men showing more addictive tendencies than women. Interestingly there are studies that suggest that there is no relationship between depression and internet use. Selfhout, Branje, Delsing, Bogt, and Meeus, (2009) conducted a questionnaire that intended to detect a significant correlation between internet use and personal issues such as depression, social anxiety and friendship quality. Selfhout, et al. (2009) however, did not find a correlation between internet use and depression in their study.

Moreno et al. (2011) conducted a study which collected personality written test from participants Facebook profiles and applied the DSM-IV criteria to a years' worth of status updates for each profile. A total of 342 college aged participants took part in this longitudinal research. This article suggests that participants who displayed depression symptoms were more likely to have recent profile updates. Participants who displayed average depression symptoms updated their Facebook profiles an average of 3.2 days before the profile was evaluated.

Conclusion

The Moreno et al. (2011) study, along with other aforementioned studies above, suggest correlations between SNS use and depression. social anxiety. An overall negative emotional valence is also suggested to be correlated with SNS use. The overuse of SNSs seems to coexist with other addictive disorders, according to Murali and George (2007). When addressing the subject of self-esteem, the research suggest that it is either a sanctuary for those who already have low self-esteem or an enabler of low self-esteem to those who uses Facebook copiously. Though seemingly simple, the issue of misusing or overusing SNSs has trickled into many different aspects of western world that will continue to unravel with more research. The importance of the continual research on this subject will prove useful for the understanding of what positive and negative effects may have on users in the future.

Methodology

The method applied in conducting this quasi-experimental research study is described in two sections. The first of which describes anticipated participants, their demographics, and the goal of how many participants from whom data

would be collected. Secondly, a section identifying and describing material / procedures that applied is entailed within the methodology section.

Participants

The goal was to have a minimal of 100 participating individuals. It was anticipated that there would be a majority being female and a goal for 35% to 45% male participants. The study intended on representing the vast population of Social Media users, therefore, a targeted audience was not specified. This study aimed to obtain around 250 participants, however due to time constraints it did not reach the goal. All participants were volunteers and there was no incentive offered.

Material/Procedure

This study entailed a survey which was distributed online. SurveyMonkey was used for the development of the aforementioned survey. The survey was distributed using social media sites such as Facebook and Instagram. Additionally, email and word-of-mouth assisted in obtaining participants. The development of the survey was to determine if and how social media services affected the psychosocial behavior. Due to the nature of how this study was administered, it is not an empirical study but a quasi-experimental one.

This survey was a questionnaire where the participants provided information about themselves and their social media browsing habits. Before distributing this questionnaire, permission was granted by the Lee University IRB Committee (see Appendix A). An even-numbered Likert-scale was used to answer most of the questions. The survey also entails some multiple choice questions. It was posted online and made accessible to all that were willing to participate. A consent form was provided for each participant to confirm of their participation by checking a box. By checking the box, they confirmed that they had read the informed consent and would then be allowed full access of the survey. A copy of the informed consent is in Appendix B.

Results

This study assessed 102 participants; male = 22% and female = 78% (see Table 1). The majority of participants in the survey were Caucasian of which there were 54%. The remainder of participants were African American = 19%, Latino = 6%, American Indian = 2%, and those who identified themselves as other = 8%. Following the demographic questions, the survey posed questions that monitored how much time participants spent on Facebook and Instagram. Questions such as “*do you have a Facebook account?*” and “*have you deactivated a Social Media account, and if so why?*” Of those who deactivated their account 56% claimed that they deactivated their account due to it consuming too much

of their time. The primary use for using social media among participants was to keep in touch with their friends (47%). The second reason, of which was made up of 13%, was for news updates and sharing pictures videos.

		Frequency	Percent	Valid Percent
Valid	Male	22	21.6	22.0
	Female	78	76.5	78.0
	Total	100	98.0	100.0
Total		102	100.0	

Table 1. Sex of Respondents

The next group of questions were to gauge how participants felt about social media. Questions such as “*I dont like it when others check their notifications while talking to me face-to-face*” were posed. Additionally, the survey entailed questions such as “*My friends get offended if I check my notifications while talking to them face-to-face*” to attain and understand as to what participants thought others felt about their use of social media. The majority (36.08%) strongly agreed with the first statement above; however, there was a somewhat tte--tte between those who disagreed (23.47%) and those who agreed (22.45%) with the second statement.

Another aspect that was monitored throughout this survey would be the mental health background of the participants. This portion of the survey examined aspect such as anxiety and depression among participants. This study specifically and distinctively asked questions that both surveyed experiencing depression and anxiety and diagnoses to have a better understanding of the outputs. Out of all the participants 21.28% were diagnosed with anxiety while 65.96% have had experienced anxiety. There was a percentage of 20.21% of participants who were diagnosed with depression in this study while 61.70% have had symptoms of depression. Self-esteem was also examined throughout this survey. Statements like “*I am lonely*” and “*I believe I have good personal qualities*” were asked. Among the participants 49.47% agreed that they had good personal qualities and 34.74% strongly agreed with the statement. The majority (32.65%) selected disagree to the “*I am lonely*” statement while 23.47% strongly disagreed to the statement.

Addictive tendencies were also surveyed, along with a new phenomenon called FOMO (the Fear of Missing Out) which is where one gets anxious that an event is occurring elsewhere that they could not be a part of. Questions such as “*I lose sleep from being on social media longer than intended*” were asked. There was 26.32% who strongly agreed and 25.26% who strongly disagreed. A statement made in this study would be “*I get anxious when I dont know what my friends are up to.*” Of the participants, 55.91% claimed this was not true of them at all while 25.81% claimed that this was slightly true of them. Another

statement made was I fear my friends have more rewarding experiences than me, 44.09% stated that this was not true at all of them while 23.66% stated that this was slightly true of them.

The data in this research was processed using Pearson correlations in SPSS. According to this study, there was no significant correlation between age and how long a person spends on social media. However, there was a correlation ($p < 0.00$) between male and female participants and how much they used Instagram. Morrison and Gore (2010) established in their study that males spent more time on the internet than females. Contrastingly this study found that females spent more time on Facebook as opposed to males. In this study it was found that 83.3% of females reported to spending 11 to 15 hours per week on Facebook as opposed to 16.7% of male respondents reported being on Facebook approximately 11 to 15 hours on per week.

Throughout this research one of the major questions aimed to assess if spending more time on SNS could contribute to making one more susceptible to having lower self-esteem and/or experience other negative effect. According to the findings of this study, those who felt lonely and left out also believed that their online friends understood them better ($p < .05$). There is a correlation of $p < .05$ between the amount of time a participant spends on Facebook and how lonely they feel. However, a correlation was not found between how long a person spends on Instagram and how lonely they feel, which was $p = -0.13$. A negative correlation between those who felt lonely and posting a lot of selfies ($p = -0.03$). Conversely, respondents data showed a positive correlation between the feeling of loneliness and one losing sleep from being on Social Media for too long. A correlation of $p < .00$ was found between those who go on SM when depressed and those who felt anxious when unable to check their SM sites along with a correlation of $p = .000$ between those who *felt lonely* and those who would go on SM when depressed. There was also a correlation between those who feared their friends having more rewarding experiences and those who felt lonely.

The results on addictive tendencies in this research study were substantial. When running a bivariate correlation, the results found a correlation ($p < .000$) between how often participants worried and them editing their selfies. A correlation between how often participants worried and social media interfering with their productivity was also found in this study. Additionally a correlation resulted between how long participants spent on Facebook ($p < .05$) and Instagram ($p < 0.002$) and them feeling the need to hide how much time they truly spent on the social media sites. This research study inferred that there was a correlation between those who spend a vast amount of time on Facebook with those who spend a vast amount on Instagram ($p < 0.004$). There was a correlation between the amount of time spent on Facebook and one being diagnosed with or experiencing anxiety. A correlation between those who yearned to return to social media and those who like to keep tabs on their friends when they go on vacation was also found.

It was reported by those that feel that sharing their positive experiences online also responded saying that they yearned to return to SM after being away for a period. A statistically significant correlation was also found between respondents who yearned to return to social media after being away for a long time and those who get anxious when they don't know what their friends are doing. There is a correlation between those who feel lonely and those who believe that they lose track of time on social media. There is also a correlation between those who feel lonely and those who find that Social Media interferes with their productivity.

There was also a correlation ($p = 0.000$) between those who feel their friends have more rewarding experiences and those who get anxious when they don't know what their friends are up to. This study found a correlation between those who worry about what other people think and those who get anxious when they don't know what their friends are up to. Every question that was asked about the Fear of Missing Out (FOMO) had a positive correlation of ($p < 0.00$) with every question asked about addictive tendencies. For example, there was a positive correlation between the statement of “*I get anxious when I don't know what my friends are up to*” (as in Table 2); and the statement of “*I lose sleep from being on Social Media longer than intended.*” (found in Table 3)

		I am lonely	I get anxious when I don't know what my friends are up to
I am lonely	Pearson Correlation	1	.345**
	Sig. (2-tailed)		.001
	N	97	92
I get anxious when I don't know what my friends are up to	Pearson Correlation	.345**	1
	Sig. (2-tailed)	.001	
	N	92	92

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2: FOMO and Loneliness

		I get anxious when I don't know what my friends are up to	I lose sleep from being on SM longer than intended
I get anxious when I don't know what my friends are up to	Pearson Correlation	1	.351**
	Sig. (2-tailed)		.001
	N	92	92
I lose sleep from being on SM longer than intended	Pearson Correlation	.351**	1
	Sig. (2-tailed)	.001	
	N	92	94

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3: FOMO Anxiety to Loss of Sleep from SNSs

Discussion

FOMO

When reviewing the results concerning FOMO (the Fear of Missing Out) we see that there is a correlation to addictive tendencies. Every question that was asked that pertained to FOMO correlated with the questions asked that pertained addictive tendencies. This alludes to the probability that FOMO and addictive tendencies are circular and may affect one another. This is supported by research conducted by Ershad & Aghajani (2017). There was also a correlation between those who feared their friends having more rewarding experiences and those who felt lonely. This indicates that those who have a fear of missing out are also more prone to having lower self-esteem.

Addiction & Mental Health

Concerning addictive tendencies, its observed that there was a correlation between those who reported to have spent a vast amount of time on Facebook and those who reported to have spent a vast amount of time on Instagram. There was also a correlation between those who yearn to return to social media after being away from it for a long time. This particular anxiety question correlates with a lot of the FOMO questions; such as I fear my friends have more rewarding experiences than me and when I am having a good time, it is important for me to share details online. This shows that addictive tendencies and FOMO seem to complement one another. The reason behind this may be because the more an individual spends on Social Media the more likely they are to develop addictive tendencies and FOMO tendencies as well. This statement is supported by previous research conducted (Murali and George, 2007; Robert, Yaya, & Manolis, 2014; Rothen, et al. 2018). There was also a correlation between addictive tendencies and those who experienced anxiety and/or were diagnosed with anxiety. This suggests that there may be an association between Social Media effecting or exacerbate stress related disorders. Such a finding is also supported by Ershad and Aghajani (2017).

Self-Esteem

This study shows that there is a correlation between how much time a person spends on social media and how it affects their psychosocial environment. A majority of participants who deactivated their Facebook accounts stated that it was because it was too time consuming. This study also shows that there is a correlation between the feeling of loneliness and how much time a person spends on Facebook. There was also a link between participants who felt lonely and the number of selfies they would post. These findings are similar to the findings of Moreno et al. (2011) along with Kross et al. (2013). Those who felt lonely did not post a lot of selfies. However, they did lose sleep from being on Social Media. This suggests that those who are lonely go to Social Media not

necessarily for companionship purposes but for entertainment purposes. This is supported by the findings of Murali and George (2007). The research conducted by Vogel et. al (2014) about upwards and downwards social comparison may be related to why those who feel lonely may not be participating in the more active benefits of Social Media.

Conclusion

There is a plethora of information found in this research. One of the more prominent aspects that weaved itself through all of the other subjects covered in this research study would be addictive tendencies. While not every individual who used Social Media were found to have addictive tendencies; this research shows that the more one engages in the consumption of Social Media content in an unhealthy manner, the more they are prone to having addictive tendencies along with psychosocial behavioral changes. This research also found that different people used Social Media for different reason. For example, those who suffered with lower self-esteem used social media as an escape as a means to share content with others. However, those who suffered with anxiety posted up more selfies and engaged more in the active aspect of Social Media.

Further Studies

When looking at this research study one of the factors that was not explored as much as expected was the mental health effects of Social Media. For future research a closer examination of how Social Media may or may not affect mental health would be extremely interesting. Another interesting way of expanding on this research study would be to look at other Social Media Services such as Snapchat and Twitter. The different ways in which different Social Media Services may or may not affect ones psychosocial behavior would also be an interesting research expansion.

Limitations

When it comes to the limitations in this research study one of the more influential limitation would be the amount of the participants obtained due to time constraints. Another limitation in this study was the fact that the study was a self-administered study. This allows the probability for participants to not answer the questions truthfull to their best ability.

References

- Alexander, B., Hadaway, P., Coombs, R. (1998). Rat Park Chronicle. In J. A. Schaler (Ed.), *Drugs: Should We Legalize, Decriminalize or Deregulate?* Prometheus Books.
- Blease, C. R. (2015). Too many friends, too few likes? Evolutionary psychology and Facebook depression. *Review of General Psychology*, 19(1), 1.
- Chung, M. Y., Kim, H. S. (2015). College students' motivations for using podcasts. *Journal of Media Literacy Education*, 7(3), 13-28.
- Ershad, Z. S., Aghajani, T. (2017). Prediction of Instagram social network addiction based on the personality, alexithymia and attachment Styles. *Sociological Studies of Youth*, 8(26), 21-34.
- Hampton, K., Goulet, L. S., Rainie, L., Purcell, K. (2011). Social networking sites and our lives. Pew Internet American Life Project, 16, 1-85.
- Harter, S. (1993). Causes and consequences of low self-esteem in children and adolescents. In *Self-esteem* (pp. 87-116). Springer, Boston, MA.
- Heres how many users logged in to Twitter everyday. (2019, April 24) Time of India.
- Hu, Y., Manikonda, L., Kambhampati, S. (2014, May). What we instagram: A first analysis of instagram photo content and user types. In Eighth International AAAI conference on weblogs and social media.
- Jelenchick, L. A., Eickhoff, J. C., Moreno, M. A. (2013). Facebook depression: Social networking site use and depression in older adolescents. *Journal of Adolescent Health*, 52(1), 128-130.
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukhopadhyay, T., Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being?. *American psychologist*, 53(9), 1017.
- Krause, A. E., North, A. C., Heritage, B. (2014). The uses and gratifications of using Facebook music listening applications. *Computers in Human Behavior*, 39, 71-77.
- Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N., Shablack, H., Jonides, J., Ybarra, O. (2013). Facebook use predicts declines in subjective well-being in young adults. *PLoS one*, 8(8), e69841. doi:10.1371/journal.pone.0069841

- Kuss, D. J., Griffiths, M. D. (2011). Online social networking and addiction: a review of the psychological literature. *International journal of environmental research and public health*, 8(9), 3528-3552.
- McClung, S., Johnson, K. (2010). Examining the motives of podcast users. *Journal of Radio Audio Media*, 17(1), 82-95
- Moreno, M. A., Jelenchick, L. A., Egan, K. G., Cox, E., Young, H., Gannon, K. E., Becker, T. (2011). Feeling bad on Facebook: depression disclosures by college students on a social networking site. *Depression and anxiety*, 28(6), 447-455.
- Morrison, C. M., Gore, H. (2010). The relationship between excessive Internet use and depression: a questionnaire-based study of 1,319 young people and adults. *Psychopathology*, 43(2), 121-126.
- Murali, V., George, S. (2007). Lost online: an overview of internet addiction. *Advances in Psychiatric Treatment*, 13(1), 24-30.
- Nielsen, N. (2018). The Nielsen total audience report: Q1 2018. Retrieved from www.nielsen.com/us/en/insights/reports/2018/q1-2018-total-audience-report.Html.
- Niemz, K., Griffiths, M., Banyard, P. (2005). Prevalence of pathological Internet use among university students and correlations with self-esteem, the General Health Questionnaire (GHQ), and disinhibition. *Cyberpsychology behavior*, 8(6), 562-570.
- Rideout, V. (2016). Measuring time spent with media: The common sense census of media use by US 8-to 18-year-olds. *Journal of Children and Media*, 10(1), 138-144.
- Roberts, J., Yaya, L., Manolis, C. (2014). The invisible addiction: Cell-phone activities and addiction among male and female college students. *Journal of behavioral addictions*, 3(4), 254-265.
- Rothén, S., Briefer, J. F., Deleuze, J., Karila, L., Andreassen, C. S., Achab, S., ... Billieux, J. (2018). Disentangling the role of users preferences and impulsivity traits in problematic Facebook use. *PloS one*, 13(9), e0201971.
- Ruggiero, T. E. (2000). Uses and gratifications theory in the 21st century. *Mass Communication Society*, 3(1), 3-37.
- Selfhout, M. H., Branje, S. J., Delsing, M., Bogt, T. F., Meeus, W. H. (2009). Different types of Internet use, depression, and social anxiety: The role of perceived friendship quality. *Journal of adolescence*, 32(4), 819-833.

- Stapleton, P., Luiz, G., Chatwin, H. (2017). Generation validation: the role of social comparison in use of Instagram among emerging adults. *Cyberpsychology, Behavior, and Social Networking*, 20(3), 142-149.
- Vogel, E. A., Rose, J. P., Roberts, L. R., Eckles, K. (2014). Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture*, 3(4), 206.
- Weiyan, L. I. U. (2015). A historical overview of uses and gratifications theory. *Cross-Cultural Communication*, 11(9), 71-78.
- Wu, J. H., Wang, S. C., Tsai, H. H. (2010). Falling in love with online games: The uses and gratifications perspective. *Computers in Human Behavior*, 26(6), 1862-1871

Fall 2019

Ayuda en el Camino de la Muerte:
**Benevolence, Evangelical Churches, and the
Caravan of Migrants**

Elijah Cox and Dr. Arlie Tagayuna, Faculty Mentor
Lee University

Ayuda en el Camino de la Muerte: Benevolence, Evangelical Churches, and the Caravan of Migrants

Elijah Cox¹ and Dr. Arlie Tagayuna²

¹Lee University

Abstract

This research explores the lesser known response of evangelical churches in the United States regarding the influx of migrants seeking refuge along the border towns of southern Arizona and Mexico. While on location, the analytic framework was developed using various interviews, participant observations and a discursive analysis of current events under the Trump Administration's polemic immigration policies. Findings suggest that the response is organic and fragmented, yet displays a number of collaborative alliances between members of evangelical institutions and nonprofit organizations, both of which are working bi-nationally to alleviate the impacts of immigration policies and the militarization of border communities. Members of evangelical institutions employ informal services to navigate their Christian calling of "hospitality and benevolence" as well as tread their legal obligations as citizens, behind the shifting ideology of ultra-nationalism and xenophobia of the current administration.

Introduction

In October of 2018 a small group of 200 individuals gathered and began their journey from Central America in hopes of reaching the United States. As word spread this group quickly expanded to over 6,000 individuals who were all migrating in hopes of filing for asylum with the United States (BBC News, 2018). In total the number of migrants expected to reach the border was predicted to reach more than 10,000 (BBC News, 2018). According to official figures released by the Mexican Interior Ministry, by the time they reached the US-Mexican border after crossing Mexico and parts of Central America, there were more than 7,000 Central American migrants expected (Goodenough, 2018). The United States Homeland Security simultaneously tracked three migrant caravans en route to the United States southern border and estimated that the total population was 12,000 individuals (Caranza & Gonzales, 2019).

When the caravan initially arrived at the Mexico/US Southern border, there were already 2,000 people waiting in line seeking asylum. Mexican officials initially registered about 6,000 migrants from the caravans at an emergency shelter less than 400 feet from the U.S. border, and soon the facility's planned capacity was doubled and overcrowded. The individuals stayed in temporary shelters in the border cities of Tijuana and Mexicali (Solis & O'Toole, 2018), where overcrowding left to poor living conditions and lack of resources (Lind, 2018). More than 400 were in a shelter in Mexico City and over 250 were in the northern Mexican state of Sinaloa (BBC News, 2018), with smaller groups at the time still traveling through Mexico. With wait times reaching up to six weeks, many of the caravan participants decided to either a) enter the United States illegally, b) claim asylum within Mexico, or c) return to their homeland.

While most of the information about the caravan is centered on the migrants themselves and the debate over the legality of immigrants and asylum seekers, there is lack of knowledge on how religious institutions respond to the crisis at the borderland. With the overwhelming perceived threat of some Americans to the national interest of this crisis, some institutions and groups have done their part in aiding the migrants on their walk towards asylum. Although bound by legality and retributive punishment for aiding illegal individuals (Congressional Research Service, 2019), there has been both success and failure to help those in need.

It is important to state that there were more apprehensions of non-Mexicans than Mexicans at U.S. borders in fiscal year 2017 for the third time on record (the first was in fiscal 2014). In fiscal 2017, the Border Patrol made 130,454 apprehensions of Mexicans, a sharp drop from a peak of 1.6 million apprehensions in 2000. The decline in apprehensions reflects the decrease in the number of unauthorized Mexican immigrants coming to the U.S. (Gonzales-Barrera and Krogstad, 2018).

Additionally, Gonzales-Barrera and Krogstad of the Pew Research Center (2019) state the following: there were 12.0 million immigrants from Mexico living in the United States in 2016, and fewer than half of them (45%) were in the country illegally, according to Pew Research Center estimates. Mexico is the country's largest source of immigrants, making up 26.6% of all U.S. immigrants. Border Patrol arrests on the entire U.S.-Mexico border fell from 409,000 in fiscal 2016 to 304,000 in fiscal 2017, the lowest total since 264,000 arrests in fiscal 1971.

Furthermore, Pendergast (2017) details in a report that in Arizona, ICE made 6,500 administrative arrests in fiscal 2017, up from 5,400 in fiscal 2016. In the Yuma Sector, Border Patrol arrests fell to 12,800 in fiscal 2017, from 14,200 in fiscal 2016. However, that dip followed a jump from 7,100 in fiscal 2015. While arrests at the border fell, "interior removals," an ICE term for deporting people who were arrested away from the border, rose 25 percent in fiscal 2017 to 81,600.

As these individual migrants seek passage across the United States border, often entailing dangerous means and treacherous environments, the Church is held responsible for their part in aiding the foreigner. There is little research or literature on the evangelical church's response to the migrant "crisis" that America is facing, specifically in locations across the border, but there is sure conviction of their duties to aid. Kris, a refugee case specialist, expressed personal faith motivation behind this desire:

To come beside or come up under refugees in order to help them be self-sustaining...work ourselves out of a job. I think that's why we are here....My hope is to be the hands and feet of Jesus to share that and to, I think, restore a little bit of the shalom or the peace and order in the world by helping them and helping not necessarily to proselytize, but to help their eyes look up a little bit. That's my goal. (Patterson, E. & Bushnell, J., 2018)

Given the recent change in demographics among the immigrant population in the United States, not only is it important but also necessary to conduct research on the non-stop increase rate of immigrants coming to the border. It is pressing to study not only the reasons and methods of immigration within these groups but also to fully understand the relation between the evangelical church and the role they play in aiding migrants along the border.

The purpose of this research is to explore the role of faith-based initiatives, particularly among evangelical churches, in their response to the growing crisis of the caravan of migrants in southern Arizona border towns. Traffic along the Arizona border has not ended. The Tucson Border Patrol Sector, which became the busiest in 1998 as traffic shifted from El Paso and San Diego, continues to apprehend hundreds of thousands of people a year (Isacson, Meyer, & Davis, n.d.). Specifically, we looked at the three towns of Naco, Douglas, and Agua Prieta. This study is significant for three reasons. First, as the country struggles to understand the concern of immigration there is less focus on the live-in experience of everyday people and institutions who are confronted with the issue. Secondly, institutions like churches often find themselves at the fence since they are mandated by their belief in benevolence to aid those who are in need. Lastly, it is important to understand the mechanisms of institutions like churches and other organizations in expressing benevolence towards those who are seeking assistance.

Migration, Refugees, and the Model of Acculturation

Immigrants are a heterogeneous group and have multiple and diverse reasons for coming to the United states. It is important to distinguish between voluntary and involuntary migration. There is clear distinction between someone who

voluntarily migrates and that of a refugee who is involuntarily forced to leave their country of origin due to fear. Refugees are individuals who have fled their countries because of persecution, fear of death, disease, poverty, and a multitude of other reasons. A great number of these individuals have been tortured and treated cruelly or have seen others close to them be treated the same way (Amnesty International, 2002). Given that a large number of refugees are themselves victims of torture or witnesses of such, it is not hard to believe that their adjustment to a new society can be more challenging than other immigrants (Suarez-Orozco & Suarez-Orozco, 2001).

When individuals migrate to the United States they are expected to adapt to this new environment, learn a new language, and adopt different values, beliefs, and customs of this new culture. This process of assimilation begins very quickly for immigrants and their families when they come into contact with the U.S. culture. Additionally, this process can more often than not be stressful and invokes anxiety causing one to feel overwhelmed and unprepared (Baptise, 1987; Rumbaut, 1994). The acculturation process is very difficult for some immigrant groups. Berry, Kim, Mindle, and Mok (1987) use the term acculturative stress to explain the feelings one has as an immigrant when coming in contact with the dominant culture. Berry et al., described the stress stating,

This kind of stress, that in which the stressors are identified as having their source in the process of acculturating; in addition, there is often a particular set of stress behaviors which occurs during acculturation, such as lowered mental health status (specifically confusion, anxiety, and depression), feelings of marginality and alienations, and heightened psychosomatic symptom levels as well as identity confusion. (p. 492).

This acculturative stress model suggests that immigrants can all experience acculturative stress in very different manners. This acculturative stress is associated with a number of different stressors which are linked to the acculturative experience they have. For example, if this experience required a great amount of sacrifice and personal involvement, then the individual involved is more likely to experience stressors and thus cause them to experience higher levels of stress. Berry and colleagues (1987) continue to describe a variety of factors that attribute to the relationship between acculturation and stress, such as the type of acculturation group, modes of such acculturations, demographic and social characteristics of such group and the individual, and the individuals' psychological characteristics.

When individuals do decide to relocate and migrate, their subsequent departure might follow a patterned process. The process of immigration has been proposed to be viewed from a multi-stage perspective in which the individual (a) prepares, (b) engages in the process of immigrating, (c) finds themselves in a period of overcompensation, (d) decompensation or crisis, and (e) a period of transgenerational impact (Sluzki, 1979).

Sluzki communicates that during the preparatory stage, the family will begin to plan, make decisions, and take time to say their goodbyes to friends and relatives. In the following stage, the action of immigration, the experiences are different for families based on their access to legal documentation or economic resources. If a family comes from a low socioeconomic status with no access to legal documentation, they will surely experience more challenges when coming to the new country. The overcompensation stage is identified by strong desires to preserve the cultural values and traditions from the country of origin. Maintaining these traditions and values allow the family to develop a deeper sense of stability and may be a reaction to the changes in the family's surroundings and culture. In the decompensation or crisis stage the family will experience conflict that is often associated with acculturation and/or gender roles.

Finally, in the period of transgenerational impact the family continues to experience changes in their adaptation to the new environment and the country, as well as the values and interactions between generations. The last two stages of this immigration model are considered by Sluzki to be the times of change within a family unit (pp. 379-390).

Latino Immigration in the United States

The United States Census Bureau (2005) indicates that there are over 4.13 million Latino immigrants living in the US, and from this 66.9% are of Mexican descent. This ethnic minority is the largest group in the U.S. and comprises nearly 13% of the total population, and this demographic contains the largest portion of individuals under the age of 18 when compared to white counterparts. There is a clear distinction between the Latino immigrant group in that not all individuals who cross the United States Southern border are undocumented or even of Mexican descent (Felicov, 1998; Santiago-Rivera, Arredondo, & Gallardo-Cooper, 2002). Historically, the heads of household (men or fathers) were the first within a family unit to immigrate (Hondagneu-Sotelo, 1992). These fathers immigrate to other countries because they may no longer be able to cover the cost of providing the basic needs for their family unit (Suarez-Orozco & Suarez-Orozco, 2001). More recently though, entire families are migrating to larger more industrialized countries such as the United States in hope of a better future.

There is an array of reasons that individuals decide to migrate from foreign countries to the industrialized Global North to countries like the United States (Suarez-Orozco & Suarez-Orozco, 2001). We can see that individuals who migrate from Mexico do so more often than not because they can no longer afford to support their families or due to insufficient income from working in agriculture (Santiago-Rivera, Arredondo, & Gallardo-Cooper, 2002). On the other hand, there is a vast population of immigrants who have decided to migrate to the United States due to fear of being persecuted, harmed, or even killed. A number of these individuals come from countries within Central and

Southern America and many are unaware of the asylum process awaiting them when they arrive. Others, fearing that they will not be granted asylum, have decided to migrate to Mexico and then into the United States with no type of legal documentation (Santiago-Rivera, Arredondo, & Gallardo-Cooper, 2002).

Suarez-Orozco and Suarez-Orozco (2001) draw attention to the multiple different reasons that individuals decide to migrate. For example, the belief that economists hold in which individuals immigrate to more prosperous countries in the Global North because of better employment opportunities and higher wages. They also highlight that sociologists argue immigrants migrate because of the networks that have developed within their families, friends, or friends of friends in other countries. Other reasons that they explain for migration are those proposed from an anthropological perspective in which people immigrate due to a change in cultural models of desirable standard of living. Finally, there are others who believe that immigration is a rite of passage for certain individuals, especially in countries containing more rural communities where men and women who have reached a certain age are expected to migrate to countries such as the United States.

Northbound Migration

Globally there are 60 million people who experience some form of forced migration or displacement (Ferris & Kirisci, 2016), and more recently this occurrence has taken place in Central America and Mexico. Undocumented migration within these regions begins when an aspiring migrant decides to head northward without documents in an attempt to gain a first entry into the United States (Massey, Durrand, and Pren 2016). If we are to look at the numbers we can see that from 1986 to 2008 the undocumented population of the United States grew from 3 million to 12 million persons, despite the fivefold increase in the number of US Border Patrol officers, the fourfold increase in hours spent patrolling the border, and a twentyfold increase in nominal funding. Studies have indicated that the surge in border enforcement has little effect on the reducing unauthorized migration into the United States (Angelucci 2012; Davila, Pagan, & Soydemir 2002; Hanson & McIntosh 2009; Hanson, Robertson, & Spilimbergo 2002; Hanson & Spilimbergo 1990, 2010; Massey, Durand, & Pren 2014; Massey & Riosmena 2010).

As a result of US immigration policy between the 1950's and 1970's, Mexico specifically went from annual access of migrants into the United States of roughly 45,000 guest worker visas and unlimited number of resident visas to a new situation where there were no guest worker visas and just 20,000 resident visas annually (Massey & Pren 2012). According to estimates from the Census Bureau (Acosta & de la Cruz 2011) and the Department of Homeland Security (Hofer, Rytina, & Baker 2011), a vast majority of immigrants from Mexico and Central America are present without authorization. We can see throughout the past 40 years that illegal migration into the United States rose from 1965 to

1977, but thereafter leveled off and fluctuated before ultimately falling again. This flow of illegal immigration has steadily decreased since 2007, and as of 2016 this number had declined by 13% from the peak of 12.2 million in 2007. Mexicans made up half of all undocumented immigrants in 2016 (5.4 million), compared to 57% in 2007 (6.9 million) and these numbers have been declining in recent years. (Krogstad, Passel, & Cohn 2018; Passel & Cohn 2018). With this decrease in overall illegal migration though, there has been an increase in unauthorized immigration from one birth region since 2007: Central America and the Northern Triangle nations of El Salvador, Guatemala and Honduras (Grämlich & Noe-Bustamante, 2019).

President Trump's Administration

The case has been made that overall illegal immigration is at a record low, however, there has been an increase in number of apprehensions at the border since President Trump's term in office, rising from 300,000 in 2017 to over 400,000 in 2018 according to the Department of Homeland Security (Anderson, 2018). With this increase in apprehensions has come the intensifying threat narrative and has profound political consequences upon the American people. The rise of illegal immigration created an opportunity for self-interested individuals to frame immigrants as criminals, rapists, aliens, and portraying them as neither warm nor competent (Daley, 2019). Fear, being a well-established tool for political power and mobilization, has created a social boundary by the American people to those who are "strangers" and "immigrants". Across history it has been difficult for humans to resist the temptation and ease of cultivating fear of "others" in order to incite loathe and achieve their own self-preserving aims.

This chain reaction allows room for policies to be made on more stringent immigration enforcement as well as larger Border Patrol staffing and resources, which produces more apprehensions and line watch hours and then feeds back into the narrative. In 2001 the USA Patriot Act was created by the Department of Homeland Security. In 2004 the National Intelligence Reform and Terrorism and Protection Act provided more funds and resources to Border Patrol and to create detention centers. In 2006 the Secure Fence Act authorized the Border Patrol to erect new fences, checkpoints, vehicle barriers, and other equipment. In 2010 the Border Security Act funded the hiring of 3,000 more Border Patrol Agents and increased the budget by \$244 million (Rowen, n.d.). Finally, in 2018 President Trump sent more than 5,000 active service members of the United States military to re-enforce the Southern Border in response to the "Migrant Crisis" (Copp, 2018).

The moral panic about illegal aliens produces a self-perpetuating increase of resources dedicated to the border enforcement, as can be seen with the declaration of a National Emergency in 2019 and funding for a Border Wall being constantly demanded, as well as the Zero Tolerance Policy enacted which effectively criminalized any individual who helps an immigrant in any way (Baker,

2019; Barnes, 2019; & Congressional Research Service, 2019). What must be understood though is that the United States southern border is long, nearly 2,000 miles, and by hardening the wall at one location will lead to migrants crossing at different locations, mainly those that are less patrolled and are more likely remote (Almond, 2018). This comes with risks however, as they are often more dangerous and make more frequent use of coyotes and shadier connections (Singer & Massey, 1998). Such a change in crossing locations can be tracked historically as migrants passed through California, Texas, and ultimately the Sonoran Desert in Arizona (Chomsky, 2014).

Immigrants, through their social connections, will often locate a border smuggler, or coyote, who is then contracted to lead the way across the frontier, with the higher prices generally increasing the odds of successful entry (Singer & Massey 1998, Spencer 2009). The militarization of the border should not be expected to deter undocumented migrants but will ultimately entice them to find more readily accessible means of border crossing, causing them to adjust their strategies, while continuing to migrate (Massey, Durrand, & Pren 2016). Once opportunities for legal entry are constricted, migration does not stop yet simply continues under undocumented auspices (Massey & Pren 2012b). As these individual migrants seek passage across the United States border, often entailing dangerous means and treacherous environments, the Church is held responsible for their part in aiding the foreigner. There is little research or literature on the evangelical church's response to the migrant "crisis" that America is facing, specifically in locations across the border, but there is sure conviction of their duties to aid. Kris, a refugee case specialist, expressed personal faith motivation behind this desire:

To come beside or come up under refugees in order to help them be self-sustaining...work ourselves out of a job. I think that's why we are here....My hope is to be the hands and feet of Jesus to share that and to, I think, restore a little bit of the shalom or the peace and order in the world by helping them and helping not necessarily to proselytize, but to help their eyes look up a little bit. That's my goal. (Patterson, E. & Bushnell, J., 2018)

Religion and Immigration

To understand the role of church and immigration, it is important to visit the concept of social capital. Social Capital theory holds that within any migration system networks can develop that provide social infrastructure capable of supporting and sustaining international migration in the face of obstacles and barriers (Massey et al. 1998). Lin, Cook, and Burt (2001) argue that social capital theory facilitates a flow of information about opportunities, resources, and choices otherwise unknown; social ties may exert certain influence over different agents and individuals who play a critical role in decision making, and the social-tie resources and their acknowledged relationship to an individual

may provide social credentials allowing organizations to see the individual's social capital and social relations. These are expected to reinforce one's sense of identity and belonging within a social group, allowing not only for emotional support but public claim to resources provided for by the community. (Lin, Cook, & Burt 2001).

Lorenz (2005) stated that a theory of hospitality is “an unconditional welcome that results in acts of reception and provision towards the stranger” (p. 4). Whereas Derlega and Grzelak describe helping behavior as that which produces a positive social connection that increases another person's positive outcome (Derlega & Grzelak, 2013). One can easily see through Christian literature the relation of Jesus as a stranger and the people within his community to show how social interactions and relationships are to be built and how the “alien” should be welcomed in. The evangelical church takes this model of hospitality, along with conviction to “love your neighbor” as a mandate, which can be seen in Matthew 25:34-40:

Take your inheritance, the kingdom prepared for you since the creation of the world. For I was hungry and you gave me something to eat, I was thirsty and you gave me something to drink, I was a stranger and you invited me in, I needed clothes and you clothed me, I was sick and you looked after me, I was in prison and you came to visit me. Then the righteous will answer him, “Lord, when did we see you hungry and feed you, or thirsty and give you something to drink? When did we see you a stranger and invite you in, or needing clothes and clothe you? When did we see you sick or in prison and go to visit you?” The King will reply, “Truly I tell you, whatever you did for one of the least of these brothers and sisters of mine, you did for me.

Nygren (1938) asserts that God's attitude to humanity is not characterized by retributive righteousness but freely giving and forgiving love, or *agape* (p. 70). Public compassion or the secular vision of “loving mankind” does not compare to the demand to “Love Thy Neighbor as Thyself,” as the Christian's love of neighbor is the manifestation of God's *agape* at which both the believer and neighbor are both expressions of the occasion. *Agape* is spontaneous, unconditional and unmotivated, and, according to Nygren (1938), is indifferent to the value of the one who is loved. If the concept of *agape* does not seem to be an appropriate substitute for social action, it might be helpful to remember that the term used even today for institutions devoted to selfless service towards the needy are titled as “charities.” This word is commonly used to present the word *agape* into English, and that a more literal translation would be something like “unconditional love,” or action without self-serving motivation on the part of the individual (Wuthnow, 1993). Historically, Christian doctrine demands that charity be performed through the acts of serving the needy, feeding the hungry, alleviating the pain of those in suffering, and the kindly treatment of strangers.

However, *agape* does not imply a moral or political principal (Niebuhr, 1956), as there have been numerous attempts to alleviate suffering out of the belief that suffering in and of itself is wrong rather than the expression of love. It is in this idea of *agape* that the idea of selfless love takes meaning, and this concept must be understood in relation to early Christian understandings of the giving, of divine love for humanity, and of the human possibility of emulating this divine love towards fellow human beings.

Compassion involves the active moral demand to address other individuals suffering (Snow, 1991) and if we can move from recognition of another's weakness and the role it plays in their distress to the realization that we too are not immune to misfortune, then compassion can become an expression of *agape* love and lead to social action. History shows us that it is not a matter of course for the spectacle of misery to move men to pity, even when Christianity's principals of mercy determined the moral standard of Western civilization (Ardent, 1963). Compassion has operated outside of political and established hierarchies of the church and reached those in need out of the belief that one should dedicate their life, or at least a significant period of time, helping others to contributing resources in their aid. Serving others through hospitality appears as a Christian duty placed under the command, "I want mercy and not sacrifice," and loving others is not merely an emotional reaction to the presence of the others need but a response from the *agape* love that one experiences

Therefore, one can see that the theory of hospitality and benevolence, mandated by Jesus to the evangelical church, can be viewed in light of *agape* love with action aimed to strengthen social capital. Both social action and social capital aim to connect those in need with information, resources, and people who are able to provide what is needed in order to sustain livelihood in the face of obstacles, while welcoming the stranger as one of their own and showing them the graciousness of God.

The Research Design

This research study utilized a multiple case study design in order to "explore the 'bounded system' of a case or multiple case over time through detail and in-depth data collection involving multiple sources of information rich in context (Cresswell, 1998, p. 61)." This method is used in order to investigate and gain insight into a central phenomenon (Creswell, 2002; Stake, 2006; Yin, 2003). Stake (1995) explains that case studies are researched because,

We are interested in them for both their uniqueness and commonality. We would like to hear their stories. We may have reservations about some things the people tell us, just as they will question some of the things we will tell about them. But we enter the scene with a sincere interest in learning how they function in their ordinary

pursuits and milieus and with a willingness to put aside many presumptions while we learn. (p. 1)

In an effort to gain multiple different perspectives in the area of the evangelical church's response to immigration, this study used the maximum variation sampling strategy (Creswell, 1998). To achieve this, twelve separate interviews were conducted over seven consecutive days. The interviews were held with local leadership within different evangelical churches across the three cities of Naco, Douglas, and Agua Prieta as well as local immigrants within the respective church congregations.

The individual migrants who were interviewed were identified and chosen with the aid of a gatekeeper. In qualitative research, a gatekeeper is used to assist the researcher in gaining access to and developing trust within the community of study (Hatch, 2002). The gatekeeper, researcher, and local church authority had multiple conversations in regard to the data being collected for this research. The church authority, with aid of the gatekeeper, contacted the individuals and asked them if they were interested in participating in the study. When the selected individual agreed, the gatekeeper then scheduled an interviewed visit with both the churchman, individual, and interviewer where I will then explained the details of the study, the purpose of the research, and what participation entailed after which I interviewed the respective parties individually. For this study data was collected in the forms of semi-structured interviews, collection of documents, and a reflective journal. The interviewer, interviewee, non-participant observer, and the translator (upon request) were present during the data collection phase of the study.

The churchman and local migrant were interviewed separately, both in the language of preference to the interviewee. The interview with the local church authority lasted approximately one hour where the interview with the migrant lasted potentially longer for reasons of consideration of the language barrier. All interviews were held at a location in which the individual felt most comfortable and accommodated. All interviews were audio-recorded and transcribed as well as a process of note taking from the interviewer during the conversation. All parties were reminded that breaks are allowed if they felt the need for one and they were informed of the measures taken to protect their identity. Each participant was provided with a consent form in English and Spanish and informed that they retain the right to withdrawal from the study upon request at any point.

The interview protocol for this study was developed into two separate pieces. The first is the version in which the local church authority was asked specifically about their connection and aid to the migrant caravan. The second is the version designed for the migrant in which they were asked about their experience during their migration and the aids they have received from the local evangelical church. Both versions consisted of a series of questions addressing aid, success

and struggles, resources, and demographics.

The purpose of the non-participant observations that were conducted was to gain additional insight and information from the interview as well as to provide support and guidance during the process to all of the individuals involved. The observation was conducted by a third-party researcher and provided an extra line of accountability within all communication during the interview process. The observer took additional notes on the actual interview and provided needed feedback and tutelage to the interviewer in efforts to gain the maximum result from the interview process. These notes were taken into account during the data collection phase of the study where they concern the information gleaned about the subject of study.

The documents gathered for this study included any type of papers that the individual wished to be submitted for research. This may entail photographs, letters, official government documentation, etc. For the purpose of analysis, the documents were photocopied and any and all identifiable information was erased. The original documents remained with the individual unless otherwise specified by such individual.

The final data that were obtained were that of a reflective journal and field notes both taken after the interviews concluded. The journal allowed the researcher to describe his feelings about conducting such research in this area of study as well as the process of data-collection. The use of a journal added invaluable information and quality to the research as the information contained real time reactions, assumptions, expectations, and biases about the research. The field notes allowed for additional data to be analyzed.

Before any data were reviewed and analyzed all interviews, observations, documents, journal entries, and field notes were transcribed by the interviewer. This process of transcription allowed the researcher to become acquainted with the data (Reissman, 1993). The researcher created a Microsoft Word file entailing all interviews, observations, journal entries, and field notes. All files are protected by a settings password and stored onto the researcher's personal computer, to which he alone has access, thereby supplying further security and confidentiality to all involved within the study. The researcher coded the data sentence by sentence to the best of his ability and then used the meaning of analysis context as the unit for analysis coding, meaning that data is coded for meaning.

This study was designed to analyze the data case by case and through thematic analysis and later cross-case analyzed (Stake, 2006). Thus, all received data were analyzed for each and every case. By doing such, themes were identified and used to conduct a cross-case analysis. All individuals who participated in this study were treated in accordance to the ethical guidelines of the American Sociological Association (ASA) and the Lee University Institutional Review

Board (IRB). Although there were no seemingly identifiable risks involved in participating in this study there were certain considerations that were taken when conducting research with the individuals involved.

First, all participants were interviewed and talked about their experiences with immigration, the local evangelical church, and the United States/Mexico government. Secondly, there was the possibility that the individuals may have felt uncomfortable discussing their experiences or be placed in a position of risk for doing so. Thirdly, they might have felt pressured to answer all of the question prompted for the interview given that the researcher held a position of power. All of these considerations were incorporated into the research design stage and all cautions were taken to make sure that all individuals were safe, comfortable, relaxed, and had the freedom to withdraw from the study at any time of notice.

Findings

Border town Evangelical churches respond to the perceived immigration crisis "organically." This means that the fragmented delivery of services of many individuals and organizations of Evangelical faith background conjure a different approach to the standard religious institutional response. Findings of this research show the following thematic patterns: 1) help is done through individuals in the church, rather than as a religious institutions as a whole, 2) on the American side of the border, Evangelical churches and individual responses are more sporadic and on an individual basis as in contrast with churches in the Mexican side that are more organized and show institutional forms of hospitality and benevolence and 3) members of these groups and churches are responding to the immigration issue by bringing awareness and educating to the public, as well as actively aiding travelers by providing resources of all kinds.

While such new phenomenon is taking place, a revisit on how religious social movement formation is significant in this case. In particular, the emerging resistance to President Trump policies on immigration by some Evangelical individuals is telling of the on-going development of disapproval in the form of protest in the field and/or online.

The Process

The border towns of Douglas, Agua Prieta, and Naco in the Southern Arizona and Mexico are among the stage for much of the debate of the border crisis in the national politics. However, as perceived by many in the area, the crisis is "relative", as observed from May 11th-16th, 2019 during multiple interviews. These towns are somewhat in crisis due to the fact that they received moderately good portion of asylum seekers at their borders but not bigger compared

to major cities in California, Arizona, and Texas. This is a result of these towns having limited commercial traffic coming through. The larger ports of entry, specifically Yuma, El Paso, and San Diego, are currently facing a “major crisis” as there are thousands of individuals who have been waiting for their chance to petition for asylum. This does not mean, however, that there is lack of need for those migrants who are currently waiting at the border in this region.

In our field, at any given time of the day, there are between 15-20 individuals at the border wall waiting, compared to the 40-100 individuals back in the early 2000’s. If one does not have the proper legal documentation they are not allowed to even go beyond the border wall to petition. These units consist of men, women, children, and families who are all waiting their turns to seek an audience for petition. They wait anywhere from one to two weeks and the government will only process one to two individuals a week— not family units of any kind, just individuals. This often leads to the separation of the family unit. Once individuals are granted asylum they are then held at the border until enough individuals have been granted asylum.

From there, the group is shuttled inside of unidentifiable buses to a facility in Tucson where they are held for an undetermined amount of time. This can range from two weeks to months. They are placed within “holding units” similar to that of prison cells. Once there, they are allowed to start contacting any connections that they might have within the United States in order to arrange finances and transportation.

For those that are caught, it is a very different story. A local activist in Naco, Arizona detailed his experience from working within the region for over thirty years purported:

People think it’s as simple as dropping them off in Mexico and letting them try again. That’s not how it works. Only about 30% are caught, and when caught they’ll be detained and sent off to a facility, any of the many around the nation, and more often than not it won’t be anywhere near where they’re picked up. The government does this to confuse them and disorient them because they don’t know where they’re at. Once detained, they’re processed and held until they can be shipped back to Mexico and even then, it’s in a different place than where they’re picked up or held. So, these people are caught and moved all around the country to confuse them, then legally prohibited from attempting entry by actual legal means and kicked back into a different place than where their journey started. At that point even if they did want to try to gain legal entry, they can’t so they’re essentially stuck where they are because they’ve spent their money hiring coyotes, they’re separated from their groups or families, and in an unfamiliar place. That’s if they’re caught. For those who aren’t it’s a much different story. If they aren’t caught

they fan out. A lot of them have relatives within the country, which is a problem in and of itself, because they'll get dropped off by a coyote somewhere in the desert and are told that they only have 'another 5 miles to go to Phoenix to catch a bus' which is not true. The 70% or so who don't get caught end up in hiding for years. I know one couple who has been here illegally for almost 40 years, still in hiding, and now they're deathly afraid they'll be sent back after establishing a life. For them, and people who have been here a long time, asylum should be grated, but it's not. (Interview no. 8, May 15th, 2019)

When asked where these travelers are coming in through he stated,

Pretty much they're crossing all over the border, but the government is operating on the basis that if they can keep people scared enough then they can control the American population by villainizing migrants and calling them rapist, thieves, murderers, drug mules, etc. That's not true. These people are seeking help and in need of rescue. The real problem isn't the border patrol stations or the points of entry, although that is an issue, it's the unpatrolled and unguarded area in the far west of the desert and the east in the mountains. That's a large area along the border, and that's where they're crossing and that's where they're dying. That's where the need is: in the desertlands. And who's helping them? (Interview no. 10, May 17th, 2019)

When We Open Our Door, the Floor is Your Bed

I got the opportunity to sit down with local pastors, activists, political influencers, and concerned citizens within the borderland communities to understand exactly who is helping. The goal was to look specifically at religious institutions, particularly evangelical churches, and understand just how these ministries were addressing the needs.

One theme that seemed to reoccur throughout the entire process is that there are certain individuals within the southern Arizona borderlands who have voiced frustration with the lack of involvement from churches when it comes to the immigration need. There is not a single organized unit of hospitality and alleviation for those in need along the border but rather individuals within certain evangelical groups will volunteer their time and resources to help. Due to a "threat of (legal) risk," these churches focus not as an institution to help on those travelers who are waiting along the border, rather they go to the community in Mexico across from the port of entry where they have more freedom to engage the migrants. Their fear is also exacerbated by the idea that their churches can be jeopardized should they help as a group.

D. Esparaza from Douglas, Arizona shared that,

From what I see there is not a lot of “organized” ministries who are focused on helping. There isn’t anything in place [on the American side of the border] that focuses on the individuals specifically, but more so on the community itself. It’s easier to provide help when you’re building relationships than dealing with being criminalized for helping a single person. So we help the community, not just those waiting at the wall. There isn’t a lot of direct contact with those waiting because of the threat of losing what we’ve established here. (Interview no. 6, May 14th, 2019)

Borderland evangelical churches are important, in terms of context, because they offer what is seen as a bi-national movement. This simply means that pastors and individuals within the congregation are allowed a certain means of mobility across national lines in order to do the work mandated by their religious faith. By establishing connections within the Mexican community this allows for settlement and a sense of stability among the area for those who are waiting within the city or on the border, fortifying their sense of identity among their fellow peers.

With this place of stability and community, comfort can be found in the direst of circumstances and the hardships they face through both physical and spiritual means. For instance, through the collaboration with the Catholic community on the Mexican side of the border, some evangelical individuals are able to assist a young mother waiting at the fence is in need of formula and diapers for her infant son. Similarly, an older man waiting in line for weeks to petition for asylum, was disheartened and on the verge of acquiescence when he found help from the local church who was willing to pray for him and encourage him in his faith. It is through these practical and spiritual resources, that when in times of distress, individuals can feel that they are supported and integrated within the community of those around them. As one worker in the shelter mentioned: “Our doors are always open, once we open it, the whole floor is your bed.” (Interview no. 10, May 16th, 2019).

The Two Faces of Help: United States vs. Mexico

When asked about this frustration and who is helping specifically, a local citizen from Naco, Arizona, stated,

Individuals within churches and organizations, concerned citizens, anyone and everyone really. I’ve seen doctors, lawyers, pastors, policemen, students, the young and old. They’re all doing it out of an individual sense of compassion. It comes from a conviction of people helping people, out of that compassion. These people are in need of refuge and are seeking help, and individuals from every area and walk of life are joining up in order to make this work sustainable. (Interview no. 4, May 13th, 2019)

Moreover, local Presbyterian pastor Mark Adam of Douglas, Arizona, reiterated this fact:

People didn't say, We're going to put something together to help. They just received traveler into their homes to provide physical, emotional, and spiritual refuge. They've opened their floors and every place within their homes to hundreds of individuals who have come through. These individual travelers come from all over South America; Guatemalans, Salvadorians, Columbians, you name it and they've been here. It's not structured, it's simply how they live out their faith. (Interview no 2, May 11th, 2019)

These individuals who are on location and aiding migrants through direct means are also actively connected members of non-profit institutions where activism and social-services are indeed provided. A volunteer from Arizona sat down with me and detailed his experience from working with migrants starting in the early 1960's. He informed me that although there are individuals within evangelical churches and other religious sectors along the Arizona border, that focus of the aid is not necessarily faith-based. He has been working within the borderland regions for over forty years and has identified that although a lot of assistance for migrants is "birthed out of religious faith, that does not mean that those who are helping are necessarily a part of any particular faith." (Interview no 9, May 16th, 2019) For example, many of the different grassroot organizations within the area are both secular and inter-faith and have volunteers inside and outside of the church who do work in the borderlands. These individuals within the organizations work together to conduct behind the scene efforts with any institution willing to help, whether they be religious or secular in nature.

This volunteer drew specific attention to such organizations as No More Deaths, People Helping People, Humane Borders, Border Angels, Samaritan Aid, and Frontro de Cristo, all of which he has personally volunteered with or has had interactions with in his work. Most notably, he expressively informed me of his involvement within a new, underground organization that individuals within his own church and community have recently been a part of. He stated,

This organization is a nation-wide system of connections between people across all state lines. They [volunteers] are meeting individual migrants at the port cities along the border and are traveling with them to their destination. We have people in every major city, from California to Maine, who all bear the same symbol as a source of identification. We escort immigrants safely across borders and provide them the necessities for travel and life as they settle, making sure that they are taken care of. We make sure they get connected at the next stop with our volunteers all the way to their final destination, never once leaving them alone and on their own. This model is working. It started with 5 individual people and now

has over 3,000 volunteers in only six weeks. (Interview no 9, May 16th, 2019)

Comparatively with their American counterparts, Evangelical individuals within Mexico show a more formalized and structured form of hospitality. This established aid comes not so much from evangelical churches, as there are little to none within the Mexico borderlands, but more so from Catholic and other non-evangelical denominations of the Protestant Church. The reality is that most of the people who are supporting and helping within Mexico are the people who live there who have affiliation to Evangelical faith, because they experience the issue of immigration first hand.

There is no exact model on how evangelical respond to the immigration issue in the borderlands. There is a natural tendency for them to show hospitality within their culture and way of life. For example, the Migrant Resource Center was established because of an instance that happened years ago with a local pastor in Agua Prieta and his family.

My wife and I at the time were hosting a party for some friends, and there happened to be a crisis within the family so no one was able to come. My wife said, “Well the Good Book says that if the invited guests don’t come then go out to the highways and byways. Let’s go to the border.” So, we drove to the border, and it was an extremely cold night, and we saw hundreds of people being captured, restrained, harassed, and sent back. We talked to the different folks who were there and found out what exactly they needed, and we found a way to provide for those needs. From that the Resource Center started. In 1984 Frontero de Cristo started and now we’re partnered with other ministries in the area to help. (Interview no. 2, May 11th, 2019)

The founder of the Migrant Resource Center, local Presbyterian Pastor of Iglesia Presbiteriana Lirio de los Valles detailed other ministries within the Mexico borderlands who are organized and structured in their aid. Such examples are the Colibrí Center for Human Rights, Missionary Sisters of the Eucharist, Centro Comunitario de Atención al Migrante y Necesitado Casa del Migrante, Herrmanos en el Camino, and Sagrada Familia.

Local participants from both Mexico and America revealed that there is something wrong with the migration and the immigration policies, but they do understand the need for them to help. One dual-citizen participant, who is a member of the local Catholic parish within Agua Preita, shared with me that,

Migration shouldn’t be illegal, it’s not in other countries, so why is it here? The administration is constantly drumming that they [Americans] should be afraid of ““those people”” because we’re coming in to rape your daughters and steal your money and everything else.

It's a shame that some people take that seriously, but overall most Americans could care less. It comes down to the fact that people don't understand that the administration tells them that the color of the skin makes the difference, because Canadians are white, and Mexicans aren't, so anyone who isn't white is a threat. Down here though, in the borderlands, they don't feel a threat or fear of immigrants because they have been living with migration for years. They know that these stories are fabricated and used to incite fear, and they see first hand the repercussions of what's happening. We continue to open our hearts and our homes to our brothers and sisters, to those who look like us and those who don't, because we see them and know them. These are my people, both sides. We are them, and they are us. (Interview no. 12, May 17th, 2019)

Being the Voice of the Voiceless

In either case, members of both religious organizations and secular groups along both sides of the border are responding to the need by educating the public to the reality of the issue, bringing awareness to the need, and actively aiding migrants by granting any resources available to them. Local radio host and immigration rights activist Peter D. says, "What the borderlands need are for people to have a thorough understanding of the root causes for migration and documentation. Who are these travelers and what has caused people to migrate from the south to here? (Interview no. 5, May 14th, 2019)" P. Mouse of Naco, Douglas stated,

If you're going to understand migration, you have to stop asking, 'What do I know about this?' and you need to ask, 'What don't I know about immigration?' That's the problem: most people have no clue about what immigration really is, why it started, or where it's going. They don't know the truth about what's happening, and they need to. (Interview no. 4, May 13th, 2019)

One local activist goes to the borderland checkpoints daily in order to communicate with the Border Patrol Agents and attend ride-along patrols in order to gain a first-hand experience. He advocates that there is a need for stronger enforcement along the border but more so that there needs to be accountability for those who are in charge. In an interview with him he informed me that his only agenda is to get to the truth of the matter, immigration policies and enforcement specifically, in order to educate those that he can and influence local policies to aid. He collects footage and photos of his endeavors to present at local churches and institutions, as well as anyone who is willing to listen, and is an active member of different religious and secular groups in the area. One group in particular is No More Deaths.

Volunteers with this organization, No Mas Muertes, weekly go on desert raids in order to sweep the scorching landscape for remains. They have people from all over the nation who come to camp in the desert with them, where they are then trained and prepared to go out into the desert zone to search. While searching they meet at strategic points along well-walked migrant routes in order to place water, food, and clothing out, and to continue to monitor the area for signs of life. If remains are found, which they always are, then they are brought to the local coroners office to be identified and the location marked on an interactive map on their website. If individuals are found alive, they are cared for and treated with first aid, then guided to the right direction and supplied for their journey. This organization not only practically aids travelers but is highly influential in the region in regards to policy and education, going as far as traveling around the borderlands to host conferences and rallies against Border Patrol brutality and the militarization of the border and the harrowing journey that migrants must take to cross the desert land.

Other local citizens gather on a weekly basis to host a prayer vigil where they march to the United States/Mexico border wall in an effort to bring awareness. Having personally observed this processional, it is apparent that individuals from all walks of life gather to pay tribute to those who have traveled through the desert and perished. As these citizens march in single file line they hold a handful of white, wooden crosses each marked with a name of a migrant who has died in the journey. Once their named is called, everyone yelled presente to indicate the memory of the life present during the treacherous journey. For those whose remains have been found but unidentified, the phrase No Identificado is painted across the beams. These names are called out loud for all to hear, followed by , and then the cross is placed along the road for those driving by to see. Once the crosses are all laid down the group gathers at the border wall to hold a united prayer session and vigil in remembrance.

Other individuals take a different approach when it comes to aiding those in need and education on the cause of migration, seeking to do such no a more personal level. During a moment across the Mexico border, I got to participate and observe a bible study hosted by local individuals in an effort to provide spiritual aid to migrants and nationals. We met in the upper room of a local coffee shop completely ran and operated by individuals and families who have migrated from Southern Mexico. This coffee shop originally was established to address the issue of poverty and causation of migration out of southern Mexico to the United States and has flourished into an international business that provides self-sustaining means and wages for those families who grow, roast, and serve the coffee. Their location in Agua Prieta, Mexico has walls adorned with large-scale portraits from a local photographer of women who have each labored to own their own piece of land, honoring the hard work and dedication of these individual women, both young and old, to remain self-sustainable and to encourage others that they can thrive where they are in their own homeland. This bible-study, led by a local pastors, brought together men and women from

all around Central America and Mexico who have each migrated to the area in search of better opportunities and asylum. After singing songs in both Spanish and English, reading the Bible, and praying, each one of us took a moment to share what we were thankful for. Through such an opportunity we grew connected in understanding our differences and how we come together in this life.

What's Hindering the Ones Who Are Helping?

Though aid looks different from person to person and group to group among the southern Arizona border, one thing has been made clear from my participation and observations. That is being that although there has been significant gains in aiding migrants and refugees, there is compelling pushback and fear of retribution from those who are stationed along the Border to enforce the policies at play. Such policies as,

Intentionally redirected hundreds of thousands of unauthorized previously busy crossing points in California and Texas into Arizona's perilous and deadly landscape. Our findings unambiguously confirm previous evidence that such U.S. policies id create the 'funnel effect' and this is indeed the primary structural cause of death of thousands of North American, Central American, and South American unauthorized men, women, and children who have died while trying to enter the U.S. (Rubio-Goldsmith, McCormick, Martinez, and Duarte 2006)

Concerns about the impending militarization of border patrols at the bordertowns have become a concern for many that reside in the United States. Some individuals are starting to meet and discuss these concerns along the lines of their ability to help those who pass through their towns. K. Gutierrez adds that,

People are forced to shift routes into more dangerous and desolate areas. The deaths spike. Militarization has never been successful in controlling immigration. It only shifts the flow. The United States government has been extremely faulty in regard to the asylum situation because they have said that anyone who is not a natural-born citizen is not welcome. (Interview no. 1, May 11th, 2019).

Walking along the borderwall in Mexico with Pastor Mark Adams, he disclosed that

In a closed-door meeting with us, [local and federal] officials said that they don't want to give hay, water, or coral to these "brown faced brutes." Basically, by using very vulgar terminology and referring to these people as animals, they don't want to help Central Americans or immigrants who are in need. (Interview no. 2, May 11th, 2019)

I had the opportunity to sit with another volunteer and activist who wishes to remain anonymous, and on the issues of Border Patrol action he stated that,

The agents, overall, don't really understand the policy themselves. I've talked to them, even have a relationship with an ex Border Patrol agent, and they've said that in their training they're taught to never act compassionate and never show that they feel anything for these people. They're trained to be empty, to do their duty and nothing more. You can ask any agent what they think about the immigration issue, and they're told to respond, "It has to be solved. That's it." I used to believe for the longest time that agents were here because they needed a job and had to feed their families, but after talking to them one-on-one I've realized that a good majority are here for another reason altogether. They genuinely despise immigrants, and there's no way to screen that out in the process. So they're allowed in and we see the result in the brutality along the border. (Interview no. 10, May 16th, 2019)

Some participant went on to say that,

I have seen the upward tick of people dying needlessly, not just from crossing illegally but from while they're detained. If we don't go back to really learning what's the truth about this issue, then there isn't a hope in the world. If the media could just once get away from politics and positions and stop telling the wrong story about immigration, then people can be made aware of what's happening. It's such a broad issue with so many facets, there's so much that goes into it. That's the problem we have today: making it known that the solution is not to simply build a wall. This goes back such a long way, and it has a long way to go. (Interview no. 3, May 12th, 2019)

These firsthand accounts and linking the broader issue to their daily encounters with both the migrants and the policing of their community spark a conversation and eventual demonstration of force to educate and raise the consciousness of the community about the reality of the problem in their turf.

Most participants agree that the push and pull factor of migration is a fact of life for many people. They are cognizant to the core roots of the current issue and are willing to bring these understanding back to their communities, hoping, that in response, that they will be react to the actors and victims of these problem more humanely.

Local Activist D. Lopez from Douglas, Arizona says that,

To say that you're going to put a stop to immigration is in essence saying that you'll be stopping something that is so integral to the human condition that has been functional for all of history. Suddenly,

because the president sees people as a threat, they want to interrupt that natural cycle. Yes, it's harder now for people to cross the border but it's worth it to them because whatever they're leaving is intolerable. That's not to say that it's not a challenge to understand what's happening, but borders are simply a human concept. There are natural borders like mountains and rivers which divide biozones, biological borders like our skin against the outside world, lines that divide states and counties, fences and land and walls and on and on. The question is, though, how do we define those borders? There needs to be a proper education of the American public, to teach them how this is all tangled up and how it works. We need to see the details, not just the larger picture that's being painted for us. (Interview no. 7, May 15th, 2019)

Members of different local aid groups have shared that,

There is no easy solution to the problem of illegal immigration, nothing short-term. As long as people who are poor can find work in a country that's rich, they'll come. The reality is that most will try crossing the border again. They'll do whatever it takes. If they try immediately, with blisters and dehydration, they'll be more at risk. We're here to orient the migrants to their surroundings. And we're here to do search and rescue in the desert zones. There's only so much you can do by giving out water and blankets, that's like giving out cold syrup for cancer, but we're doing what we can. (Interview no. 12, May 17th, 2019)

Evangelical church believers are biblically mandated to engage in benevolence and hospitality in an effort to exercise their faith. One way to do this is by actively engaging in advocating and delivering services with those who are considered "others." Many of the participants believe that the work must also be done in policy. The policies and procedures in action along the border date back to the early 1900's and some are so antiquated that they have no empirical efficiency within today's climate (Mouse, Gutierrez, Lopez, Adams, 2019). According to them, those policies that are newer in nature breed xenophobia and place a boundary between the American people and anyone who is different. These policies need to be re-evaluated and readjusted and implemented in such a manner that dignifies and honors individuals, and in doing so a system can be created and put in place from the evangelical church to alleviate the suffering of migrants seeking safety.

I don't believe in retaliation against people, but I do believe that someone needs to be held responsible for the inhumanity that these people are experiencing. I don't know how it's going to be fixed, but I do know that it's going to come from changing the way we see things. Its going to come from people looking into their eyes and hearing their heartache. Its going to come from people continuing to help people. (A. Dixon, Interview no. 11, May 17th, 2019)

Conclusion

Towards a Theory of New Religious Social Movements: The Case of Evangelical Churches in the Borderlands

There has been a failure from scholars in sociology of religion and social movements and the modern convergence of the two. Both parties have historically sought to address the different problems within the two types of movements and create different paradigms through which to view them, tending to “isolate the subcultural universe” and “seal off from the ideas and approaches of the other (Robbins, 1998a). The study of sociology of religion and social movements came about during the larger sociological effort to understand the processes and problems by which change occurs in a rapidly secularizing world, and the view of religious movements was seen as an elemental part of society as a whole and social movements as a threat to such. Gary Marx (1980) has argued that in viewing social movements with other forms of collective behavior and religious movements, to deny both the similarities and differences dramatically restricts our comprehension of both. What we need is not an understanding of the differences between social action and religious movements, but rather a conceptualization that allows for both similarities and differences.

Theoretically, borrowing from literature on hospitality and benevolence, evangelical churches have a biblical mandate to show compassion to strangers and those who are needing help (Lorenze, 2005 & Ardent, 1963; Matthew 25). Throughout history different social and religious movements came out of this mandate to express hospitality in both the secular and religious spheres. In an effort to remain true to religious doctrine, religious movements have often sought to separate themselves from secular acculturation. James, a New Testament disciple of Jesus, wrote in James 4:4, “You adulterous people, don’t you know that friendship with the world means enmity against God? Therefore, anyone who chooses to be a friend of the world becomes an enemy of God.” Whereas John wrote in 1 John 2:15, “Do not love this world nor the things it offers you, for when you love the world, you do not have the love of the Father in you.”

Distinguishing between religious movements and social ones, Blumer (1951) demonstrated that the former was an “expressive movement whose members were unable to release their tension in the direction of actual change” and the latter sought to “effect a political revolution as well as change the ideology” (p. 216). “Whether such a sentiment apply to an invisible God, to a wooden or stone idol, to a hero or to a political conception... it’s essence always remains religious” (Le Bon, 1960:72-73). Both were originally fixed in the attempt to understand the rapidly changing policies of the time, however they were eventually separated into two separate fields of study, with the study of social movements seeking to address the psychological reaction of mass societal strain upon individual members and the study of religious sociology seeking to address the

functionality of said religion in a secularized society. According to Stark (1964),

Religion is seen as the pillar of the status quo, and religious movements are treated as withdrawals from, rather than encounters with, social change. Religion, it is claimed, bids the deprived to accept their lot while radicalism urges them to question it. (p. 703)

Touraine characterizes religious movements as “nostalgic attempts to rediscover the core of a lost civilization;” that is, they are cultural movements whose political commitment “is often closer to waiting for the Day of Judgement than to strategy and negotiation” (1971, pp. 97-99). Turner and Killian (1972) discuss religious groups mainly as “participant-orientated movements” whose sole goals are the satisfactions and rewards of those who are participating, which will come to those individuals involved in the collective action. These movements evolve from an inward position satisfying the desires of their members to feel alleviated in their mandate to “love thy neighbor” to an outward expression of this exact mandate, engaging practically in their expression of such morality and belief. Johnson (1980) states that “a religious movement is a social movement whose ideology stresses the supernatural element in its system of meaning” (p. 330). Whereas Lang and Lang (1961) continue to explain that,

Many movements at some point in their careers pass through a phase in which their orientation is predominantly inward and moral, while at a later stage of development they stress the concrete objectives of institutional reform or the usurpation of power. (p. 499)

While both political action and religious experience are different responses to the same situational strains within a society, there is little evidence to show that choosing one over the other necessarily is more beneficial. Gerlach and Hine have shown that expressive religion and radical social action are not always incompatible, for example many new Pentecostal converts combine “the radical personal change involved in the Pentecostal experience with a radical approach to social action on non-religious issues.” (1970, p. 19) Thus, we can see that religious movements can be revolutionary in a political sense as they can transform the basic instructions of a society with their own ideological vision.

Krjesi (1988) has argued that contemporary social action is not centrally concerned with expressing claims to fundamental political and human rights or with the social distribution of economic benefits; rather, they are focused on the crucial contention of what is called cultural rights: the right to one’s own lifestyle, the right to be different, and the protection of the individual against new kinds of risks. New Social Movements are different from past social action in that their preferred form of action is distrustful of politics, they favor small-scale, decentralized organizations, are they are antihierarchical and advocate direct democracy (Klandermans and Tarrow, 1988). Robertson (1985) has identified the emergence of a world theology can be describes as that of a

“global human condition,” stating that contemporary modes of global discourse are partly “theological-secular” (p. 23).

In the past, both social and religious movements have sought to achieve their efforts in bringing about change by focusing solely on local, regional, and national boundaries. However, with the appearance of a new global social condition, these ideologies have expanded beyond boundaries and nations. This globalization can be defined as the process “by which the world becomes a single place both with reference to interdependence and the growth of consciousness” (Robertson, 1985). As Hargrove observed (1988), human religion is an ideal location for people to “transcend the maze ways they have known, to glimpse new visions of what may be, and to lead people into them.” (p. 46-47) This readiness though is also present in ideologies not often considered religious, but which could create new forms to “incur new ways of acting, thinking, and interpreting the world.”

What both movements have in common is that they consider spirituality and contemporary social movements as being part of the same sociocultural strain. In this understanding, religious movements are seen by it's members as a mode to achieve both spiritual and political power, whereas New Social Movement members “share the understanding that they have the power to influence their futures through collective action (Robertson, 1989). Hegedus (1989) describes this concept of empowerment as,

The capacity of people to intervene directly in problems they are concerned with and to control the choices of their futures; that is to decide their collective and individual destiny or simply, the choices concerning different aspects of their own lives. (p. 32)

We can see that both social action, or New Social Movements, and religious movements are able to, and should be, seen through the same theoretical paradigm. Both of these types of movements are the products of the steady erosion between public and private domains (Hannigan, 1991), and both entail the concept of empowerment to suggest that collective action leads to the achievement of desired goals and power, and thus this along is an incentive for individuals to join and participate. Turner and Killian (1988) have stressed, “every social movement is ultimately a moral crusade, (p. 237)” and it is in this that social movements and religion are linked together. As Durkheim recognized (Beckford, 1989; Swastos, 1989), religion and morality are, in fact, different sides of the same coin.

As shown, both seek to address the needs of others through personal involvement, self awareness, and mass activity, as well as stressing that we have the ability to influence the future through collective action (McGuire and Beckford, 1983) and individual empowerment, or the capacity of people to intervene directly in problems (Hegedus, 1989). The theory of New Religious Social Movement believes that everyone is inherently deserving of support and aid, whether

religious or secular, to face the obstacles within their way while being empowered by their own autonomy and dignity in order to live a successful and full life. As we continue to analyze the role of religion within social movements, we must stop seeing the two as independent entities to be examined and begin to integrate the theories of benevolence, hospitality, and empowerment in light of current social issues in an effort to aid those who are in need and express hospitality in all possible ways.

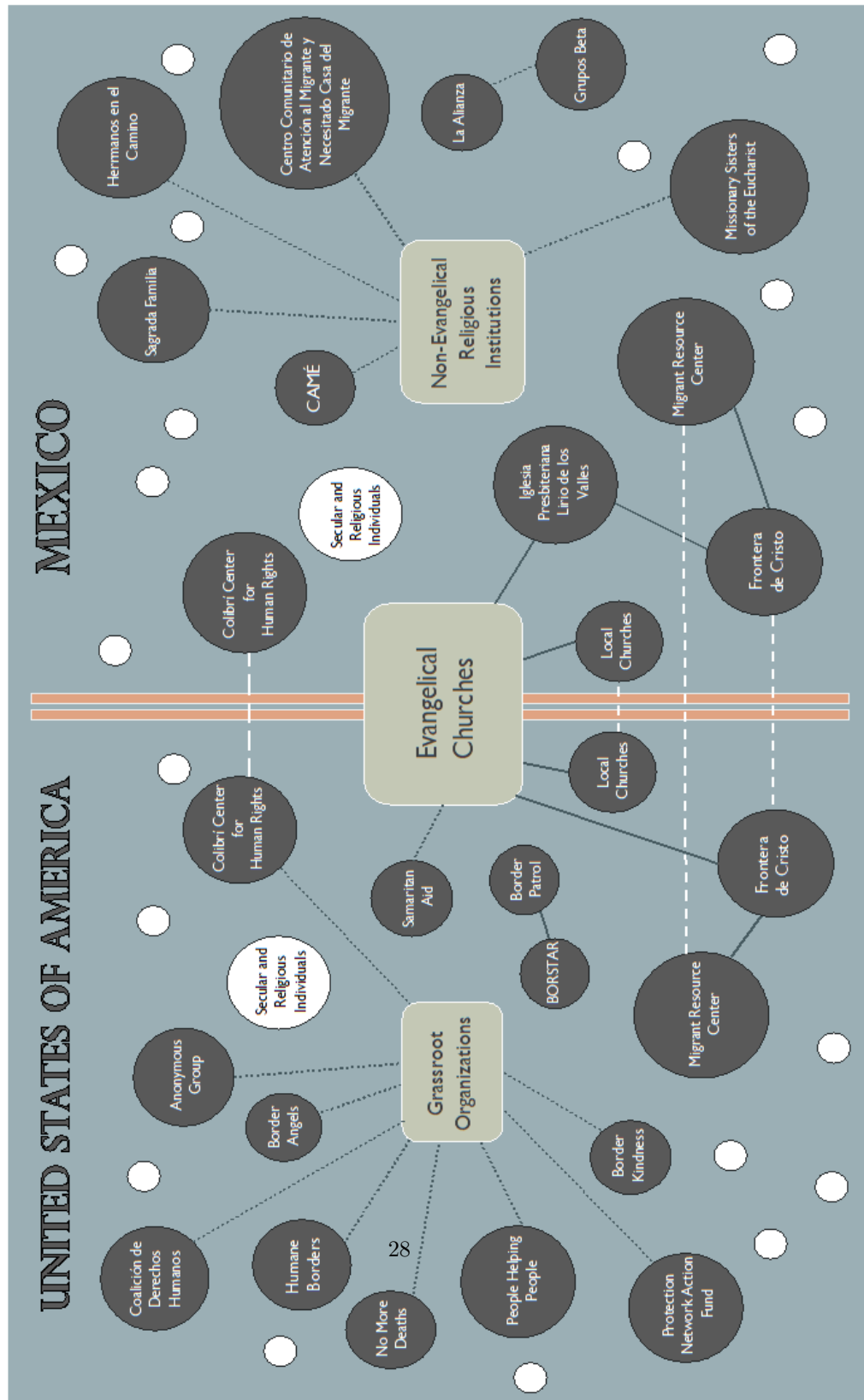
Figure 1 demonstrates the relationships of Evangelical actors on the Southern Arizona/Mexico border in demonstrating benevolence. There are three distinct groups to notice: first, evangelical churches that move binationally along both sides of the border; second, grassroot organizations whose efforts are focused predominately within the United States; and third, non-evangelical religious institutions who are working solely on the Mexican side of the border.

As previously detailed, social and religious movements are the product of the erosion between public and private domains, the use of collective action to achieve the desired goals of such movements, and a moral crusade to address the needs of others through various means. Instead of these being two separate causes one can easily see the commonality shared and view them together as a New Religious Social Movement. The case of evangelicals in the borderlands shows the empowerment of individuals through autonomy while finding support through self awareness of the issues, aligning with mass activity with other non evangelical and non religious groups, volunteerism, and other collective action to aid migrants seeking refuge while navigating the difficult process of fostering national identity and politics.

The social boundary between the private and public spheres within immigration to the United States has diminished significantly, as this “crisis” has become both personal and societal to many at the borders. Evangelicals at the borderlands are finding themselves more at the midst of the issue and seeking out ways to alleviate such suffering since they are far more exposed to the misfortunes of the migrants. These individuals are mobilized to collective social action based on morality and beliefs to make change for the refugee and asylum seekers without forming a more institutionalized and centralized resistance to the policy.

There are evangelical churches both in the American and Mexican communities along the border that provide distribution of goods as well as joining community rallies that centers with religious emphasis to honor the plight of the migrants. Although they are relatively limited to show an overt support to the support of the migrants since their membership also would include border patrols and agents working for the government.

Immigration and New Religious Social Movements



On the American side of the border, we can see that certain grassroots organizations like No More Deaths, People Helping People, and Coalición de Derechos Humanos are working together in an effort to achieve their desired goals of responding to the “crisis” at hand. They are doing this through empowering individuals (both migrants and citizens) to remain true to their humanitarian beliefs in dignity and respect for all life, as well as educating the public to the broader issue. On the Mexican side of the border, coalitions of religious institutions are doing work through personal involvement and providing housing and food to those waiting at the border. Sagrada Familia, La Alianza, Missionary Sisters of the Eucharist, and the Migrant Resource Center are all doing their part in aiding migrants along the border. Individuals in each of these agencies oftentimes know each other and have some form of relationships that allows for coordination to be more likely possible should the need arise.

As we look at the entirety of the migration issue along the southern Arizona border we can conclude that there is indeed a need to be addressed. There is a problem in the way that current immigration policies deal with those who are migrating into America and those who are seeking asylum, and because of such individuals are found wanting and in desperate aid. On both sides of the border there are organizations, institutions, and churches who work individually and collaboratively within their communities, as well as reaching across international lines, to display benevolence, hospitality, and the humanitarian belief that all people are deserving of dignity, decency, and support in time of need to achieve a successful life. This is indeed, by definition, a new religious social movement.

References

- Acosta, Yesenia D., and G. Patricia de la Cruz. (2011). *The foreign born from Latin America and the Caribbean: 2010 American community survey briefs*. Washington DC: U.S. Bureau of the Census.
- Almond, K. (2018) This is what the US-Mexico border looks like. Retrieved from: <https://www.cnn.com/interactive/2018/12/politics/border-wall-cnn-photos/>
- Anderson, S. (2018, June 25). There is no crisis at the border - And DHS stats prove it. Retrieved at: <https://www.forbes.com/sites/stuartanderson/2018/06/25/there-is-no-crisis-at-the-border-and-dhs-stats-prove-it/#60a3ea29112a>
- Angelucci, Manuela. (2012). "U.S. border enforcement and the net flow of Mexican illegal migration." *Economic Development and Cultural Change* 60:311-57.
- Arendt, Hannah (1963): *On Revolution*. New York: Viking.
- Baker, P. (2019, February 15). Trump declares a national emergency, and provokes a constitutional clash. Retrieved from: <https://www.nytimes.com/2019/02/15/us/politics/national-emergency-trump.html>
- Barnes, R. (2019, July 26). Supreme Court says Trump can proceed with plan to spend military funds for border wall construction. Retrieved from: https://www.washingtonpost.com/politics/courts_law/supreme-court-says-trump-can-proceed-with-plan-to-spend-military-funds-for-border-wall-construction/2019/07/26/f2a63d48-aa55-11e9-a3a6-ab670962db05_story.html
- Beckford, J. (1983). "The restoration of 'power' to the sociology of religion." *Sociological Analysis* 44:11-32 - 1989. *Religion and Advanced Industrial Society*. London: Unwin Hyman
- Berger, P. (1967). *The Sacred Canopy: Elements of a Sociological Theory of Religion*. Garden City, N.Y. Random House, Inc.
- Blumer, H. (1951). "Social movements," pp. 199-220 in A. M. Lee (ed.), *New Outlines of the Principles of Sociology*. New York: Barnes and Noble
- Chomsky, A. (2014). *Undocumented: how immigration became illegal*. Boston :Beacon Press.
- Cohn, D. & Passel, J. (2017, April 25). As Mexican share declined, U.S. unauthorized immigrant population fell in 2015 below recession level. Retrieved

from: <https://www.pewresearch.org/fact-tank/2017/04/25/as-mexican-share-declined-u-s-unauthorized-immigrant-population-fell-in-2015-below-recession-level/>

- Cohn, D., Krogstad, J., & Passel, J. (2018, November 28). 5 facts about illegal immigration in the U.S. Retrieved from: <https://www.pewresearch.org/fact-tank/2018/11/28/5-facts-about-illegal-immigration-in-the-u-s/> Consiliul Pontifical pentru Dreptate si Pace, Compendiu de doctrina sociala a Bisericii, (Iasi: Editura Sapientia, 2007).
- Copp, T. (2018, October 29) President Trump orders 5,200 active duty troops to US-Mexico border. Retrieved from: <https://www.militarytimes.com/news/your-military/2018/10/29/trump-orders-5200-active-duty-troops-to-us-mexico-border/>
- Creswell, J.W. (1998). Qualitative inquiry and research design choosing among five traditions. Thousand Oaks, CA: Sage Publications.
- Creswell, J.W. (2002). Educational research: planning, conducting, and evaluating quantitative and qualitative research. Upper Saddle River, NJ: Pearson Education Inc.
- Daley, B. (2019, February 11). How to manufacture a crisis: deconstructing Donald Trump's immigration rhetoric. Retrieved from: <http://theconversation.com/how-to-manufacture-a-crisis-deconstructing-donald-trumps-immigration-rhetoric-111049>
- Davila, Alberto, Jose A. Pagan, and Gokce Soydemir. (2002). "The short-term and long-term deterrence effects of INS border and interior enforcement on undocumented Immigration." *Journal of Economic Behavior and Organization* 49 2: 459–72.
- Derlega, V. J., Grzelak, J. (Eds.). (2013). Cooperation and helping behavior: Theories and research. Academic Press.
- Felicov, C.J. (1998). Latino families in therapy A guide to multicultural practice. New York, NY: The Guilford Press.
- Ferris, E. G., Kirişci, K. (2016). The consequences of chaos: Syria's humanitarian crisis and the failure to protect. Washington, D.C.: Brookings Institution Press.
- Fry, W. (2018, December 6). More than 100 caravan migrants have found jobs in Tijuana, hundreds more cleared to work. Retrieved from: <https://www.sandiegouniontribune.com/news/migrant-caravan/sd-me-caravan-jobs-20181216-story.html>

- Gerald Handel, *Social Welfare in Western Society*, (Rutgers, USA: Transaction Publishers, 2009).
- Gerlach, L. and V. Hine. (1970). *People, power, change: Movement of social transformation*. Indianapolis: Bobbs-Merill.
- Gonzalez-Barberrá, A. & Krogstad, J. (2019, June 28). What we know about illegal immigration from Mexico. Retrieved from: <https://www.pewresearch.org/fact-tank/2018/12/03/what-we-know-about-illegal-immigration-from-mexico/>
- Gonzalez, D. & Carranza, R. (2019, November 25). US border agents fire tear gas as some migrants protesting slow asylum process try to breach fence. Retrieved from: <https://www.usatoday.com/story/news/2018/11/25/immigrant-caravan-us-agents-fire-tear-gas-slow-migrants/2110267002/>
- Gonzalez, D. & Carranza, R. (2019, February 9). What happened to the migrant caravan that arrived in Tijuana? Retrieved from: <https://www.azcentral.com/story/news/politics/immigration/2019/02/09/immigration-migrant-caravan-tijuana-mexico-us-border-central-america/2747809002/>
- Goodenough, P. (2019, January 8). Anticipating new US-Bound ‘caravan,’ Mexican Minister says Mexico’s southern border will be secured to ensure ‘legal and orderly’ entry. Retrieved from: <https://www.cnsnews.com/news/article/patrick-goodenough/mexican-minister-talks-about-securing-her-own-countrys-southern>
- Grämlich, J. Noe-Bustamante, L. (April 10, 2019). Whats happening at the US-Mexico border in 6 charts. Retrieved from: <https://www.pewresearch.org/fact-tank/2019/04/10/whats-happening-at-the-u-s-mexico-border-in-6-charts>
- Handagneu-Sotelo, P. (1992). Overcoming patriarchal constraints: The construction of gender relations among Mexican immigrant women and men. *Gender and Society*, 6, 393-415.
- Hannigan, J. (1990a). “Apples and oranges or varieties of the same fruit? The new religious movements and the new social movements compared.” *Review of Religious Research* 31:246-58
- Hanson, Gordon H., and Antonio Spilimbergo. 1999. “Illegal immigration, border enforcement, and relative wages: Evidence from apprehensions at the U.S.-Mexico border.” *American Economic Review* 89 5: 1337–57.
- Hanson, Gordon H., Raymond Robertson, and Antonio Spilimbergo. 2002. “Does border enforcement protect U.S. workers from illegal immigration?” *Review of Economics and Statistics* 84 1: 73-92.

- Hanson, Gordon H., and Craig McIntosh. 2009. "The demography of Mexican migration to the United States." *American Economic Review* 99 2: 22–27.. 2010. "The Great Mexican Emigration." *Review of Economics and Statistics* 92:798–810.
- Hargrove, B. (1989). "Social movements and social change in self-creative society: new civil initiatives in the international arena." *International Sociology* 4:17-36.
- Hatch, J.A. (2002). *Doing qualitative research in educational settings*. Albany, NY: SUNY Press.
- Hoefler, Michael, Nancy Rytina, and Bryan Baker. 2013. *Estimates of the unauthorized immigrant population residing in the United States: January 2012*. Washington, D.C.: U.S. Office of Immigration Statistics.
- Isacson, A., Meyer, M., Davis, A. (n.d.) *Border security and migration: a report from Arizona*. Retrieved from: https://www.wola.org/wp-content/uploads/2013/12/131204_arizona_sm.pdf
- Johnson, B. (1980). "A fresh look at theories of secularization," pp. 314-31 in H. M. Blalock, Jr. (ed.), *Sociological Theory and Research: A Critical Appraisal*. New York: Free Press.
- Klandermans, B. and S. Tarrow. (1988). "Mobilization into social movements: synthesizing European and American approaches," pp. 1-38 in B. Klandermans, H. Kriesi, and S. Tarrow (eds.), *From Structure to Action: Comparing Social Movement Research Across Cultures*. Greenwich, CT: JAI Press.
- Kreisi, H. (1988). "The interdependence of structure and action: some reflections on the state of the art," pp. 349-68 in Klandermans et al., q.v.
- Lank, K. and G. Lang. (1961). *Collective Dynamics*. New York: Crowell.
- Le Bon, G. (1960) [1985]. *The Crowd: A Study of the Popular Mind*. New York: Viking Press.
- Lin, N., Cook, K., Burt, R. (2001). *Social capital theory and research*. New Brunswick, New Jersey. Transaction Publishers.
- Lind, D. (2018, November 28). *The US has made migrants at the border wait months to apply for asylum. Now the dam is breaking*. Retrieved from: <https://www.vox.com/2018/11/28/18089048/border-asylum-trump-metering-legally-ports>

- Lorenz, G. V. (2005). Leading from the margins: Recovering the Christian tradition of hospitality in church leadership, 136
- Malkin, E. (2018, November 18). Migrant caravan is just yards away from border, but long wait lies ahead. Retrieved from: <https://www.nytimes.com/2018/11/18/world/americas/mexico-tijuana-migrants-caravan.html>
- Marx, G. (1980). Conceptual problems in the field of collective behavior," pp. 258-74 in Blalock, q.v.
- Massey, Douglas S., and Fernando Riosmena. 2010. "Undocumented migration from Latin America in an era of rising U.S. enforcement." *Annals of the American Academy of Political and Social Science* 630:137–61.
- Massey, Douglas S., Jorge Durand, and Karen A. Pren. 2014. "Explaining undocumented migration." *International Migration Review* 48:1028–61.
- Massey, Douglas S., Jorge Durand, and Karen A. Pren. 2016. "Why border enforcement backfired." *American Journal of Sociology*.
- Massey, Douglas S., and Karen A. Pren. 2012. "Origins of the new Latino underclass." *Race and Social Problems* 4 1: 5–17.
- Massey, Douglas S., and Karen A. Pren. 2012. "Unintended consequences of US immigration policy: Explaining the post-1965 surge from Latin America." *Population and Development Review* 38:1– 29.
- Massey, D. Singer, A. (1998). The Social process of undocumented border crossing among Mexican migrants. *The International Migration Review*. Vol. 32, No. 3, pp. 561-592
- McGuire, M. (1982). *Pentacostal Catholics: Power, Charisma, and Order in a Religious Movement*. Philadelphia: Temple Univeristy Press.
- Migrant caravan: What is it and why does it matter? (2018, November 26). Retrieved from: <https://www.bbc.com/news/world-latin-america-45951782>
- Niebuhr, Reinhold 1956: *An Interpretation of Christian ethics*. New York: Meridan. Nygren, Anders 1938: *agape* and Eros. Philadelphia: Westminster Press.
- Patterson, E. Bushnell, J. (2018). Refugee empowerment and faith communities: A qualitativge study. *Social Work and Christianity*, 45(2) 35-54
- Pendergast, M. (December 6, 2017). New report: southern Arizona border arrests lowest since 1983. Retrieved from: <https://tucson.com/news/local/new->

report-southern-arizona-border-arrests-lowest-since/article_888f00a2-7246-5cf0-8620-778c538282b2.html

Ramos, J. (2018, November 29). The migrant caravan isn't causing the border crisis. Trump is. Retrieved from: <http://time.com/5466781/migrant-caravan-trump-border-crisis/>

Riessman, C.K. 1993. Narrative analysis. Qualitative Research Methods Series, No. 30. Newbury Park, CA: Sage.

Robbins, T. (1988a). "Thee transformative impact of the study of new religion on the sociology of religion." *Journal for the Scientific Study of Religion* 27:12-31

Robbins, T. (1988b). *Cults, Converts and Charisma: The Sociology of New Religious Movements*. London, Sage.

Robertson, R. (1978). *Meaning and Change: Exploration in the Cultural Sociology of Modern Societies*. New York: New York University Press.

Robertson, R. (1985). "The sacred and the world system," pp. 347-58 in Hammond, q.v.

Rowen, B. (n.d.) A detailed look at immigration legislation from the Colonial Period to the present. Retrieved from: <https://www.infoplease.com/us/immigration-legislation>

Rubio-Goldsmith, R., McCormick, M., Martinez, D., Duarte, I. (October 1, 2006) The 'funnel effect' recovered bodies of unauthorized migrants processed by the Pima County Office of the medical examiner, 1990-2005. Retrieved from: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3040107

Sandu, A. Caras, A. (2013). *Journal for the Study of Religions and Ideologies*. 12(36) 72-99

Santiago-Rivera, A.L., Arredondo, P., Gallardo-Cooper, M. (2002). *Counseling Latinos and la familia*. Thousand Oaks, CA: Sage Publications.

Semple, K. (2018, October 18). What is the migrant caravan and why does Trump care? Retrieved from: <https://www.nytimes.com/2018/10/18/world/americas/trump-migrant-caravan.html>

Singer, A., & Massey, D. (1998). The Social Process of Undocumented Border Crossing among Mexican Migrants. *The International Migration Review*,

- 32(3), 561-592. doi:10.2307/2547764
- Sluzki M.D., C., (1979). Migration and family conflict. *Family Process*, 18(4).
- Snow, Nancy 1991: Compassion. *American Philosophical Quarterly*, 28, pp. 195- 205.
- Solis, G. O'Toole, M. (2018, December 24). Migrant caravans stall on border with no leaders and little hope. Retrieved from: <https://www.latimes.com/politics/la-na-pol-migrant-caravan-20181224-story.html>
- Stake, R.E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications
- Stake, R.E. (2006) *Multiple case study analysis*. The Guilford Press, New York
- Stark, R. (1964). "Class, radicalism and religious involvement in Great Britain." *American Sociological Review* 29:698-706
- Suarez-Orozco, C., Suarez-Orozco, M.M. (2001). *Children of immigration*. Cambridge, MA: Harvard University Press
- Swastos, W. H. Jr. (ed.) (1989). *Religious politics in global and comparative perspective*. New York: Greenwood Press.
- Sznaider, N. (1998). The sociology of compassion: A study in the sociology of morals. *Cultural Values*, 2(1). PP 117-139
- The Holy Bible. (2001) *English Standard Version*. Wheaton, Illinois: Good News Publishers
- Touraine, A. (1981). *The Voice and the eye: An analysis of social movements*. Cambridge: Cambridge University Press.
- Touraine, A. (1985). "An introduction to the study of social movements." *Social Research* 52:74-87
- Turneere, R. and Killian, L. (1972). *Collective behavior*, 2nd ed. Englewood Cliffs, NJ: Prentice-Hall.
- U.S. Census Bureau (2005). *The Hispanic population: 2004*. Washington, DC: U.S. Department of Commerce.
- U.S. Customs and Border Protection. (2019, March 5). Retrieved from: <https://www.cbp.gov/newsroom/stats/sw-border-migration>

- Virginia B.O & Victoria Clarke (2006) Using thematic analysis in psychology, *Qualitative Research in Psychology*,3:2, 77-101, DOI: 10.1191/1478088706qp063oa
- Wuthnow, R. (Sep., 1993). Altruism and sociological theory. *Social Service Review*, 67(3) pp. 244-357.
- Yin, R.K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Fall 2019

Relationship Between Vestibular Dysfunction and Fatigue in Persons with Multiple Sclerosis

Alex Gann

Graham Cochrane and Dr. Jennifer Christy, Faculty Mentor

Lee University

Relationship Between Vestibular Dysfunction and Fatigue in Persons with Multiple Sclerosis

Alex Gann¹, Graham Cochrane², and Jennifer Christy³

¹Lee University

²University of Alabama, Birmingham

Abstract

The vestibular system works in part with the somatosensory system and the ocular system to achieve an optimal state of balance. Multiple Sclerosis (MS) is a neurological disorder that causes damage to the Central Nervous System (CNS) which in turn develops scar tissue around the nerve fibers. Fatigue is one of the most significant defining characteristics of MS. The objective of this study is to test the vestibular function within persons with MS and show the relationship between it and their clinical and subjective level of fatigue. This is a case study where each participant completed a subjective Expanded Disability Status Scale (EDSS), Fatigue, and Balance Confidence surveys and underwent clinical testing using the Sensory Organization Test (SOT), Functional Gait Analysis (FGA), and the 6min walk test. The clinical tests were compared both to the normative values and between each participant showing clinical variances caused from different durations of diagnoses. There were non-significant moderate negative and positive correlations, respectively, between the 6-minute Walk distance and perception of fatigue and SOT performance. Physical fatigue seems to be related to both self-report fatigue and balance. Self-reported fatigue does not seem to have a relationship with measured balance. This discrepancy may be due to the inclusion of mental and social fatigue instead of simply physical fatigue in the surveys.

Introduction

The vestibular system is an organ that is attached to the cochlea in the inner ear. It has three loops that represent the three-dimensional axis: x, y, and z. These loops are shown in Figure 2. Inside these loops are hair cells, fluid, and crystals. When the head turns, the crystals move inside this fluid and rub against the hair cells. The hair cells send a signal through Cranial Nerve VIII to let your brain know what position the head is in at all times. When these Crystals are not in the correct place with the position of the head, a state of dizziness occurs.

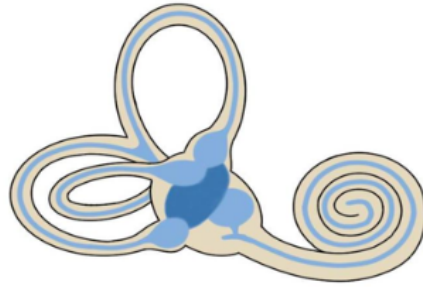


Figure 1: Representation of the vesibular organ attached to the cochlea

The vestibular system works in part with the somatosensory and the ocular systems to achieve the most optimal state of balance the body can have. When one of these systems is hindered, the overall level of balance of the body is diminished. Multiple Sclerosis (MS) is a neurologic condition in which prohibits immune responses to the Central Nervous System (CNS). This causes damage to the nerves in the muscles and inhibits responses to the brain to send help to repair the muscles if they become damaged. Much scarring of the muscle tissue forms which is where the condition gets its name of “Multiple Sclerosis (scarring).”² The damage done to these muscles gives MS its most defining characteristic: fatigue. The goal of this experiment is to show that vestibular dysfunction relates to this fatigue. If this relationship can be established, then perhaps vestibular rehabilitation therapies could help these persons improve physical fatigue in further studies.

Procedures

Five participants underwent both clinical tests and self-reported surveys. Each participant had been diagnosed with MS and was within the age range of 30-60 years old with less than a 6.5 on the Expanded Disability Status Scale (EDSS). The clinical tests include the Sensory Organization Test (SOT), 6 Minute Walk (6MW), and Functional Gait Analysis (FGA). The SOT aims to gauge the participant’s most optimal state of balance (when the eyes are open and with a firm surface under their feet) and compare their state of balance when only their vestibular system is contributing toward their balance (when the ocular and somatosensory systems are taken away). This is measured as a ratio of the vestibular test to the first test (the most optimal state of balance). This ratio is essentially a percentage of how much the participant’s vestibular system is contributing to their overall state of balance. Six different conditions were tested three times each and the average of these conditions is the overall SOT Composite score. These conditions are represented in Figure 2.

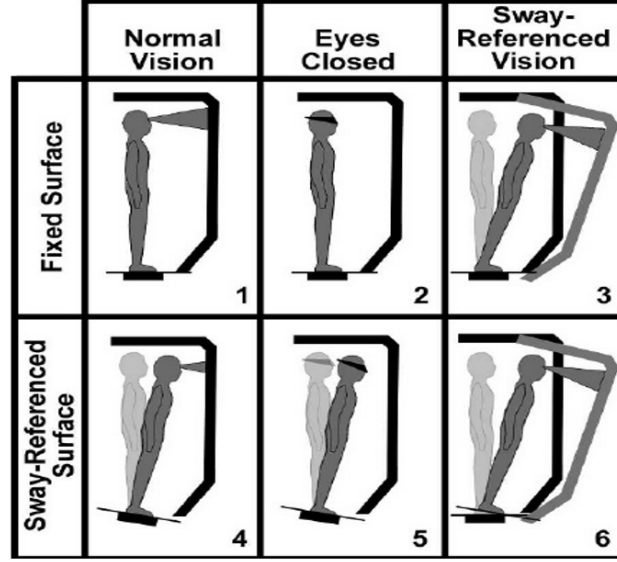


Figure 2: SOT Conditions

The 6MW test is a procedure to measure physical fatigue. The participant is instructed to walk in a designated path while their distance traveled over six-minutes is recorded. During the FGA, participants are instructed to walk along a 20-foot-long path a total of ten times while following a different condition each time. Examples of these conditions include walking while turning the head vertically or horizontally and walking with eye closed. Each trial is scored on a scale from 0-3 with 0 being severely impaired and 3 being normal. The best total score possible is 30/30 (completely normal gait). The two self-reported survey categories were fatigue and balance confidence. The self-reported fatigue score is on a scale of 0-147 where 0 is no reported fatigue and 147 is severe fatigue reported with every question. The fatigue category is a combination of the Modified Fatigue Impact Scale (MFIS) and Fatigue Severity Scale (FSS). These two surveys collectively target different aspects of fatigue such as social, mental, and physical fatigue. The Activities Specific Balance Confidence Scale (ASBCS) is used for the balance confidence survey.

Results and Discussion

ID	AGE	GENDER	RACE	EDSS	D.O.D
1	59	F	BLACK	4	16 YRS
2	50	F	BLACK	3	10 YRS
3	45	M	BLACK	6	8 YRS
4	53	F	BLACK	4	14 YRS
5	39	F	WHITE	2	1 W

Table 1. Table of Participant Demographics

ID	6MW Dis- tance ft.	SOT Comp	SOT Vest Ratio	FGA Comp	Fatigue (0-147)	Balance Confi- dence
1	1064	58	0.00	16.00	63.00	16.9
2	1824	62.6	0.28	26.00	65.00	91.2
3	650.4	17.6	0.00	16.00	108.00	21.9
4	1174.1	NA	NA	12.00	75.00	45
5	1594	72	0.41	27.00	71	100

Table 2. Table of Quantitative Test Results

As seen in Figure 3 and Figure 4, the physical fatigue data obtained by the 6MW test appears to be related to that from the self-reported fatigue (via the surveys) and the SOT Comp. This supports the original theory that balance is related to physically measured fatigue. Self-reported fatigue seems to have no relationship with measured balance as seen in Figure 5. This is most likely due to the questions in the surveys that involve social and emotional responses.

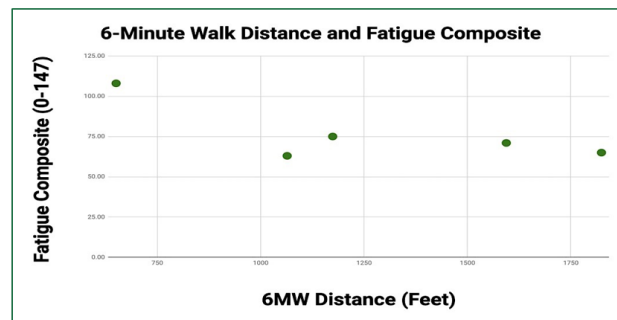


Figure 3: Graph displaying correlation between Physical (6MW) and Self-Reported Fatigue

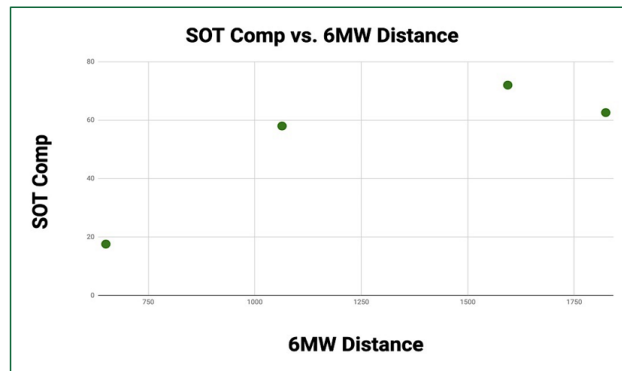


Figure 2: Graph displaying the relationship between SOT Comp and 6MW

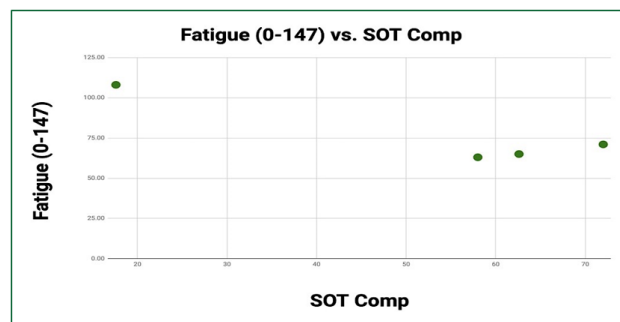


Figure 3: Graph displaying the relationship between Self-reported Fatigue and SOT Comp

Conclusions

Vestibular dysfunction appears to be a prevalent factor in persons with MS. With providing data for the relationship between fatigue and vestibular dysfunction, actions toward improving fatigue within persons with MS can be made through vestibular rehabilitation therapies. This could potentially lead to these persons having a much better quality of daily life both physically and emotionally.

References

- 1.<https://neuroscientificallychallenged.com/blog/know-your-brain-vestibular-system>
- 2.<https://www.nationalmssociety.org/What-is-MS/Definition-of-MS>
- 3.https://www.researchgate.net/figure/Six-conditions-of-the-Sensory-Organization-Test-Used-by-permission-of-NeuroCom_fig1_50362213

Fall 2019

A Literature Review on the Benefits of Music Education: Beyond the Scope of Academics

Ashley Garner

Dr. Susanne Burgess, Faculty Mentor

Lee University

A Literature Review on the Benefits of Music Education: Beyond the Scope of Academics

Ashley Garner¹, Dr. Susanne Burgess, Faculty Mentor², and
Dr. Michael Sturgeon³

¹Lee University

Introduction

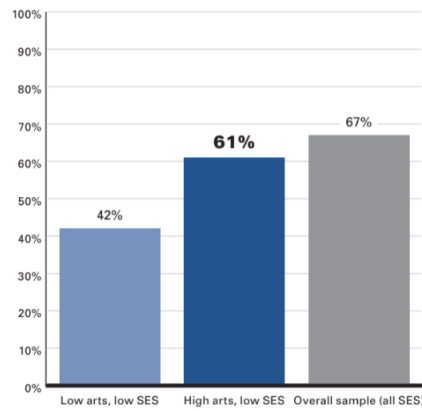
The research that supports the US Congressional statement that music belongs in the curriculum of American students has been primarily based in the research findings suggesting that participation in school band enhances students' academic achievements, attendance, and their social behaviors (Trandahl, 2004). In the past few decades, researchers have come to discover other findings outside the scope of how academics are improved and have considered additional benefits that music classrooms can have on students (Trusty & Oliva, 1994). Benefits unrelated to test scores or reading skill improvements include the development of students' coping mechanisms, self-concepts, self-confidence, and self-efficacy; to mention a few. An intentionally unbiased representation of research in the music field, specifically affective and academic, is provided within this literature review. The primary focus is on the ideology that participation in learning music can be academically and affectively beneficial alike.

The purpose of this literature review was to examine the available literature pertaining to music education and determine to what degree that it is or is not beneficial as a core subject in school programs. The literature addressing music education and academic achievement is plentiful; however, there appears to be a lack of research on the matter of interpersonal skills (i.e. coping, cognitive behavior) and social development of students.

Music Learning Benefits

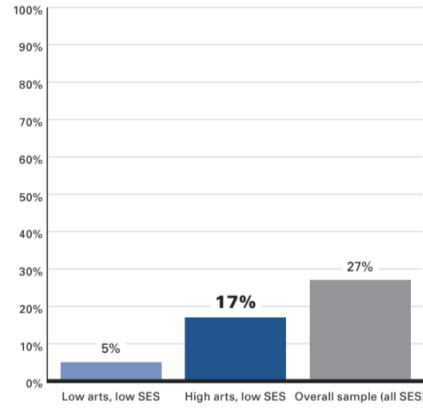
The relationship between music education and academic achievement historically stems back as far as the Ancient Greeks (Seaton, 2017). In recent years, members of the American education system looked to pillars such as Horace Mann, who pushed for the inclusion of music in the core curriculum. One argument for music education is supported by evidence that inferred increased SAT

Percent of 12th Graders Who Planned to Earn a Bachelor's Degree (2004)



Source: ELS:2002. From 2002, when participants were in 10th grade, to 2004, when most participants had completed 12th grade.

Percent of Young Adults Who Had Earned a Bachelor's Degree (2008)



Source: NLSY97. From 1998, when participants were 13–17 years old, to 2008.

Note: Arts course credits from high school transcripts are the sole indicators of arts engagement in the NLSY97 database.

scores (Vaughn & Winner, 2000), and another study with evidence of increased math and reading standardized test scores in comparison to data sets of varying students socioeconomic status', parent participation, and music involvement (Southgate & Roscigno, 2009). Additionally, a study completed by researchers (Catterall, Dumais, Hampden-Thompson, 2012) evaluated similar criteria, SES status, academic data comparison, and student success in college. The aforementioned study's results were statistically significant; concluding that students who had met the defined criteria of music participation had overall better test scores. These students' scores improved in writing and science, higher-level math, and overall GPA's had increased. Lastly, the students were more likely to complete college than students who did not participate in music engagement (Catterall et al., 2012). Catterall et al., (2012) remarked, that "Arts engaged high-school students enrolled in competitive colleges and in four year colleges...at higher rates than did low-engaged art students" (p. 15). Figure 1 displays such results with graphs from two different data sources, adapted from Catterall et al.'s findings.

Additionally, it was found in their research that 94% of the groups that were highly-engaged in the arts went on to obtain higher-education degrees compared to 76% in the low-arts with high SES group. These data support the concept that there is an association between music education and academic growth. However, Catterall et al. (2012) also suggests the impact is more than academics, stating that "...children and teenagers who participated in arts education programs have shown more positive academic and social outcomes in comparison to students who did not participate in those programs." (p. 8) In

the aforementioned published study, Catterall et al. (2012) continue to make note of the psychosocial implications.

Psychosocial Benefits

Although the ideology that music is beneficial in academic, social, and cognitive aspects, studies have been conducted that support the idea that music can have an impact and others suggesting no impact. Miranda and Claes (2009) stated in their study that, “In terms of music listening as problem-focused coping, it is conceivable that music listening can be used deliberately by adolescence in order to reflect upon the resolution of stressful situations they confront” (p. 218).

Contrastingly, a school-based music instruction study was conducted with students aged ten to thirteen years old revealed that there were no significant findings of non-music benefits, specifically psychosocial or cognitive benefits, and showed a decline in motivation for these classes. The study suggests participation in any extra-curricular activities are beneficial; thereby, not limiting the benefits just to the activity of music learning (Rickard, Bambrick, & Gill, 2012). According to Rickard et al. (2012), “In contrast to previous research ... no convincing benefits of school music classes were apparent” (p. 57). One study includes individual music lessons, and background music for classroom study also concluded that music had no reliable results for the Mozart effect. By definition, the Mozart effect is an effect caused by playing background music in the classroom to improve students’ spatial abilities (Dosseville, Laborde, & Scelles, 2012). Music lessons also had no impact on academic benefits but a slight increase in spatiotemporal reasoning. The study led the researchers to conclude that music was beneficial for cultural awareness but not for academic growth (Reimer, 1999). For instance, Zillmann and Gan (2003) contend that, “The fact that a cultural product, music, can serve as the defining, central condition in the formation and organization of interactive groups has led to the idea of ... youth cultures that are rather independent of social-class standing” (pp.171-172).

Research supports that music is beneficial in other aspects than academics. Students involved in music have peer groups that are academically oriented and can lead to other extracurricular participation. Within the studies entailed in this literature review, students demonstrated a “safe space” experience and social bonding through the shared goal of creating music (Parker, 2010). A student interviewed by Parker (2010) describes their perception as, “...a good place to come and say, ‘oh good I have chorus’...it is a good place to let things go” (p. 348). These “social club” member benefits do not stop with student to student interaction but cause teens to have more parental involvement in their school life, and are more likely to talk to their parents, teachers, and peers. These activities lead to students with a better developed self-esteem and ability to focus (Southgate & Roscigno, 2009). Przybylska-Zielińska (2018) supports

research by Nowak (2014), by stating that,

“...her data analysis confirmed a strong impact of music on children’s emotional and social development: the children became more courageous, perceived other people’s needs, were more independent, learned perseverance as well as responsibility for themselves and others” (p.73).

A study dissecting the social-emotional impact of instrumental music on students completed by Devroop (2012) asserts that, “The results from this study provide evidence that self-esteem, optimism, happiness and perseverance increased after participation in the instrumental programme” (p.414).

Conclusion

In conclusion, research on music education has revealed both benefits, or no effects at all. When it comes to the research of music, the sample sizes, SES status, defining the levels of students’ participation in music, and duration of the studies each play a role in determining the outcome of the research. The social interaction a student gains from participating in music groups and/or listening to music has been identified as beneficial for coping, cognitive development, and social development. Participation in music improves students’ chances of going on to higher-education and completing a Bachelor’s degree in comparison to students who have not engaged in music participation. The literature is continuously published on the matter of music enhancing academics with students. However, there is very little literature that can be discovered on the impact students receive in terms of social and/or psychological benefits when learning music. Therefore, there is a noticeable need for future research on such matters. Additionally, student’s testing scores potentially being a direct result of their increased self-confidence and self-efficacy is an area that would benefit from more research.

References

- Arnett, J. J. (1995). Adolescents' uses of media for self-socialization. *Journal of Youth and Adolescence*, 24(5), 519–533. <https://doi.org/10.1007/bf01537054>
- Barbaki, M. (2014). The role of music in the education of young male workers in nineteenth-century Greece: The case of charity institutions. *Music Education Research*, 17(3), 327–339. <https://doi.org/10.1080/14613808.2014.930113>
- Bloom, S. L. (2010). Bridging the black hole of trauma: The evolutionary significance of the arts. *Psychotherapy and Politics International*, 8(3), 198–212. <https://doi.org/10.1002/ppi.223>
- Cabane, C., Hille, A., & Lechner, M. (2015). Mozart or Pelé? The effects of teenagers' participation in music and sports (pp. 1–81). Switzerland: Swiss Institute for Empirical Economic Research.
- Catterall, J. S., Dumais, S. A., & Hampden-Thompson, G. (2012). The arts and achievement in at-risk youth: Findings from four longitudinal studies. Retrieved from <https://www.arts.gov/sites/default/files/Arts-At-Risk-Youth.pdf>
- Catterall, J. S., & Peppler, K. A. (2007). Learning in the visual arts and the worldviews of young children. *Cambridge Journal of Education*, 37(4), 543–560. <https://doi.org/10.1080/03057640701705898>
- Cogo-Moreira, H., de Ávila, C. R. B., Ploubidis, G. B., & Mari, J. de J. (2013). Effectiveness of music education for the improvement of reading skills and academic achievement in young poor readers: A pragmatic cluster-randomized, controlled clinical trial. *PLoS ONE*, 8(3), 1–8. <https://doi.org/10.1371/journal.pone.0059984>
- Črnčec, R., Wilson, S. J., & Prior, M. (2006). The cognitive and academic benefits of music to children: Facts and fiction. *Educational Psychology*, 26(4), 579–594. <https://doi.org/10.1080/01443410500342542>
- Davis, K. (2010). Music and the expressive arts with children experiencing trauma. *Journal of Creativity in Mental Health*, 5(2), 125–133. <https://doi.org/10.1080/15401383.2010.485078>
- Dosseville, F., Laborde, S., & Scelles, N. (2012). Music during lectures: Will students learn better? *Learning and Individual Differences*, 22(2), 258–262. <https://doi.org/10.1016/j.lindif.2011.10.004>

- Eccles, J. S., & Barber, B. L. (1999). Student council, volunteering, basketball, or marching band. *Journal of Adolescent Research*, 14(1), 10–43. <https://doi.org/10.1177/0743558499141003>
- Epstein, J. S. (1994). *Adolescents and their music: If it's too loud, you're too old* (pp. xiii–xvii). New York U.A.: Garland.
- Hille, A., & Schupp, Jj. (2013). How learning a musical instrument affects the development of skills. *SSRN Electronic Journal*, 1–33. <https://doi.org/10.2139/ssrn.2338467>
- Humpal, M. (1991). The effects of an integrated early childhood music program on social interaction among children with handicaps and their typical peers. *Journal of Music Therapy*, 28(3), 161–177. <https://doi.org/10.1093/jmt/28.3.161>
- Johnson, E. (2017). The effect of symmetrical and asymmetrical peer-assisted learning structures on music achievement and learner engagement in seventh-grade band. *Journal of Research in Music Education*, 65(2), 163–178. <https://doi.org/10.1177/0022429417712486>
- Kwak, Y., Mihalec-Adkins, B., Mishra, A. A., & Christ, S. L. (2018). Differential impacts of participation in organized activities and maltreatment types on adolescent academic and socioemotional development. *Child Abuse & Neglect*, 78, 107–117. <https://doi.org/10.1016/j.chiabu.2017.09.026>
- McClung, A. C. (2000). Extramusical skills in the music classroom. *Music Educators Journal*, 86(5), 37–68. <https://doi.org/10.2307/3399635>
- Miranda, D. (2013). The role of music in adolescent development: much more than the same old song. *International Journal of Adolescence and Youth*, 18(1), 5–22. <https://doi.org/10.1080/02673843.2011.650182>
- Miranda, D. (2019). A review of research on music and coping in adolescence. *Psychomusicology: Music, Mind, and Brain*, 29(1), 1–9. <https://doi.org/10.1037/pmu0000229>
- Miranda, D., & Claes, M. (2009). Music listening, coping, peer affiliation and depression in adolescence. *Psychology of Music*, 37(2), 215–233. <https://doi.org/10.1177/0305735608097245>
- Moreno, S., Friesen, D., & Bialystok, E. (2011). Effect of music training on promoting preliterate skills: Preliminary causal evidence. *Music Perception: An Interdisciplinary Journal*, 29(2), 165–172. <https://doi.org/10.1525/mp.2011.29.2.165>

- Nowak, B. (2014). Muzyka a rozwój emocjonalno-społeczny dzieci w wieku przedszkolnym Wstęp (pp. 47–71). Retrieved from https://sbc.org.pl/Content/214928/Nowak_B_muzyka%20a%20rozw%C3%B3j.pdf
- Parker, E. C. (2010). Exploring student experiences of belonging within an urban high school choral ensemble: An action research study. *Music Education Research*, 12(4), 339–352. <https://doi.org/10.1080/14613808.2010.519379>
- Przybylska-Zielinska, A. (2018). Functions of music that support a child’s development. *Konteksty Pedagogiczne*, 1(10), 61–79.
- Rathmann, K., Bilz, L., Hurrelmann, K., Kiess, W., & Richter, M. (2018). Is being a “small fish in a big pond” bad for students psychosomatic health? A multilevel study on the role of class-level school performance. *BMC Public Health*, 18(1), 1–13. <https://doi.org/10.1186/s12889-018-5977-5>
- Reimer, B. (1999). Facing the risks of the “Mozart Effect.” *Music Educators Journal*, 86(4), 37–43. <https://doi.org/10.2307/3399576>
- Rickard, N. S., Bambrick, C. J., & Gill, A. (2012). Absence of widespread psychosocial and cognitive effects of school-based music instruction in 10–13-year-old students. *International Journal of Music Education*, 30(1), 57–78. <https://doi.org/10.1177/0255761411431399>
- Saarikallio, S., & Erkkilä, J. (2007). The role of music in adolescents’ mood regulation. *Psychology of Music*, 35(1), 88–109. <https://doi.org/10.1177/0305735607068889>
- Seaton, D. (2017). Ideas and styles in the Western musical tradition. New York: Oxford University Press.
- Southgate, D. E., & Roscigno, V. J. (2009). The impact of music on childhood and adolescent achievement. *Social Science Quarterly*, 90(1), 4–21. <https://doi.org/10.1111/j.1540-6237.2009.00598.x>
- Trandahl, J. (2004). 08th Congress 2d session concurrent resolution.
- Trusty, J., & Oliva, G. M. (1994). The effect of arts and music education on students’ self-concept. Update: Applications of Research in Music Education, 13(1), 23–28. <https://doi.org/10.1177/875512339401300105>
- Vaughn, K., & Winner, E. (2000). SAT scores of students who study the arts: What we can and cannot conclude about the association. *Journal of Aesthetic Education*, 34(3/4), 77–89. <https://doi.org/10.2307/3333638>

- Young, R., Camic, P. M., Tischler, V. (2015). The impact of community-based arts and health interventions on cognition in people with dementia: A systematic literature review. *Aging Mental Health*, 20(4), 337–351. <https://doi.org/10.1080/13607863.2015.1011080>
- Zillman, D., & Gan, S. I. (1997). Musical taste in adolescence. In D. J. Hargreaves & A. C. North (Eds.), *The social psychology of music* (pp. 161–187). New York, NY: Oxford University Press.

Fall 2019

Characterization of *TMEM67* Gene Variant Association with Joubert Syndrome

Alissa Jackson

Dr. Jonathan Cornett, Faculty Mentor

Lee University

Characterization of *TMEM67* Gene Variant Association with Joubert Syndrome

Alissa Jackson¹ and Dr. Jonathan Cornett, Faculty Mentor²

¹Lee University

Background

Joubert Syndrome is a genetic disorder inherited in an autosomal recessive pattern with an estimated incidence rate of 1 in 80,000 live births. An individual who inherits two variants of a gene associated with the syndrome, one variant copy from each parent, may exhibit symptoms of Joubert Syndrome such as cognitive delays and diseases of vital organ systems. Mutations in more than 30 genes have been associated with the symptoms of Joubert Syndrome. The gene of interest for the present study is the *TMEM67* gene, which encodes a transmembrane protein known as meckelin. Meckelin is involved in developmental signaling pathways and formation of a cellular organelle known as the primary cilium (1). Case studies have shown mutations in the *TMEM67* gene have been associated with symptoms of Joubert Syndrome (4). The present study is informed by a 4-year-old patient affected by Joubert Syndrome. She inherited two mutations – C615R and A572T – which are single amino acid changes within the full-length protein. The C615R mutation has been reported in scientific literature as pathogenic, but the A572T mutation is of unknown significance. The focus of our study is to characterize the novel *TMEM67* gene variant of unknown clinical significance. We will first analyze the protein structure of the normal meckelin protein and make predictions on the protein structure of the mutated variant based upon the location of the mutation. We aim to use plasmid DNA constructs to visualize the protein localization in kidney cells using fluorescent microscopy. Online protein modeling and expression of the protein in kidney cells may elucidate information about the likely effects of certain mutations on the function of the meckelin protein in a mammalian cell model system.

The *TMEM67* gene encodes a transmembrane protein that is 995 amino acids long. The protein spans the extracellular surface of the cell and extends into the cytoplasm. *TMEM67* is important for formation of an organelle in the cell known as the primary cilium (1). The primary cilium functions as a signaling “stalk” where extracellular signals are received by the cell and then transmitted to a pathway inside the cell. The domain of the protein that extends outside the

cell receives signals through the binding of small molecules. When signals are received, the intracellular domain of the protein interacts with other proteins inside of the cell to coordinate a response to the external stimulus (1,3) (Figure 1).

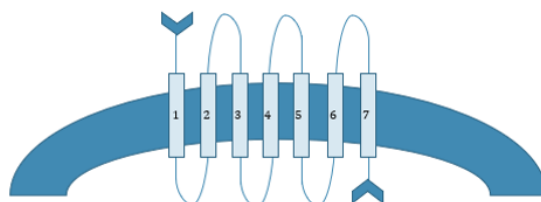


Figure 1: Simplified structure of a transmembrane protein with 7 domains that span the cell membrane. Proteins from this family of G-Protein Coupled Receptors have a domain that is outside the cell and a domain inside the cell.

Protein Structure Analysis

Use of the National Institute of Health's databases as well as a research paper studying TMEM67 involvement in developmental signaling pathways provided information to determine where the novel mutation falls in relationship to the functional domains of the protein (1). Figure 2 shows the location of the two TMEM67 gene variants of interest. The A572T variant is of unknown significance, but the mutation falls within the second transmembrane domain, as shown below. Since the mutation falls within a transmembrane domain, the proper insertion of the TMEM67 protein in the cell membrane may be affected.

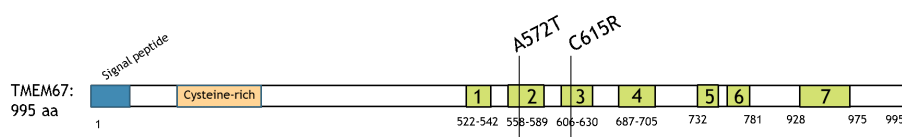


Figure 2: Linearized form of TMEM67 protein highlighting the location of the seven transmembrane domains (light green). The location of two mutations (A572T and C615R) resulting in the presentation of Joubert Syndrome in a known patient are shown.

The variant that is known to be pathogenic is the C615R variant. Figure 3 shows the structure of the cysteine and arginine amino acids. Cysteine has a nonpolar side chain, and arginine has a charged, polar side chain. Arginine is also considerably larger in size. These differences suggest a molecular basis for pathogenicity of the C615R mutation.

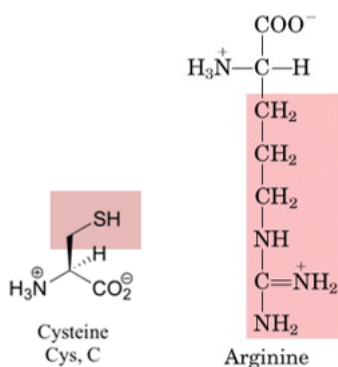


Figure 3: Chemical Structure of the amino acids cysteine and arginine. The variable group that identifies each specific amino acid and their chemical properties is highlighted in dark grey (Figure modified from <https://amit1b.files.wordpress.com/2012/09/20-amino-acids1.png>)

The novel gene variant is p.A572T, which represents a single amino acid change at position 572 of the full-length protein. The change is an alanine amino acid to a threonine amino acid, as shown in Figure 4.

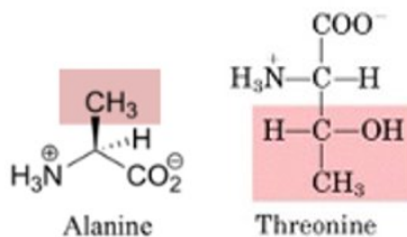


Figure 4: Chemical structure of the amino acids alanine and threonine. The variable group that identifies each specific amino acid and their chemical properties is highlighted in pink. (Figure modified from <https://amit1b.files.wordpress.com/2012/09/20-amino-acids1.png>).

The A572T mutation results in incorporation of a polar amino acid into the protein rather than the nonpolar amino acid. The chemical nature of this change implies that the structure, and therefore the function, of the protein will be affected. The cell membrane is a bilayer composed of nonpolar lipids, so the A572T mutation in the TMEM67 protein may affect proper insertion of the protein in the cell membrane.

Experimental Studies

Primary Cilium Visualization

The TMEM67 protein has been shown to localize to the primary cilium of cells and functions in formation and stability of the cilium structure (Mori 2012). Other proteins important for primary cilium formation localize to this structure and to the plasma membrane. These proteins are also involved in cell communication for developmental signaling pathways. Since the TMEM67 protein localizes to the primary cilium, another protein which localizes to the same structure – Arl13b – was chosen as a primary cilium marker. Non-transfected HEK293T cells were stained with -Arl13b and then stained with a green secondary antibody. As shown in Figure 5, the primary cilium is a small, organellar structure present in the cell membrane.

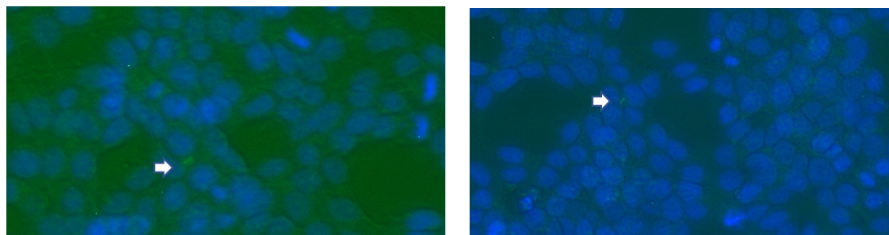


Figure 5: The primary cilium structure was visualized by staining HEK293T cells with an Arl13b antibody as a ciliary marker and a green secondary antibody.

In a cell culture model, we expected the primary cilium to be present in a larger percentage of cells. However, some green fluorescent signal was present, suggesting the presence of the primary cilium structure. One possible explanation for the lower number of observed primary cilia is the high proliferation rate of HEK 293T cells. Since the primary cilium breaks down each time a cell divides, there may be fewer to observe at a given time in rapidly dividing cells.

TMEM67-GFP Constructs

To study the TMEM67 gene experimentally, Dr. Colin Johnson from the University of Leeds in the United Kingdom provided DNA constructs that encode the transmembrane protein. Graduate student Sunayna Best created a recombinant DNA sequence containing the genetic information for a fusion protein of the TMEM67 protein and a Green Fluorescent Protein (GFP). The recombinant DNA contains the information necessary to synthesize the transmembrane protein with a GFP tag. When the recombinant DNA is expressed in kidney cells, the cells can be visualized under green light to determine where the protein localizes. The normal, non-mutated version of the TMEM67 gene

should lead to synthesis of a transmembrane protein that successfully incorporates into the cell membrane. The mutated variants may not insert properly into the cell membrane, which would be observed as fluorescent signal retained in the cytoplasm of the kidney cells. Two attempts of transfecting kidney cells with the constructs did not lead to visualization of a fluorescent signal as expected.

Best and Johnson provided the normal version of the TMEM67 gene as well as three other variants of unknown significance (VUS). They included a variant known to be pathogenic due to retention of the translated protein in the endoplasmic reticulum inside the cell. *E. coli* bacteria were transformed to contain one of each of these five plasmids and then grown overnight. As the *E. coli* grow and divide, they replicate their DNA as well as the exogenous plasmid DNA. The growing bacteria are visible as colonies on a cell media plate. A colony was taken from each plate, grown in a liquid culture of bacteria, and plasmid DNA was prepped from the bacteria. A diagnostic restriction digest was performed on the TMEM67-GFP constructs provided from the Johnson lab. Purified plasmid was incubated with the restriction enzyme, *Nhe*I, to cut the DNA. The restriction digest reactions were analyzed after running on a gel electrophoresis to confirm if the DNA banding patterns were consistent with the size of bands expected with an *Nhe*I digestions. The gel banding patterns were consistent with expected banding patterns resulting from *Nhe*I digestion. The *Nhe*I enzyme cuts at two specific locations within the TMEM67 DNA and at one location within the larger plasmid vector. As shown in Figure 6, digestion with *Nhe*I resulted in three bands of expected size.

The restriction digestion of the DNA prepped from the *E. coli* confirms the desired TMEM67-GFP plasmid constructs were successfully purified.

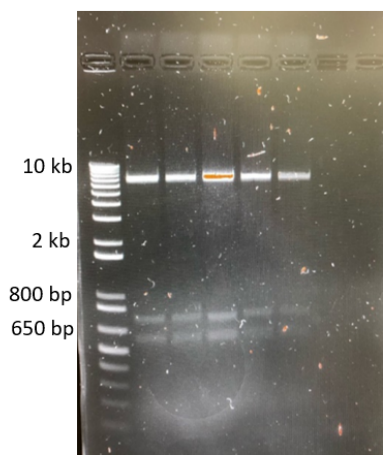


Figure 6: Results of restriction-enzyme digestion of TMEM67-GFP plasmid constructs. All five of the prepped DNA samples were cut with the *Nhe*I re-

striction enzyme, which cuts once within the vector DNA backbone and twice within the TMEM67 gene. Three bands were visible as expected, confirming the DNA purified from the E.coli is the TMEM67-GFP plasmid.

The protein encoded by the TMEM67-GFP plasmid is a recombinant protein consisting of the transmembrane protein of interest fused to a GFP tag. The fusion protein may not fold properly when expressed in the cells, which may explain the lack of fluorescent signal when the DNA constructs were expressed in kidney cells.

HEK293T cells transfected with the TMEM67-GFP constructs were also stained with an -GFP antibody. The GFP antibody was validated by staining HeLa cells transiently transfected with a GFP plasmid, as shown in Figure 7.

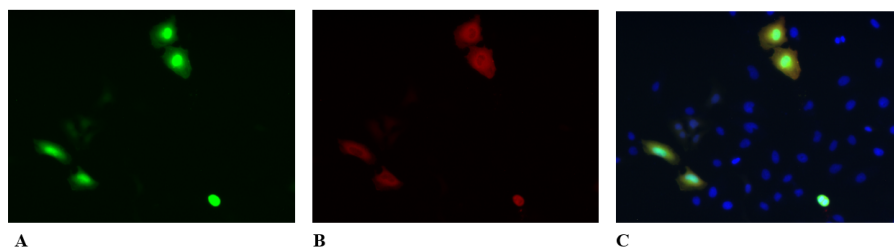


Figure 7: HeLa cells expressing the GFP protein after transient transfection with a GFP plasmid. The cells were fixed and stained with an -GFP primary antibody and then a red secondary antibody. Figure 7A shows the expression of GFP when viewed under green light. Figure 7B shows the binding of the red secondary antibody to the GFP antibody. Figure 7C is a merged image showing the nuclei of non-transfected cells in blue and overlap of red and green signals.

Immunocytochemistry was used to validate the GFP antibody before staining cells transfected with the TMEM67-GFP constructs. As shown in Figure 7C, the GFP signal overlaps with the red secondary antibody signal, suggesting the -GFP antibody is binding to GFP specifically. Validation of this antibody was necessary before staining HEK293T cells transfected with the TMEM67-GFP constructs to ensure the function of the GFP antibody.

Staining of TMEM67-GFP transfected HEK293T cells with -GFP did not result in transfected protein visualization. After further communication with the Johnson lab, it became clear that they also had trouble visualizing expression of TMEM67-GFP in their cell culture studies. Future studies will involve troubleshooting the protein visualization procedure and attempting to generate a new TMEM67-GFP DNA construct using a different plasmid vector backbone.

Gene Cloning

The most recent work aims to clone the TMEM67 gene into an eGFP-N1 plasmid as a second attempt to visualize the protein with a GFP tag. In order to generate enough TMEM67 insert for use in a ligation reaction, the TMEM67 cDNA was amplified using a PCR reaction. Oligonucleotide primers were designed using Agilent primer design software. The annealing temperature for the PCR was varied from 56.3 to 64.9 degrees Celsius. As shown in Figure 8, the four PCR reactions successfully amplified the TMEM67 gene product, seen to be 3 kb.

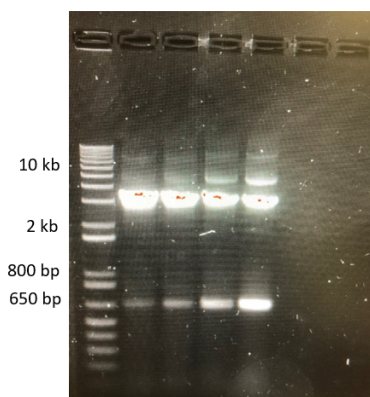


Figure 8: TMEM67 gene amplification using PCR with varying annealing temperatures. The left lane PCR product was amplified using an annealing temperature of 64.9 degrees Celsius, which seemed to be the reaction to most enrich the 3 kb product.

With an amplified TMEM67 gene product, the next aim is to insert the gene into a GFP plasmid vector and proceed with mammalian cell expression studies.

Future Directions

Current work is focused on ligating the amplified TMEM67 gene into a pEGFP-N1 plasmid vector using a restriction digestion with the enzymes AfeI and BamHI to create compatible DNA ends. Once a TMEM67-GFP construct is generated and isolated from transformed bacteria, transfection studies can be repeated in attempt to visualize TMEM67 protein localization.

With a TMEM67-GFP construct that is visible in HEK293 cells, the next step would be to attempt to generate the mutations of interest using a site-

directed mutagenesis kit. The mutated TMEM67 variants would be confirmed with sequencing and then used in comparison studies with the wild-type variant.

Future goals also include assaying HEK293T cells expressing either the normal or mutated TMEM67 variants for the activity of downstream signaling targets. Since TMEM67 is a protein that plays an important role in cellular development, we aim to compare the activity of known downstream target proteins that play a role in organismal development using a cDNA synthesis kit and RT-qPCR to measure the level of target protein expression. Assaying for the activity of proteins involved in cellular development may provide further evidence for how TMEM67 mutations result in protein dysfunction and ultimately disease symptoms.

Material and Methods

Thank you to Sunayna Best and Dr. Colin A. Johnson from the University of Leeds, UK for sharing plasmid DNA reagents.

HEK293T cells were cultured and grown in DMEM media supplemented with 10% FBS and 1% Penicillin/Streptomycin.

α - GFP Antibody: 1:50 dilution in 3% BSA. Cells were fixed using 4% PFA for 1 hour on the benchtop and permeabilized with 0.2% Triton-X for 1 hour on benchtop then incubated with primary antibody overnight at 4 degrees Celsius.

α -Arl13b Antibody: 1:50 dilution in 3% BSA. Cells were grown to 70% confluency and then serum-starved for 19 hours before fixation. Cells were fixed using either 4% PFA or 4%PFA/4% Sucrose for varying times in attempt to preserve the primary cilium structure. Cells were permeabilized with 0.2%, 0.1%, and 0.05% Triton-X at 10, 15, 30, and 60 minutes then incubated with primary antibody overnight at 4 degrees Celsius. The cilium structures presented in the study were seen with 4% PFA and 0.2% Triton for 30 and 60 minutes.

Transfection: HEK293T cells were seeded in a 24-well plate and grown to 80% confluency. Cells were transfected using a 1:25 dilution of Lipofectamine and a 1:25 dilution of P3000 and TMEM67-GFP plasmid DNA.

References

- Abdelhamed, Z.A. et al. The Meckel-Gruber syndrome protein TMEM67 controls basal body positioning and epithelial branching morphogenesis in mice via the non-canonical Wnt pathway. *Disease Models Mechanisms* (2015) Vol. 8: 527-541 doi:10.1242/dmm.019083
- AbAdams, M.; et al. A meckelin-lamin A interaction mediates ciliogenesis. *Human Molecular Genetics*. 2012; Vol. 21 (6): 1272–1286. doi:10.1093/hmg/ddr557
- AbCvicek V; Goddard W.A.III, Abrol, R. Structure-Based Sequence Alignment of the Transmembrane Domains of All Human GPCRs: Phylogenetic, Structural and Functional Implications. *PLoS Computational Biology*. 2016; Vol. 12(3):e1004805. doi:10.1371/journal.pcbi.1004805
- AbDoherty, D. Joubert syndrome: insights into brain development, cilium biology and complex disease. *Seminars in Pediatric Neurology*. 2009 September; Vol. 16(3): 143–154. doi:10.1016/j.spen.2009.06.002
- AbLarkins, C. et al. Arl13b regulates ciliogenesis and the dynamic localization of Shh signaling proteins. *MBoC in Press*; 2011 December; Vol 22. 4694-4703. Doi: 0.1091/mbc.E10-12-0994
- AbMori, RD; et al. The ciliary protein Meckelin/TMEM67 interacts with HDAC6: possible implications for primary cilia stability. *Cilia*, 2012. 1(Suppl 1). P20
- AbOtto, E.A.; et al. Hypomorphic mutations in meckelin (MKS3/ TMEM67) cause nephronophthisis with liver fibrosis (NPHP11). *Journal of Medical Genetics*. 2009; Vol. 46: 663–670. doi:10.1136/jmg.2009.066613
- AbSplering, D; Hodgson, L. Dynamics of the Rho-family small GTPases in actin regulation and motility. *Cell Adhesion and Migration*. 2011; Vol 5(2): 170-180. doi:10.4161/cam.5.2.1440

Fall 2019

An Examination of Presidential Rhetoric Theory

Brandyn Kirby

Dr. Mark Scully, Faculty Mentor

Lee University

An Examination of Presidential Rhetoric Theory

Brandyn Kirby¹,
Dr. Mark Scully, Faculty Mentor²

Lee University

Marked by triumphant highs and devastating lows, Richard Milhous Nixon is a true fixture of the American political landscape. Serving as the 37th president of the United States from 1969 to 1974, Americans know Nixon most for his diplomatic relations with China, the Watergate Scandal resulting in his eventual resignation from office, and his humorously iconic use of the “V-for-Victory” hand gesture. Memory of Nixon’s domestic policies, however, has been darkened by the larger shadows of Nixon’s successes and scandals. One of Nixon’s most significant and innovative domestic policies was his New Federalism plan. This plan was intended to restore levels of autonomy to states following the explosion of federal welfare systems set in place by Roosevelt during the Great Depression era. Introduced less than a year into his first term as president, the New Federalism plan capitalized on a desire of the American people to lay claim to heightened responsibility in their home states, taking advantage of their constitutional rights in a federalist system of governance.

On August 8th of 1969, exactly one year removed from the GOP’s nomination of Nixon for the 1968 election, Nixon describes New Federalism for the first time in this way: “After a third of a century of power flowing from the people and the states to Washington, it is time for a New Federalism in which power, funds, and responsibility will flow from Washington to the states and to the people.”¹ In this speech, Nixon promised increased funding for states and local governments in order that decentralization might occur. Through the next year, Nixon spoke publicly about New Federalism seven times:²

¹“Address to the Nation on Domestic Programs.” Address to the Nation on Domestic Programs. The American Presidency Project. August 08, 1969. <https://www.presidency.ucsb.edu/documents/address-the-nation-domestic-programs>.

²Spreadsheet Mine. Data from the Documents Archive Search of The American Presidency Project. [https://www.presidency.ucsb.edu/advanced-search?field-keywords=+Federalism&field-keywords2=field-keywords3=from\[date\]=to\[date\]=person2=200293items_per_page=25](https://www.presidency.ucsb.edu/advanced-search?field-keywords=+Federalism&field-keywords2=field-keywords3=from[date]=to[date]=person2=200293items_per_page=25).

Aug. 8, '69	Address to the Nation on Domestic Programs
Aug. 8, '69	Remarks at a Surprise Celebration
Aug. 12, '69	Special Address to the Congress on Manpower Training
Sept. 1, '69	Address at the National Governors' Conference
Oct. 28, '69	Remarks at Salem, Virginia
Nov. 5, '69	Remarks at the Governors Elect of NJ and VA
Oct. 28, '69	Remarks at Salem, Virginia

In these speeches and addresses, Nixon outlined four areas of reform that would embody the spirit of the New Federalism: “first, a complete replacement of the present welfare system; second, a comprehensive new job training and placement program; third, a revamping of the Office of Economic Opportunity; and fourth, a start on the sharing of Federal tax revenues with the States.”³ Nixon presented all of these programs as initiatives to filter power out of Washington in hopes of restoring a more balanced federal system.

Ironically, despite Nixon’s focus on decentralization, his presidency is known among political scientists as marking an era of rapid growth in the national administrative state.⁴ According to the Federal Register, the growth rates of the administrative state under Nixon’s presidency are only topped by growth rates during Obama’s tenure.⁵ In addition, Nixon explored and expanded areas of presidential authority that had seldom been braved before. In particular, Nixon uniquely took advantage of his abilities as Commander-in-chief. In 1970 and 1971 for example, Nixon circumvented his Congress to order a military intervention in Cambodia, and solely sustained the Vietnam war despite Congressional revocation of The Tonkin Resolution. These never before seen expressions of presidential power were bold, and when combined with the explosion of Nixon’s administrative state, seem to be at odds with his push for decentralization via the New Federalism plan. In hopes of exploring the connection between Nixon’s plan for decentralization and the expansion of the executive and administration simultaneously, it is worth considering Nixon’s motivations.

Presidential rhetoric is a relatively new field of interest in the realm of American political science scholarship. In 1981, James Ceaser became the first notable author of this field with his article, *The Rise of the Rhetorical Presidency*.⁶

³Address to the Nation on Domestic Programs. — The American Presidency Project. August 08, 1969.

⁴Here, I use Ballotpedia’s definition of the Administrative State: “The term administrative state refers to federal executive branch agencies collectively and routinely wielding powers that exceed their statutory authority and elude accountability, including the exercise of judicial and legislative functions in violation of the United States Constitution’s principles of separation of powers and the rule of law. ”Administrative State”, https://ballotpedia.org/Administrative_state.

⁵Office of the Federal Register, National Archives and Records Administration (NARA) and Ballotpedia’s.”Administrative State”, https://ballotpedia.org/Administrative_state.

⁶Ceaser, James W., Glen E. Thurow, Jeffrey Tulis, and Joseph M. Bessette. ”The Rise of the Rhetorical Presidency.” *Presidential Studies Quarterly* 11, no. 2 (1981): 158-71.

Ceasar begins by making the fundamental observation unique to presidential rhetoric literature: “Popular or mass rhetoric, which presidents once employed only rarely, now serves as one of their principal tools in attempting to govern the nation.”⁷ Ceasar argues that the rise of this popular rhetoric may be evidenced through comparisons between presidents in office before and after the 20th century, providing many examples. Unlike the modern era of the executive in which presidents liberally give addresses and speeches dedicated to all manner of topics, pre-20th century presidents seldom addressed the public, “preferring communications between the branches of government”.⁸ Ceasar refers to this fundamental change of the early 20th century from inter-branch communication to mass-communication as dangerous in light of the Constitution: “[The] framers of our Constitution looked with great suspicion on popular rhetoric. Their fear was that mass oratory...would undermine the rational and enlightened self interest of the citizenry which their system was designed to foster.”⁹ This quote introduces the archetypal sentiment within political science literature that popular rhetoric is a dangerous tool that erodes constitutional patterns of governance. This article introduces the field of presidential mass rhetoric as relevant to the discussion of Nixon in terms of its concern for traditional patterns of presidential communication and fear of manipulative speech.

A constitutional fundamentalist, Ceasar believes that the Constitution instituted certain channels through which public goods might be attained, with particular care for the preservation of federalism. Presidential mass rhetoric, however, circumvents the Constitutional process that is built on the congress and states debating over policies, instead making policy a subject of simulated conversation between the United States citizens and the United States President. Ceasar claims that this bypass of the enunciated channel serves to weaken the executive office broadly as well as undermine the Constitution. This accusation is a heavy one. In addition, Ceasar points out the role that the media has increasingly played in the 20th century to encourage trends of ever-heightening presidential activity in the public sphere of rhetoric. While previously, citizens would look to their state government or state representatives in congress to aid with policy, individuals increasingly view the president as an agent of policy politics. Thus it was in Nixon’s case, as his ideation of New Federalism was directed at the public first, given the status of the executive as figurehead of the nation. Ceasar argues that these trends were galvanized by the president’s ability to directly address the public through television, a medium climbing to prominence in Nixon’s time.¹⁰

Tulis expounded upon Ceasar’s argument from constitutionalism and ad-

<http://www.jstor.org/stable/27547683>.

⁷159.

⁸Ibid.

⁹161.

¹⁰Nixon participated in the first televised presidential debate in United States history with John Kennedy in 1960.

vanced the literature with his *Rhetorical Presidency* by dividing American presidential history into three phases with respect to rhetoric: The old way, the middle way, and the new way.¹¹ The old way (1789–1900) refers to the period of history in which presidential rhetoric was primarily limited to inter-branch communication. Rare communication with the public was limited to the slow medium of written addresses, and frequent attempts at mass rhetoric were frowned upon. The middle way is characterized by Theodore Roosevelt's presidency, Roosevelt being among the first presidents to directly advocate for legislation publically, instead of directly confronting congress. Roosevelt is the poster child for the middle way because, unlike the presidents of the new way, Roosevelt's public appeals ceased once Congress began deliberating the key issue of his attention. Tulis characterizes the New Way with Wilson, who began to consistently employ both policy advocacy and vision casting in his numerous speeches. This strategy has been employed by every president since Wilson, including Nixon. Tulis states that Wilson's presidency gave birth to a second constitution by grafting, "a new role on old institutions".¹²

With increasing mass rhetoric being used, Tulis argues that the respect for the office of the presidency is lost in addition to a weakening of the office that occurs. With presidents of the New Way giving speeches and addresses often, the perceived worth of the president's words decrease. While Ceasar argues that the rhetorical presidency weakened the Constitutional system of governance, Tulis takes a different perspective, focusing on the ways in which mass rhetoric has reduced the public understanding of the president. Tulis' concern is that president's will become increasingly associated with quantity over quality. This is especially important in the modern era of social media, in which twitter has made mass communication instantly accessible. In general then, Ceasar and Tulis present readers with numerous reasons to be wary of mass rhetoric as a strategy that weakens the federal government as a whole. Could it be, though, that Nixon's mass appeals for New Federalism could have strengthened the government? This will emerge as a question of prominence as more literature is explored.

While Ceasar and Tulis wrote of the rhetorical presidency in descriptive ways, Kernell's *Going Public* explores a more analytical central research question: "Why should presidents come to favor a strategy of leadership that appears so incompatible with the principles of pluralist theory?"¹³ The answer, according to Kernell, is that divided government makes bargaining a less appealing and successful strategy, forcing presidents into their public appeals. Kernell highlights the contrast between institutionalized and individualized pluralistic systems. Kernell states that institutionalized pluralism has always been the system of American governance, with various individuals uniting themselves under institutions to advocate for the ends of the institution. For example, he argues

¹¹Tulis, Jeffrey. *The Rhetorical Presidency*. Princeton University Press, 2017.

¹²158.

¹³Kernell, Samuel. *Going Public*. CQ Press, 2006, p. 11.

that presidential candidates used to be more explicitly intertwined with the institutions of their parties, and sees that as a decreasing trend in the modern age. When an individual “goes public”, however, they abandon conventional institutionalized norms of interaction and go rogue, so to speak. These individuals no longer speak primarily on behalf of their party, instead employing mass-rhetoric to speak to the public on behalf of their own ideas and agendas. Kernell might posit that Nixon’s vision of New Federalism would have been a difficult sell for the congress, but an easier sell for the American people; thus it would have been advantageous to appeal to the masses and garner support for a given project first, before entering debates with congress.

Kernell points out that only political outsiders have the ability to go public, because they are not bound by conventions of institutions. Kernell evidences this by looking at presidential elections. Since the 1970’s, Kernell states that parties have begun to rely on primary races to determine their nominee for each election, while they previously selected insider candidates through conventions. Kernell associates these trends of going public inseparably with the vehicle for its actualization, being rhetoric. Kernell defines rhetoric as, “a strategy whereby a president promotes himself and his policies in Washington by appealing to the American public for support.”¹⁴ This often includes what Kernell describes as, “fluff”, meaning that the rhetoric does not have the substance needed for Constitutional bargaining in a way that would come under a fundamentalist view of the Constitution.¹⁵ In the end, Kernell shows that going public is easy, while fighting through the slowness and rigidity of institutions is difficult. Kernell hints, however, at the idea that fighting through the slog of congress yields more successful and healthy policy, because it is the result of more natural and robust bargaining patterns.

In 2003, George Edwards wrote a book called *On Deaf Ears: The Limits of the Bully Pulpit*.¹⁶ This text served as a much needed logistical exploration of presidential mass-rhetoric, and especially fits well with Kernell’s work. Edwards uses the term “bully pulpit” to refer to the strategy of going public, viewing it as a manipulative strategy geared pressing the public towards support of policy that they would not ordinarily support. In a scholarly context dominated by the enthusiasm regarding the effectiveness of mass presidency in theory, *On Deaf Ears*, sought to discover whether or not presidents actually affect change through mass rhetoric. By analyzing countless public opinion polls from each post World War II president, Edwards’ study sought to measure the effectiveness of the president’s ability to move the needle of public opinion by going public. The study examined four factors to qualify and control results: the messenger, message, audience, and response. Analysis of these four factors indicated that, contrary to much extant literature, the presidential strategy of the bully pulpit

¹⁴2

¹⁵5

¹⁶C., Edwards III George. *On Deaf Ears The Limits of the Bully Pulpit*. Yale University Press, 2008.

is not effective in shifting public opinion. Rather, Edwards claimed that the president could only intensify pre-existing public opinion:

Chief executives are not directors who lead the public where it otherwise refuses to go, thus reshaping the contours of the political landscape. Instead, presidents are facilitators who reflect, and may intensify, widely held views. In the process, they may endow the views of their supporters with structure and purpose and exploit opportunities in their environments to accomplish their joint goals.

17

In particular, the study indicated that the strength of a president's party support and general popularity are more powerful tools than any legislative skills such as the bully pulpit. Thus in addition to being unhealthy for the government, Edwards' research indicates that rhetorical strategy is also inefficient.

On Deaf Ears has not, however, been fully accepted into the academic community, with several studies challenging its results. One such study is *Who Leads Whom? Presidents, Policy and the Public* by Brandice Canes-Wrone. Published in 2005, Wrone argues that going public is a successful presidential strategy based on foundations of self-interest.¹⁸ Wrone writes that, to begin with, presidents will be publically responsive to the desires of the public in order to encourage and spread public support of the president. This is in the president's self interest because of reelection. This is especially interesting when viewed in consideration of Nixon. From a congressional standpoint, Wrone argues that presidential effectiveness in creating legislation is actually better when said president has gone public. This is due to the fact that, most times, legislation introduced and advocated for by the president is actively supported by the public already. In addition, when a president employs "limited pandering" through mass rhetoric, this places pressure on congress indirectly to act.¹⁹ Wrone confirms these ideas empirically by examining data from presidents from Eisenhower to Clinton

¹⁷74.

¹⁸Canes-Wrone, Brandice. *Who Leads Whom? Presidents, Policy, and the Public*. University of Chicago Press, 2006.

¹⁹106.

Bibliography

- “Address to the Nation on Domestic Programs.” Address to the Nation on Domestic Programs. — The American Presidency Project. August 08, 1969. <https://www.presidency.ucsb.edu/documents/address-the-nation-domestic-programs>.
- “Administrative State.” Ballotpedia. https://ballotpedia.org/Administrative_state.
- “Advanced Search (case Sensitive).” Documents Archive Search—The American Presidency Project. Archive Search—The American Presidency Project. [https://www.presidency.ucsb.edu/advanced-search?field-keywords=+Federalismfield-keywords2=field-keywords3=from\[date\]=to\[date\]=person2=200293items_per_page=25](https://www.presidency.ucsb.edu/advanced-search?field-keywords=+Federalismfield-keywords2=field-keywords3=from[date]=to[date]=person2=200293items_per_page=25).
- C., Edwards III George. *On Deaf Ears The Limits of the Bully Pulpit*. Yale University Press, 2008.
- Canes-Wrone, Brandice. *Who Leads Whom? Presidents, Policy, and the Public*. University of Chicago Press, 2006.
- Ceaser, James W., Glen E. Thurow, Jeffrey Tulis, and Joseph M. Bessette. “The Rise of the Rhetorical Presidency.” *Presidential Studies Quarterly* 11, no. 2 (1981): 158-71.
- “Home- Monday, August 26th.” *Federal Register*. <https://www.federalregister.gov/>.
- Kernell, Samuel. *Going Public*. CQ Press, 2006.
- Tulis, Jeffrey. *The Rhetorical Presidency*. Princeton University Press, 2017.

Fall 2019

Factors Influencing College Retention Rate for First Generation College Students: A Literature Review

Desiree LaPeer

Dr. Ruthie Wienk, Faculty Mentor

Lee University

Factors Influencing College Retention Rate for First Generation College Students: a Literature Review

Desiree LaPeer¹ and Dr. Ruthie Wienk, Faculty Mentor²

¹Lee University

College retention rates for first-generation college students are known to be significantly lower than other college students (Fike & Fike, 2008). A first-generation college student, as used in this literature review, is a student whose parents did not receive a bachelor's degree. Research has been done on college retention rates of students from various backgrounds, yet there are some gaps in the research with respect to retention rates of first-generation students. This literature review attempts to provide a general coverage of research written on college retention rates and specifically view various factors that directly influence college retention rates for first-generation college students. The list of factors will prompt further study on the topic in the future. In an attempt to bridge gaps in current research, the list of factors influencing colleges retention rates will be conducted with students from the Central Appalachian region. First-generation college students from the Central Appalachian region are understudied in relation to what factors are keeping from completing post-secondary education; therefore, there is a need for further research to be conducted on this topic.

Appalachian Students

The Appalachia is defined by Wilson and Gore (2009) as, "...a mountain range running from northeast Mississippi to southwest New York." (p.72) Within this range, the Appalachia touches twelve states. Of this region, the central Appalachia region is currently experiencing severe poverty. The poverty rates are twice that of the national average (Wilson, Gore, 2009). Socio-economic statuses and along with other factors lead the Appalachia to have very low college retention rates. In the Appalachian region, only 12.3% of adults hold a college degree, which is much lower in comparison to the national average of 21%. (Wilson & Gore, 2009). Students in this region have limited

role models with college degrees, less access to college information, and fewer supporters to assist with the transition to college (Wilson & Gore, 2009). Using this information, it is a reasonable assumption that a majority of Appalachia students are first-generation college students.

In the Appalachian region, college attendance is not as much of a primary concern as it may be in other cultures, which would lead to low rates of students holding a college degree. It is known that citizens of the Appalachia region share very strong cultural ties, which often differ than that of the rest of the nation (Wilson & Gore, 2009). Characteristics of citizens from this region include: having a strong sense of family ties and of community (as both a social identity and an organization), maintaining a distance from those outside their region, being attached to their geographic location, holding strong personal and religious values, and lacking the desire to acclimate to change (Wilson & Gore, 2009). The cultural bounds of Appalachians have influenced their college retention, as higher education is not promoted as highly as other values. However, the lack of access and promotion to higher education should not solely be based on cultural bounds. In understanding the cultural differences of Appalachians, universities with a high number of Appalachian students could be supportive through student life activities (Wilson & Gore, 2009). If Appalachian students are known to have a strong sense of community, having more cultural student involvement might increase college retention.

Wilson's study tested the effect college connectedness had on Appalachian students' GPAs (Wilson & Gore, 2009). His research confirmed that when the students felt more connected on campus, they had higher GPAs (Wilson & Gore, 2009). Given that Appalachian students have strong community ties, the students' transition to college can be very difficult to leave their families behind; therefore, the students needed a community within their college peers (Wilson & Gore, 2009). This need for connectedness is unique to Appalachian students, as students who grew up outside of the region had no academic support from community inclusiveness (Wilson & Gore, 2009). Because of the strong need to have community inclusiveness, some Appalachian college students find themselves attending their local community colleges to continue their education; thereby allowing them to stay in their home town, which provides the students with a sense of safety and security (Wright, 2012).

Community College Students

Community college students have similarities with first-generation college students, as many first-generation students find themselves choosing community colleges over universities. In a study conducted by Fike and Fike, (2008) it was concluded that students often choose to enroll in a community college due to "ease of access, low tuition, and the open-door policy." (p.70) Those options make entrance easier for prospective students, especially those with underrepresented backgrounds; however, student success in such programs should

be brought into question. Community colleges, by default, encourage students to have part-time status (Fike & Fike, 2008). The rise in part-time students has to do with several factors: more women are attending college, more students are choosing to combine work and school, and more adults are choosing to attend college (Fike & Fike, 2008). The above factors are just a few of the reasons why rates of part-time students are rising; however, the variance in choices to become part-time aligns with factors that should be considered when enrolling first-generation college students.

For starters, first-generation college students often come from low-income households. Students coming from these households are directly affected by the family's finances. Students from low-income backgrounds are less likely to achieve a bachelor's degree than those from a higher income background (Thayer, 2000). First-generation college students often find themselves needing to work full-time hours to be able to take care of themselves and their families. Students in these situations find it necessary to enroll in college part-time. When a student is part-time, completing course assignments on-time and correctly often becomes a secondary concern. Work becomes a priority over education, especially when the family relies on the student's income. Such findings suggest that financial struggles are a factor in retention rates for first-generation college students, often because they are also from a low SES household.

There is a difference between first-generation college students and low SES (Socioeconomic Status) college students. Often the first-generation student is from a low SES; however, the college student from a low SES does is not always a first-generation student. Some first-generation college students come from households where the parent(s) hold a technical certification. While the student still qualifies as a first-generation college student, he would not qualify as low-income as long as the parent brings home a suitable salary. For example, plumbers, truck drivers, electricians, real estate agents, etc. all have positions that could bring home a middle-class salary without a college degree. However, a student who qualifies as both low-income and first-generation will usually face compounded difficulties because of the challenges of being a low-income and first-generation college student. Students of low income often have to work and handle classes in order to be in college. Regardless of the family income level, first-generation college students will be met with challenges of transitioning to college life. Those challenges appear in various ways, such as a lack of parental knowledge of how to navigate the culture and environment of a university. When a first-generation college student comes from a low-income background, challenges are exasperated due to the lack of financial support (Thayer, 2000; Fike & Fike, 2008).

Developmental COurse for Community College Students

First-generation college students that are also part-time status are often similar to other community college students; for one, they both frequently need

developmental/remedial courses before being prepared for college-level courses. Students choose to enter community colleges because universities are commonly more selective in acceptance for admission, while community colleges typically have more open enrollment policies. Because of this, students that are enrolled in community colleges often need remedial math, reading, and writing courses (Fike & Fike, 2008). These courses are required for such students to develop skills that will increase their likelihood to succeed in college-level courses. However, coursework alone will not guarantee success. The students need persistence and patience in completing remedial courses as well.

Current developmental courses often do not result in students completing their courses and achieving their degrees (Bailey, 2009). Community colleges are now tasked with preparing students for college-level course; however, many students entering these programs significantly lack in one or more subject area that keeps them from successfully completing college-level work (Bailey, 2009). The primary reason for the lack of success in developmental courses is the students' lack of completion (Bailey, 2009).

In a study that tracked progress on student development from eighth grade to college, it was found that 58% of the students tracked, who attended a community college, was required to take at least one remedial course; 44% took between one and three courses, and 14% took three or more courses (Bailey, 2009). This study is not alone in its data, as another study in Bailey's report also found similar numbers. According to a second study, of 256,672 students, 59% were required to take at least one remedial course (Bailey, 2009). It should be noted that there is a limitation with this data. Students who had higher test scores did not have to take remedial courses; however, that does not mean that the student was adequately prepared for college. Areas that would be expected to learn are often inadequate when students that are referred to a remedial course choose to not enroll in them (Bailey, 2009).

After completion of the courses, it was found that over half the students passed their writing and reading courses, yet only thirty percent passed their mathematic remedial courses (Bailey, 2009). While those numbers show optimism, it should also be mentioned that most students must take one to three levels of the developmental courses before the student is considered to be college-level ready (Bailey, 2009).

Importance of Grit for Community College Students

Because of the number of remedial courses students must take, another factor must be considered: grit. Grit is defined by Wolters and Hussain (2014) as "a person's trait-level perseverance and passion for long-term goals." (p.294) Students must have persistence while taking developmental courses (Fike & Fike, 2008). Without persistence to further their education, a student will not succeed. First-generation college students are less likely to have persistence in

community colleges, compared to other students (Fike & Fike, 2008). Therefore, first-generation, who need to take developmental course, are less likely to succeed, which leads to lower retention rates.

According to research completed by Duckworth and Quinn (2009), if a student has grit, he is more likely to pursue his long-term educational goals, even when faced with adversity (Wolters & Hussain, 2014). First-generation college students are faced with more adversity than most college students, which means grit is a necessary factor in order for the student to have college success. Since it is suggested that first-generation college students need grit, it would be relevant for colleges to promote the importance thereof. With that, the college should also provide the student with resources to strengthen their academic persistence. Using this information, another factor influencing low-retention rates for first-generation students is possibly the lack of persistence/grit and its direct influence on the overall educational goals of the student, rather than just its influence in developmental courses.

Mental Health

Eisenberg, Golberstein & Hunt (2009) conducted a research study and produced an article on the correlation between mental health and academic success in college. Mental health is especially relevant for first-generation college students, as many of them already feel a lack of ability to succeed. In the study information was provided pertaining to the feelings of sadness and hopelessness having detrimental affects in a student's academic success (Eisenberg et al., 2009). When a student experiences these feelings, they are less likely to have interest in the future (Eisenberg et al., 2009). This is alarming for first-generation college students experiencing mental illness, as they are already predisposed to uncertainty in their academic futures. A matter to this degree may cause the student to drop out of their university.

First-generation students are more likely to come from low-income households, which according to Eisenburg students from poor backgrounds are more likely to experience depression and anxiety (Eisenberg et al., 2009). Students who experience depression and anxiety are more likely to have a lower GPA, with a higher chance of dropping out (Eisenberg et al., 2009). Using these predictors of mental illness, it is relevant to have the effects of mental illness as a factor influencing college retention rates for first generation college students, especially first-generation, low-income college students. Students with both backgrounds are at a higher risk for developing mental illness while in college due to the financial background (Eisenberg et al., 2009) and the lack of persistence in their academic futures (Eisenberg et al., 2009). Knowing the overwhelming numbers of college students with mental illness, colleges should be well-equipped to handle the number of students needing counseling resources; however, universities have been frequently criticized about the lack of accessibility of resources for students (Mowbray et al., 2006).

In a study on mental health for college students, students identified that campus resources are often unhelpful because the students were expected to recognize their own mental illness and seek services (Mowbray et al., 2006). To counteract this, universities have suggested taking a campus-wide approach to reduce the stigma surrounding counseling (Mowbray et al., 2006). This would be especially useful for first-generation college students needing mental health counseling. A targeted approach would be helpful in assisting these students to identify resources available to them, while also providing information on mental health conditions. This approach will be tested in future research to understand if first-generation students would find this would be helpful. In addition to mental health counseling, first-generation college students would also benefit from proper academic advising. By having proper academic advising, a student may receive the emotional support (e.g. encouragement) needed to succeed. Receiving academic encouragement from a mentor may even be more effective for student.

Academic Advising

Student success and college completion are directly related to proper academic advising from a college advisor (Young-Jones, Burt, Dixon & Hawthorne, 2013). In their article, a study by Habley (2004) was cited in reference to the importance of interaction between student and a concerned individual on campus being a key contribution to college retention (Young-Jones et al., 2013). For first-generation college students, this academic relationship is of great importance. These students often have a lack of support to complete college from immediate family members, so they need more support and encouragement than students with parents who went to college. With proper academic advising, a student should be able to plan out their degree completion, while being supported to make good career and educational decisions. While it is still up to the student to complete assignments and courses, having extra support has proven to increase college retention.

Although there have been studies completed to research the positive influence of academic advising, many postsecondary institutions do not capitalize on these benefits, which would increase their student retention rates. Students may complete course work adequately, yet still be at risk for dropping out (Young-Jones et al., 2013). The reason for this is that students still need to be able to develop academic confidence, which does not always come after completing coursework. The research completed on this topic suggests that students should meet with their advisor at least once per semester to maximize benefits, but more meetings should be encouraged (Young-Jones et al., 2013). This research also highlighted the specific need of first-generation college students to have academic advising (Young-Jones et al., 2013). Colleges and universities have seen an increase in enrollment from first-generation college students; however, they still have the lowest retention rates (Young-Jones et al., 2013). First-generation students often come to college with a lack of belief that they can succeed, which

is why an advisement relationship is needed. The advisor is able to give the student resources and encouragement needed to be able to succeed (Young-Jones et al., 2013).

This study focused on the importance of academic advising in relation to college success, which ultimately leads to retention. Intentional academic advising promotes student success. When a student feels he can succeed, he is more likely to do so. First-generation college students need more encouragement during advising because many of them have little faith in their abilities to succeed. The information provided on the influence of academic advising suggests that academic advising is a factor in first-generation college students, as well as using academic advising as part of a working solution for low retention rates.

Government Program for Underrepresented Students

Along with academic advising, underrepresented students also benefit from developmental programs. For example, the federal TRIO programs were established to assist low-income and underrepresented students (Swail, 2000). Over the course of its development, the TRIO programs now serve students from middle school to graduate level (Swail, 2000). It is estimated that the TRIO programs serve 750,00 students each year (Swail, 2000). Another program that has been implemented for student services is the GEARUP program (Gaining Early Awareness and Readiness for Undergraduate Programs) (Swail, 2000). TRIO and GEARUP programs are similar, yet they have one major difference. The difference is that the TRIO programs focus on serving individuals, while the GEARUP program focuses on serving a cohort of students (Swail, 2000). Although these programs have promising intention, there is a major lack of student access to these programs. For example, the TRIO program only serves approximately ten percent of eligible students due to funding (Swail, 2000).

Family Dynamics

It is no secret that first-generation students often come from different socioeconomic backgrounds than other college students. The home life of first-generation college students directly affects their success in college. London (1989) produced a study compiled of qualitative data. His study focused entirely on the lives of a handful of first-generation college students. Rather than presenting a paper with just factual statistics, his paper allows the students to do all the talking.

Before going into the students' stories, London discusses a multigenerational effect that is unique to first-generation college students. Within every family, each member will fulfill a family role assignment of some sort; however, this is much stronger in first-generation households. Role assignments in families are often based upon the histories of the parents. When the child grows into an adolescent and begins to individualize, the family begins to experience drama (London, 1989). This was a reoccurrence London noticed with each student he

interviewed. He concluded the reason for this drama within the family stems from the family feeling separation (London, 1989). When the student decides to pursue higher education, the family feels the elemental concerns that are found in separation (London, 1989).

To understand why these families would feel separated, it is important to understand just how important family roles are in these households. When a child is given a significant role in the family, it often stems from parental need (London, 1989). Furthermore, family assignments are passed down from generation to generation. Therefore, parents who bind their own children are likely to have been bound by their own parents (London, 1989). If a parent does not experience liberation, it leads them to bind their own children. When it comes time for a teenager from this type of situation to make a decision about secondary education, he is challenged with making a decision that affects his whole family, especially when the family relies on the teenager financially.

Understanding the complexity surrounding the college decisions of first-generation college students, it is important to consider family dynamics to be a factor influencing retention rates. In further study, it is relevant to ask first-generation college students if they have experienced similar family dynamics and if they were able to break free from the multigenerational cycle. In addition, I would like to further study whether or not universities are aware of these unique challenges and how they are being addressed.

Conclusion

To summarize, first-generation college students have specific needs that are not being properly addressed. The needs presented in the literature are especially amplified in the Central Appalachian region, as the rates of first-generation students are nearly twice the national average (Wilson & Gore, 2009). There has been research conducted on the topic of college retention rates. However, there are still gaps for factoring influences first-generation Central Appalachian students face. Possible, non-exhaustive, list of factors influencing college retention rates for first-generation Central Appalachian college students include: financial struggle, grit, mental illness, academic advising, and family dynamics. The cited research leads to the following question: How are financial struggle, grit, mental illness, academic advising, and family dynamics experienced by first-generation college students in the Central Appalachian region in relation to academic success?

References

- Bailey, T. (2009). Challenge and opportunity: Rethinking the role and function of developmental education in community college. *New Directions for Community Colleges*, 2009(145), pp.11-30.
- Duckworth, Angela Lee and Quinn, Patrick D. (2009). Development and Validation of the Short Grit Scale (Grit-S). *Journal of Personality Assessment*, 91(2) pp. 166-174.
- Eisenberg, D., Golberstein, E. and Hunt, J. (2009). Mental Health and Academic Success in College. *The B.E. Journal of Economic Analysis & Policy*, 9(1) pp. 1-35.
- Fike, D. and Fike, R. (2008). Predictors of First-Year Student Retention in the Community College. *Community College Review*, 36(2), pp.68-88.
- Habley, W.R. (Ed.) (2004). The Status of Academic Findings from the ACT sixth national survey. National Academic Advising Association, 2004.
- London, H. (1989). Breaking Away: A Study of First-Generation College Students and Their Families. *American Journal of Education* 97(2), pp.144-170.
- Mowbray, C., Megivern, D., Mandiberg, J., Strauss, S., Stein, C., Collins, K., Kopels, S., Curlin, C. and Lett, R. (2006). Campus mental health services: Recommendations for change. *American Journal of Orthopsychiatry*, 76(2), pp.226-237.
- Swail, W. (2000). Preparing America's Disadvantaged for College: Programs That Increase College Opportunity. *New Directions for Institutional Research*, 2000(107), pp.85-101.
- Thayer, P. (2000). Retention of Students from First Generation and Low-Income Backgrounds. *The Journal of the Council for Opportunity in Education*, [online] pp.1-9. Available at: <https://eric.ed.gov/?id=ED446633> [Accessed 19 Jul. 2019].
- Wilson, S. and Gore, J. (2009). Appalachian Origin Moderates the Association between School Connectedness and GPA. *Journal of Appalachian Studies*, 15(1/2), pp.70-86.
- Wolters, C. and Hussain, M. (2014). Investigating grit and its relations with college students' self-regulated learning and academic achievement. *Metacognition and Learning*, 10(3), pp.293-311.

- Wright, C. J. (2012). Becoming to remain: Community college students and post- secondary pursuits in central Appalachia. *Journal of Research in Rural Education*, 27(6) pp. 1-11. Retrieved from <http://jrre.psu.edu/articles/27-6.pdf>
- Young-Jones, A., Burt, T., Dixon, S. and Hawthorne, M. (2013). Academic advising: does it really impact student success?. *Quality Assurance in Education*, 21(1), pp.7-19.

Fall 2019

Book Banning in Schools: Are Students Suffering in Silence?

Sierra Ledford

Dr. Kevin Brown, Faculty Mentor

Lee University

Book Banning in Schools: Are Students Suffering In Silence?

Sierra Ledford¹ and Dr. Kevin Brown, Faculty Mentor²

¹Lee University

Abstract

Throughout history, authorities of various kinds have sought to ban books, taking them out of the hands of the people who need them. The act of banning books now most frequently occurs in school's libraries and classrooms leaving students in the dark on important and current topics. While schools ban book for legitimate reasons, such as profanity, violence, or sexuality, students should be able to learn about the relevant topics within banned books. These books range from classics like *Huckleberry Finn* by Mark Twain to contemporary young adult works like *The Fault in Our Stars* by John Green. Banned books such as these contain important lessons for students, who should have access to these books within schools as they develop their critical thinking and empathy. With the help of a teacher, students can understand the difficult themes within banned books and gain access to stories they may not have otherwise.

For centuries, books have been inspiring people around the world to change lives, help those around them, and think critically. However, access to certain books along with their important themes and characters have not always been easy due to restrictions from government authorities as well as individuals. Within schools around the United States, concerned parents, school administration, and even librarians and teachers challenge and ban books from schools taking them off library shelves and out of the classroom. According to the Office of Intellectual Freedom, around 483 books were either challenged or banned across the U.S. in 2018 alone ("Top 10 Most Challenged Books Lists"). These challenges and bans traditionally take place within school libraries, classrooms and local libraries. If school or local administration choose to ban a book within these locations, they can place the book on a restricted shelf where parents must sign a consent form for their child to read them or remove from the library's shelves indefinitely. Nevertheless, banning books takes away the very soul of

education that is promoting critical thinking as well as creating a safe space for students to relate and learn to respect others. Taking controversial books out of school's libraries does not benefit students, rather it harms them because the school has taken away the students' opportunity for them to learn about touchy subjects such as violence, identity, and sexuality within the safe environment of school. As a result of banning books, students lose the ability to have a teacher answer questions about these books, to think critically about the themes and ideas in them, to see themselves represented in literature and to learn how to feel empathy for those who are different from them. Losing access to these books is especially detrimental to those students who experience poverty and do not have the opportunity to get these banned books outside of the school library. Ultimately, schools banning any book from their library harms students intellectual and emotional well-being as they lose the freedom to learn more about the world around them, which is a necessary aspect of education.

As some are confused on the subject and various terms pertaining to banned books, there is a need to establish the distinct difference between challenging a book and banning a book. When a parent or concerned individual finds a book inappropriate or controversial, they normally bring their concerns forward to a school librarian or member of administration. In the book *Censorship in America: A Reference Handbook*, author Mary Hull cites that school libraries, school classroom, and public libraries have substantially more challenges than colleges, prison, or any other public institution (109). Once doing so, generally the individual will ask what they can do to get the book moved to a more restricted section or even taken off of the shelves entirely. The first action taken toward removing a book off the shelves or even restricted is known as a challenge towards that book. By definition, a challenge is when the parent or patron files a formal complaint against the book, however a challenge does not always take the book off the library's shelves. Hull also states in her book that, between the years of 1990 to 1998, nearly 3000 challenges came from parents while 815 came from library patrons and only 491 came from a school or library administrator (108). The American Library Association says that although there has been a slight decrease in parent challenges, these numbers still remain consistent ("Infographics"). When a challenge actually goes through, and the school or library removes the challenged book from shelves entirely, they have banned or "censored" that book. However, it is still censorship if a school or library places the book on a restricted shelf or in a different section after a challenge as it still makes it more difficult for a student or other patron to gain access to the book itself. Within technical terms, the act is known as "soft censorship" as the school or library has not fully removed book but, again, it still makes it difficult for people to access or even find the book within the library.

Various types of book censorship, such as soft-censorship and self-censorship, also occur within the classroom at the hands of both parents and teachers. School admin can ban books from being taught within the classroom if a parent's challenge leads the school board to judge it inappropriate for a classroom

setting. Unfortunately, many teachers attempt to avoid censorship by choosing not to use controversial or previously banned books within the classroom. By denying students access to these books out of fear of backlash, these teachers are doing what is known as “self-censorship.” In the article “The Ripple Effect of Censorship: Silencing in the Classroom,” Elizabeth Noll interviews English teachers across America, asking them about their experiences with censorship in the classroom. One teacher named John tells Noll about teachers in his school that self-censor frequently for the fear of administration firing them:

Most of the English teachers at my school self-censor materials but have still had complaints, e.g., that witchcraft was being taught with *The Crucible*. I know teachers who have recently stopped teaching *The Chocolate War* and *Black Boy* for fear of their jobs. . . In fact, most of our teachers are now reluctant to adopt any new texts at all, and this especially hits multicultural literature hard (Noll, 62).

Rather than allowing students to read the books and facing the idea of possibly getting censored, they are inadvertently censoring the books themselves from their students. Teachers limiting the books their students can read due to fear of getting in trouble hurts both the teachers and the students as the teachers become limited in ideas that they can cover with those controversial books, as John pointed out with *The Crucible* and students miss out on the opportunity to learn. Like John points out to Noll, self-censoring especially hurts minority students as it causes them to be less likely to see themselves represented in literature, a point that will be explored later. Librarians are guilty of self-censorship when picking out books for their own collections as well, choosing rather to take out the guessing of whether a parent or other patron will challenge their book choices and simply do it themselves. Regardless of who is censoring books, whether that be a parent or an unintentional teacher, both forms of censorship can be detrimental to students’ learning and development.

These various forms of book censorship occur normally due to certain themes or language within these books, making parents and administration consider them unfit for students especially when read without context. The first most popular reason for someone to challenge a book is because it is sexually explicit, meaning the book includes either a scene that is sexually explicit, even if the scene is only on one page of a novel, or a character uses sexually explicit language (“Infographics”). Some examples of books that administrators have banned for this reason include *Catcher in the Rye* by J.D. Salinger and *Beloved* by Toni Morrison (“Banned and Challenged Classics”). The second most popular reason for book challenges is the use of offensive language which includes profanity of some kind, and the third reason for a book challenge is that it is “unsuited for age group” (“Infographics”). An example of a challenged book with profanity includes *In Cold Blood* by Truman Capote and *The Great Gatsby* by F. Scott Fitzgerald (“Banned and Challenged Classics”). The fourth reason is violence within the novel shortly followed by the fifth reason of homosexuality which can purely mean that the novel includes a character on the LGBTQ+

spectrum (“Infographics”). A book that people challenge due to violence within the novel is *The Lord of the Flies* by William Golding, and book that people have challenged because of homosexuality within the novel is *The Color Purple* by Alice Walker (“Banned and Challenged Classics”). While these are only a few of the reasons administrators of schools or libraries ban books, with the examples included of books challenged for these reasons it is obvious how limiting that leaves a school library or classroom if a ban takes all six of these classics off the shelves. Although most parents and administrators challenge books that include these themes to protect students, they ultimately end up harming students as they no longer get to learn about the good aspects of these books that makes them classics.

Censorship, whether that be through book challenges or bans or even soft or self-censorship, negatively affects students within schools. Students reading books within the classroom also allows them to have a civil discourse of ideas in a safe environment where a teacher is present to answer questions and provide support. In the article “The Role of Censorship in School,” Ken Petress considers how students will become even more interested in a book’s controversial ideas once their school bans it leading them to learn about sensitive subjects on their own:

It is argued here that censorship is only valid, ethical, and required when it appears to be the only way to avoid or to mitigate provable physical, social, emotional, or intellectual harmful outcomes for students, teachers, or the school itself. When schools censor ideas, students become increasingly interested in such subjects and typically discover some clandestine means to gain access to these taboo ideas. When such means are thus acquired by students, there is lost any chance that teachers, librarians, or parents can become personally aware of and involved in contextualizing, prioritizing, or explaining what the student has secured. When teachers, librarians, and parents are involved with what is encountered by children, there is less chance that harm from such material will visit that individual. (Petress 1-2)

According to Petress, teachers being involved when students read books containing sensitive topics such as violence, substance abuse or even LGBTQ+ issues allows them to give students context as well as answers that students would not get if they sought out the information on their own. By teachers’ actively creating a conversation within their classroom about these controversial ideas, they are also allowing students to learn about them within a supportive environment. One example of a book that teachers should be able to answer students’ questions about is *The Outsiders* by S.E. Hinton, a book that schools have banned due to its portrayal of violence as well as profanity. As the book is set within the 1960s, it would be important for teachers to explain the language, such as “socs” and “greasers,” used within the novel in order for students to

understand it properly. Despite the violence within the novel, students should be able to read the novel with the assistance of a teacher who can answer questions about why the fights were occurring and discuss the themes in the context of the 1960s. Another book that people have challenged that would be beneficial for students to read with a teacher is *The Catcher in the Rye* by J.D. Salinger, as the book can be easily confusing to students due to its unconventional writing style and timeline. While students may not necessarily be harmed by these sensitive ideas if they read about them on their own as Petress suggests, teachers should be available and willing to give surrounding context and possible reasons for an author to include controversial language or topics within their works such as *The Adventures of Huckleberry Finn*. Using banned books such as these is one great way for teachers to prioritize educating students on current and historical issues as well as giving students context of the novels for the time the author wrote it and helping students understand difficult themes.

When administration bans a book from within a classroom or even within a school's library, those admin are stripping students of their opportunity to learn about current issues and relevant topics from history. As Petress suggests, these topics also require teachers to be present to answer questions and provide context for the language and time period of the novels. *The Adventures of Huckleberry Finn* by Mark Twain is a book that schools around the United States have frequently banned, so much so that author Nat Hentoff even wrote a fictional book titled *The Day They Came to Arrest the Book* about a school principal attempting to ban *Huck Finn* in 1982. Those who have not banned Twain's book teach it in classrooms as it depicts realistic historical events such as slavery as well as the constant idea of growing up. Those who have banned the book generally have a problem with the racial slurs within the book, specifically the use of a certain derogatory term used towards enslaved people. Still, this book contains pertinent ideas and historical values that give students key insight into past societal norms as well as how today's society has grown as a whole. Another popular book that deals with historical racism is *How to Kill a Mockingbird* by Harper Lee which schools have also banned due to racial slurs used within the text. In an article titled "Banning Books Deprives Students of Complex Discussion," journalist Will Tomer wrote about school administration in Biloxi, Mississippi attempting to remove *How to Kill a Mockingbird* from their classroom curriculum. Tomer quotes a member of the school board and considers how removing this book negates the importance of its historical context:

'There is some language in the book that makes people uncomfortable, and we can teach the same lesson with other books,' Kenny Holloway, the vice president of the Biloxi School Board, [said]... But uncomfortable confrontations with difficult topics is a large part of what education ought to be about. Shying away from the unsettling language of *To Kill a Mockingbird* takes the learning process in the wrong direction, steering it away from hard truths in favor of false

comforts.

Like Hentoff argues within his book that *Huck Finn* is important for students to read as it shows the effects of racism in history, Tomer argues the same for *To Kill a Mockingbird*. Banning books like these takes away the opportunity for students to learn the complexities of how accepted racism was in history despite how wrong it is. Holloway says the school board is removing the book from the curriculum because the language makes parents and students uncomfortable, however doing so would send a message to students not to bring up uncomfortable subjects such as racism or even immigration within the classroom despite that the purpose of school is to educate students. With the help of a teacher in the classroom, they would be able to answer questions about why these racial slurs were used in the novels and give an explanation as to why those words are not acceptable to use. While people like Holloway may question the necessity of reading books like *Huck Finn* and *Mockingbird*, these books point out issues of racism and bigotry within America's history, some of which continue to affect people today. Students who read these books specifically will learn that while the nature of racism has shifted in today's society, it still exists and is hurting people as well as learning the importance of empathizing and being kind to others who are not like you.

Students reading books that schools have challenged or banned because of their content also presents students with an opportunity for critical thinking. Along with the idea that teachers should be willing and able to answer questions and cultivate conversations on these issues, schools should allow students themselves to think critically about the world around them with the help of books. Michael Brenyo states within his article "Book Banning in the U.S. Education System" that students reading books with controversial or unconventional ideals allows them to think critically about the world around them: "Freedom of literature is the lifeblood of a democratic state. Exposing the nation's children to different and sometimes uncomfortable viewpoints is what stimulates them towards success. It encourages critical thinking instead of blind obedience. Without it, society would be in a far worse place." (549). As Brenyo asserts within his statement, America is founded on certain freedoms, and while reading books with controversial topics may be uncomfortable, it presents students with an opportunity to think critically about their own worldviews as well as those of others around them. While parents may be concerned about students questioning certain topics and ideas, this process of questioning is essential to learning as well as growing up. In *The New York Times* article "Race, Banned Books, Fake News and Sleep: Our Favorite Student Comments of the Week," The Learning Network invited students to share their thoughts on banned books, and North Carolina student Lola Byers stated,

As we've seen in this world's history, the downfall of society begins with the burning of books. Books are a symbol of human individuality, and reading books not only gives us knowledge about the world around us but about ourselves. Taking away people's access

to books takes away their ability to learn and grow. Yes, the content of these books may be controversial, violent, disturbing, but how can you learn to fight against the horrors of this world without knowing what they are? How are we to stand up for ourselves and what we believe in if books are kept behind bars?

As Byers asserts, reading books allows students to learn not only about themselves but also about those around them, and taking this special opportunity away from students essentially stunts their mental growth. Byers also comments that banning books takes away students' ability to learn how to combat these taboo topics, and that shielding students from these topics puts them in even more danger than just simply allowing them to read it in the first place. Students reading these topics and thinking critically about them also allows them to back up and support their own beliefs as well. One example of a banned book that promotes critical thinking is *The Lord of the Flies* by William Golding as it contains symbolism and themes that students must intensely consider in order to fully understand. The complex novel details a group of boys fall from civilization after a plane crash traps them on a secluded island, and schools popularly ban it for violence. In an article from the *English Journal* titled "Engaging Banned and Challenged Books Through Role-Play Simulation," one student participating in the activity by reading *The Lord of the Flies* says, "You don't need the characters to be good people [for the book] to teach good lessons [sic]" (qtd. in Scarbrough, 81). By reading this book, students can consider how people can forget many years of understanding and knowledge about civilization in favor of gaining power over others as well as developing paranoia and mistrust. Without this book and other books like it, it would be difficult for students to consider these topics critically in the classroom, and it also presents the opportunity to read about someone around their age dealing with those topics which students would not be able to otherwise.

Students who are not able to read books like *The Lord of the Flies* may struggle to develop critical thinking skills which will follow them outside of public school. Member of the National Council of Teachers of English David Moshman writes in the article "Academic Freedom: Students Rights and Faculty Responsibilities" about how students who cannot to read books with controversial topics struggle with critical thinking:

Moreover, restricting access to ideas and sources of information, even when rationalized as protecting children from dangerous influences, may in fact hinder development of their ability to coordinate multiple perspectives and think for themselves. Censorship of books and curricula may thus inhibit intellectual development and limit later ability to contribute to the free market of ideas (31).

Moshman asserts that schools denying students the right to read banned books deprives students of the ability to think critically about the world around them and to form their own unique ideas. In addition to affecting their initial academic career, this lack of critical thinking skills could also follow students into

their college careers as well as their adult life. A crucial part of college classes is figuring out individual ideas and opinions on various texts or events, and without the introductory critical thinking skills that come within middle and high school, this aspect of college life may be extremely difficult for students. This difficulty formulating their own ideas could also follow students through their education and into their future careers as adults, causing them to need help to know they are doing the right thing rather than personally assessing a situation and thinking critically about a solution. Another book that schools have banned that would be beneficial for students to read in order to develop these skills is *Fahrenheit 451* by Ray Bradbury. The science fiction novel depicts a future where the government has outlawed books of any kind, and firemen now start fires in houses hiding books in order to destroy them. Reading this book would allow students to directly confront the idea of censorship, think critically about types of censorship that are happening today, and consider whether it is benefiting or harming society. In the *English Journal* article titled “Engaging Banned and Challenged Books Through Role-Play Simulation,” another student speaks out about how hiding the issues presented in banned books harms students: “Students recognized that there are appropriate developmental moments for young people to be encountering challenging content in their reading, but many also defended classrooms as important and supportive contexts for engaging tough topics and themes. As one student said, ‘If we don’t talk about it, that doesn’t mean that it doesn’t exist’” (qtd. in Scarbrough, 81). Even if students have no previous knowledge of the issues of censorship presented within the book, reading the book will allow them to learn and think critically about how those experiences effect other people. Allowing students to think critically does not take away from what their parents have already taught them, but it forces them to expand their knowledge and understanding of the world by considering issues from different viewpoints.

Banning books within schools not only takes away critical thinking skills and fundamental conversations between teachers and students, it also limits students themselves as they are less likely to see their own life represented in literature. In a 2016, 15-year-old Renae Roscart spoke out at a school board meeting in Pittsburgh who were meeting to discuss the possibility of censoring *The Glass Castle* by Jeannette Walls. The young student was totally against the removal of the book, starting a petition at her school, and according to the *Pittsburgh Post-Gazette*, speaking out about the harmful effects of taking the book away from students: “How is this inappropriate for our children when they’re going through this right now? What time could be more relevant to learn this than when they’re going through it? By cutting these particular things out, you’re pretending that these statistics don’t exist. You are pretending that sexual assault and alcoholism isn’t something that youths encounter. And that is a problem,” (qtd. in Reis). Roscart’s response to her own school’s attempt at censorship reveals that students relate to the contents of books, even if the book contains a taboo issue like physical abuse as well as substance abuse. Some students may deal with these issues everyday even if teachers do not realize it,

so for them to read a book where someone went through what they are going through and they came out of that situation successfully is so important as it gives that students not only someone to relate to but also an outlet for hope.

In addition, schools removing these books from their classrooms and libraries for fear of exposing innocent students to controversial and mature content frankly tells the students who have experienced those themes within their own lives that they are not worth talking about. A recent article from *The Atlantic* titled “How Banning Books Marginalizes Children” quotes middle-grade author Kate Messner as she considers how banning books that are relatable to students ultimately sends a negative message, “When we say ‘This book is inappropriate,’ we’re telling those children ‘your situation. . . your family. . . your *life* is inappropriate.’” (Ringel) For students who have dealt with parents or siblings struggling with addiction, physical or mental abuse of any kind, or even bullying, banning books such as *The Glass Castle* takes away their opportunity at connecting with a character as well as their voice to connect them with others who have had similar experiences. Even students who have not gone through these hardships can read books like *Speak* by Laurie Halse Anderson, about a girl who is sexually assaulted the summer before going to high school, that deal with these intimate issues and hopefully can feel empathy for the characters and others who have actually gone through that experience. Another banned book that students see themselves represented in is *The Perks of Being a Wallflower* by Stephen Chbosky which depicts a teen going through high school while navigating issues of sexuality, friendship, and mental health. By reading *Perks*, students can not only relate to the teen characters, but they can also think critically about what it means to be a friend as well as supporting friends struggling with the effects of trauma. In an interview with Illinois Public Media, Jacqueline Woodson, author of the children’s book *Visiting Day*, comments on how books validate people’s experiences while banning them takes this reassurance away from them: “I think literature is powerful. And I think that what they are more afraid of is people seeing themselves in literature and knowing that they matter. And what these books are saying is, you matter, you have a right to be in the world, you have a right to have your ideas, you have a right to have literature in the space that you’re existing” (Gaines). As Woodson eloquently points out, literature is powerful, and by seeing their own story represented within fictional novels—such as *Speak*, *Perks*, or even *Crank* by Ellen Hopkins about a girl struggling with substance abuse—students can feel that their teachers see them as well as that they are not the only people going through these hardships. Essentially, allowing students to read books with taboo or unconventional topics lets those students who have gone through similar experiences feel validated and gives them hope that their own situation will turn out okay.

Reading these books with hard-hitting issues within them not only allows students to relate to the characters but it also presents students with the important opportunity to cultivate empathy with those around them. Author of

the 2017 award-winning novel *The Hate U Give*, Angie Thomas comments on how reading books can create empathy from the reader for the characters: “If you spend 300 or so pages in the shoes of a character — especially one who isn’t like you — I’d like to think by the end you can’t help but walk away with some empathy,” she said. “That’s why ‘The Hate U Give’ was born” (qtd. in Alani). Multiple schools across the United States have banned Thomas’s book as some considered it anti-police because the book details how a policeman shoots and kills an African American teen after he and his friend are pulled over for a minor traffic violation. However, in the act of reading about the trauma these characters go through, students begin to step into these characters’ shoes and relate to them even if they have nothing in common with each other.

By allowing students to read books *The Hate U Give*, schools would not only be inviting them to think about current issues such as previously stated, but they would also be responsible for cultivating student’s empathy towards others. In the *Council Chronicle*, a magazine published by the National Council of Teachers of English, an award-winning teacher named Shekema Silveri speaks about how beneficial reading literature is for students as it allows them to see into the lives of others: “Literature transformed me. It gave me a window into the world of the way other people see and be and feel and think. When we focus solely on literacy in its grandiose context, sometimes we miss the transformative power of literature. It’s a ‘yes-and’—we need both” (qtd. in Barnwell, 7). Silveri points out that literature is not purely just reading a story, it allows readers to become that person for a while and understand what they go through, even if they live a completely different life from the reader. *The Kite Runner* by Khaled Hosseini is a prime example of how gaining empathy and learning through reading works. The highly praised yet banned book is set in modern Afghanistan and follows the young main character Amir as he goes through political events, revolution, and violence happening around him. Most students reading this book could empathize with Amir while also seeing what they would do differently if they were in his shoes. The English Journal article “Engaging Banned and Challenged Books Through Role-Play Simulation,” quotes a student who read the book for the project and while empathizing with Amir, they also wanted to take action against violence towards others after reading the novel: “It makes [readers] uncomfortable when we see Amir doing nothing and holding back from helping [against violence], and we sit here hoping that he is going to help. And in the future, that can be beneficial to our students, because they’re not going to want to be the ones that sit back. They’re going to want to take action” (qtd. in Scarbrough, 81). Not only did the student get to see a different perspective than their own, but they also became inspired to become an advocate for others who need help. Essentially, students reading about these topics not only gives them a way to learn about issues they may not have learned otherwise, but it also allows them to come to a place of understanding and empathy for others who may be different from themselves. Rather than these books enforcing a negative ideal into students, instead these books are becoming a platform for students to both receive and give empathy to those

around them regardless of their differences.

Some may argue that students should just simply access these books outside of their school's library if they wish to read them. While that may be effective for some students who have the resources to do so, other students living in poverty with no funds to spend on entertainment expenses suffer the consequences of the books' absences. Another negative effect of book banning is entirely taking the opportunity for students to read these books away from them due to students not having access to income to buy those books on their own. By taking books with controversial topics off of school's library's shelves, these concerned parents and school boards are taking away access to that book for every student, but especially those dealing with poverty. Middle school students are too young to have their own money from work aside from an allowance from parents as the average age of joining the workforce is 14 with limited hours at best according to the U.S. Department of Labor ("Age Requirements"). Generally high school students do not have a lot of money, and even if they do, they put it towards their car or savings for college. An article titled "How Are Teen Spending Money" considers a survey done by Piper Jaffray that found in an average income family, teens spend about 30% of their own income on clothes, shoes, and accessories, 20% on food, 8% on their car, and a mere 1% on books or magazines. By taking books with controversial topics off of school's library's shelves, these concerned parents and school boards are taking away access to that book for every student, but especially those dealing with poverty. In an article titled "Child Poverty in America 2017: A National Analysis," the Child Defense Fund states, "In total, 39.7 million poor people in America were poor in 2017 and a third of them were children. Nearly 1 in 5 children—17.5 percent—were poor in 2017, compared with 11.2 percent of people ages 18-64 and 9.2 percent of people ages 65 and older" (1). If 1 in 5 children is living in poverty, that is 1 in 5 students that has lost the opportunity to read a book if their school takes it off of their library shelves and out of the classroom. Students on free and reduced lunch should also be taken into consideration when assessing students living in poverty. The United States Department of Agriculture's Economic Research Service states that in 2018 alone the National School Lunch Program, which provides free or reduced cost lunch to students across the U.S., they "provided low-cost or free lunches to 29.7 million children daily at a cost of 13.8 billion dollars." Students within this program can hardly afford to pay for their lunch at school, which is vital to their health and overall wellbeing. Therefore, they most likely cannot spare any money to pay for a book they want to read that their school has removed from its library. If a student's school has chosen to make a book unavailable in their library, many students dealing with poverty do not have to resources to buy a book they want to read outside of school.

After a school bans a book a student living in poverty wants to read, or even just a student without access to a car or bookstore, those students have no way to access that book and ultimately suffer. In an article titled "Do We Really Still Need Banned Books Week?" critic Ron Charles interviews James LaRue

from the Office of Intellectual Freedom who points this very idea out to Charles and asks him to consider how a student in need of a book would get it if the book was banned from the library:

There are so many places like in rural communities where you say, ‘Well, the book isn’t banned. It’s still been published. It’s still available on Amazon. It’s still in a bookstore.’ But let’s say you’re a young gay kid, and you go to your library, and David Levithan’s ‘Two Boys Kissing’ has been removed, and so you don’t know that it’s there. You don’t have a credit card to get it from Amazon. You can’t hop in a car if you’re 14 years old and drive to a bookstore. So, the ban is not a trivial thing. It’s a deliberate suppression of a viewpoint that has real consequences for people.(wtd. in Charles)

As LaRue points out, banning a book from a library of any kind makes it extremely difficult for a student in need of it to get a hold of it, especially if they do not have the support or money to do so. Banning books in this way takes a critical toll on the student who wishes to access it, and so as LaRue states “the ban is not a trivial thing.” For example, schools have banned the book *The Fault in Our Stars* by John Green for only one slightly sexually explicit scene. However, the entire book is not purely about that scene as it portrays the lives of teens who are battling with different forms of cancer. A student who is struggling with cancer or has a friend or family member with cancer may feel comforted by the theme of hope within the novel, but if a school has taken it off the shelves, they have made that virtually unavailable to students living in poverty. Another book that schools have banned that would be beneficial for students to read is *Eleanor and Park* by Rainbow Rowell as the book follows a girl named Eleanor whose family is living in poverty and deals with an abusive stepfather as well as bullying, and the other main character Park struggles with relating to his parents. Students struggling with poverty could relate greatly to Eleanor and even Park, but they cannot do so without access to the book in their school library or classroom. Taking a book with what administration would consider a controversial topic such as identities from the LGBTQ+ spectrum, sexually explicit content, or profanity denies all students of the opportunity to think critically about the subject, to feel empathy through characters, and to relate to the content.

Ultimately, students should be able to read books with controversial or unconventional ideas and themes because it is harmful to limit their knowledge and understanding of these topics. Banning books takes away students’ opportunities to learn about the book’s ideas within a safe school environment where teachers can cultivate conversations and answer questions as well as students’ opportunities to think critically about their own thoughts on the subjects. Students missing out on having these intellectual discussions and thinking critically about these novels are suffering as this is a large aspect of college as well as adult life and careers. Banning books also prevents students from seeing themselves represented in literature and hearing similar stories to their own so they feel

less alone. Not allowing these books within schools also limits students' ability to step into characters that are different from them and feel empathy. Without seeing themselves represented in their school's literature as well as developing empathy for people unlike them, these students will likely suffer as they go through life and maintain feelings of loneliness and apathy. Banning books also simply takes the opportunity to read these important and necessary books away from those who need it most as most students do not have the money or essential resources to purchase the book. Students losing the opportunity to read the range of important stories within banned books negatively affects their ability to grow intellectually as young adults, relate to their classmates as well as themselves, and learn more about the world outside of their school. Essentially, banning books takes away the power of the reader and student and puts it into the hands of an adult, whether that be a principal, parent, or school board member, that gets rid of that power entirely. The act of banning books leaves students not only in the dark about certain hard-hitting topics and current issues, but also leaves them wondering how they will face the world outside of school without this power of knowledge and books to support them.

Reference

- Alani, H. "The Hate U Give author speaks in Charleston months after book's local controversy." *The Post and Courier*, 14 Jan. 2019, https://www.postandcourier.com/news/the-hate-u-give-author-speaks-in-charleston-months-after/article_f5bc0460-184f-11e9-a929-f3b227abe8da.html.
- "Banned and Challenged Classics." American Library Association. <http://www.ala.org/advocacy/bbooks/frequentlychallengedbooks/classics>. Accessed 22 July 2019.
- Barnwell, Paul. "Life as an NCTE Secondary English Teacher." *Council Chronicle*, vol. 28, no. 2, 2018, pp. 6-11.
- Brenyo, M. "Chalk Talk-: [Censored]: Book Banning in the US Education System." *Journal of Law & Education*, vol. 40, 2011, pp. 541-549. EBSCOhost, search.ebscohost.com/login.aspx?direct=trueAuthType=ssodb=edslexAN=edslexD16FF961site=eds-live.
- Charles, R. "Do we really still need Banned Books Week?" *The Washington Post*, 26 Sept. 2018, https://www.washingtonpost.com/entertainment/books/do-we-really-still-need-banned-books-week/2018/09/26/80e924be-c0fd-11e8-90c9-23f963eea204_story.html?utm_term=.5007f8e997c8.
- "Child Poverty in America 2017: National Analysis." Children's Defense Fund, <https://www.childrensdefense.org/wp-content/uploads/2018/09/Child-Poverty-in-America-2017-National-Fact-Sheet.pdf>. Accessed 23 July 2019.
- Gaines, L.V. "'It's Heartbreaking' Authors Criticize Removal Of 200 Books from An Illinois Prison Library." *Illinois Public Media*, 6 June 2019, <https://will.illinois.edu/news/story/its-heartbreaking-authors-criticize-the-removal-of-200-books-from-an-illino>.
- Hull, M. *Censorship in America: A Reference Handbook*. ABC-CLIO, 1999. EBSCOhost, search.ebscohost.com/login.aspx?direct=trueAuthType=ssodb=nlebkAN=9826.
- "Infographics." American Library Association. <http://www.ala.org/advocacy/bbooks/frequentlychallengedbooks/statistics>. Accessed 22 July 2019.
- Moshman, David. "Academic Freedom: Student Rights and Faculty Responsibilities." *Preserving Intellectual Freedom: Fighting Censorship in Our Schools*, edited by Jean E. Brown, National Council of Teachers of English, 1994, pp. 26-35.

- “National School Lunch Program.” United States Department of Agriculture, <https://www.ers.usda.gov/topics/food-nutrition-assistance/child-nutrition-programs/national-school-lunch-program.aspx>. Accessed 23 July 2019.
- Noll, E. “The Ripple Effect of Censorship: Silencing in the Classroom.” *The English Journal*, vol. 83, no. 8, 1994, pp. 59–64. JSTOR, www.jstor.org/stable/820338.
- Petress, K. “The role of censorship in school.” *Journal of Instructional Psychology*, vol. 32, no. 3, 2005, p. 248+. Academic OneFile, https://link.galegroup.com/apps/doc/A137791005/AONE?u=tel_a_leeusid=AONE&id=d7721325. Accessed 28 May 2019.
- “Race, Banned Books, Fake News and Sleep: Our Favorite Student Comments of the Week.” *The New York Times*, 5 Oct. 2017, <https://www.nytimes.com/2017/10/05/learning/race-banned-books-fake-news-and-sleep-our-favorite-student-comments-of-the-week.html>.
- Reis, S. “West Allegheny student petition decries censorship of reading list.” *Pittsburg Post-Gazette*, 24 June 2016, <https://www.post-gazette.com/local/west/2016/06/24/Student-petition-asks-not-to-shield-students-from-problems/stories/201606240008>.
- Ringel, P. “How Banning Books Marginalizes Children.” *The Atlantic*, 1 Oct. 2016, <https://www.theatlantic.com/entertainment/archive/2016/10/how-banned-books-marginalize-children/502424/>.
- Scarborough, Burke, et al. “Engaging Banned and Challenged Books Through Role-Play Simulation.” *English Journal*, vol.108, no. 2, 2018, pp. 74-83.
- Tomer, W. “Banning books deprives students of complex discussion.” *Blade, The* (Toledo, OH), sec. Op-Ed Columns, 10 Nov. 2017. NewsBank, infoweb-newsbank-com.eu1.proxy.openathens.net/apps/news/document-view?p=NewsBankdocref=news/168196920D3B0620. Accessed 28 May 2019.
- “Top Ten Most Challenged Books Lists.” American Library Association, <http://www.ala.org/advocacy/bbooks/frequentlychallengedbooks/top10>. Accessed 3 June 2019.

Fall 2019

Hashtag Thriving: Religious in Congruence to Flourishing

Heather Mellis

Dr. Bryan Poole, Faculty Mentor

Lee University

Hashtag Thriving: Religiosity in Congruence to Flourishing

Heather Mellis¹

Dr. Bryan Poole, Faculty Mentor²

Abstract

The PERMA model (Seligman, 2012) defines a holistically well person as possessing positive emotion, engagement, relationships, meaning, and accomplishment. One's overall well-being has been reported to produce a positive relationship when measured alongside religion (Cohen, 2002; Francis, Tekke, Robbins, 2016; Myers, 2008). In the current study, 103 participants responded to a survey via Amazon's Mechanical Turk (MTURK). The survey assessed participants' flourishing and religiosity using the 23-item PERMA-Profiler and the Gorsuch Intrinsic/Extrinsic Religiosity Scale. The researcher concluded intrinsic religiosity was related to higher levels of overall well-being. The current study supports past research of religiosity and well-being as religion contributing to one's overall sense of well-being.

Well-Being

In Western societies—which emphasize the self over other—individualism, independence, and self-care are paramount (Markus & Kitayama, 1991). Individuals within American culture say they are “hashtag thriving” without a proper understanding of what overall well-being is; overall well-being rates have been in decline since 2017 as a result of worsening emotional, social, and personal well-being (Davis, 2019). This idea of holistic well-being may be hard to practice and incorporate into one's daily life, perhaps because there is not a clear understanding of what well-being is. Researchers have yet to produce one cohesive definition, let alone a unanimous agreement to hyphenate the word well-being or not. Dodge, Daly, Huyton, & Sanders (2012) commented on the difficulty among researchers to determine an operational definition of well-being, as well as an accurate spelling of well-being. The research team noted most ‘definitions’ of well-being entail descriptions rather than definitions (Dodge et al., 2012). Seligman (2012) defined well-being or flourishing as a construct modeled by the well-being concepts: positive emotion, engagement, relationships, meaning, and accomplishment, or PERMA. The PERMA construct allows the quantifiable measurement of one's well-being; however, the elements of PERMA

are not always an observable and quantifiable concept among individuals (Dodge et al. 2012; Reber 1995).

PERMA Model

Within his research in positive psychology, Seligman (2012) advanced his theory of authentic happiness with the idea of flourishing to achieve overall well-being. Seligman's (2002) theory of authentic happiness focused on one's mental health and the development of underdeveloped characteristics such as kindness or originality; his theory uses these traits to contribute to flourishing in individuals. Seligman (2012) described how his concept of positive psychology was one's pursuit of authentic happiness until he discovered the over-simplistic nature of happiness that conceals the complexity of the flourishing person. This discovery would advance the theory of well-being as the main contributor of the flourishing person.

From authentic happiness, Seligman's construct of flourishing evolved. His construct of flourishing consists of five components: positive emotion, engagement, relationships, meaning, and accomplishment. Positive emotion is defined as one's happiness and life satisfaction, while engagement is one's level of mindfulness. Positive relationships are the absence of solidarity but the harmonious effect of other people for the sake of companionship. Meaning is one's sense of belonging or ability to serve something more than just the self. Though subjective, meaning must meet three criteria: meaning must contribute to one's own well-being, pursued for one's own sake, and be measured independently of the other components of well-being. Accomplishment is one's sense of achievement that does not benefit positive emotion, meaning, or relationships. All elements are considered to contribute to well-being when they can function independently of another (Seligman, 2012).

In a study conducted from Australian private school employees, Seligman's PERMA model was used to assess employees' well-being, employees' life satisfaction, physical health, and professional thriving (Kern, Waters, Adler, White, 2014; Seligman, 2012). The results of Kern et al.'s (2014) study concluded high levels of positive emotion, engagement, meaning, relationships, and accomplishment correlated to better health and higher levels of life satisfaction, job satisfaction, commitment to one's organizations, and better relationships with one's coworkers. Similarly, Seligman's PERMA model was used in a cross-sectional and longitudinal study to assess well-being and flourishing among college students' physical health and college success from sophomore to senior year (Coffey, Wray-Lake, Mashek, Branand, 2016). Coffey et al. (2016) determined the PERMA model served as a reliable predictor of college students' physical health and college success, as well as a valid measure of positive emotion, engagement, meaning, relationships, and accomplishment within a community sample.

Religiosity

Religiosity contributes to overall happiness and could serve as a buffer for stress, as well as combat individualism which plagues American society (Meyers, Eid, & Larsen, 2008). Religion, unlike spirituality, includes communal living and serves as a social support system that allows its religious counterparts to be more resilient in the face of various crises such as divorce and death (Koenig, 2009; Myers, 2008; Salsman, Brown, Brechting, & Carlson, 2005). Those who are religious experience low levels of depression, as well as have purpose within their own lives, which contributes to well-being; religiosity as a whole instills hope in individuals as well as increases one's overall happiness (Francis, Tekke, & Robbins, 2016; Myers, 2008). Myers (2008) also discussed a correlation between one's self-concept and one's concept of God; when both are higher an individual experiences a greater sense of well-being. Religiosity also contributes to forgiveness, especially within Islam, Christianity, Judaism, Hinduism, and Buddhism (Myers, 2008). Religiosity is correlated to higher levels of compassion, humility, as well as gratitude. Those who are religious seem to be more altruistic and volunteer more (Myers, 2008). Religious individuals also give more charitably and engage in more moral behaviors. Those who attend religious services are found to be generally healthier and experience longevity in their own lives, as well as have lower rates of suicidality and substance abuse (Diener, Tay, & Myers, 2011; Kim-Spoon, Farley, Holmes, Longo, 2014; Myers, 2008). Individuals who are personally spiritual, in particular, Christians, have a higher sense of well-being in comparison to individuals who are Jewish that experience lower levels of well-being, life satisfaction, and happiness (Cohen, 2002). In later studies, Sheldon (2006) found that within Christian denominations, Catholics report higher levels than Protestants in religious introspection; that may produce more guilt which is seen to lower overall well-being. However, Eichorn's (2012) study found that those who were religious only experienced higher levels of life satisfaction when they lived in countries that were also high in religiosity.

There are different aspects of religiosity; Allport and Ross (1967) defined two motivations of religion: intrinsic and extrinsic religiosity. Intrinsic religiosity is the ultimate motive within one's religion. One who is intrinsically religious will internalize their beliefs and follow them unto completion (Allport & Ross, 1967). In contrast, extrinsic religiosity is when one uses their religion for their own needs (Allport & Ross, 1967). One who is extrinsically religious can use their religion to provide social desirability, security, comfort, and sociability. Meyers (2008) also noted, when extrinsically expressed, religiosity can create ingroup bias, prejudice, and antipathy towards minorities. In summary, one who is intrinsically religious lives their religion while as one who is extrinsically religious uses their religion (Allport & Ross, 1967).

Hypothesis

Within the literature there is not a study that directly examines individuals who are flourishing and measures the flourishing person's commitment to religiosity, as well as how the flourishing person is religious. However, in this study, the researcher explores the five specific components of PERMA (positive emotions, engagement, relationships, meaning, and accomplishment) to determine the correlation between individuals who are intrinsically versus extrinsically religious. The researcher predicts there is a positive correlation between someone who is both flourishing and intrinsically religious whereas no correlation may exist between someone who is both flourishing and extrinsically religious.

Method

One hundred and thirty-three participants volunteered for the survey via Amazon's Mechanical Turk (MTURK). Participants were compensated \$2.57 after completion of the survey upon the researcher's approval via MTURK. However, 30 participants were excluded for failing more than two attention check questions outlined in the consent form each participant signed. One hundred and three participants made up the sample size the researcher used for the following analyses. Within this sample there were 60 males (58.3%), 42 females (40.8%), and one individual who self-described as "other" (1.0%). The average age of each participant was 32.3, ($SD = 8.40$). 54 (52.4%) participants identified as Christian, two participants identified as Islam (1.9%), 16 participants identified as Hindu (15.5%), and 26 participants identified as Non-religious (25.2%).

Participants were asked to complete a survey via MTURK. Upon the participants' consent to participate in the study, their emotional intelligence was assessed using the BEIS-10 (Davies, Devonport, & Scott, 2010), religiosity was assessed using the Gorsuch Intrinsic/Extrinsic Religiosity Scale (Gorsuch McPherson, 1989), overall well-being was also assessed using the 23-item PERMA-Profiler (Butler Kern, 2016), and the participants' resilience was assessed using the Connor-Davidson Resilience Scale (Connor & Davidson, 2003). These surveys were part of a larger questionnaire administered to MTURK users. The following analyses only focused on the Gorsuch Intrinsic/Extrinsic Religiosity Scale and the 23-item PERMA-Profiler to assess whether one who is flourishing is religious and if they are more intrinsic versus extrinsically religious. Analyses with other unused scales will be reported elsewhere.

Results

Upon completion of the survey, the participants' data was analyzed using SPSS statistical software (Version 25), to determine the relationship between religious activity and flourishing; an independent samples t-test was run be-

tween both religious activity and flourishing to test the researcher's hypothesis¹, $t(38.430) = 2.694$, $p = .010$. The results from the t-test show no likelihood of religious activity impacting one's level of flourishing; this is primarily due to the unequal sample sizes among both religious and non-religious participants. Since there were no differences in flourishing between religious and non-religious, the following analyses will only focus on participants who self-identified as religious. From here, intrinsic and extrinsic religiosity were assessed among the self-identified religious.

More analyses were conducted between both intrinsic and extrinsic religiosity as separate variables in relation to overall well-being, as well as each component of PERMA. Participants who demonstrated high in intrinsic religiosity were also high in overall flourishing, $r = .228$, $p = .049$ (see Figure 1). In contrast, there was no relationship between extrinsic religiosity and overall flourishing, $p = .819$. Together, these results suggest that intrinsic religiosity may relate to a person's well-being. Further correlational analyses were run to determine if intrinsic religiosity was related to specific aspects of flourishing.

Participants who demonstrated high in intrinsic religiosity were also high in overall flourishing, $r = .228$, $p = .049$ (see Figure 1). In contrast, there was no relationship between extrinsic religiosity and overall flourishing, $p = .819$. Together, these results suggest that intrinsic religiosity may relate to a person's well-being. Further correlational analyses were run to determine if intrinsic religiosity was related to specific aspects of flourishing.

Participants who demonstrated high in extrinsic religiosity did not show to be high in positive emotion, $p = .777$; engagement, $p = .053$; relationship, $p = .083$; meaning, $p = .191$; or accomplishment, $p = .948$. All together, one who is high in extrinsic religiosity may not possess the specific aspects in order to experience overall well-being.

Discussion

The researcher predicted those who are intrinsically motivated in their religiosity will experience higher levels of overall well-being than those who were extrinsically religious for the social aspect only. Similarly, those who were intrinsically religious in this study reported higher levels of overall well-being, as well as higher levels of positive emotions, relationships, meaning, and accomplishment. Those who were extrinsically religious did not report experiencing higher levels of overall well-being, positive emotions, engagement, relationships, meaning, nor accomplishment. This study's results coincide with the previous study completed by Kern et al. (2014) who found higher levels of each component of PERMA led to overall higher levels of life satisfaction and organizational

¹Overall flourishing did not differ between men and women, $t(100) = 0.853$, $p = .957$.

commitment, as well as Myers' (2008) study that concluded individuals who are religious also experience greater life satisfaction and overall sense of well-being.

In contrast, the results of this study do not coincide with research completed by Eichhorn (2012) who found religiosity when personally practiced (e.g., attendance of religious services) did not increase overall life satisfaction. Rather, when religiosity was practiced within a country that places a high importance in attendance of religious services, as well as in God, then life satisfaction increased. Eichhorn's (2012) study found life satisfaction or happiness may not be linked to intrinsic religiosity but rather conformity towards cultural norms in regard to religious attendance. However, in this study the opposite was concluded.

When studied, religiosity has been noted to benefit participants' overall well-being through enhancing their life satisfaction, promoting better physical health, decreasing anxiety, building resiliency, providing a social support, as well as helping its participants practice forgiveness and volunteerism (Abdel-Khalek, Tekke, 2019; Cohen, 2002; Myers, 2008). When practiced based on one's intrinsic desire, Allport and Ross (1967) noted one practices what they internalize from their religion. This conclusion led the researcher to hypothesize intrinsic religiosity must lead one to better overall well-being since one's religion becomes an essential aspect of their identity. As one's religion increases in intrinsic value, their overall being is also increasing because these variables appear to be positively correlated (Figure 1). However, one who is extrinsically religious only practices their religion for their own benefit; thus, one's personhood is not conformed to the likeness of their religion. Rather, their religion's benefits or societal standards and/or expectations become one's motives for practicing their religion, and, as a result, one's well-being does not improve as found in this study.

Limitations of this study include an unequal sample size among religious and non-religious, as well as an unequal sample size among participating religions. The population recruited from MTURK may not be a representation of society at large due to education level of participants, as well as the possibility of participants not taking the survey seriously.

Further studies will need to be done to determine the correlation of one's level of overall well-being with other factors, such as time devoted to religious activity or congregational affiliation among intrinsically religious individuals. Additionally, future studies will also include analyzing the correlation between those who are demonstrating high levels of overall well-being with emotional intelligence and resilience.

References

- Abdel-Khalek, A. M., Tekke, M. (2019). The association between religiosity, well-being, and mental health among college students from Malaysia. *Revista Mexicana de Psicología*, 36(1), 5-16.
- Allport, G.W. Ross, J.M. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology*, 5, 432-443.
- Butler, J., Kern, M. L. (2016). The PERMA-Profler: A brief multidimensional measure of flourishing. *International Journal of Wellbeing*, 6(3), 1-48.
- Coffey, J. K., Wray-Lake, L., Mashek, D., Branand, B. (2016). A multi-study examination of well-being theory in college and community samples. *Journal of Happiness Studies*, 17(1), 187-211.
- Cohen, A. B. (2002). The importance of spirituality in well-being for Jews and Christians. *Journal of Happiness Studies*, 3, 287-310.
- Connor, K. M., Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). *Depression and Anxiety*, 18(2), 76-82.
- Davies, K. A., Lane, A. M., Devonport, T. J., Scott, J. A. (2010). Validity and reliability of a brief emotional intelligence scale (BEIS-10). *Journal of Individual Differences*, 31(4), 198-208.
- Davis, A. (2019, August 5). Gallup's top well-being findings of 2017. Retrieved from <https://news.gallup.com/poll/224675/gallup-top-findings-2017.aspx>.
- Diener, E., Tay, L., Myers, d. g. (2011). The religion paradox: If religion makes people happy, why are so many dropping out? *Journal of Personality and Social Psychology*, 101(6), 1278-1290.
- Dodge, R., Daly, A. P., Huyton, J., Sanders, L. D. (2012). The challenge of defining wellbeing. *International Journal of Wellbeing*, 2(3), 222-235.
- Eichhorn, J. (2012). Happiness for believers? Contextualizing the effects of religiosity on life-satisfaction. *European Sociological Review*, 28(5), 583-593.
- Francis, L. J., Tekke, M., Robbins, M. (2016). The psychometric properties of the sahin-francis scale of attitude towards islam revised among sunni students in malaysia. *Mental Health, Religion Culture*, 19(5), 433-439.
- Gorsuch, R. L., McPherson, S. E. (1989). Intrinsic/extrinsic measurement:

- I/E-revised and single-item scales. *Journal for the Scientific Study of Religion*, 348-354.
- Kern, M. L., Waters, L., Adler, A., White, M. (2014). Assessing employee well-being in schools using a multifaceted approach: Associations with physical health, life satisfaction, and professional thriving, 5, 500-513.
- Kim-Spoon, J., Farley, J. P., Holmes, C. J., Longo, G. S (2014). Does adolescents' religiousness moderate links between harsh parenting and adolescent substance use? *Journal of Family Psychology*, 28(6), 739-748.
- Koenig, H. G. (2009). Research on religion, spirituality, and mental health: A review. *The Canadian Journal of Psychiatry*, 54(5), 283-291.
- Markus, H. R., Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224.
- Myers, D. G., Eid, M., Larsen, R. (2008). Religion and human flourishing. *The Science of Subjective Well-being*, 5(6), 323-343.
- Reber, A. (1995). Dictionary of psychology – Second Edition. Harmondsworth: Penguin.
- Salsman, J. M., Brown, T. L., Brechting, E. H., Carlson, C. R. (2005). The link between religion and spirituality and psychological adjustment: The mediating role of optimism and social support. *Personality and Social Psychology Bulletin*, 31(4), 522-535.
- Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.
- Seligman, M. E. (2012). *Flourish: A visionary new understanding of happiness and well-being*. Simon and Schuster.
- SPSS Statistics for Windows (Version 25) [Computer software]. Armonk, NY: IBM Corp.

Figures and Graphs

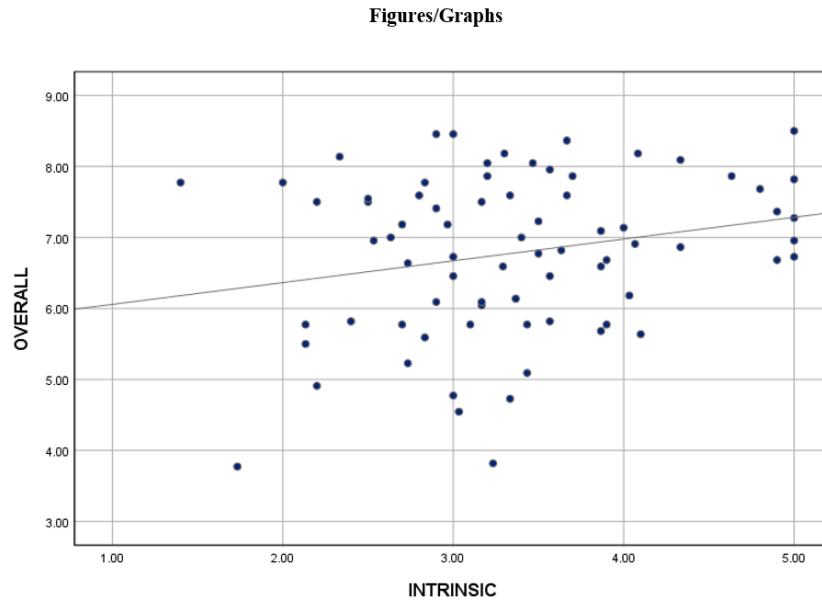


Figure 1: Results of the correlation analysis ran between intrinsic religiosity and overall well-being (PERMA) is shown. As intrinsic religiosity increases as does one's overall well being.

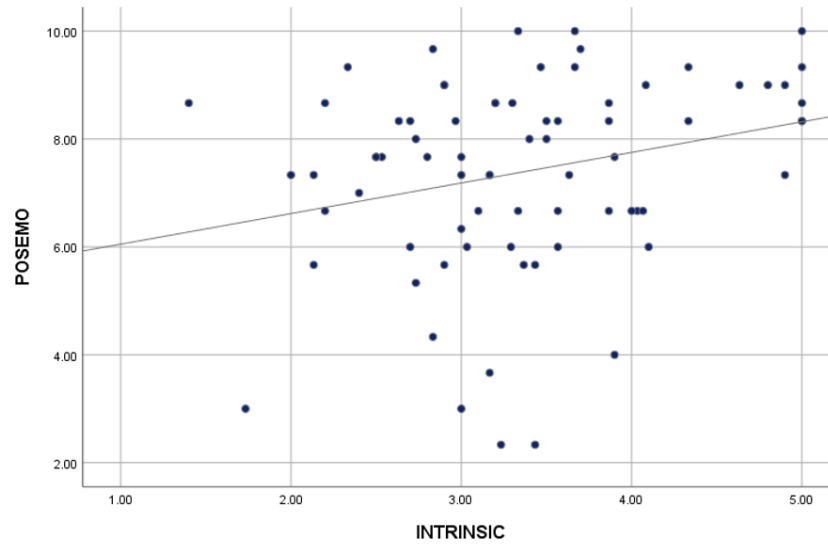


Figure 2: Results of the correlational analysis ran between intrinsic religiosity and positive emotion, one of the components of PERMA is shown. As intrinsic religiosity increases as does one's positive emotions.

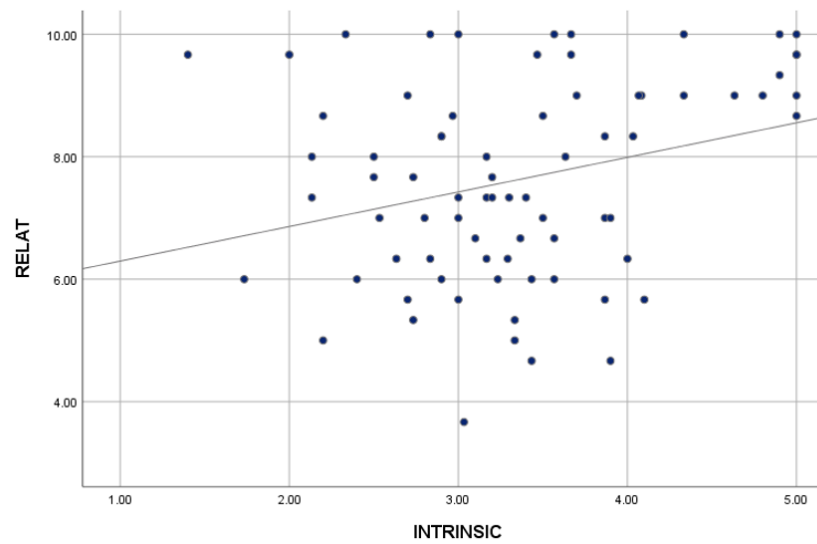


Figure 3: Results of the correlational analysis ran between intrinsic religiosity and meaning, one of the components of PERMA is shown. As intrinsic religiosity increases as does one's positive emotions.

Fall 2019

Humility and Darkness: Self-Knowledge in Walter Hilton's *The Scale of Perfection*

Garret Mikulka

Dr. Chad Schrock, Faculty Mentor

Lee University

Humility and Darkkness: Self-Knowledge in Walter Hilton's *The Scale of Perfection*

Garret Mikulka¹, Dr. Chad Schrock, Faculty Mentor ²

Lee University

Though Walter Hilton's work is saturated with modesty, his work won him the reputation as "the authority on the subject" of prayer, helping readers "understand its form and function" (Riehle 1). His most famous work, *The Scale of Perfection*, came to be, more than any other spiritual writing of its time in England, "a well-known and widely read manual that helped to form many of the most religious souls in the restless and materialistic century that followed his death" (Knowles 117). A popular writer, Hilton also acquired for himself the reputation as the theologian of the English mystics, prompting many medieval scribes to "father on him any number of anonymous mystical writings" (Putter 135). J. P. H. Clark appropriately adds the title of "pastor" ("Trinitarian Theology" 125) to his description of Hilton, as Hilton was quite concerned with offering a guide for serious (though not the *most* serious) prayer and meditation for those who are not spiritual recluses or living in monastic community. Hilton's multi-faceted success as a writer, that he was at once authoritative, theologically sensitive, and accommodating to the laity, is in large part paradoxically due to his focus on humility.

Even a cursory reading of Hilton's *Scale* makes it obvious that he saw humility as the most important virtue a Christian could attain; for Hilton humility is the root of all virtues (Scale 1.18), and virtues the ground of all contemplation (Scale 1.14). In addition to making humility the subject of several chapters in *Scale* and reminding readers of its importance in countless others, Hilton exemplifies humility in his prose, often telling readers that he has not achieved some of the spiritual goals he is describing and making frequent use of the phrase "as me thynketh" and others like it. Hilton's emphasis on humility is likely due in part to Bernard of Clairvaux, whose work, especially *De Gradibus Humilitatis*, or "On the Steps of Humility," is "pervasive throughout Hilton's writings" (Introduction 23). Through Hilton's authorial voice and through the content of the text, the *Scale of Perfection* offers itself as a pastorally focused yet theologically sensitive guide to the acquisition and practical application of humility,

acquired through self-knowledge, by moving the reader first to imperfect humility through knowledge of sin in the self and then to perfect humility through knowledge of God (and by extension, a reformed version of the self) through contemplation.

The two most pronounced features of his prose, theological sensitivity and widespread accessibility, stand in a calculated relationship to one another, carefully situating him as a writer between the other two most prominent English religious voices of his day, Richard Rolle, who at times was theologically insensitive, and the *Cloud* author, whose work was exclusive to spiritual elites. Actively working against the examples set by Rolle and the *Cloud* author, Hilton places himself at once firmly under the authority of the church and in humble relationship with its other members. As Saint Bernard's "On the Steps of Humility" calls "rebellion against superiors" step ten of pride, Hilton works against Rolle's writings to place the *Scale* clearly under the authority of the church; as "trying to be different" (Bernard 133) or thinking oneself "holier than others" (Bernard 134) are steps five and six of pride, Hilton writes the *Scale* as an inclusive spiritual guide, allowing those refused by the *Cloud* to enrich their interior lives. Hilton also posits an epistemological *via media*; as a response to Rolle's sensory-focused cataphasis and the *Cloud* author's apophatic theology, Hilton uses humility to provide a grounded entry point into the mystery of God that neither claims him to be altogether knowable nor denies his accessibility through the incarnation; his "scale" is a functional tool for ascension regardless of the spiritual level of the reader.

In the *Scale*'s metaphorical use of darkness, Hilton's message of humility also acts as the medium through which the reader actually becomes humble. Through guided introspection, Hilton reveals that spending time with the dark nothingness in the soul, that which is beyond human understanding, is the paradoxical means to attaining the sure knowledge of God, though partial, and of the self that allows a soul to become humble. The primary use of "darkness" ¹in Book 1 refers to the image of sin found in the soul. Hilton's descriptions of sin in Book 1 are tangible; it is a thing to be picked up and examined closely. Hilton employs several images to represent the dark nothingness of sin, but his most descriptive and sustained metaphor describes sin as a human body, each body part representing one of the seven deadly sins. Darkness in Book 1 is humanity's creation in its own image, sin fashioned out of self-love. In Book 2, darkness refers to the night of the soul, a manifestation of the presence of God a contemplative feels when he or she shuts out the false light of the world; Christ is in this night, though he conceals his true light and fullness of nature. Because Hilton elects to name Christ as the one in this darkness with the contemplative rather than God the Father, he creates a conceptual problem: God in Book 2 resembles sin in Book 1. The similitude between sin and God simultaneously demonstrates how one comes to know themselves and thereby acquires humility

¹Middle English "merknesse"

and positions Hilton's doctrine between that of Rolle and the *Cloud* author by acknowledging the incarnation as the means by which the mystery of God is partially knowable without reducing mystical experience to physicality.

Humility in Practice

As "one of the great formative influences in England during the later Middle Ages" (Allen x), Rolle inevitably defined much of what it meant to be an English author, especially a mystical one. Hilton had to actively define himself against Rolle at times. Rolle, writing earlier in the 14th century, became a widely read voice in the Later Middle Ages, even earning an honorable mention in Shakespeare's *Henry V*². In reaction to Rolle's self-removal from the spiritual authority of the church, Hilton continually reminds readers of the appropriate relationship between Christian and church. Rolle's work enjoyed wide circulation, especially among the laity. This is largely due to the demands of the eremitic lifestyle; "templates for spiritual improvement that did not depend on the fortifications of external community routine, or discipline" (Bryan 16) were critical for hermits *and* laypeople. As Jennifer Bryan points out, the spiritual needs of the hermit "often overlapped with those of lay readers" (16). Both hermits and the laity needed guides to spiritual growth that not only envisioned the self as the primary object, but also as the primary agent (in cooperation with God). Langland even calls the hermit "an order by hymself—/ Religion saunz rule and resonable obedience" (qtd. in Bryan 16). Though it was common for hermits to be placed under the patronage of a bishop, Rolle seems to have forgone the oversight; Wolfgang Riehle observes that Rolle was so committed to his own spiritual freedom that he was "not willing to bow down to any authority; he [knew] that he [owed] obedience to God alone" (Riehle 76). This mindset could be especially dangerous to many of his readers who would not have had the same level of education, and by extension, intimate relationship to scripture. Nicholas Watson's study captures the source of this danger: since mystical writing inherently "fuses subjective experience and expression with absolute declarations as to the nature of the truth, . . . it is thus heady and potentially uncontrollable, always in a position to lay powerful claims to an authority which lies outside and above ecclesiastical institutions, even to deny the authority which inheres in those institutions" (*Invention* 1). While Rolle himself may have handled his decisions without necessarily being heretical, his example could easily be misinterpreted and misappropriated by an unlettered audience.

Even though most of the manuscripts of Rolle's work are dated around the time of Hilton's death in the 1390s (Bryan 16), Hilton would have likely seen the danger inherent in Rolle's teachings manifest in his lifetime.³ Keeping a

²Allen, xi: "Two chantries where the sad and solemn priests / Still sing for Richard's soul." (*Henry V*, Act IV, Sc. i).

³Clark makes the same observation in his edition of Hilton's *Scale* (98n93).

potentially wide readership in mind, Hilton's *Scale* makes frequent efforts to affirm the authority of the church and the clergy. He constantly cites Scripture, just one of the ways in which Scale "stresses its own orthodoxy" (Ellis and Fanous 146), and each citation includes both a direct quotation from the Vulgate and either a literal translation or a "spiritualizing gloss" (Ellis and Fanous 146), most likely a way to provide scripture for those who cannot read it themselves⁴ while keeping a distance from Lollard teachings. When instructing the enclosed addressee of Scale Book 1 on what she should believe with a "firm faith," he advises her to "forsake thyn owen witte withoute disputynge or ransakyng of hem [church practices], and sette thi feith generali in the feith of Hooli Chirche, and charge not the styryng of thyn herte whiche, as thee thenkith, is contrarie therto" (1.21). Here, any disagreement between the intellect and the church should go to the church by default. Further, an enclosed person should refrain from correcting the sins of others if at all possible because the church grants that authority to certain clergymen (1.17). Hilton also adds that an enclosed person should not "make thee not for to teche" a clergyman, though Hilton is not so blind as to always believe the clergy are correct, as he adds the proviso "but in nede" (1.83). When giving instruction on how and what to pray, Hilton advises above all that one make frequent use of the Pater Noster and Matins, claiming that "sithen it is the praiere of Holi Chirche there is no praiere so profitable to thee whiche is vocale for to use comounli as that is" (1.27). He goes on to describe how pleasing it is to God for one to pray in their heart without preordained speech (1.32), but he only mentions this kind of prayer after a warning not to abandon the church's vocal prayers too soon lest the praying person fall into "fantasies and singulere conceites, or into open errours, and letten the grace that God gyveth hem bi sich vanytees" (Hilton 1.28). The reverence for the church and clergy is consistent throughout Scale, decisively rejecting the kind of spiritual freedom perpetuated through Rolle's work. When giving instruction on how and what to pray, Hilton advises above all that one make frequent use of the Pater Noster and Matins, claiming that "sithen it is the praiere of Holi Chirche there is no praiere so profitable to thee whiche is vocale for to use comounli as that is" (1.27). He goes on to describe how pleasing it is to God for one to pray in their heart without preordained speech (1.32), but he only mentions this kind of prayer after a warning not to abandon the church's vocal prayers too soon lest the praying person fall into "fantasies and singulere conceites, or into open errours, and letten the grace that God gyveth hem bi sich vanytees" (Hilton 1.28). The reverence for the church and clergy is consistent throughout Scale, decisively rejecting the kind of spiritual freedom perpetuated through Rolle's work.

As for Hilton and the *Cloud* author, the relationship is not as clearly defined (Putter 33), though some level of connection between the two is certain: both writing around the same time and in the East Midland dialect, their works oc-

⁴The addressee of Book 1 was an anchoress with little or no knowledge of Latin (*Scale* 1.15).

asionally respond to each other. Compared to Rolle, Hilton has much more in common with the *Cloud* author in their understanding of the contemplative life, but the fact remains that there are differences between Hilton and the *Cloud* important enough for Hilton to make explicit. Whereas Hilton's *Scale* relative to Rolle's work promotes a humble relationship to the institutional church, the *Scale* alongside the *Cloud of Unknowing* promotes humble relationships with others people regardless of spiritual office. The *Cloud* author is undeniably orthodox, even sharing some of Hilton's grievances against Rolle and the sensational spirituality he professed, but the *Cloud* is an exclusive text, reserved only for spiritual elites prepared to engage in serious contemplation. Nowhere is this stance clearer than in the *Cloud's* prologue when the author warns that no one

rede it, ne write it, ne speke it, ne yit suffre one or to soche one that hath (bi thi supposing) in a trewe wille and by a hole entent, purposed him to be a parfite folower of Christe, not only in active leving, bot in the sovereyneste pointe of contemplatif leving the whiche is possible by grace for to comen to in this present liif of a parfite soule yit abiding in this deedly body; and thereto that doth that in him is, and bi thi supposing, hath no longe tyme before, for to able him to contemplative levying by the vertuous menes of active levying. For elles it acordeth nothing to him. (*Cloud* 21)

This lengthy warning is followed by a list of the kinds of people—just in case the warning above missed any—who should definitely not have anything to do with the book, including “worldly chatterers, public self-praisers or fault finders” (*Cloud* 22) and many more. The author does say that those living the active life who are nonetheless stirred inwardly by the Spirit of God may benefit from the book, but even this concession is preceded by a strict warning against those who, educated or not, are merely curious (*Cloud* 22). The *Cloud* author's criteria for a suitable reader intentionally excludes the majority of those who would have been influenced by Rolle's work.

The *Scale of Perfection*, however, presents itself as a welcoming work for anyone in right standing with the church who wants to develop a richer interior life. Book 1 cites the commonplace teaching of *lectio*, *meditatio*, *oratio* as means to the contemplative life but bypasses an in-depth look at reading altogether since the “redynge of Holi Writ” is not practicable for his enclosed female addressee (Hilton 1.15). His open invitation to spiritual development is even more explicitly laid out in Book 2:

Se now thanne how grace openeth the goostli iye, and clereth the wit of the soule wondirli above the freelte of corrupt kynde. It geveth the soule a newe ablenesse, whethir it wole reden Holi Writ or heeren or thenken it, for to undirstonde truli and savourli the sothfastnesse of it in the manere bfore seid, and for to turnen redeli alle resones and wordes that aren bodili seid into goostely undirstondynge . . .

and this grace mai be, and is, as wel in lewed as in lettred men, as anemptis and substaunce and the trewe feelynge of soothfastnesse and of goosteli savour of it in general. (Hilton 2.43, emphasis added)

Though Hilton does believe the potential for contemplation in a person living the active life is limited compared to a true contemplative, the door is nonetheless open, a sentiment also central to his *On Mixed Life*. At one point, Hilton even claims that though certain religious will have special (not necessarily better) rewards in heaven for special callings such as celibacy, some “wordli man or woman, as a lord or a ladi, knyght or squyer, marchaunt or plowman, what degree he be in, man or woman, schal have more meede than sum prest or frere, monke or chanoun or ankir incloos” of the highest bliss of heaven: God’s presence. He continues, “And whi? Soothli for he lovede more God in charité of His gifte” (Hilton 1.61). Not disillusioned about wholly religious people and their potential for mediocre spirituality, Hilton weighs the reality of human behavior against the calling.

Acquiring Humility Through Self-Knowledge

Situated between Rolle’s inordinately sensory-dependent cataphasis and the *Cloud* author’s apophatic theology, Hilton’s *Scale* promotes a moderate epistemology, acknowledging that the mystery of divinity resides in a knowable Christ, an observation that helps audiences, especially the uneducated, better comprehend divinity while guarding them from a dangerously physical spirituality. “On the Steps of Humility” defines humility as the “virtue by which a man recognizes his own unworthiness because he really knows himself” (Bernard 103). It follows that Hilton’s guide to contemplation would be most of all a guide to acquiring self-knowledge. According to Hilton, a person journeys into themselves and becomes aware first of sin (imperfect humility) and then of God and his mercy (perfect humility) (Hilton 2.34). By what means and to what degree a person can *know* sin and God thus becomes a foundational part of any spiritual instruction because the sum of a person’s spiritual life is contingent upon what one finds in the self and how it is interpreted. That question is problematized, however, by the incarnation; what is not fully knowable through intellection or available to the senses nonetheless resides in intellectually and sensually familiar flesh. The incarnation forces the spiritual teacher to negotiate a balanced presentation of God as divine man; placing too much emphasis on his humanity risks oversimplifying his nature and equating him with fallen creation, and placing too much emphasis on his divinity risks eluding human understanding altogether and hindering any real sense of connection to the divine. Suspended between absolute knowability and absolute unknowability, the *Scale* must make use of a theological anthropology defined by the incarnation. True self-knowledge cannot only acknowledge the sin in the self but must also recognize the “ymage of the Trinité, whiche we hadden bi kynde and aftir schullen have fulli in blisse” (Hilton 1.45). As fully God and man, Christ makes the prelapsarian Trinitarian “ymage” inherent in humanity conceptually accessible

for lay and religious alike without reducing God to merely body. Hilton thus places Jesus between cataphasis and apophasis as an affirmation of the paradox of God's nature, revealing God as a knowable mystery, but only through Christ who is both "the gifte and the gyvere, and maketh us thanne bi that gifte for to knowen Him and loven Him" (Hilton 2.34).

As a corrective measure for those who might have understood Rolle's teachings to be wholly focused on a physical manifestation of spirituality, Hilton takes several opportunities to define the relationship between matters spiritual and matters physical. There is some debate as to how mystical Rolle's mystical experiences actually were. A university dropout, Rolle began his eremitic lifestyle at a young age and without much formal education, and though he was well-read and proficient in Latin and possibly had knowledge of Greek (Riehle 71), he was largely responsible for his own spiritual teaching. Being an autodidact is one of the primary reasons that David Knowles feels Rolle's evaluation of his own spiritual progress was overstated, even claiming that what Rolle "gained as a figure of abiding significance in the history of English religious sentiment, [he] has perhaps lost as a mystic" (Knowles 53). For Rolle, Riehle notes, "*knowledge* of God and *love* of God are always identical" (Riehle 84), thus allowing God to be known at an intimate level. Coupled with Rolle's innovative description of the mystical *nio*—*calor*, *dulcor*, *canor* (heat, sweetness, song)—one can easily read Rolle's mysticism as being dangerously tethered to human senses and emotions. Nicholas Watson provides useful counterarguments to these critiques in Rolle's defense. First, since Rolle's genre of choice was "heady and potentially uncontrollable" (*Invention* 1), it is bound to be misunderstood on at least some accounts. Rolle seems to have accepted this risk; regarding Rolle's description of mystical unio as heat, sweetness, and song, Watson claims that even though Rolle has the

habit of treating them essentially as inner sensations[,] . . . in affective and rhetorical terms it is, if anything, an advantage, for it enables Rolle to communicate a remarkably tangible sense of his experience. . . . He is doing little more than exploiting affective possibilities latent within an existing literary mode which almost from the start had tended to be more celebratory than analytic. (*Invention* 21)

To whatever degree Rolle did intend these terms to refer to physical sensations or to be rhetorically charged explanations of the metaphysical, the opposing viewpoints of Knowles and Watson demonstrate the potential of reading Rolle as advocating the former, especially for those without significant theological training. More importantly, however, Hilton himself explicitly warns against this kind of sensationalism in a chapter of *Scale* titled "the fier of love" (Hilton 1.26) an unmistakable reference to Rolle's *Incendium Amoris*. The problem with Rolle's explanation of his mystical experience was not necessarily what he claimed to know, but how he claimed to know it. In fact, Hilton even allows for the possibility that physical sensations during prayer can be spiritually prof-

itable: “yif it so be that this maner of feelygne lette not thyn herte fro goostli occupacion, but it maketh thee the more devoute and the more fervent for to pray, . . . and encreseeth thi love more bothe to God and to thyne evene Cristen; also it maketh thee more meke in thyn owyn sight” (Hilton 1.11). Hilton affirms the potential for God to work through physical sensations, but total trust in these bodily feelings, unchecked by spiritual wisdom and undirected by a stable intention on Christ, leaves one vulnerable to pride. Hilton makes bodily sensations secondary signs of spiritual progress to avoid this danger.

Hilton must also tone down the apophasis of the *Cloud* author’s teaching, for while God is far beyond human senses and understanding, he nonetheless made himself partially accessible through the incarnation. The *Cloud* author places God and one’s experiences with him completely beyond the human capacity to understand. In this respect, the *Cloud* author, in a sense, epitomizes a medieval mystical writer, one who does not communicate experiences⁵ but instead circumnavigates a “‘divinity’ which is ‘hidden’ precisely from experience” (Turner 4). Leaning heavily on the Pseudo-Dionysius, the *Cloud* author takes advantage of the paradoxical linguistic framework of apophatic theology to avoid making too many concrete claims about God, what Denys Turner calls “self-subverting” language, language that “first says something and then, in the same image, unsays it” (Turner 21). This tendency is perhaps most clear in the title of his most popular work, *The Cloud of Unknowing*. The title refers to the space between the contemplative and God where intellectual understanding is impossible, but even this image comes with a self-subverting clarification in the text itself:

And wene not, for I clepe it a derknes or a cloude, that it be any cloude congelid of the humours that fleen in the ayre, ne yit any derknes soche as in thin house on nightes, when thi cendel is oute. For soche a derknes and soche a cloude maist thou ymagin with coriousté of witte, for to bere before thin ighen in the lightest day of somer; and also, agenswarde, in the derkist night of wynter thou mayst ymagin a clere schinyng light. (*Cloud* 34-35)

Here, the *Cloud* author is attempting to provoke an imaginative⁶ reading of his own titular metaphor, one which will hopefully cause the reader to cease any thought of an actual cloud or anything else understood through reason in order to enter into union with God. Using this method of writing, the *Cloud* author is able to write seventy-five chapters of contemplative instruction without ever

⁵Denys Turner calls the communication of experiences a contemporary expectation of mystical writers (4).

⁶Imagination here refers to the medieval sense of the term in which the imaginative faculty extracts abstract knowledge from sensory information. As Alastair Minnis points out, the *Cloud* author attempts to deintegrate imagination from his writing (in the medieval sense as well as the contemporary) in an effort to move away as much as possible from reliance on sensory information, though he is a “master of imaginative and affective writing, in the strict medieval sense of those terms” (“Affection and Imagination” 324).

claiming to say anything concrete or make any stable metaphors about God, for making any absolute claim would place readers in the realm of *knowing*, actually distancing them from God. Here, the problem for Hilton lies in *what* one can know. While God in the flesh is still not entirely in reach of human reason, to Hilton, there is doubtless something knowable about him:

Love me, and knowe me, and worshcipe Me as God and man godli,
not as man manli. So schaal thou touche Me, for syn I am bothe
God and man, and al the cause whi y schal be worshipped and loved
is for I am God, and for y took the kyde of man; and therefore make
Me a God in thyne herte, and in thi love, and worshipe Me in thyn
undeirstondynge as Jhesu God in man, sovereyn soothfastnesse, and
as sovereyne goodenesse and blissid liyf, for that am I. (Hilton 2.30,
emphasis added)

Humanity can love, know, even touch God through the person of Jesus, and in doing so, they also worship God in his divinity.

Perhaps another problem with this approach for a pastoral Hilton is its potential inaccessibility for lay readers. One is to understand the cloud metaphor, for example, by “coriousté of witte” (*Cloud* 35). While this may not have been an issue for the learned intended audience of the *Cloud*, it remains out of reach for an increasing number of lay readers for whom even Passion meditations were being modified to avoid reliance on the imaginative capabilities of the unlearned⁷: “Those beginners in the spiritual life about whom the *Cloud* author was so scathing would have found in the Scale an abundance of doctrine designed to instruct and encourage them. It is little wonder therefore, that Hilton’s work soon became popular among people other than contemplatives” (Minnis 352).

Darkness as Sin and God

Hilton’s instruction regarding introspection suggests that in order to grow in humility through mystical knowledge of the incarnate Christ, the contemplative must search for him in his or her own soul, find darkness instead of him, and slowly pass through that darkness in search of Christ. Hilton introduces the topic of sin in chapter forty-two, but it is not until chapters fifty-two and fifty-three that Hilton tells his readers what sin actually *is*: “nought but a merk ymage and a peynful of thyn owen soule . . . sothli it is not” (Hilton 1.52-53). Though darkness and nothingness are difficult to conceptualize as described, he assures readers that if they want to find Jesus “the peyne of this nought bihoveth thee to suffre, and abide in this merkenesse” (Hilton 1.54). For the remainder of Book 1, Hilton uses several metaphors to describe the appearance and nature of sin in the soul in more concrete terms; the “ground of synne” (1.42) in the

⁷For example, Nicholas Love’s popular translation of the *Meditationes* softened its imaginative language for the sake of the laity. For further reading on this subject, see Michelle Karnes.

soul is the first, followed by a spring as the source for seven rivers (1.55), a plant with limbs and branches (1.64), a house with five windows (the senses) and holes in the walls (the imagination) (1.78), and finally the human body made up of the seven deadly sins, the head being pride, the stomach gluttony, and so forth (1.84). Thereafter, Hilton makes no further attempts to expound upon the image of sin, letting the image of a human-shaped sin extend even into Book 2. While Hilton calls sin a dark nothing, it acts in many ways as a three-dimensional *something*: it can be felt, “Now mai thou grope that this ymage is nought” (1.55); it can be manipulated, “Turne this image upsodoun and loke wel thereinne” (1.64) and it can be seen, “[l]ifte up this image and loke wel al abouthte” (1.71), “[y]it mai thou see more in thys image, though it be myrk” (1.72).

Hilton describes the night of the soul, Christ’s giving of himself to the contemplative, with the same defining characteristics used for sin in Book 1 with no more than a contrastive conjunction and a new set of adjectives to set them apart, and in doing so, prompts the reader to pay close attention to the two seemingly opposite discoveries in the self. Book 2 shifts focus away from sin and begins explaining contemplation more fully (since the reader has already come to imperfect humility through the knowledge of their own sin), and here Hilton introduces the second dark nothingness to the reader, the “riche nought” and “lighti merkenesse.” When the contemplative is “taken up with desire to Jhesu” by the touching of his grace, Hilton recommends thinking about Christ being near (“that thou haste Jhesu”) (2.24). This process of being moved to desire for Christ through special grace and then thinking on him diligently is what Hilton calls being in the “night” of the soul. It is dark because the false light of the world is shut off to the contemplative and the dawn of Christ in his true light is near (his true light is hidden in this night). This night is restful for the contemplative because in it is “eese as for thought of ertheli thyng, but not as for Jhesu, for though the soule thenke not of ony ertheli thyng, neveretheless it is ful bisi for to thenken on Him.” Souls that normally have to labor to keep thoughts on Christ find it to be a natural impulse while in this night. Following this night, the soul is able to experience God’s presence to a new degree. Just as sin is a darkness to labor in before finding Jesus, Book 2’s darkness is one must go through before seeing the light of Christ. In the same chapter that Hilton introduces this night, he refers to it as a “lighti merkenesse” and a “riche nought” (2.24).

Hilton’s paradoxical employment of darkness and nothingness first reveals the limitations of human reason unaccompanied by humility. That Hilton uses darkness to refer to both sin in the self and the presence of God in the night of the soul, the “absence of God”⁸ and God himself, is possible because Hilton places union with God in the rational soul, a faculty that suffered significant dis-

⁸The Middle English spelling *gode* is ambiguous. Clark translates the phrase as “absence of good,” while Evelyn Underhill’s edition has “wanting of God.”

tortion at the Fall. Human reason is thus incapable of seeing the spiritual world perfectly. Like Plato's allegory of the cave, Hilton takes theological advantage of the blinding quality of bright light; Hilton explores this idea through his own metaphor of three men looking at the sun (2.32). The first is reformed in faith alone through allegiance to the church and has no spiritual sight whatsoever. The second is reformed in "feith and feelynge" and is thus spiritually sensitive to the spirit of God; this man is like a sighted man looking at the sun with his eyes closed. Though he does not have full sight of the sun, he can sense the sun (God's divinity), though not directly through the organ specially designed for detecting light (reason). A small amount of light makes it through the eyelids, but if he were to open his eyes, he would be blinded. The third is a man enjoying full view of the sun, a spiritual state only possible after death. Because of humanity's inadequate "vision," the first two men have a remarkably similar visual experience even though one's darkness is accompanied by, in fact due to, the presence of real light.

Hilton plays even more into the similarity between the darkness of the image of sin and that of the presence of God by having both take the form of a human shape, and at once affirms the mystery of God to be within reach through the incarnation. Hilton's describing sin with the human form is not unique to the *Scale*; it is the subject of one of his Latin treatises *De Imagine Pecatti* and is consistent with other of his early works, many of which are "organized around a model of the fallen self as an idol, which sinners worship but the devout must topple from its pedestal and expel, so far as possible, from the temple of the soul" ("Idols and Images" 97). Sin looks like a person because it is fashioned from a person's love for the self. Since the *imago Dei* for Hilton is the rational soul, it is a small leap to model sin after the carnal part of humanity. The "lighti merkenesse" of Book 2, however, complicates the simple association of sin, darkness, and the human form. Hilton introduces the luminous darkness in *Scale* 2.24 as the absence of the "false light" of the world, which disappears before the dawn of the "true light" of Christ. Its earliest mentions lack the metaphorically rich descriptions that sin had in Book 1, but as his discussion of this darkness progresses, the apophatic descriptions—"tyme ful space atwixt to daies," and later, "foreberynge" (Hilton 2.24)—find cataphatic form in Christ later in the chapter: "What thinge thanne maketh this merkenesse? Sothli not ellis but a gracious desire for to have the love of Jhesu . . . that is bothe love and light is in this merkenesse" (2.24). Without the concrete metaphors, such as a stream or a five-window house, dedicated to sin in Book 1, the remaining discussion of the darkness itself remains fairly abstract throughout, but the entirety of Book 2, unlike Book 1,⁹ is saturated with reference to Christ. So while the *Scale* Book 2 in many ways ventures into its loftiest and most abstract descriptions of spiritual experiences, it is especially emphatic about the presence of God incarnate. For those reading who could easily engage with the idea of

⁹Many scholars, including Underhill, Riehle and Knowles, have noted that Book 1 is theocentric while Book 2 is distinctly Christocentric

Christ in his divinity, the metaphor achieves a *Cloud*-like level of abstraction as it describes a restfulness of the soul that is entirely estranged from physical experience. On the other hand, for those who, like the intended audience of Nicholas Love's translation of the *Meditationes Vitae Christi*,¹⁰ may not be able to imagine Christ as anything other than a person, Hilton reassures that "Jesus," the lovable, knowable, touchable God, "is in this merkenesse" (2.24).

The metaphorical comparison also demonstrates the dangers of depending on the senses or reason unaccompanied by humility for spiritual wisdom, and the ways a proud person, one who has not acquired humility through thorough examination of the image of sin in the self, may mistake his or her own soul for being Christ-like when it is not. In Book 1, Hilton explains how "scheweynges to the bodili wittis . . . may be bothe good and yvel" (1.10). This warning includes all the senses, but focuses most on tactile information: "What thinge thanne maketh this merkenesse? Sothli not ellis but a gracious desire for to have the love of Jhesu . . . that is bothe love and light is in this merkenesse" (2.24). Since the image of sin and the Christ share the same shape and can be "touched," the light of Christ, acquired through humility, is necessary to distinguish what feeling may mistake. Hilton later takes two chapters to explain how hypocrites and heretics (two kinds of people Hilton claims lack humility), though they "schewen outward mekenesse, in habite, in hooli speche, in loweli berynge, and, as it semeth, in many grete bodili and goostli vertues. But neverthelees in the wille and the affeccoun of here herte, where mekenesse schulde principali be, it is but feyned. For thei dispisen and setten at nought all othere men that wolen not doo as thei doon and techen" (1.20). These warnings emphasize the dangers of relying exclusively on the self in matters spiritual; the mind can deceive itself with a faulty understanding of holiness just like the body can deceive the spirit with sensations. In the same way that all virtue stems from humility, all sin can come out of pride, and depending on the degree, it can be the difference between salvation and damnation even for those who think they are serving God.¹¹ The cursory glance of an untrained spiritual eye or the touch of a prideful hand may not be able to properly interpret what it finds in the soul. Hilton is careful to steer people away from the pitfall of pride by encouraging thorough introspection.

Despite these similarities between the two darknesses, Hilton has no intention of equating them absolutely. Thorough knowledge of sin allows one to begin to see the inherent differences between the darknesses; as the contrast between the two darknesses becomes more clear for the contemplative, he or she can begin to understand God and his mercy, thus inspiring perfect humility. Since Hilton thought of the *Scale* as one work (Introduction 19) the reader should already have imperfect humility through Book 1's prompting to discover sin, so

¹⁰See Karnes

¹¹*Scale*, 1.57-59 explains how heretics and hypocrites are sinning mortally in pride whereas others may only be sinning venially in pride. Regardless of a person's outer life, pride unchecked can lead one to hypocrisy or heresy.

Hilton engages with the truly mystical content of the *Scale*. In Book 2, Hilton describes the night of the soul with the same self-subverting language that found frequent use in the *Cloud*. He first refers to this darkness in *Scale* 2.24: “this is a good nyght and a lighti merkenesse . . . a riche nought.” While Book 1 uses several unrelated and progressively detailed metaphors to describe sin, Book 2 relies on the adjectives “lighti” and “riche” as sole modifiers for darkness and nothingness; they are stable terms that garner no further meaning from other images. Hilton can simply and completely overwrite the meanings of darkness and nothingness he so laboriously established in Book 1 because, unlike the words describing the image of sin, these words are stable because they describe attributes of Christ, and Christ is as stable as language can get: “This word is Jhesu, I mene not oonli this word Jhesu peynted upon the wall, or writen bi letres on the book, or fourmed bi lipen in soun of the mouthe, or feyned in the herte bi travail of mynde” (1.46). Here Christ is a Word fully removed from the fallen tendencies of human communication inherent in writing, speaking, and thinking. The tension Hilton creates between “This word is Jhesu” and the rest of his description of the word Jesus is the tension of the incarnation. He is the Word unencumbered by a fallen intellect and, regardless of the capacity to understand the mysterious aspects of the incarnation, Christ always means God in his fullness, and by this model Hilton makes the darkness of God at once lofty and attainable through the person of Jesus. Knowing well, as the *Cloud* author did, that God in his divinity is far beyond adequate description, he places Christ and the paradox of “lighti merkenesse” in the same image, letting those who can mentally soar beyond the bounds of language do so and letting those who cannot be comforted by the presence of Jesus. The presence of the incarnated God in the darkness also reveals the great potential for redemption Christ made available to the human image. So while sin is “not ellis but a fals mysrulid love of a man to himsilf” (1.42), an idol in the heart crafted to look like a self-loving person, God, in Christ, also came to look like a fallen humanity in body. Though humanity became a “foul, merk wrecchid trinité” (1.43) at the Fall, allowing sin to take on the human shape, a redeemed people can “be schapin agen to the ymage of Jhesu bi mekenesse and charité, and thanne schalt thou be ful schapen to the image of God” (1.91, emphasis added). Hilton affirms a redeemed relationship between spirit and body, one not defined by a human-shaped sin, but a human-shaped Christ.

As a pastorally focused fourteenth-century theologian, Walter Hilton had the task of producing a widely accessible spiritual guide that was at once profitable instruction for lay and religious alike and a corrective against dangerous teachings prevalent in England during his lifetime. With humility as his guide, Hilton’s *Scale* navigates between the popular sensationalism perpetuated by Rolle’s teachings and the exclusive apophatic theology of the *Cloud* author. By placing self-knowledge as the means to humility and by demonstrating the quest for knowledge through the darkness metaphors, Hilton affirms that God in his mystery became accessible through the incarnation, opening the door of contemplation to a new audience of lay readers, keeping them doctrinally sound

in the process. As a text that is wise as it is welcoming, the Scale uses the person of Jesus as the model for proper relationships between Christians and each other, spirit and body, and most importantly for a mystic, knowledge and mystery.

References

- Allen, Hope Emily. Introduction. *The English Writings of Richard Rolle Hermit of Hampole*. Oxford UP. 1931.
- Bernard of Clairvaux. *Selected Writings*. Translated by G. R. Evans. Paulist Press. 1987.
- Bryan, Jennifer. *Looking Inward: Devotional Reading and the Private Self in Late Medieval England*. U of Pennsylvania P. 2008.
- Clark, J. P. H. Introduction. Watler Hilton. *The Scale of Perfection*. Edited by J. P. H. Clark. Paulist Press. 1990.
- - -. "The Trinitarian Theology of Walter Hilton." *Langland, The Mystics, and the Medieval English Religious Tradition*. Edited by Helen Phillips. D. S. Brewer. 1990.
- The Cloud of Unknowing*. Edited by Patrick J. Gallacher. Medieval Institute Publications. 2005.
- Ellis, Roger and Samuel Fanous. "1349-1412: texts." *A Cambridge Companion to Medieval English Mysticism*. Edited by Samuel Fanous and Vincent Gillespie. Cambridge UP. 2011.
- Karnes, Michelle. *Imagination, Meditation, & Cognition in the Middle Ages*. University of Chicago Press. 2011
- Knowles, David. *The English Mystical Tradition*. Harper Torchbooks. 1961.
- Hilton, Walter. *The Scale of Perfection*. Edited by Thomas H. Bestul. Medieval Institute Publications. 2000.
- Minnis, Alastair. "Affection and Imagination in 'The Cloud of Unknowing' and Hilton's 'Scale of Perfection.'" *Traditio: Studies in Ancient and Medieval History, Thought, and Religion*, vol. 39, 1983, pp. 323-66. *EBSCOhost*, search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=mzhAN=1996023238.
- Putter, Ad. "Walter Hilton's *Scale of Perfection* and *The Cloud of Unknowing*." *A Companion to Middle English Prose*. Edited by A. S. G. Edwards. D. S. Brewer. 2010.
- Turner, Denys. *The Darkness of God: Negativity in Christian Mysticism*. Cambridge University Press, 1999.

Riehle, Wolfgang. *The Secret Within: Hermits, Recluses, and Spiritual Outsiders in Medieval England*. Translated by Charity Scott-Stokes, Cornell UP. 2018.

Watson, Nicholas. “‘Et Que Est Huius Ydoli Materia? Tuipse’: Idols and Images in Walter Hilton.” *Images, Idolatry, and Iconoclasm in Late Medieval England: Textuality and the Visual Image*, 2002, pp. 95–110. *EBSCOhost*, search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rfh&AN=ATLA0001344301&site=eds-live.

---. *Richard Rolle and the Invention of Authority*. Cambridge University Press, 1991.

Volume 3

Article 13

Fall 2019

Teacher's Perceptions of Trauma

Chanmony Miller

Dr. Kimberly Moffett, Faculty Mentor

Lee University

Teacher's Perceptions of Trauma

Chanmony Miller¹, Dr. Kimberly Moffett, Faculty Mentor²

Lee University¹

Abstract

Millions of children in America have experienced trauma (Merrick, Ford, Ports, & Guinn, 2018). This has many effects on their psychological, emotional, and physical development and well-being. Without the sufficient intervention and support, the effects of trauma can negatively follow a child well into their adult years and is correlated with poor coping skills, risky behavior, and various health problems (Felitti et al., 1998). Early intervention is key to helping children overcome and thrive after trauma. Teachers are in a prime position to be able to recognize the symptoms, refer to intervention, and help students (Bell, Limberg, & Robinson III, 2013). However, many teachers are not trained to recognize the signs of trauma and often mistake the child for simply being uncooperative or defiant. On top of this, symptoms can manifest in the classroom in a way that disrupts the student's education and the environment of the classroom (David, 2016). This study sought to attain teachers' perceptions of trauma and their self-efficacy in recognizing the symptoms and assisting children. It also purposed to understand what influences a teacher's perceptions and whether the culture or environment surrounding the school affect a teacher's views on trauma. Respondents ($n = 173$) were 87% female and 13% male. Researchers found that teachers' self-efficacy increased with the amount of training teachers received.

Key Words: trauma, teachers' perceptions, classroom, education

Introduction

Trauma can present itself in many ways in the classroom. For the purpose of this introduction, a fictitious scenario will help to exemplify. Teachers often struggle with identifying students who have experienced trauma and how to best support them. For example, a high school math teacher may see a 'Johnny' as defiant and disrespectful, often disrupting the class and occasionally starting fights with his peers. Conversely, a first-grade teacher may be concerned that 'Susie' is struggling to make friends. The teacher may find it difficult to know whether Susie is shy or withdrawn, hoping that she will grow out of it. Susie may also struggle with reading and complain frequently about headaches and stomachaches. Without saying it aloud, students are communicating to teachers

that they need support. However, teachers are frequently not trained adequately to recognize and respond to their students.

Defining trauma is a controversial topic. For the purposes of this study, the writer will use the definition given by the Substance Abuse and Mental Health Services Administration (SAMHSA). Trauma is defined by SAMHSA (2014) as, “results from an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or threatening and that has lasting adverse effects on the individual’s functioning and physical, social, emotional, or spiritual well-being.” (p. 7) Within this definition, there are two subcategories of trauma that students may face: acute and complex. Acute trauma involves a single event that is impersonal in nature, such as a car accident or natural disaster (Bell, Limberg, & Robinson III, 2013). The other form of trauma, complex trauma, is defined by the National Child Traumatic Stress Network (2013) as, “Both children’s exposure to multiple traumatic events, often of an invasive and interpersonal nature, and the wide-ranging, long-term impact of this exposure.” (p. 1) This could include childhood abuse or witnessing domestic violence, and the effects are often more damaging than those of acute trauma. Finally, a definition for toxic stress is necessary. Toxic stress, also known as traumatic stress, refers to prolonged, intense stress that can alter the brain’s structure (Child Welfare Information Gateway, 2015). Examples of this would include poverty, living with a parent with a mental illness, or experiencing racism.

Literature Review

It is difficult to determine how many children have experienced trauma. However, based on the Center for Disease Control and Prevention’s (CDC) report, the estimates are staggering. Between 2011 and 2014, using the Behavioral Risk Factor Surveillance System (BRFSS), the CDC surveyed over 200,000 individuals from across 23 states, asking them how many Adverse Childhood Experiences (ACEs) they had experienced before the age of 18 (Merrick, Ford, Ports, & Guinn, 2018). These ACEs included various forms of abuse and household dysfunction, such as domestic violence and having a household member being incarcerated. Researchers found that slightly over sixty percent of participants had experienced at least one ACE, with nearly sixteen percent having experienced four or more.

The BRFSS was a follow-up to the ACE study published by Vincent Felitti of Kaiser Permanente and Robert Anda (1998) of the CDC (Mayo Clinic, 2015). In the original study, they found the correlation between the numbers of adverse childhood experiences and health and life outcomes later in life. They found that the higher one’s ACE score, as they called it, the higher one’s likelihood of suffering from seven of the top ten causes of death in the United States, such as ischemic heart disease and cancer. Additionally, adults who experienced more

adversities as a child were more likely to struggle with mental health concerns. The survey found that those with ACE score of four or more were over four times more likely to experience depression as an adult and twelve times more likely to attempt suicide compared to those who had an ACE score of zero. Finally, Felitti and Anda (1998) discovered that the higher one's ACE score, the more likely one was to engage in risky behavior such as using illicit drugs or having multiple sexual partners.

Additionally, researchers have found that psychological harm need not only be caused by a discreet frightening event. Such circumstances such as neglect, living with a parent with a substance abuse problem, and poverty can raise a child's stress to damaging levels ("ACEs—Fact sheet and overview—January 2018," 2018; Felitti et al., 1998). The term traumatic stress refers to prolonged stress levels of such intensity that it causes the brain to alter. For instance, it inhibits the prefrontal cortex and hippocampus and heightens the amygdala, thereby reducing the brain's executive function and its ability to accurately detect danger (Child Welfare Information Gateway, 2015; Mayo Clinic, 2015).

However, physical and psychological damage begin much sooner in life. Trauma, especially known as complex trauma, have the potential to rewire the brain, affect how it develops, and upset the body's hormonal system. A leading pediatrician, Nadine Harris (2015), explains that when a child repeatedly experiences rushes of cortisol seen in the body's fight-or-flight response, a normal response can become toxic as the body becomes accustomed to high levels of cortisol. Harris (2015) explains that this is a life-saving response when facing a life-threatening situation such as meeting a bear in the forest, "but the problem is what happens when the bear come home every night?" This can cause a child's brain and body default to a constant state of stress, and these high levels of cortisol can damage the development of the child's brain and body.

Traumatic stress has the potential to change the structure of the brain and impair development. One result is a decreased volume in key parts of the brain, including the prefrontal cortex, cerebellum, and hippocampus. This damages structures crucial to cognition, learning, memory, attention, and executive functioning. Each area is necessary to a child's academic success (Child Welfare Information Gateway, 2015). Cook et al. (2005) elaborated on the problem, describing how children who have experienced complex trauma have "less flexibility and creativity in problem-solving tasks" and have "deficits in attention, abstract reasoning, and executive functioning skills." (p. 394) Additionally, students may experience struggles with language development, processing information, and sustaining attention long enough to complete a task. Altogether, this can lead to lower grades and test scores and a higher referral for special education services. In fact, the dropout rate of children who have been abused or neglected is three times that of their peers (Cook et al., 2005).

However, the harm does not stop with cognition and learning. Children who

have experienced trauma may also have a heightened amygdala, which evaluates situations as dangerous or safe and is critical for emotional regulation. Not only is the amygdala more likely to warn the brain that a situation is threatening, but the hippocampus, which helps to bring stress levels down, is inhibited. For this reason, a child who has experienced trauma may be psychologically conditioned to deem and respond to a situation as threatening more quickly than their peers (Child Welfare Information Gateway, 2015; Mayo Clinic, 2015). Consequentially, whether a child is withdrawn or defiant as a result of a traumatic event, she is highly likely to struggle with emotional regulation.

The effects of trauma are largely affected by the child-caregiver attachment. Healthy attachment is crucial to a child's development. Infants who do not receive the love or attention needed for their brain to properly develop will struggle with coping. Dr. Bessel van der Kolk (2015), a leading psychiatrist in the field of trauma, notes, "In practice, it is often difficult to distinguish the problems that result from disorganized attachment from those that result trauma." He goes on to explain, "Children who don't feel safe in infancy have trouble regulating their moods and emotional responses as they grow older. . . . By kindergarten, many disorganized infants are either aggressive or space out and disengaged." (p. 118)

Van der Kolk (2015), a leading psychiatrist in the field of trauma, explains that people seek attention and connection, but this can be disrupted by insecure attachments and trauma. He writes, "The need for attachment never lessens . . . People who cannot connect through work, friendships, or family usually find other ways as bonding through illnesses, lawsuits, or family feuds. Anything is preferable to that godforsaken sense of irrelevance and alienation. . . . Kids will go to almost any length to feel seen and connected." (Van der Kolk, 2015, p. 115)

This is the brain's way to adapt to survive an environment. Dr. van der Kolk (2015) explains that the brain's primary goal is to survive. For children, this may mean learning to cope with a parent who is abusive or distracted by their own problems. Dr. van der Kolk explains, "Children have no choice who their parents are, nor can they understand that parents may simply be too depressed, enraged or spaced out to be there for them or that parent's behavior may have little do with them. . . . (They have no choice) but to organize themselves to survive within the families they have. . . . Their survival hinges on their caregivers." (p. 133)

For some children, this may look like becoming withdrawn and avoiding drawing too much attention to themselves. They may even dissociate to cope with the overwhelming emotions from their trauma. Other children may cope by becoming aggressive. They may be easily triggered by their surroundings, having learned to be distrustful and defensive (Cook et al., 2005; National Child Traumatic Stress Network Schools Committee, 2018).

However, strategies to cope in an abusive or stressful environment can be detrimental to thriving in a healthy environment, such as school. For example, a child's hypervigilance may keep his/her brain from being able to feel safe enough to learn. While a child is in the limbic system of their brain, used for survival, he/she may not be able to relax enough to access the neocortex part of their brain, needed to fully engage with or remember content in the classroom (van der Kolk, 2015). "When children grow up under conditions of constant threat, all their internal resources go toward survival" (National Child Traumatic Stress Network, 2013).

As the knowledge of Adverse Childhood Experiences and toxic stress has grown, institutions have implemented trauma-informed practices. Several writers talk about why and how schools should do the same. First, there are protective factors that can help to shield a child from the effects. One of the biggest ones is the presence of loving, supportive adults in the child's life. Although it is best that the child's parents be a part of helping a child heal from trauma, having another stable adult, such as a teacher or coach, can still help to mitigate the effects of trauma (Cook et al., 2005). In fact, teachers may be one of the few adults in the lives of some children who are consistent. As Bell, Limberg, and Robinson III (2013) explain, "Educators truly are a first line of defense for children dealing with issues beyond their control and recognition." (p. 145) This role may be key in seeing the aftereffect of trauma and helping a child receive the intervention and support needed to overcome and thrive. Intervention is key to preventing ACEs take over a child's life (PBS, 2018c).

Schools have a unique ability to provide the intervention and mental health resources to struggling students. Jaycox, et al. (2006) calls schools "logical venues for (mental health) programs" and states that "mental health professionals working in schools constitute the largest cadre of primary providers of mental health services for children," clearly noting the increase of mental health services in schools in the last decades (pp. 8, 11). Ko, et al. (2008) echoes this sentiment, stating "Schools have long been identified as an ideal entry point for access to mental health services for children." (p. 398)

Additionally, intervention saves in the long run. The state of Tennessee estimates that for every dollar of prevention saves seven dollars in the future ("ACEs—Fact sheet and overview—January 2018," 2018). This includes the cost of special education services, criminal justice and the juvenile system, health costs, and lost productivity.

Some teachers and administration alike are concerned that mental health interventions are encroaching on limited resources and time need for school's main goal, to educate children. However, Crnabori (2018) argues that trauma-informed practices are crucial to the academic success of students with ACEs and beneficial to all students. As the trauma-informed coordinator of several schools in Nashville, she has seen how trauma-informed practices are crucial to

the mission of educating students. Before a student is able to learn and fully engage cognitively, they need to viscerally feel safe. Otherwise, their brains may literally be too stressed to learn, with children operating in the limbic system of their brain, which is focused on survival (van der Kolk, 2015).

One example of success is Lincoln Alternative High School. Since implementing trauma-informed strategies in 2010, they have received national attention for their success. By 2015, the school saw sixty percent fewer office referrals and seventy-five fewer fights. Academically, mathematics scores increased by fifty-five percent, and the number of college-bound seniors tripled. (*Paper Tigers*, 2016)

The study of teachers' perceptions of trauma is not a new point of interest in research. The first to explore this topic was child traumatologist Eva Alisic in 2008. However, in the last four years there has been an increased interest amongst several researchers exploring the topic of child trauma.

There are a variety of themes that span this research. One of the most noticeable is the need for more teacher training. In her interviews with special education teachers, Sadin (2018) found that "every participant articulated the need for more training, . . . for themselves, their colleagues, and their administration." (p. 79) Teachers in another qualitative study conducted by Alisic (2011) expressed their lack of competence and confidence in their abilities supporting students experiencing traumatic stress. One teacher commented on how she "felt she did not have enough specific knowledge of traumatic stress." (p. 145) Reker (2016) also found that the majority of teachers lacked training. About half of respondents had received no training in their pre-service programs, and only 43% receiving any training since their pre-service program. However, those who had received training perceived it as inadequate.

In a quantitative study conducted by David (2016), 48% of elementary teachers said they had received no trauma training in the professional program; 38% had received a little; 13% had received some; and only 2% had received a lot. Teachers reported receiving more in-service training; however, over 50% of the respondents said that they had received little to no training through their school or district. David (2016) asserted that less than one-third of teachers felt like they had "a great deal" of understanding on trauma effects a student in the classroom (p. 52).

Another common theme was the emotional impact on teachers working with children who have experiencing traumatic stress. Alisic, et al. (2012) describes the emotional burden that teachers face while balancing between supporting the child while avoiding taking the problem home or becoming too emotionally involved. Teachers interviewed explained that part of their struggle was feeling of helplessness and uncertainty on how to help their students.

Alisic (2012) explains the danger of vicarious trauma to teachers working with children affected by adverse childhood experiences. Vicarious trauma, also known as secondary trauma, is, according to Caffrey (2015), a “mental condition in which an individual who did not personally experience a trauma absorbs the stressful feelings of a directly traumatized person.” (p. 1) This is also like the emotional exhaustion felt by those experiencing compassion fatigue. As Alisic (2011) notes, this can have a negative effect on “both their own health and the support given to children at risk.” (p. 150)

The literature reveals that students are coming to school with the cognitive and social effects of trauma. This impacts their ability to engage the learning environment and succeed academically. However, several studies have shown that teachers are often undertrained, if they have received any training, on how to support these struggling students.

Methodology

A quasi-experimental study was conducted to obtain teacher’s perceptions of trauma. The research team created an online survey through SurveyMonkey. The survey included a demographic section followed by questions asking if teachers had received trauma training and the nature of the training, their self-efficacy working with students who had experienced trauma, and their perceptions on how trauma affects their students. The survey link was emailed to schools and districts associated who distributed it to teachers.

In this survey, 173 teachers responded. The first section of questions aimed to assess demographics of the participants as individuals and as teachers. The respondents were predominantly female: 87% female (151). Additionally, the majority were Caucasian: with 147 teachers (84%); 18 (10.3%) reported African American and Latinx each. Lastly, 1 respondent (0.6

Participants had a broad range of experiences teaching. 24.6% of the respondents reported that they had been teaching for 1 to 5 years; 35 (20%) had been teaching for 5 to 10 years; 50 (28.6%) had been teaching for 10 to 20 years; and 14 (8%) teachers had been teaching for more than 30 years. There was a range of grades taught; however, are participants were primarily elementary teachers ($n = 101$). There were 56 middle school teachers and 28 high school teachers. Twenty-five worked in special education. It should be noted that the sum supersedes 173 as teachers were given the choice to select multiple responses, such as if a teacher taught special education in an elementary school.

Lastly, educators were asked whether they personally had experienced trauma as a child, which had a response of 44.6% reporting that they had experienced childhood trauma, and 55.4% reporting that they had not personally experienced trauma.

Results

Teachers were asked to rate their perceived confidence levels in recognizing trauma behaviors and their confidence levels in dealing with trauma behaviors. They did so on a scale of 0 to 100. The mean for recognizing trauma-related behaviors was 66.21, and the standard deviation was 20.163. The results for dealing with trauma-related behaviors was slightly lower (mean = 57.42, SD = 22.754).

The next section included a list of questions pertaining to trauma training. When asked if they had received trauma training, 83 participants (47.4%) said they had, and 92 (52.6%) said they had not received training. Those who answered in the affirmative were then asked a series of questions about their training. When asked how many of training they had received, answers varied. Twenty-eight educators (34.1%) had received 1 to 3 hours of training; 17 (20.7%) had received 3 to 5 hours; 10 (12.2%) has received 5 to 7 hours of training; and 27 (32.9%) had received more than 7 hours. Respondents were also asked where they had received their training, allowing them to choose more than one option if applicable. Twenty-two teachers (26.5%) received pre-service training in a while getting their licensure; 76 (91.6%) received in-service training through their school; and 22 (26.5%) received training from an outside service. Teachers were also asked what curriculum was used in the training. An analysis of their responses is included in the discussion below.

Finally, teachers were asked two questions related specifically to their views of trauma and how it impacted their students. One of these questions asked teachers to consider various symptoms of adverse childhood experiences and rate how likely they considered each one to be on a five-point Likert scale, with five being very likely, three being likely, and one being very unlikely. The results are included in Table 1.

	Mean		Std. Deviation
	Statistic	Std. Error	Statistic
Withdrawn/ Fearful	4.36	.080	1.042
Defiant	4.31	.070	.908
Anxiety	4.25	.074	.961
Physically violent/ aggressive	4.25	.083	1.087
Depression	4.25	.084	1.092
Unpredictable/ short tempered	4.23	.076	.994
Attention seeking	4.15	.078	1.012
Tardiness/ Truancy	3.93	.091	1.190
Physical symptoms (i.e.- stomach ache, headache etc)	3.92	.081	1.055
Substance Abuse	3.92	.110	1.424
Difficulty with memory/attention	3.69	.089	1.160
Eating disorders	3.69	.101	1.310
Difficulty with memory	3.52	.094	1.227
Controlling/ Perfectionism	3.28	.098	1.279
Sensory issues	3.24	.097	1.256
Paranoia/ hearing voices	3.21	.108	1.410
Thrill seeking/ easily excited	3.16	.097	1.261
Talking excessively/ clowning around	3.09	.103	1.335

The last question consisted of a list of adverse childhood experiences. Participants were asked to choose the seven they thought were most common to the students in their school. The respondents' answers can be viewed in Table 2.

	Mean		Std. Deviation
	Statistic	Std. Error	Statistic
Divorce/separation	.83	.029	.378
Emotional abuse/neglect	.80	.030	.401
Drug use/ alcoholism in the home	.79	.031	.409
Parent guardian in jail	.72	.034	.450
Death of a family member/friend	.61	.037	.489
Low socioeconomic status	.61	.037	.490
Physical abuse / neglect	.58	.037	.495
Witnessing violence	.47	.038	.501
Bullying	.44	.038	.498
Sexual molestation / rape	.40	.037	.491
Mental illness in the home	.39	.037	.489
Removal from primary caregiver	.34	.036	.474
Experiencing accident	.13	.026	.339
Experiencing racism	.09	.021	.281

Additionally, SPSS was used to identify correlations, of which the findings varied. The ethnicity of the teacher had an impact on which forms of trauma she thought was more common. African American and Latinx teachers were more likely to choose bullying. Also, being African American or Caucasian had a statistical significance with choosing low SES as a common trauma. African American teachers were more likely to choose racism; whereas, Caucasian teachers were more likely to choose emotional abuse/neglect. Finally, Caucasian teachers were more likely to choose household substance abuse and physical abuse/neglect. Contrastingly, there was a negative correlation if the teacher was African American and a weak negative correlation if the teacher was Latinx.

Upon analysis, a few factors were shown to not have a statistical significance of teachers' self-efficacy. One such factor that had no effect was teachers' past

experience with childhood trauma. Additionally, the number of years in the profession had little to effect on teacher's perception of self-efficacy. Having a longer career as a teacher has a weak positive correlation with self-efficacy in recognizing. However, years of experience had no correlation with teachers' perceived ability to support students who have experienced trauma.

Researchers found that trauma training had a statistically significant positive correlation with teachers' self-efficacy in recognizing and dealing with trauma-related behavior ($p < 0.01$). Teachers who had received training had mean score 16.38 points higher for recognizing trauma-related behaviors and 14.43 points higher for dealing with trauma-related behaviors. Additionally, the amount of training teachers received had a significant positive correlation with the self-efficacy in both domains ($p < 0.01$). Each type of trauma training (pre-service, in-service, outside service) each had a strong positive correlation with teachers' confidence recognizing and handling trauma-related behavior ($p < 0.01$).

Discussion

This study aimed to understand teachers' perceptions of trauma and what influenced their self-efficacy supporting students who have experienced toxic stress. The majority of the teachers surveyed had received less than five hours of training, if any. This lack of training is seen across the literature. This discussion will consider the curricula of trauma training teachers noted in the survey; their perceptions of trauma, including the prevalence of the types of trauma and the likeliness of symptoms; and trauma training's effects on teachers' self-efficacy working with students who have experienced traumatic stress.

Trauma Curricula

Teachers who selected that they had received training were asked to specify what training they had received. The most common response was "Not sure" or "Cannot remember" with 15 educators responding as such. Twelve teachers responded with "ACEs." The categories of "Trauma-informed classrooms" and "Building Strong Brains" each had 5 respondents. Building Strong Brains is an initiative by the state of Tennessee to raise awareness on the issue of Adverse Childhood Experiences (ACEs); therefore, respondents who wrote ACEs might have received training through this initiative. Four educators received unspecified training through presentations offered by their school's counselor or in a conference. Three respondents reported they had received training through their master's program, with two receiving a master's in counseling and one receiving a "master's in instruction and curriculum with minor in trauma and resilience." Unique selections included "Multi-Tiered Systems of Support," "CASA advocate," "brain development," "scenario-based," "Kognito," and "PREPaRE." There were also several responses that were deemed by the research team to not be trauma training. These included restraint training; active shooter train-

ing; curricula from Jason's Foundation, a suicide prevention organization; *Paper Tigers*, a documentary on trauma-informed schools (Redford, J., et al., in Bradwell, J., & KPJR Films,. (2015) and the Internet.

Teachers' Perceptions on the Prevalence of ACE's

The survey question asking teachers what they thought were the most common experiences their students faced provided insightful results. Although the exact prevalence of various ACEs can only be estimated, the Behavioral Risk Factor Surveillance System (BRFSS) conducted by the CDC across 23 states is a good indicator (Merrick et al., 2018). Some trends arose when comparing the results of this survey of teachers and the BRFSS. Perhaps most notable was that teachers in this survey identified the three most common adverse childhood experiences: emotional abuse/neglect, parental divorce/separation, and household substance abuse. However, the results begin to get harder to compare since this questionnaire include experiences that the BRFSS did not account for. For example, this survey included the three new ACEs that have been added since the BRFSS was conducted: poverty, racism, and bullying (ACEs—Fact sheet and overview, 2018). However, teachers still generally listed the traditional ACEs according to their prevalence in society.

One notable exception was an incarcerated household member. Merrick, et al. (2018) found that only about eight percent of adults had experienced this as a child, making the form of toxic stress the least common ACE accounted for on the BRFSS. However, having a parent or guardian in jail was the fourth most common form of trauma on this survey with 72% of teachers from this survey said this was a common form of trauma their students faced. Although a qualitative piece would more clearly explain this anomaly, researchers noted one possible explanation when analyzing the correlation between the ethnicity of teachers and the forms of trauma they chose as common to their school. Although there was not a statistically significant difference, Caucasian teachers tended to choose having an incarcerated household member more frequently than Hispanic or African American teachers. At first, this puzzled the research team since African American citizens are disproportionately imprisoned. However, the results made more sense in light of the statistics from the BRFSS. Consequentially, the data suggests that Caucasian teachers may overestimate how many of their students have a parent or guardian in jail. Another possible explanation for this is that a teacher is more likely to know if a student has a parent in prison than if a student has a parent with a mental illness or some other ACE that is less evident.

Teachers' Perceptions on Trauma-related Symptoms

The top five symptoms that teachers identified as the most likely symptoms of trauma were *withdrawn/fearful*, *defiant*, *anxious*, *depressed*, *physically violent/aggressive*, *unpredictable/short-tempered*. This included an even number of

internalizing and externalizing behaviors. The two symptoms seen as least likely were *thrill seeking/easily excited and talking excessively/clowning around*. This was unexpected since risk taking, hyperarousal, and distractibility are common symptoms of trauma (van der Kolk, 2015). Additionally, David (2016) found that disruptive and defiant were the most common characteristics of challenging behaviors teachers noted. In future studies, a rewording of the question or possibly reforming the question including a vignette of students' symptoms may provide different results.

Teachers' Perceptions of Self-Efficacy

Participants' self-efficacy tended to be lower for dealing with trauma-related behaviors than for recognizing trauma-related behaviors. Although the difference was not statistically significant, the trend was still worth noting as this relates to much of the literature. In a qualitative study of special education teachers' perceptions of trauma, Sadin (2018) noted, "Few of the respondents could articulate strategies that they learned from training that helped them in the classrooms, however many described an understanding of what it means to have trauma and how it impacts children in school." (p. 79) This theme of teachers' having a better understanding of trauma's affects and being more confident in detecting it than knowing how to support students is echoed in other studies (Alisic, 2011; Stasiak 2018). In somewhat contrast, Reker (2016) also found that the difference between teachers' self-efficacy recognizing trauma and self-efficacy supporting students was not statistically significant. On the contrary, she found that teachers were slightly more confident in their ability to support students, especially academically, than in their ability to recognize students who have experienced trauma. This is something that is echoed repeatedly in the literature. Whether it be Alisic in 2012 or Sadin in 2018, researchers throughout the years have found that teachers are rarely adequately trained to support students who have experienced trauma. Sadin (2018) also noticed that teachers who had received one to two hours of training were able to define trauma and begin to recognize how its effects might manifest in the classroom; however, teachers with more training often were able to name specific ways to students.

Implications

Overall, there is a need for more training. Over half of participants reported they had received no training. Of those who did, less than half had received more than 5 hours. However, even these numbers may be higher than reality. As noted earlier, several teachers listed resources that were not considered to be trauma training such as active shooter training and restraint training.

Limitations

This study had several limitations. This study was based on the self-report of participants. As noted earlier, discrepancies were noted in teachers' responses, such as erroneously reporting training as trauma related. Additionally, the participants of this study were selected through convenience sampling through schools connected with the research team. Participants were not as diverse as would be optimal, being primarily white and female. Finally, the survey would have received more accurate results if the researcher had used a pre-existing assessment tool.

Conclusion

Given the prevalence of ACEs and their pervasive effect on children's cognition and behavior in the classroom, there is a significant need for trauma training for educators and administrator. The findings of this study echo this sentiment and the results of previous studies highlighting the need for more trauma training for educators. The majority of participants lacked sufficient trauma training, with less than a quarter of teachers receiving five or more hours of training. At the completion of the literature review alongside the results of this study, there is an apparent lack of awareness and/or concern on behalf of the school administration and teachers in regards to traumatic stress and how it impacts students, academically as well as holistically. Prior research emphasizes the importance of trauma-informed practices for the students' well-being inside and outside of the school setting (Brunzell, Stokes, & Waters, 2018).

Additionally, proper training and practices in the classroom students may also assist with the necessary resources and support to help teachers adequately fulfill their role. Within the results, trauma training had a significant positive correlation with teachers' self-efficacy both in recognizing and handling trauma-related behaviors.

References

- ACEs - Fact sheet and overview - January 2018. (2018, January). Retrieved from Tennessee Commission on Children and Youth website: <https://www.tn.gov/content/dam/tn/tccy/documents/ace/ACEs-Handout.pdf>
- Adverse childhood experiences in Tennessee: Fact not fate. (n.d.). Retrieved July 17, 2019, from Tennessee Commission on Children and Youth website: [https://www.tn.gov/content/dam/tn/tccy/documents/ace/Tennessee%20ACE.Final%20Report%20with%20Authorization%20\(1\).pdf](https://www.tn.gov/content/dam/tn/tccy/documents/ace/Tennessee%20ACE.Final%20Report%20with%20Authorization%20(1).pdf)
- Alisic, E. (2011). Children and trauma: A broad perspective on exposure and recovery (Doctoral Dissertation). Library.Uu.Nl. <https://doi.org/978-90-393-5523-7>
- Alisic, Eva, Bus, M., Dulack, W., Pennings, L., & Splinter, J. (2012). Teachers' experiences supporting children after traumatic exposure. *Journal of Traumatic Stress*, 25(1), 98–101. <https://doi.org/10.1002/jts.20709>
- Alisic, E., van der Schoot, T., van Ginkel, J., & Kleber, R. (2008). Trauma exposure in primary school children: Who is at risk? *Journal of Child & Adolescent Trauma*, 1(3), 263–269.
- All In The Family, Part 2. (2016, August 10). Retrieved August 1, 2019, from CBC website: <https://www.cbc.ca/radio/ideas/all-in-the-family-part-2-1.3532422>
- American Academy of Pediatrics. (2014). Adverse childhood experiences and the lifelong consequences of trauma. In American Academy of Pediatrics. Retrieved from American Academy of Pediatrics website: https://www.aap.org/en-us/Documents/ttb_aces.consequences.pdf
- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: Author.
- Auerbach, R. P., Bigda-Peyton, J. S., Eberhart, N. K., Webb, C. A., & Ho, M.-H. R. (2010). Conceptualizing the Prospective Relationship Between Social Support, Stress, and Depressive Symptoms Among Adolescents. *Journal of Abnormal Child Psychology*, 39(4), 475–487. <https://doi.org/10.1007/s10802-010-9479-x>
- Bell, H., Limberg, D., & Robinson III, E. M. (2013). Recognizing Trauma in the Classroom: A Practical Guide for Educators. *Childhood Education*, 89(3), 139–145. Retrieved from <https://eric.ed.gov/?id=EJ1009918>
- Berg, A. (2017). Trauma in schools: Identifying and working with students who

- have experienced trauma (St. Catherine University of St. Thomas). Retrieved from https://sophia.stkate.edu/cgi/viewcontent.cgi?article=1711&context=msw_papers
- Blaustein, M., & Kinniburgh, K. M. (2019). Treating traumatic stress in children and adolescents: how to foster resilience through attachment, self-regulation, and competency. New York, Ny: The Guilford Press.
- Brunzell, T., Stokes, H., & Waters, L. (2018). Why do you work with struggling students? Teacher perceptions of meaningful work in trauma-impacted classrooms. *Australian Journal of Teacher Education*, 43(2), 116–142. <https://doi.org/10.14221/ajte.2018v43n2a1>
- Caffrey, C. (2015). Vicarious traumatization (VT). Salem Press Encyclopedia of Health.
- Carrion, V. G., & Wong, S. S. (2012). Can traumatic stress alter the brain? Understanding the implications of early trauma on brain development and learning. *Journal of Adolescent Health*, 51(2), S23–S28. <https://doi.org/10.1016/j.jadohealth.2012.04.010>
- CCTASI at Northwestern University. (2017). Remembering Trauma Official Film (2017) [YouTube Video]. Retrieved from <https://www.youtube.com/watch?v=v13XamSYGBk>
- Center for Disease Control. (n.d.). About the CDC-Kaiser ACE Study Error processing SSI file. Retrieved from Center for Disease Control and Prevention website: <https://www.cdc.gov/violenceprevention/childabuseandneglect/acestudy/about.html>
- Chandler, M. (2018). What are the Current Perceptions of a High School’s Teachers Regarding Trauma-Sensitive Practice? What is the Teachers’ Perceived Need for Future Training? Retrieved July 12, 2019, from Research and eData website: https://ir.library.illinoisstate.edu/rsp_urs/28/
- Chapman, D. P., Whitfield, C. L., Felitti, V. J., Dube, S. R., Edwards, V. J., & Anda, R. F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*, 82(2), 217–225. <https://doi.org/10.1016/j.jad.2003.12.013>
- Child Welfare Information Gateway. (2015). Understanding the effects of maltreatment on brain development. In Child Welfare Information Gateway. Retrieved from U.S. Department of Health and Human Services website: https://www.childwelfare.gov/pubPDFs/brain_development.pdf
- Cook, A., Spinazzola, J., Ford, J., Lanktree, C., Blaustein, M., Cloitre, M., . . . van der Kolk, B. (2005). Complex trauma in children and adolescents. Psy-

- chiatric Annals, 35(5), 390–398. <https://doi.org/10.3928/00485713-20050501-05>
- Cooper, L., & Wortman, S. (2017). Study on the perspectives of teachers in the K-12 system on how experiences of trauma that children encounter impact the learning environment: A project. Retrieved from <https://csusdspace.calstate.edu/bitstream/handle/10211.3/190245/Final%20Thesis.pdf?sequence=1>
- Crnobori, M. (2018, April 20). Episode 11: Trauma-informed schools with Dr. Mary Crnobori (L. Dunnivant, Interviewer). Retrieved from <http://educonversations.com/2018/04/20/269/> Crosby, S. (2016). Evaluating trauma-informed educational practices with trauma-exposed, female students. Retrieved from <https://pdfs.semanticscholar.org/2dd7/ac7a9c21a8244d5db784cdda5f975624007c.pdf>
- Crosby, S. D., Howell, P., & Thomas, S. (2018). Social justice education through trauma-informed teaching. *Middle School Journal*, 49(4), 15–23. <https://doi.org/10.1080/00940771.2018.1488470>
- David, M. (2016). Urban elementary teachers' perceptions of challenging behaviors and childhood trauma. Retrieved from https://sophia.stkate.edu/cgi/viewcontent.cgi?article=1575&context=msw_papers
- De Bellis, M. D., & Zisk, A. (2014). The biological effects of childhood trauma. *Child and Adolescent Psychiatric Clinics of North America*, 23(2), 185–222. <https://doi.org/10.1016/j.chc.2014.01.002>
- De Sanctis, V. A., Nomura, Y., Newcorn, J. H., & Halperin, J. M. (2012). Childhood maltreatment and conduct disorder: Independent predictors of criminal outcomes in ADHD youth. *Child Abuse & Neglect*, 36(11–12), 782–789. <https://doi.org/10.1016/j.chiabu.2012.08.003>
- Dinkler, L., Lundström, S., Gajwani, R., Lichtenstein, P., Gillberg, C., & Minnis, H. (2017). Maltreatment-associated neurodevelopmental disorders: a co-twin control analysis. *Journal of Child Psychology and Psychiatry*, 58(6), 691–701. <https://doi.org/10.1111/jcpp.12682>
- Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., . . . Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245–258. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/9635069>
- Finkelhor, D., Turner, H. A., Shattuck, A., & Hamby, S. L. (2013). Violence,

- crime, and abuse exposure in a national sample of children and youth: an update. *JAMA Pediatrics*, 167(7), 614–621. <https://doi.org/10.1001/jamapediatrics.2013.42>
- González, R. A., Vélez-Pastrana, M. C., McCrory, E., Kallis, C., Aguila, J., Canino, G., & Bird, H. (2019). Evidence of concurrent and prospective associations between early maltreatment and ADHD through childhood and adolescence. *Social Psychiatry and Psychiatric Epidemiology*, 54(6), 671–682. <https://doi.org/10.1007/s00127-019-01659-0>
- Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., . . . Dunne, M. P. (2017). The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *The Lancet Public Health*, 2(8), e356–e366. [https://doi.org/10.1016/s2468-2667\(17\)30118-4](https://doi.org/10.1016/s2468-2667(17)30118-4)
- Jaycox, L. H., Morse, L. K., Tanielian, T., & Stein, B. D. (2006). How schools can help students recover from traumatic experiences: A toolkit for supporting long-term recovery. Retrieved from Rand.org website: https://www.rand.org/pubs/technical_reports/TR413.html
- Kinniburgh, K. (2005). Attachment, self-regulation, and competency. *Psychiatric Annals*, 35(5), 424–430. Retrieved from <http://ngolearning.com.au/file/s/face2face-courses/CP-dynamics/AttachmentSelf>
- Ko, S. J., Ford, J. D., Kassam-Adams, N., Berkowitz, S. J., Wilson, C., Wong, M., . . . Layne, C. M. (2008). Creating trauma-informed systems: Child welfare, education, first responders, health care, juvenile justice. *Professional Psychology: Research and Practice*, 39(4), 396–404. <https://doi.org/10.1037/0735-7028.39.4.396>
- Kwak, Y., Mihalec-Adkins, B., Mishra, A. A., & Christ, S. L. (2018). Differential impacts of participation in organized activities and maltreatment types on adolescent academic and socioemotional development. *Child Abuse & Neglect*, 78, 107–117. <https://doi.org/10.1016/j.chiabu.2017.09.026>
- Martin, C. G., Cromer, L. D., & Freyd, J. J. (2010). Teachers' beliefs about maltreatment effects on student learning and classroom behavior. *Journal of Child & Adolescent Trauma*, 3(4), 245–254. <https://doi.org/10.1080/19361521.2010.523061>
- Mayo Clinic. (2015). Mayo Clinic Transform 2015 - Nadine Burke Harris, M.D. [YouTube Video]. Retrieved from <https://www.youtube.com/watch?v=454xt2RnypM>
- McInerney, M., & McKlindon, A. (2014). Unlocking the door to learning: Trauma-informed classrooms & transformational schools. In *Education Law*

- Center. Retrieved from Education Law Center website: <https://www.elc-pa.org/wp-content/uploads/2015/06/Trauma-Informed-in-Schools-Classrooms-FINAL-December2014-2.pdf>
- McIntyre, E., Baker, C., & Overstreet, S. (2018). Evaluating foundational professional development training for trauma-inform...: Find all Library resources in one search. Retrieved July 12, 2019, from Ebscohost.com website: <http://eds.a.ebscohost.com/eds/pdfviewer/pdfviewer?vid=1&sid=54f653ff-8a1a-4dfb-a8a8-75dfb93ea1b6>
- Merrick, M. T., Ford, D. C., Ports, K. A., & Guinn, A. S. (2018). Prevalence of Adverse Childhood Experiences From the 2011-2014 Behavioral Risk Factor Surveillance System in 23 States. *JAMA Pediatrics*, 172(11), 1038. <https://doi.org/10.1001/jamapediatrics.2018.2537>
- National Association of School Psychologists. (2015). Creating Trauma-Sensitive Schools: Supportive Policies and Practices for Learning. Retrieved from National Association of School Psychologists website: https://www.nasponline.org/Documents/Research%20and%20Policy/Research%20Center/Trauma_Sensitive_Schools_2015.pdf
- National Child Traumatic Stress Network. (2003). What is child traumatic stress? Retrieved from https://www.nctsn.org/sites/default/files/resources/what_is_child_traumatic_stress.pdf
- National Child Traumatic Stress Network. (2013). Impact of Complex Trauma. In National Child Traumatic Stress Network. Retrieved from https://www.nctsn.org/sites/default/files/resources/impact_of_complex_trauma.pdf
- National Child Traumatic Stress Network Schools Committee. (2018, October 3). Child trauma toolkit for educators. Retrieved from The National Child Traumatic Stress Network website: <https://www.nctsn.org/resources/child-trauma-toolkit-educators>
- Oehlberg, B. (2008). Trauma and loss: Research and interventions. In Trauma Informed Care Project. Retrieved from [http://www.traumainformedcareproject.org/resources/WhySchoolsNeedToBeTraumaInformed\(2\).pdf](http://www.traumainformedcareproject.org/resources/WhySchoolsNeedToBeTraumaInformed(2).pdf)
- O'Neill, L., Guenette, F., & Kitchenham, A. (2010). 'Am I safe here and do you like me?' Understanding complex trauma and attachment disruption in the classroom. *British Journal of Special Education*, 37(4), 190-197. <https://doi.org/10.1111/j.1467-8578.2010.00477.x>
- Pai, A., Suris, A., & North, C. (2017). Posttraumatic Stress Disorder in the DSM-5: Controversy, Change, and Conceptual Considerations. *Behavioral Sciences*, 7(4), 7. <https://doi.org/10.3390/bs7010007>

Paper Tigers [YouTube Video]. (2016). Retrieved from <https://www.youtube.com/watch?v=iV3wzUhJSKs>

Parents who had severe stresses, trauma in childhood more likely to have kids with behavioral health problems. (2017). Retrieved August 9, 2019, from UCLA Health website: <https://www.uclahealth.org/parents-who-had-severe-stresses-trauma-in-childhood-more-likely-to-have-kids-with-behavioral-health-problems>

PBS. (2018a, February 22). Episode #1 - ACEs and Their Effects. Retrieved July 17, 2019, from PBS website: <https://www.pbs.org/video/aces-episode-1-u7sgje/>

PBS. (2018b, February 22). Episode #2 -The Role of Stress. Retrieved July 18, 2019, from PBS website: <https://www.pbs.org/video/aces-episode-2-lycuah/>

PBS. (2018c, February 22). Episode #3 - Fact not Fate. Retrieved from PBS website: <https://www.pbs.org/video/aces-episode-3-ewzfui/>

Peterson, S. (2018a, March 27). Essential Elements. Retrieved August 9, 2019, from The National Child Traumatic Stress Network website: <https://www.nctsn.org/trauma-informed-care/trauma-informed-systems/justice/essential-elements>

Peterson, S. (2018b, November 5). About child trauma. Retrieved from The National Child Traumatic Stress Network website: <https://www.nctsn.org/what-is-child-trauma/about-child-trauma>

Preidt, R. (2019, March 21). Abuse in Childhood Tied to Brain Changes and Later Depression. Retrieved from US News & World Report website: <https://www.usnews.com/news/health-news/articles/2019-03-21/abuse-in-childhood-tied-to-brain-changes-and-later-depression>

RB-Banks, Y., & Meyer, J. (2017). Childhood Trauma in Today's Urban Classroom: Moving beyond the Therapist's Office. *Educational Foundations*, 30(1-4), 63-75. Retrieved from <https://eric.ed.gov/?id=EJ1173234>

Redford, J., Pritzker, K., Norwood, T., Boekelheide, T., In Bradwell, J., & KPJR Films,. (2015). Paper tigers.

Reker, K. (2016). Trauma in the classroom: Teachers' perspectives on supporting students experiencing child traumatic stress. Retrieved from https://ecommons.luc.edu/luc_diss/2146/

Romano, E., Babchishin, L., Marquis, R., & Fréchette, S. (2014). Childhood

- Maltreatment and Educational Outcomes. *Trauma, Violence, & Abuse*, 16(4), 418–437. <https://doi.org/10.1177/1524838014537908>
- Ruiz, R. (2014, July 7). How childhood trauma could be mistaken for ADHD. Retrieved from The Atlantic website: <https://www.theatlantic.com/health/archive/2014/07/how-childhood-trauma-could-be-mistaken-for-adhd/373328/>
- Russell, G., Ford, T., Rosenberg, R., & Kelly, S. (2013). The association of attention deficit hyperactivity disorder with socioeconomic disadvantage: alternative explanations and evidence. *Journal of Child Psychology and Psychiatry*, 55(5), 436–445. <https://doi.org/10.1111/jcpp.12170>
- Sadin, M. (2017). The Perceptions of Special Education Teachers Regarding Trauma-informed Care: A Qualitative Case Study. Retrieved from http://www.traumasensitive.com/DM_Sadin_Melissa_Final.pdf
- SAMSHA. (2014). SAMHSA’s Concept of Trauma and Guidance for a Trauma-Informed Approach Prepared by SAMHSA’s Trauma and Justice Strategic Initiative. In SAMSHA. Retrieved from U.S. Department of Health & Human Services website: <https://store.samhsa.gov/system/files/sma14-4884.pdf>
- Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., Garner, A. S., . . . Wood, D. L. (2011). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, 129(1), 232–246. <https://doi.org/10.1542/peds.2011-2663>
- Smyth, M. (2017). Teachers Supporting Students Affected by Trauma. Retrieved from Wilfrid Laurier University website: <https://pdfs.semanticscholar.org/9b69/ef3376e32f5ad4f1bee0ea89e067d70b9938.pdf>
- Stasiak, M. M. (2018). Teachers’ experiences with and perceived ability to serve students exposed to trauma. Retrieved from https://etd.ohiolink.edu/!etd.send_file?accession=dayton1533578925321897&disposition=inline
- Stern, A., Agnew-Blais, J., Danese, A., Fisher, H. L., Jaffee, S. R., Matthews, T., . . . Arseneault, L. (2018). Associations between abuse/neglect and ADHD from childhood to young adulthood: A prospective nationally-representative twin study. *Child Abuse & Neglect*, (81), 274–285. <https://doi.org/10.1016/j.chiabu.2018.04.025>
- Study Finds ADHD and Trauma Often go Hand in Hand. (2019). Retrieved from American Academy of Pediatrics website: <https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/Study-Finds-ADHD-and-Trauma-Often-go-Hand-in-Hand.aspx>

- Sun, J., Patel, F., Rose-Jacobs, R., Frank, D. A., Black, M. M., & Chilton, M. (2017). Mothers' Adverse Childhood Experiences and Their Young Children's Development. *American Journal of Preventive Medicine*, 53(6), 882–891. <https://doi.org/10.1016/j.amepre.2017.07.015>
- Symptoms of trauma. (n.d.). Retrieved from <http://recognizetrauma.org/symptoms.php>
- TED. (2015). How childhood trauma affects health across a lifetime - Nadine Burke Harris. Retrieved from <https://ed.ted.com/featured/eczPoVp6>
- Trauma. (n.d.). Retrieved from American Psychological Association website: <https://www.apa.org/topics/trauma/>
- Van der Kolk, B. (2015). The body keeps the score: Mind, brain and body in the transformation of trauma. London: Penguin Books.
- Van der Kolk, B. A., Pynoos, R. S., Cicchetti, D., Cloitre, M., 'andrea, W. D., Ford, J. D., . . . Putnam, F. W. (2010). Proposal to include a developmental trauma disorder diagnosis for children and adolescents in DSM-V. Retrieved from http://www.traumacenter.org/announcements/DTD_papers_Oct_09.pdf
- Waggoner, D. (2018). Responding to students exposed to community violence: A mixed methods study of teachers' perceptions of trauma-informed service delivery. Retrieved from <https://digscholarship.unco.edu/cgi/viewcontent.cgi?article=1528context=dissertations>
- Whitaker, R. C., Herman, A. N., Dearth-Wesley, T., Smith, H. G., Burnim, S. B., Myers, E. L., . . . Kainz, K. (2019). Effect of a Trauma-Awareness Course on Teachers' Perceptions of Conflict With Preschool-Aged Children From Low-Income Urban Households. *JAMA Network Open*, 2(4), e193193. <https://doi.org/10.1001/jamanetworkopen.2019.3193>
- Wolke, D., & Lereya, S. T. (2015). Long-term effects of bullying. *Archives of Disease in Childhood*, 100(9), 879–885. <https://doi.org/10.1136/archdischild-2014-306667>

Appendix A

LEE UNIVERSITY

HUMAN SUBJECTS REVIEW FORM

Completion of this form is required for each research project using human subjects. This document acts as a statement by the investigator that the project complies with The Public Health Service Act (P.L. 93-348) as implemented by HHS regulation 45 CFR 46 and Lee policies.

Principal Investigator: Chanmony Lee Miller

(If a student, please list faculty advisor as co-investigator)

Department: Helen DeVos School of Education Address: 1120 N Ocoee St Cleveland, TN 37311
Tel No. (423) 614-8672

Co-Investigator: Dr. Kimberly Moffett, Dr. Jonathon Stout

Department: Helen DeVos School of Education Box No. 3450 Tel No.: 423-614-8672

Estimated Period for This Project: Two months

Source of Funds/Funding Agency: McNair

Project Title: Teacher Perceptions of Trauma in the Classroom

Please check one of the following:

1. X This project meets the requirements of Paragraph 46.101(b) and is exempt.
(Please complete sections A [check the appropriate exemption category] and B and attach a copy of the survey if applicable).
2. This project does not meet the requirements of Paragraph 46.101(b) and is not exempt from committee review. (Please complete Section B and C and attach a copy of the survey and/or Informed Consent form if applicable.)

- X 2. Research involving the use of educational tests such as (cognitive, diagnostic, aptitude, achievement, personality), survey procedures or observation of public behavior **unless**:
- a. information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and
 - b. any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation

SECTION B

1. Provide a concise description (~1-2 paragraphs) of your proposed project, including purpose and objectives.

This project will seek to understand teachers' perceptions of trauma through a quantitative survey. We hope to determine whether teachers recognize the signs of trauma and feel adequately prepared to support students who have experienced adverse childhood experiences. We also would like to determine what affects a teachers' perceptions, such as previous trauma training, type of school, region, years teaching, age, and gender.

2. Provide a detailed description of all procedures involving human subjects including (but not limited to):

- a. **Subject selection procedure**, including a description of your target population, recruitment procedures, intended sample size, and sampling method:

Our target population is teachers from various school settings and regions. We will be sending the survey to five schools through email through convenience sampling. Our intended sample size is at least 200.

- b. **Informed consent procedures**, including how participants will receive the consent form (e.g., hard copy, electronically) and how participants will indicate consent. Please attach a copy of the Informed Consent form at the end of this document.

Participants will receive the survey link via email. The first page of the survey will include their informed consent form where participants can give consent by continuing with the survey.

c. **Measures to be collected on Human Subjects.** Please describe all measures (i.e., tests, surveys, observations, questionnaires, interview questions, assessment scales to be collected or used on your participants). Provide a copy of each measure at the end of this document.

We will be conducting a quantitative survey.

3. Is this an experimental project? That is, does your project any manipulation of human behavior or assigning participants to experimental/control groups?

Check one: ☐ YES* ☒ NO

5. Do you expect any possible psychological or emotional risks?

Check one: ☒ YES* ☐ NO

*If you checked yes, please describe the nature of the psychological or emotional risks present in this study, and what protections you will put in place to protect against this risk.

There is minimal psychological or emotional risk associated with this survey. Risks could include emotional distress due to past or present memories of trauma with a student or self, though this risk is no more significant than those that could be experienced in day-to-day life. This is noted in the informed consent form.

6. Will data be recorded in such a manner that the human subject can be identified?

Check one: ☐ YES* ☒ NO

*If you checked yes, please justify the need to identify participant data and explain how these data will be secured.

7. Does this study involve significant deception to the participants?

Check one: ☐ YES* ☒ NO

Appendix B

INFORMED CONSENT FORM

Lee University

Teacher's Perceptions of Trauma in the Classroom

You have been asked to take part in a research project described below. The following instructions will explain the project to you in detail. If you have questions after completing the following surveys, please contact Chanmony Miller at cmille15@leeu.edu.

Description of the project:

This survey is looks at teacher's perceptions of trauma in the classroom and the effects of teacher training on effectively recognizing children's behavior.

Procedures:

If you decide to take part in this study, here is what will happen: the approximately 5-10 minute survey will be ranking and multiple choice with few explanatory questions, and demographical information.

Risks or discomfort:

The risks that you will be exposed to in this study are minimal and may include emotional distress due to past or present memories of trauma with a student or self.

Benefits of this study:

It is hoped that results of this study will be presented or published in a scientific setting that will allow for better understanding of trauma in schools.

Compensation:

There is no compensation for participating in this study.

Confidentiality:

Your part in this study is confidential within legal limits. The researchers and Lee University will protect your privacy, unless they are required by law to report information to city, state or federal authorities, or to give information to a court of law. Your data will be matched by code to your identity so your results can be tracked over time. However, all reported, presented, and published data will have all identifying information removed. All data will be collected on paper or on password-protected computers, to which only members of the research team have access. After completion of the research, all paper data will be securely stored in the locked lab rooms, and all computer data will be stored on password-protected computers.

Voluntary participation and withdrawal:

All participation is voluntary. Refusal to participate in any or all aspects of this project will be immediately honored. If you decide to be in the study and change your mind, you have the right

to drop out at any time. If you drop out during this study, please contact the researcher.

Questions, Rights and Complaints:

If you have questions after completing the following surveys, please contact Chanmony Miller cmille15@leeu.edu. If you have any questions or concerns about your rights as a research participant in this study, please contact the Human Subjects Review Committee at Lee University.

Consent statement

By moving to the next screen you consent to participate in this project. This statement certifies the following: you are 18 or older and you have read the consent and all questions have been answered. You understand that you may withdraw. All answers you provide are kept private. You have the right to see the results of this study if you wish. A copy of the informed consent will be given to you if requested.

Appendix C

1. What is your age?

- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65+

2. What is your gender?

- ☐ Female
- ☐ Male

3. What is your racial or ethnic identity? (Select all that apply.)

- ☐ African-American/Black
- ☐ East Asian
- ☐ Hispanic/Latinx
- ☐ Middle Eastern
- ☐ American Indian/Alaskan Native
- ☐ Pacific Islander
- ☐ South Asian
- ☐ Southeast Asian
- ☐ White
- ☐ None of the above, please specify...

4. How many years have you taught?

- ☐ 1-5
- ☐ 5-10
- ☐ 10-20

☐ 20-30

☐ 30+

5. In what type of school do you teach?

☐ Public

☐ Private

☐ Charter

☐ Magnet

☐ BIE (Federal or Tribal)

6. What geographical region is your school considered?

☐ Rural

☐ Suburban

☐ Urban

☐ Reservation

7. What grades do you teach? (check all that apply)

☐ Elementary

☐ Secondary

☐ Special education

☐ Middle grades

8. Have you ever experienced childhood trauma?

☐ Yes

☐ No

9. How confident do you feel in recognizing trauma behaviors in your classroom?

not confident somewhat confident very confident

10. How confident do you feel in dealing with trauma behaviors within the classroom?

Not confident somewhat confident very confident

*** 11. Did you receive trauma training?**

☐ Yes

☐ No

12. When did you receive the training? (check all that apply)

☐ Pre-service (i.e.-student teaching, college course, training before teaching)

☐ In- service (while teaching, school provided)

☐ Outside service (in addition to school)

13. Approximately how many hours of training have you received?

☐ 1-3 hours

☐ 3-5 hours

☐ 5-7 hours

☐ 7+ hours

14. What curriculum was used during training?

15. In respect to your school and the students you teach, from the list below choose up to 7 common likelihoods of trauma: w

- ☐ Bullying
- ☐ Death of family member/close friend
- ☐ Divorce/ separation
- ☐ Experiencing Accident
- ☐ Experiencing Racism
- ☐ Emotional Abuse/ Neglect
- ☐ Low socioeconomic status
- ☐ Mental Illness in the home
- ☐ Drug Use/ Alcoholism in the home
- ☐ Parent or Guardian in Jail
- ☐ Parental Sex change
- ☐ Physical Abuse/ Neglect
- ☐ Removal from primary care giver
- ☐ Sexual molestation/ rape
- ☐ Witnessing violence
- ☐ Other (please specify)

16. In your opinion, indicate from very unlikely to very likely, which behaviors may be related to trauma within the classroom. [w](#)

☐

	Very Unlikely		Likely		Very Likely N/A	
Talking excessively/ clowning around	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Withdrawn/ Fearful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Controlling/ Perfectionism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Substance Abuse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tardiness/ Truancy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty with memory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attention seeking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty with memory/attention	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxiety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Depression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eating disorders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Defiant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unpredictable/ short tempered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sensory issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Paranoia/ hearing voices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Thrill seeking/ easily excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical symptoms (i.e.- stomach ache, headache etc)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physically violent/ aggressive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify)						<input type="checkbox"/>

Figure 1: Caption

Fall 2019

Objectification, Orientalism, and Orthodoxy: Hypatia in Modern Centuries

Kaitlyn Morrison

Dr. Aaron Johnson, Faculty Mentor

Lee University

Objectification, Orientalism, and Orthodoxy: Hypatia In Modern Centuries

Kaitlyn Morrison¹ and Dr Aaron Johnson, Faculty Mentor²

¹Lee University

Introduction

In antiquity, Hypatia's death highlighted many important things to the sources that recorded the story. To Socrates Scholasticus, her death exemplified the catastrophic violence Cyril invoked upon Alexandria by overstepping his jurisdiction as the bishop. Damascius uses her death to empathetically paint the picture of a true philosopher martyred by a changing world that should be shamed for abandoning the old ways. Lastly, John of Nikiu marks her death as the triumphant end of all idolatry in Alexandria, thanks to the guidance of Cyril's holy leadership. All of these men share a common interest in the symbolism of Hypatia's body, whether it be dismembered with tiles, gouged of her eyes, or paraded through the streets like a moderm of the Serapeum's bloody mysteries, denuded of its beauty, virtue, and feminine appeal. Synesius, her student, appeals to her for her unprecedented knowledge of philosophical secrets and access to rare items he could not get elsewhere; an appreciation more of her class-standing and her mind. With this juxtaposition between the relevance of her body and of her intellect in mind, we can begin to evaluate the classification of Hypatia's symbolism as a character that resonated deeply with those on the outside of extreme religiosity in scholarly discussion and in visual art, poetry, and performance spanning across the 18th century into the 21st century.

Protestantism and Enlightenment

"I cannot but here represent to myself with Pleasure, let who will censure me for it, the Flower of all the Youth in Europe, Asia, and Africa, sitting at the Feet of a most beautiful Lady (for such we are assur'd Hypatia was) all greedily swallowing Instruction from her Mouth, and many of 'em Love from her Eyes," writes John Toland in 1720, a fierce protestant with special vehemence against the abuses of the Catholic church ¹. Toland's pamphlet on Hypatia is a piece

¹Toland, John, "Hypatia: Or, the History of a Most Beautiful, Most Vertuous, Most Learned, and Every Way Accomplish'd Lady; who was Torn to Pieces by the Clergy of

out of four writings called the compiled into an historical novel, reading as an epistemological manual on ancient and modern Christian thought. An earlier book of Toland's, called *Christianity not Mysteriorious*, argues that most of the miracles in the Bible can be explained rationally, following John Locke's theories of rationalism. This controversial take almost had him burned at the stake by the Irish Parliament, who instead burned copies of his book in the streets when Toland stayed in England. Most of his following pamphlets and essays are narrative tirades against ecclestical authorities, specifically the Catholic church². Thus Toland's Hypatia easily emerges in his narrative as a noble scholar, who resisted unjust ecclestical power despite the uncomfortable tension it provoked in her environment. Alongside the relatable struggle his Hypatia endured, Toland finds an image of beauty and stately womanhood garnered from Damascius's *Isidore* and grasps on to it, taking several narrative liberties in his writing, consistently expounding on Hypatia's beauty and her forlorn nobility against those who tried to undermine her gender, recording even some as raping her³. Toland vehemently attacks all potential arguments that could be made to detract from her worth on the basis of gender, explaining that his Hypatia was different from modern women because she realized that a "greater Glory for a Woman" lies within her choice to "[teach] in [the philosopher's] Chair", even though "one or two Women have not long since done."⁴ According to Toland, Hypatia was powerful for both the dalliances of her sex and for her choice to utilize her talented mind, something women of his age were not wont to do.

Despite Toland's factual inaccuracies and saturated interest in extolling his Hypatia's mental stamina above that of contemporary women, possibly a more evident constraint of the text he was working with, both Maria Dzielska and Edward Watts assert that his biography was most generally accepted by scholars that went on to write about Hypatia in the following years⁵. Efforts to defend Cyril from John Toland's narrative were altogether ignored, specifically the pamphlet written by Thomas Lewis in response to the *Tetradymus*. This pamphlet posits that Hypatia was truly not a true philosopher or even a scholar of note, and instead if the pagan sources of her "achievements" are even worthy of accounting, she held rather corruptible influence over the minds of Alexandrian men for the same behaviors Damascius and Toland praise.⁶ His following

Alexandria, to gratify the Pride, Emulation, and Cruelty of their Archbishop, commonly but undeservedly titled S. Cyril." *Tetradymus*, ed. by C. Sympson, M. Cooper, and W. Reeve, (London, England 1753), <https://tinyurl.com/y3jepk9f>, chap. V, pg. 8.

²Watts, Edward. *Hypatia: The Life and Legend of an Ancient Philosopher*, (New York: Oxford University Press, 2017), pg. 135.

³Toland, John, "Hypatia...", chaps. XIII and XV., pgs. 20-23.

⁴Toland, John, "Hypatia...", chap. IV, pg. 7.

⁵Dzielska, Maria, *Hypatia of Alexandria*, (Cambridge, MA: Harvard University Press, 1996), pg. 2. Watts, Edward, *Hypatia: The Life and Legend of an Ancient Female Philosopher*, pg. 130. Gibson, Joan. "Educating for Silence: Renaissance Women and the Language Arts." *Hypatia* 4, no. 1 (1989), <http://www.jstor.org/stable/3809932>, pgs. 9-27.

⁶Lewis, Thomas, "The History of Hypatia, a Most Impudent School-Mistress of Alexandria: Murder'd and torn to Pieces by the Populace, in Defence of Saint Cyril and the Alexandrian Clergy From the Aspersions of Mr. Toland", (London, UK: Crown in Tater-Noster-Row,

arguments that Cyril was certainly within his right to reach beyond the bounds of episcopal authority, considering the fact that Orestes was a heathen, were easily overridden in the rise of an Enlightened, rational man's thinking.

Specifically, Toland wins the consensus for Enlightenment writer Voltaire and historian Edward Gibbon, who echo Socrates and Damascius' claims of Cyril's envy and obsession with power, though perhaps the latter two belong more in the field of Damascius's pagan sympathies than Toland's Protestant fury. Gibbon, who typically shared empathy with pagan empresses that fell victim to sexist comparisons to Eve and Jezebel than the preachers of "pathetic sermons" and "temperament mobs" that listened to them, describes the call for Hypatia's virgin blood over the banishment of a saint as a "gentle [atone-ment]...of superstition [Christianity]." ⁷ He records the preceding destruction of "Serapis's temple" in Alexandria with the same grim, narrative understanding of violent change it held for the pagan culture that his ancient source, Socrates, did, yet Gibbon is suspicious that the early Christian faith was a breeding ground for the continuation of pagan superstition, yielded on martyr veneration rather than pagan gods.⁸ However, Hypatia in the role of a martyr does not emerge in Gibbon's narrative as she did in Toland's, and neither does she serve much purpose in Voltaire's, aside from a perfect example of how cultic superstition erodes the naturalistic behavior of mankind. Jerome Rosenthal approaches Voltaire's philosophy of history with the assertion that Voltaire "evaluated", through satirical rhetoric in the spirit of the age of reason, "the past of man's cultural life either in so far as it offered evidence for what he admired in his contemporary European society or...as it could be regarded as the source of its evils." ⁹ Perhaps this is why he approaches the crowd of monks that killed her with this chauvinistic comment: "When one strips beautiful women, it is not to massacre them."¹⁰ Regardless of its syntax, this quote revives the question of the role of Hypatia's body and her mind as men portrayed the history of her death. The physical image of Hypatia standing naked amidst her attackers stands out, above every other motif in her life, as the most poignant theme. Some, however, explored this notion through poetry and symbolism as early as the 18th century; a neohellenistic poet Charles Leconte de Lisle, writing in the period of French revolution, writes an epic that places Hypatia and Cyril in a direct confrontation, wherein Cyril attempts to connect with Hypatia the way a "distressed

1721), pg. 10. Lewis refers specifically to the gift of the menstrual rag to her infatuated, so embarrassed by it he quotes it in Greek out of the notion that a translation would stain his page

⁷Gibbon, Edward, *The Decline and Fall of the Roman Empire: An Abridgement* by D.M. Low, (New York, NY: Harcourt, Brace and Company, 1960), pgs. 390 and 480. Dzielska, Maria, *Hypatia of Alexandria*, pg. 3.

⁸Gibbon, Edward, *The Decline and Fall of the Roman Empire: An Abridgement* by D.M. Low, (New York, NY: Harcourt, Brace and Company, 1960), pgs. 479-480.

⁹Rosenthal, Jerome. "Voltaire's Philosophy of History." *Journal of the History of Ideas* 16, no. 2 (1955), <https://www.jstor.org/stable/2707660?seq=2metadatainfotabcontents>, pg. 152.

¹⁰Dzielska, Maria, *Hypatia of Alexandria*, pg. 3. Watts, Edward, *Hypatia: The Life and Legend of an Ancient Philosopher*, pg. 139.

father” might “want [his daughter] back in the family home.”¹¹ Despite Cyril’s strong appeals for Hypatia’s turn from blasphemy, Leconte de Lisle’s Hypatia counts above all the true voices of Homer and Virgil, as she believes it echoes all the ephemeral proof the gods have left of their existence. Leconte de Lisle thus champions his belief of the lost classical world due to Christian ferocity in the intellect and beauty of his Hypatia, and echoes Toland’s anti-Catholic motif in the lines, “The vile Galilean struck you and cursed you; But in falling, you became even greater”, emphasizing that the greatness was housed in her “spirit of Plato” and her “body of Aphrodite!”¹²

Prolifically male imagination of Hypatia’s Greco-African pagan lifestyle and beauty can possibly be reduced to the cancerous growth of European orientalism, as this fetishism of Eastern culture was a predominant fad in art and literature within the 18th century.¹³ Voltaire, Gibbon, and Toland certainly saw her as a Western influence, enough to combat the tangled superstitions of her culture, yet beautiful and pagan enough to fill the ideal of an Eastern allure. However, writings in defense of Hypatia can also be a form of revolt for certain protestants against the orthodoxy, or Christian dominance in general, as this Protestant spirit evolves into the rationalist and reasonist mindset. Whatever fascination Hypatia’s death projected in the minds of historians, poets, and scholars, it is a prevalent fact that Hypatia’s intellect and beauty are the most notable things about her life, perhaps giving skeptical and fiercely Christian writers like Thomas Lewis a bit of room to air his frustrations with her renown. The famous symbol of her life and her death, which could be manipulated to represent the ideal classical world in accordance with true philosophy in a cryptic, tantalizing, and divine world that had suffocated at the hands of an emerging orthodoxy and yet retained aspects of mythical realism as it ventured into the curriculum of 18th century thinkers¹⁴, must have certainly irritated those who wanted to believe in the blamelessness of their saints and the idealisms of their history. Even though frustrated Christian writers were often drowned out by forms of thought in line with John Toland’s untempered assertions, especially those of male or female French writers, who brought the attention back and forth from Hypatia’s scientific accomplishments, her striking beauty, and her vivid death,¹⁵ a more striking and piously Protestant motif gives due diligence to her symbolic existence in the 19th century, in the form of an English pastor’s novel.

¹¹Leconte de Lisle, “Poemhunter”, Charles Maria Leconte Rene de Lisle, November 12, 2012, accessed July 30, 2019, <https://www.poemhunter.com/poem/hypatie-et-cyrille/>, par. 7.

¹²Dzielska, Maria, Hypatia of Alexandria, pg. 5.

¹³Varisco, Daniel Martin. “The Growth (Benign, Cancerous, or Otherwise) of Orientalism.” In *Reading Orientalism: Said and the Unsaid*, (Seattle; London: University of Washington Press, 2007), DOI 10.1093/jis/etp012, pgs. 79-90.

¹⁴Rosenthal, Jerome. “Voltaire’s Philosophy of History.” *Journal of the History of Ideas* 16, no. 2 (1955): pg 151. DOI 10.2307/2707660

¹⁵Dzielska, Maria, Hypatia of Alexandria, pgs. 10-23. Watts, Edward, Hypatia: The Life and Legend of an Ancient Philosopher, pgs. 137-140.

The Englishman's Fantasy

Charles Kingsley's historical-fiction novel is 500 pages long and increasingly assiduous in its message as it reads. In his lifetime, Kingsley spent a great amount of time organizing factions for Christian socialists and labour rights; in fact, he was a very active figure in the community, which can be why his Egyptian monks and priests show extraordinary anger toward his main character, Philiammon, a young monk who wishes to travel to Alexandria and preach the gospel in order to save more souls from hell. Maria Dzielska highlights that Kingsley "detested" the Catholic church for its ascetic, internal values; the same lofty and aristocratic mindset upper class citizens such as his Hypatia exude in his novel toward the Alexandrian mob, such as her "dark-skinned slaves", and "Jewish crones."¹⁶ This mindset, akin with the orientalist's motif of Western influence over rabbles of Eastern culture, is never better expressed as she shares her mission aloud with the reader: "to show one's self superior to the herd, by seeing boundless depths of living glory in myths" and "to conquer - at least to have my reward. . . [being] welcomed into celestial ranks of the heroic."¹⁷ It is this striking religiosity alongside her refined Greek features that attracts Philiammon as he becomes her student in the role of a spy for Cyril, and much of the narrative tension blossoms as a deepening eroticism as the two talk on end. In between these talks, Hypatia convenes with Orestes and his Jewish slaves to dispose of Cyril before she grants Orestes marriage, with the secret goal that her empire will overthrow all Jewish and Christian influence. Ironically, Cyril seems to have some of the same anti-Semitic aspirations in mind, as he makes plans to destroy the historical uprising of Jewish rebellion in Alexandria: "It is not enough for them to blaspheme God...to have the monopoly of all the cheating, fortune-telling, usury, sorcery, and coining of the city", but they must seek all of Cyril's ambitions as they riot and absorb the city's veneration. Their uprisings are stoppable only by "God's power through [Cyril]", revealing to the reader Kingsley's portrayal of Cyril as a power-hungry monarch that wishes to disseminate all opposition, however abusively.¹⁸ Indeed, Kingsley's anti-Semitism and Christian socialist criticism of episcopal and aristocratic power ebbs throughout the novel as the lofty and pretentious Hypatia encounters the errors of her ways often due to the work of a former Jewish student that converted into Christianity, named Raphael, tricking her by dressing as a beggar and demanding alms, a person Kingsley's Hypatia would altogether "[recoil] from", unable to "endure the sight of...anything squalid or degraded", although she taught the philosophy of an ascetic lifestyle.¹⁹ Not only Kingsley's Hypatia, but his Cyril, through his temper and ambition; Philiammon, who longs to stay a monk although he hungrily listens to Hypatia's "sorceries" and dreams of her "Greek figure"; and finally, Raphael, a "wily Jew" who, naturally, recognizes the "accursed" nature

¹⁶Dzielska, Maria, *Hypatia of Alexandria*, pg. 8. Kingsley, Charles, *Kingsley, Hypatia, Or, New Foes With an Old Face*, (New York, NY: R.F. Ferno Company, 1900), pg. 33.

¹⁷Kingsley, Charles, *Hypatia, Or, New Foes With an Old Face*, pg. 33.

¹⁸Kingsley, Charles, *Hypatia, Or, New Foes With an Old Face*, pg. 89.

¹⁹Kingsley, Charles, *Hypatia, Or, New Foes With an Old Face*, pg. 130

of his ethnicity and becomes a Christian himself, all conquer the hypocrisy of their lifestyle and are humbled by true Christianity, which is honest, meek, and empirically masculine, as the pagan, Christian, or Jewish women in the novel busy themselves with their gossip, sorcery, and pretensions.²⁰ Ultimately, even Hypatia's great philosophy is reasonless without the strong hand of Raphael's instruction.

Shortly after she is betrayed by Orestes's manipulative, power-hungry tactics, Kingsley's Hypatia converts. With her will weakened by the sorcery of a Jewish witch, she is ultimately inclined to submit to Raphael's pressures as he explains to her, with the rhythm of Socratic dialogue, how all of her philosophy, inevitably and cyclically, will fail to guard her from his true wisdom: "How sweetly and obediently my late teacher becomes my pupil!" Raphael exclaims after her logic has failed to promote her ideals yet again.²¹ In this confrontation, Kingsley professes the weakness of a philosophy that does not promote Christian theology, and that Christian theology is lost without true virtue, which Cyril and other power-hungry, self-sufficient episocal members lack, even though this comes at the cost of negating and ignoring Hypatia's virtue, intelligence, and overall role as a character in the narrative thus far; in fact, her mind is proven absolutely useless after she expresses her deepening insecurity as a scholastic professor, and Raphael responds, "You taught me most, beloved lady, when you least thought of it."²² Thus, as the "spirit of Plato" turns out to be lacking its highest good without the image of God, Kingsley shifts his attention to Hypatia's "body of Aphrodite", her beauty and grace being one of the most intriguing details of her character. Despite her conversion, his Hypatia is still murdered in the streets by a rabid mob of Christians led by a monk named Peter, as recorded in Socrates's brief biography, and as foreshadowed earlier in the novel before Hypatia's conversion.²³ Philiammon, of course, rushes to save her as a "dark wave of men" steal her from his arms and drag her "upon the church steps"; in a matter of one short paragraph, Kingsley's Hypatia dies naked before a church altar in a highly eroticized scene, fearless as she predicted she would be, emitting one hand to stretch out for her new God.²⁴

In Victorian England, Kingsley's book enjoyed extreme popularity. It was translated into several European languages and remained a favorite of the queen, who kept it in print throughout the 19th century.²⁵ While Kingsley's book does not hold up very well under modern scholarly reading, as Edward Watts and Dzielska openly criticize Kingsley's racist and anti-Semitic rhetoric, as well

²⁰Kingsley, Charles, *Hypatia, Or, New Foes With an Old Face*, pg. 126, 290, 343

²¹Kingsley, Charles, *Hypatia, Or, New Foes With an Old Face*, pg. 433

²²Kingsley, Charles, *Hypatia, Or, New Foes With an Old Face*, pg. 435

²³Kingsley, Charles, *Hypatia, Or, New Foes With an Old Face*, pgs. 298, 438. Socrates Scholasticus, *The Ecclesiastical History of Socrates Scholasticus*, ed. by Schaff, Phillip, and Wace, Henry, *A Select Library of Nicene and Post-Nicene Fathers of the Christian Church*, "Socrates, Sozomenus: Church Histories." 2nd ed., vol. 2, Book V.XVI., pgs. 126-127.

²⁴Kingsley, Charles, *Hypatia, Or, New Foes With an Old Face*, pg. 457

²⁵Watts, Edward, *Hypatia: The Life and Legend of an Ancient Philosopher*, pg. 141.

as his tensely erotic descriptions of Hypatia's beauty and death, Watts points out that the popularity of his novel suddenly opened up endless possibilities for "radicalized reinterpretations"²⁶ of Hypatia's story, and with this realization, productions such as plays, paintings, and poems expanded from Kingsley's 19th-century Protestant zeitgeist into 20th and 21st-century motifs. Both 20th-century Italian and German literature make her a protagonist that stands bravely against the dissolving philosophy of the Mediterranean world; some authors such as Contessa Diodate Roero di Silazzo and Carlo Pascal question the idea that this lost society should be read as laterally negative, as they choose to follow Kingsley's path of Hypatia's conversion.²⁷ Carlo Pascal in 1907, however, is the first writer Dzielska notes that presents Hypatia's murder as an anti-feminist act: "Formerly free, intellectually independent, and creative, they [women] were suppressed into silence."²⁸

"The Course of the World"

Hypatia's literary ascension from a smart and beautiful woman whose death marked the change from a spirited classical society into a Christian supremacy, or otherwise was rewritten to be a figure of Christianity and martyrdom herself, shifts away from Victorian Protestant culture into a legend that records one of the first victims of many following witch hunts, if we are following Dzielska's chronological timeline, which jumps thematically from Pascal's 1907 article to a 1978 dramatic novel written by Mario Luzi.²⁹ In this novel, she has a premonition of her death, much like Kingsley's, but remains a pagan to the end in order to protect her ideals and her truth. In fact, she looks forward to her death, as her eyes were opened to what would become of women of her caliber in the ages to come; drawing a close connection made by Giulio Gasperini that she was written to immortalize a "new pagan Christ" as she is "dismembered in the center of a Church."³⁰ As productions based on this play ran in Italy, Hypatia was credited outside of literary circles as one of the few women of renown in the scientific world. Margaret Alic, in a chronological novel that records the history of all females involved in science, describes her death as coming to "symbolise the end of ancient science", even though the structures had been in decline for centuries, "after Hypatia only came the chaos and barbarism of the Dark Ages."³¹ B. L. Van Der Waerden describes Hypatia in a textbook as "the heroine of romantic atrocity tales" and asserts that "Alexandrian mathematics came to

²⁶Watts, Edward, *Hypatia: The Life and Legend of an Ancient Philosopher*, pg. 142.

²⁷Dzielska, Maria, *Hypatia of Alexandria*, pg. 12.

²⁸Dzielska, Maria, *Hypatia of Alexandria*, pg. 13.

²⁹Dzielska, Maria, *Hypatia of Alexandria*, pgs. 13-14. Edward Watts also makes a significant leap into the 21st century, accounting for the suggestion that Hypatia faded into the background of scholastic history, outside of the world of scholarly orthodoxical or neohellenistic criticisms.

³⁰Gasperini, Giulio, "Libro di Ipazia': in un mondo che cambia chi sa distinguere il tramonto dall'alba?", accessed August 3 2019, *ChronicaLibri* (2011), par. 3.

³¹Alic, Margaret, *Hypatia's Heritage: A History of Women in Science from Antiquity Through the Nineteenth Century*, (Boston: Beacon Press, 1986), pg. 42.

an end” because of her death.³² These sources do not have Protestant agendas that wish to place the orthodoxy at fault, nor are they orientalist-minded men fascinated by the Western Hellenistic presence in Africa. Alic and Wearden simply serve to credit Hypatia with her scientific accomplishments of which we have no tangible record, placing the facility of her intellect above that of her symbolism and her new-Christ persona. This sort of fantastical interplay between her mathematical pursuits and her feminist symbolism is exactly the premise of a poetic prose-piece submitted in the fourth issue of *Hypatia: A Journal of Feminist Philosophy*.

Hypatia began publication in 1986, founded by philosopher and legal scholar Azizah al-Hibri, and runs to this day.³³ The topics range in content, but field submissions only from feminist theorists or philosophers.³⁴ Three years after its commencement, a self-described feminist poet and novelist named Ursule Molinaro submitted a prose-piece about Hypatia and Hypatia’s death, a historical event that “marks the end of a time when women were still appreciated for the brain under their hair.”³⁵ Molinaro opens the poem with a description of Hypatia’s screams that rang in the minds as warnings of “future centuries of reformers & healers that they must hush their knowledge if they wished to avoid burning as heretics, or witches. If they wished to stay alive.”³⁶ Immediately, we must hear the screams of Hypatia as they reverberate from the “moon gate & sun gate of that civilized Egyptian city” and understand the weight it had upon the city and the surrounding world, as the world “run by a new brand of Christians, politicians of faith” would push back on all “independent thought...Especially when taught by women.”³⁷ Molinaro’s Hypatia does not belong to this age from the start of her life, as Molinaro juxtaposes St. Augustine’s disavowal of astrology as heresy against Hypatia’s father Theron’s casting charts at her birth, and all of the charts he casted on her lovers as she grew older and older. Theron dislikes Hypatia’s sexual exploits, and wonders if the mysteries of the power within her chart allow her to abuse men as her marriage to Isidore (as mentioned, recorded improbably by the *Suda* and touted by John Toland) continues with Isidore’s acquiescence to Hypatia’s amorous relations with other men, despite their vows. All her lovers abandon her, along with her city, and Hypatia chooses to remain, although her father warns her what the stars say, unable to disbelieve the science that posits her future. Molinaro’s Hy-

³²B. L. Van Der Waerden, *Science Awakening*, (New York: Springer Science and Business Media, 1962), pg. 290.

³³University of Richmond, “Azizah Y. al-Hibri”, Richmond School of Law, (1995-2019), accessed August 3 2019, <https://law.richmond.edu/faculty/aalhibri/>

³⁴*Hypatia: A Journal of Feminist Philosophy*, “proposal guidelines for special issues, clusters, and symposia”, *Hypatia Philosophy*, (2019), <http://hypatiaphilosophy.org/special-issues/proposal-guidelines-special-issues-clusters-symposia/>

³⁵Molinaro, Ursule. “A Christian Martyr in Reverse Hypatia: 370 - 415 A. D.: A Vivid Portrait of the Life and Death of Hypatia as Seen through the Eyes of a Feminist Poet and Novelist.” *Hypatia* 4, no. 1 (1989), <http://www.jstor.org/stable/3809931>, pg. 1.

³⁶Molinaro, Ursule. “A Christian Martyr in Reverse Hypatia...”, pg. 6.

³⁷Molinaro, Ursule. “A Christian Martyr in Reverse Hypatia...”, pg. 6.

patia, like Pascal's and Luzi's, senses what will unfold in the centuries ahead, "beyond which she had no desire to live", as she does not wish to live in a world that does not allow her to be more learned than her astrologer father and philosopher husband, that does not condone her sexual freedom despite a commitment to a monogamous relationship, and that allows a man such as Cyril to kill her.³⁸ Molinaro's Hypatia dies, as so many other Hypatias have died, naked in the Christian church of Caesareum:

staring wide-eyed across a sea of bodies that were pausing briefly, getting ready to charge into the new Christian era in which she had no desire to live. Until she realized how long it took a healthy 45-year-old woman's body to be torn fingers from hands from wrists from elbows from shoulders from toes from feet from ankles from knees from thighs. For the 45-year-old heart to stop beating. For her brain to lose its exceptional consciousness.³⁹

Molinaro's *Hypatia* is the perfect feminist martyr, and the perfect Hypatia to represent the journal that shares her name; she is sexually free, smarter and stronger than all of her male lovers, and without fear of her death or of moral qualms, for she has known her role and purpose since birth because of her surrounding scientific environment. However, she dies like a human in the midst of the chaos of the crowd; shrieking through the pain and shock of the atrocity committed upon her body.

Despite the vastly different rhetorics that went into the various catalogues on Hypatia's death, the motif that remains vivid in every writer's mind is the brutality of the reportedly Christian crowd that killed her. Many have attempted to answer the question of why she died and why Christians did not act like Christians, and many of them have pulled from sources that are hopeful, vehement, or blatantly wrong. Many wish to blame Cyril, yet nothing can truly be conjectured about Cyril's involvement with Hypatia, nor can we speak to a possible underlying hatred of women or an attempt to rise above his bishopric jurisdiction in ways that other church officials contemporary to his time did not do. Regardless of any source's personal belief or ambition, Hypatia emerges over again as a determined and inspired figure that worked to serve the public and those she was closest to the way she believed a Platonic philosopher should. She was born into a dangerous socio-political climate that would have made her religious beliefs challenging, despite the fact the philosophy she taught did not have much need for public ritualism. Insofar as we know, she died a pagan woman, even though Christian opposition would have made maintaining her beliefs more and more difficult. The constant ebb and flow through criticism and rehashings of her influence and death is the most important thing we can learn from Hypatia's narrative use across the centuries mentioned in this paper, as it holds insight into how legends are formed, and how real, living people can

³⁸Molinaro, Ursule. "A Christian Martyr in Reverse Hypatia...", pg. 7.

³⁹Molinaro, Ursule. "A Christian Martyr in Reverse Hypatia...", pg. 8.

be used as tools to fit into the hindsight of any given age's pretensions. Hypatia emerged in the 18th century as a weapon against orthodox history, and maintained this role as she was used by historians and prevalent skeptics of the church, who assigned her a role as a Western thinker housed in the body and timeframe of Eastern otherness. Her Westernism is proficially negated by anti-elitist Kingsley, as he sets the tone for her popularity over the 20th century. It is here where she is given her familiar role as a feminist; now, her name is used to circulate feminist theory and thought. The real Hypatia has been sought out by scholars with a real ambition to discover her vital role in Alexandrian culture, yet much is left to assumption, because the ideals twisted out of her legend holds more weight in the prolific imagination of writers.

References

- Alic, Margaret, *Hypatia's Heritage: A History of Women in Science from Antiquity Through the Nineteenth Century*, (Boston: Beacon Press, 1986)
- B. L. Van Der Waerden, *Science Awakening*, (New York: Springer Science and Business Media, 1962).
- "The Chronicle of John, Bishop of Nikiu," Tertullian, transcribed by Pearse, Roger, last modified October 26th, 2002, http://www.tertullian.org/fathers/nikiu_2_chronicle.htm
- Damascius: *The Philosophical History*, transl. by Athanassiadi, Polymnia. (Athens: Apamea Cultural Association).
- Dzielska, Maria. *Hypatia of Alexandria*, (Harvard University Press, 1996).
- Feke, Jacqueline. *Ptolemy's Philosophy: Mathematics as a Way of Life*, (Princeton University Press, 2018).
- Gasperini, Giulio, "'Libro di Ipazia': in un mondo che cambia chi sa distinguere il tramonto dall'alba?", accessed August 3 2019, *ChronicaLibri* (2011).
- Gibbon, Edward, *The Decline and Fall of the Roman Empire: An Abridgement by D.M. Low*, (New York, NY: Harcourt, Brace and Company, 1960).
- Haas, Christopher, *Alexandria in Late Antiquity: Topography and Social Conflict*, (JHU Press 2002), <https://tinyurl.com/y4w2vvsp>.
- Hypatia: A Journal of Feminist Philosophy*. Founded by al-Hibri, Azizah (1986-present). <http://hypatiaphilosophy.org/about/hypatia-wiley-blackwell/read-hypatia/>. Accessed 13 June 2019.
- Molinaro, Ursule. "A Christian Martyr in Reverse Hypatia: 370 - 415 A. D.: A Vivid Portrait of the Life and Death of Hypatia as Seen through the Eyes of a Feminist Poet and Novelist." *Hypatia* 4, no. 1 (1989): 6-8. <http://www.jstor.org/stable/3809931>. Accessed 14 June 2019.
- John, Bishop of Nikiu. Chronicle 84.87-103. Reprinted from *Alexandria 2*. Phanes Press (1993). <https://tinyurl.com/y2qhp8b>. Accessed 14 June 2019.
- Kingsley, Charles. *Hypatia: Or, New Foes with an Old Face*. Oxford University

- Press (1915). https://books.google.com/books?id=JY8OAAAAYAAJsource=gbs_navlinks.s. Accessed 13 2019.
- Leconte de Lisle, "Poemhunter", Charles Maria Leconte Rene de Lisle, November 12, 2012, accessed July 30, 2019, <https://www.poemhunter.com/poem/hypatie-et-cyrille/>
- Lewis, Thomas. The History of Hypatia, a Most Impudent School-mistress of Alexandria: Murder'd and Torn to Pieces by the Populace, in Defence of Saint Cyril and the Alexandrian Clergy. From the Aspersions of Mr. Toland. T. Bickerton (1721).
- Livius, "Texts of Synesius", last modified May 4, 2019, accessed June 19, 2019 <https://tinyurl.com/y6acv2ue>.
- Toland, John. "Hypatia: Or, the History of a Most Beautiful, Most Vertuous, Most Learned, and Every Way Accomplish'd Lady; who was Torn to Pieces by the Clergy of Alexandria, to gratify the Pride, Emulation, and Cruelty of their Archbishop, commonly but undeservedly titled S. Cyril". Tetrady-mus. London, England (1753). C. Simpson, M. Cooper, and W. Reeve. <https://tinyurl.com/y3jepk9f>. Accessed 12 June 2019.
- Rivera, David Maldonado. "The Letter Collection of Synesius of Cyrene." Late Antique Letter Collections: A Critical Introduction and Reference Guide, ed. by Sogno, Cristiana, Storin, Bradley K., and Watts, Edward J., (Oakland: University of California Press, 2017). <http://www.jstor.org/stable/10.1525/j.ctv1wxs0x.19>.
- Rosenthal, Jerome. "Voltaire's Philosophy of History." Journal of the History of Ideas 16, no. 2 (1955), https://www.jstor.org/stable/2707660?seq=2#meta-data.info_tab_contents.
- Socrates Scholasticus. The Ecclesiastical History of Socrates Scholasticus, ed. by Schaff, Phillip, and Wace, Henry, A Select Library of Nicene and Post-Nicene Fathers of the Christian Church, "Socrates, Sozomenus: Church Histories." 2nd ed., vol. 2.
- "Synesius of Cyrene to Hypatia." Deep Roots, New York, NY (2013). Edited by Altman, Billy, Costa, J.C., Hill, Christopher, McGee, David. <http://deeprootsmag.org/2013/08/28/synesius-of-cyrene-to-hypatia>. Accessed 14 June 2019.
- Varisco, Daniel Martin. "The Growth (Benign, Cancerous, or Otherwise) of Orientalism." In Reading Orientalism: Said and the Unsaid, (Seattle; London: University of Washington Press, 2007), <http://www.jstor.org/stable/j.ctvcwnjk4.9>,

Watts, Edward. *Hypatia: The Life and Legend of an Ancient Philosopher*, (New York: Oxford University Press, 2017).

Wessel, Susan. *Cyril of Alexandria and the Nestorian Controversy: The Making of a Saint and of a Heretic*, (OUP Oxford, 2004), <https://tinyurl.com/y2hahehc>.

Volume 3

Article 15

Fall 2019

Why Johnny Doesn't Write

Brittney Perez

Dr. Donna Summerlin, Faculty Mentor

Lee University

Why Johnny Doesn't Write

Brittney Perez¹ and Dr. Donna Summerlin, Faculty Mentor²

¹Lee University

Abstract

Author Rudolph Flesch recognized the epidemic between students and the lack of reading skills. However, Flesch did not blame the students or a lack of ability or intellect. Instead, he called attention to the method by which students were being taught to read. Flesch published his thoughts in his book, *Why Johnny Can't Read*, and he brought awareness to the way students are being taught. It's not a lack of ability that hinders students from becoming successful readers and/or writers just as it is not a lack of ability that hinders students from being great writers. This paper focuses on a particular strategy to hopefully resolve or improve the barrier between students and writing. Expressive writing is a powerful form of writing that could relieve anxiety, lessen the need for punishment, improve test scores, and improve student learning overall. If it is implemented correctly, it could change classrooms and the way students feel about writing.

Introduction

In 1955, Flesch realized the issue between many children and reading. According to journalist Martin Cothran, Flesch believed that many children were not learning to read because of the method of reading instruction they were exposed to. It wasn't that students were incapable, they simply were not being taught in the best way. Flesch later wrote a book entitled *Why Johnny Can't Read*, which discusses methods of discussion for reading in the classroom. While awareness of the problem and research rapidly grew, many people chose to over-look the problem and do nothing. Now, the same can be said for students and writing. Many students have no desire to write simply because of the teaching methods they have been exposed to. Often times, teachers will turn a student's paper into a sea of red marks and comments. This slowly kills a student's desire to write and learn through the power of words. Expressive writing is a writing style that could teach students how to write again, and it could allow them to find a love for writing. Expressive writing allows individuals to express, through

words, what they are feeling, thinking, and believing at any given moment. If it were to be implemented often enough and used correctly, expressive writing could revolutionize classrooms. Among other benefits, expressive pedagogy can be restorative and fulfilling. Due to its therapeutic and self-reflective benefits, expressivism could be a proactive way to improve student involvement and test scores.

A writing style that focuses on the individual writer and the development of the writer's voice, expressive pedagogy dates all the way back to the 1960s and 1970s and is still used today. This method of writing is often related to process pedagogy; however, expressivism is far less focused on the formal process of the writing. Expressivism began in the anti-textbooks of Peter Elbow, Donald Murray, and Ken Macrorie, where each of the men provided a different approach to the standard composition pedagogy. According to Burnham, "Expressivism's strength is its insistence that all concerns, whether individual, social, or political, must originate in personal experience and be documented in the student's own language" (31). There is something powerful about giving students the opportunity to document their thoughts and feelings in their own words. This type of writing can lead to knowledge on a deeper level when students are able to process things outwardly and make connections in their own ways. The idea of expressive pedagogy is that the writer will have all authority as he or she uses language to work through whatever he or she may be thinking on the inside. This can be done in the form of journals, creative writing assignments, drafts, revisions, freewriting, and note-taking.

Not only can expressive pedagogy allow students to discover their own voice, but it can also be a great tool to relieve stress and mental clutter. Many studies support the idea that expressivism can be remedial and useful in relieving dependency and even illness. According to Dr. Pennebaker at the University of Texas at Austin, expressive pedagogy can be therapeutic when it is used consistently and correctly. In his book *Opening Up: The Healing Power of Expressing Emotions*, Dr. Pennebaker discusses the extensive research and experiments he conducted to explore the healing power of expressivism. In one experiment, he focused on the benefits of writing after traumatic experiences. He divided people into different groups and gave them different instructions such as "just vent your emotions during the writing sessions," "just write about the facts surrounded the trauma," or "write about the facts surrounding a trauma and vent your emotions dealing with the trauma" (31). While each group benefited from their writing instructions, he found that the third group, that vented their emotions dealing with the trauma and wrote about the facts of the trauma, had the most long-term benefits:

People who wrote about their deepest thoughts and feelings surrounding a trauma evidenced an impressive drop in illness visits after the study compared with other groups. In the months before the experiment, everyone in all the groups went to the health center for

illness at the same rate. After the experiment, however, the average person who wrote about their deepest thoughts and feelings went fewer than 0.5 times—a 50 percent drop in the monthly visitation rate (Pennebaker 34).

This experiment provides evidence for Dr. Pennebaker's theory and supports the idea that expressive writing can provide amazing benefits for people who suffer from stress, trauma, or other mood disorders. It is worth mentioning that, at the time of the experiment, the people in the study were receiving treatment after experiencing a traumatic event; therefore, the setting is different from the average classroom where students are not all suffering with post traumatic stress disorder. Still, the results of the experiment support the idea that expressive writing is therapeutic and provides long-term results for people.

The University of Pittsburgh's Alternative Curriculum Program is a study that implemented expressive pedagogies in an actual classroom. Because a lot of the conclusions about expressivism were based off secondary research and textbooks covering hypothetical classrooms, one of the goals of this program was to find out how expressivism would work in an actual classroom. The Alternative Curriculum program began as a first-year program, but they eventually began to accept sophomore students as well. The AC program began in 1973 with a total of 150 students and they were divided into groups of fifteen with one faculty member per group.

According to one of the AC faculty members, Dan Tannacito, the main goal of the program was described as a way to "let students define how to envision an alternative way of life within but opposed to the dominant cultural and educational model" (Warnick 191). Students wanted to envision and implement a new educational approach to education while remaining within the culture of education at the University of Pittsburgh. Tannacito also stated that "students wanted to learn how literature and writing were an asset in their lives" (Warnick 191). The students wanted to explore the benefits of writing and literature and test the idea that literature and writing are, in fact, necessary.

Expressive pedagogy was heavily implemented in the Advanced Curriculum program as the students were rarely required to write traditional essays or papers. Instead, they had opportunities to keep journals, write reflections, and take notes. Students in the program often paired expressive writing techniques with formal writing assignments and found that it worked out quite well. This practice in the classroom supports the idea that students can learn and retain information by connecting new concepts to their own words, thoughts, and language. Berlin claims that one of the benefits of expressivism in the classroom is that "expressivist classrooms encourage students to find their voice not through the happening or the political confrontation but through private reflection" (152). Being able to take in information and privately reflect on it allows students to process information in their own way. According to Berlin's state-

ment, students do not learn by simply being in the face of action. They learn by taking things in and privately making meaning, which means that expressivism could play a vital role in how students learn and retain information. Therefore, implementing expressive pedagogy as a regular part of the curriculum could lead to more student success despite the student's ability level or prior knowledge. This could then lead to a confidence boost in some students, which could result in more positive behavior in the classroom and more student involvement.

While other techniques were implemented for different assignments throughout the AC course, journaling was implemented as a common practice for most of the students in the program. A handout written for students in the AC program suggested that all students keep a journal in order to keep a record of events and information and because, according to physics professor John Townsend, "It also gives you practice in expressing yourself through writing" (qtd. in Warnick 193). Many of the journals were found and collected in the study's archives, and many of them are testaments of the power that lies within expressive writing.

One journal that was saved shows how one unnamed girl used her journal to work through some of her deepest thoughts. She writes, "I've been keeping a journal for no one but myself to get at my confusions, to clarify my ideals, and to record the changes within me in an outward form . . . writing is becoming more of a natural form of expression for me. I am choosing it and using it in many ways and I now see why I always will" (qtd. in Warnick 193). Her words are extremely personal and private, and she exemplifies how expressive writing can allow one to work through finding a voice and identity through language. Her words sound as if she relied heavily on her journal to help shape and bring forth the person she was on the inside. The self-reflective writing in the journal also enabled her to see how writing truly is an asset in her life. This supports the idea that expressive writing in the classroom could enable students to find their identity and work through their deepest thoughts with journaling. This could be especially beneficial in middle and high school grades when many students are experiencing puberty and working toward finding out who they are. Expressive writing could help students express the changes that they feel on the inside in an outward form.

Expressive pedagogy emphasizes the importance of personal experiences and how the unique moments of one's life can be portrayed through language. So, while this pedagogy is self-centered and doesn't focus much on the formalities of writing, it still has the potential to teach students so much more. Expressive writing has the potential to teach students how to have a voice and how to use that voice to tell a unique narrative.

By psychologist Ken Macrorie's definition of opposition, "Strong writers bring together oppositions of one kind or another. Kitchen language and elevated language, long and short sentences, fast and slow rhythms. And what

they choose to present from life—whether it be object, act, or idea—is frequently the negative and the positive, one thing and its opposite, two ideas that antagonize each other” (71). The term “kitchen language” is particularly appropriate here because it truly pulls each person’s diverse heritage and homestyle into the picture. Families across America tend to have a particular personality and speech style within their household; however, their at-home “kitchen language” is usually much more well-rounded and proper when in public. So, it’s interesting that Macrorie understands that one’s “kitchen language” has equal standing with one’s “elevated language.” Both play a vital role in making the student the person that he or she is. It’s important to acknowledge the greatness that happens when people can bring together both styles of language and both sides of who they are to create something that works well together. Because expressive pedagogy can be informal and doesn’t require perfect grammar or writing, it’s the perfect way for students to bind their kitchen language and elevated language together to give insight to who they are. This could help them understand that their own backgrounds and cultures are to be embraced and celebrated. When students find the courage to be fully who they are, they’ll act differently. They’ll go to class differently, with a sense of pride in who they are, which of course, could lead to their being better students overall.

The other statement from Macrorie’s definition that I want to focus on is when he says, “And what they choose to present from life...” (71). Students will all come with unique experiences that only they can accurately portray. No one can tell the story of a person’s life as well as the individual can. The same goes for every student that will ever enter a classroom. Every student has a story, but it is up to the student to either share the story or to keep it hidden from everyone else. With expressivism, students could relieve the heaviness of their experiences instead of bottling up traumatic experiences or emotions that threaten to burst through the masked persona. As Macrorie stated, they will all have the opportunity to choose what scenes of life to present, and with expressive pedagogy students could learn how to own and present their experiences in a way that tells a beautifully, unique narrative.

In fact, many authors today credit their novels to things they encountered throughout life. Sabaa Tahir, the author of *An Ember in the Ashes*, is the perfect example of someone who used his experiences growing up to tell a story that could never be told in the same way by another person. Tahir is quoted in the article when he states,

I was inspired by two things. The first is that I grew up in this really isolated town in the Mojave Desert where I felt like I really didn’t fit in. I felt really voiceless as a kid, and I felt really isolated. Eventually as I grew older, I ended up finding my power and voice through writing. Then, in 2007, I decided I was going to write a book. And I didn’t know what it was going to be about; all I knew it that it was going to be about people who felt like me as a kid,

people who felt that sort of powerlessness, but unlike me, I wanted them to fight against it (“10 Authors”).

Tahir and his story are great examples of what can happen when people allow their personal experiences to transcend from secret thoughts to public narratives. It’s paramount to not strip students of the power of their own experiences. Expressivism is a great tool to teach students how to pour out those scenes of life through language and to teach them that those unique experiences only make them greater. The more we feed into a student’s confidence, the brighter the student will shine in the classroom.

As studies and experiments show, expressivism is a powerful tool that carries many benefits; therefore, it should be used in the classroom whenever possible. When it comes to implementing expressive pedagogy, there are many ways to successfully incorporate it into the classroom. It should not be assumed that expressive writing is common to all students, so it’s important that the teacher takes time to properly explain what expressive pedagogy is and why he or she believes that it is a useful exercise for students in the class. This is a great first step to ensure as much success as possible because it could motivate students to engage in the exercise. In an article titled “How to Motivate Your Students,” Dr. Ronald Girmus provides eight motivational strategies for teachers to use in the classroom. He argues the importance of motivating students, and he discusses how motivation is directly linked to a student’s success and ability to learn. Science suggests that a student’s motivation to learn, or the lack of it, determines whether a student will participate in the learning process:

Functional magnetic resonance imaging allows neuroscientists to identify what areas in the brain are active in relationship to higher brain functions such as problem-solving, language, et cetera. Studies have shown that the association areas of the brain involved with motivation become active slightly ahead of association areas for cognition and problem-solving. In the brain, motivational processing precedes the learning event. Simply put, the brain is deciding whether or not something is of value before engaging in learning. (Girmus 4)

Because motivation happens before learning does, it is necessary that students understand the benefits of expressive writing and believe that it will be worthwhile, or they may not be motivated enough to ever learn through expressivism. Girmus also states that, “teachers are the difference in motivated versus unmotivated classrooms” (6). If his claim is true, teachers play a vital role in how well expressive pedagogy works in the classroom. The teacher’s perception of expressivism has the ability to alter the class’s motivation, which, according to Girmus, has the ability to alter the class’s learning. If the students become motivated to learn, they’ll instantly become more involved in the learning process, which could ultimately lead to more knowledge and more student success.

If a teacher's goal for expressive pedagogy is to use writing as a way to enhance learning or class involvement, he or she could have students write at a time that best suits the class schedule, the curriculum, and the students. However, if the goal in mind is to use expressive writing to lessen the persistence of outside distractions or to lessen outbursts in the classroom, there are a few more steps teachers could follow to increase the chances of success.

Writing at the beginning of class could enable students to release anything that may be on their minds, and it could mentally prepare them for the class session ahead. Often students come into the classroom and are expected to fall into the routine of the class and sit there to learn; meanwhile their thought process is consumed by issues outside of the classroom. From poverty and stress to bullying and fear, students carry all types of issues to school with them, so it isn't surprising that some students are disruptive in the classroom and fail to be engaged with the lesson. Former neurologist and educator Judy Willis claims that "when teachers use strategies to reduce stress and build a positive emotional environment, students gain emotional resilience and learn more efficiently and at higher levels of cognition" ("The Neuroscience Behind Stress and Learning"). Because studies support the idea that expressive pedagogy is therapeutic and effective in relieving stress, expressive writing would be a great way for students to relieve stress and gain emotional resilience prior to learning. If students had the chance to spend the first few minutes of class writing, there's a great possibility that they could be better prepared to spend the remainder of the class fully engaged and involved with what's happening. This also has the potential to limit outbursts during the class due to the newfound emotional resilience that comes from students having an outlet to channel their thoughts and feelings at the beginning of the class period.

Another option is to have students write outside of class. This is beneficial because students tend to have more time to focus on writing once they are home. According to Foulk and Hoover, "The longer students write, the more processing and connecting they do" (6). While expressivism does not consist only of self-reflection and soul searching, that is sometimes the case for certain students with this type of writing. Therefore, more time engaging in writing could lead to a deeper understanding of one's self or one's thoughts and feelings. Also, if students are consistent with their writing, they could experience major increases in their positive thoughts and feelings over time.

The University of Pittsburgh's Alternative Curriculum Program, mentioned above, provides an example of another unnamed student who consistently practiced expressive writing in her journal. According to Warnick, one of the girl's early journal entries states, "There is no me. Me is a lot of other people's ideas, opinions, and gestures" (197-198). The student later wrote, "I want to be happy, and I will. Today is the first day I'm going to be alive" (198). The difference in the girl's tone in the two journal entries is due to the skill of expressive writing. The student was consistent with her journal writing, and she took full advan-

tage of the ability to express through words everything she was feeling. In the time between the two journal entries, the student wrote down her thoughts and feelings daily. She participated in the expressive activities with the rest of her class and she learned the significance of writing down her thoughts and feelings. The two journal entries are a perfect example of how much the girl transformed and how she eventually exhibited more confidence in herself due to expressive writing.

All students are different; however, if only one more student could have a similar experience of growth through expressive writing, it's well worth the effort. In return, this boost of happiness and confidence through writing could present at least two solutions: 1) The student could learn how to address and resolve personal issues outside of the classroom, 2) The student's newfound happiness could follow him or her to school and could lead to better classroom behavior and involvement from the student. Overall, this could result in more class participation and student learning because not only would the student have an outlet to cope with thoughts and feelings, but he or she could potentially feel more confident and motivated to learn and grow. This increase in student confidence and motivation could result in an increase in learning.

A final tip for successfully implementing this pedagogy is to inform students on how their expressive writing will be evaluated. Foulk and Hoover “. . . recommend that they be evaluated as minimally as possible, on a pass-fail basis only. That is, the collected writings should be required in order to receive a grade, but the writings themselves should not be graded” (9). The writings are extremely personal for some students, so they should know that their privacy will be respected. If students do not feel comfortable or safe to write what they truly want or need to say, they won't be able to reap the full benefits of expressive writing. Therefore, it is paramount for them to trust that they will not be judged or ridiculed because of something they may write.

Expressive pedagogy has the ability to create a significant decrease in the amount of punishment that is needed and enforced in the classroom. From corporal punishment in some schools to loss of privileges in others, there are numerous ways students are being disciplined for behaviors in classrooms. While it is necessary to maintain discipline and management in the classroom, both can be accomplished without implementing excessive punishment. Punishment seems to be ineffective for many students as they are continually punished for the same actions over and over. According to educational psychologist, Kathie Nunley, “Thousands of studies and years of practice show what punishment does teach - fear, aggression and avoidance. People who are punished do not quickly learn to stop a behavior”. Clearly, punishment has the ability to do more harm than good. Because it doesn't effectively teach students to refrain from behaving a certain way, it shouldn't be as common in school as it is. If students could practice expressive writing on a regular basis, the need for classroom punishment could drop significantly.

Expressive pedagogy could be a proactive solution to the ineffectiveness of classroom punishment. Instead of being handled with punishment, it would be more beneficial if incidents could be used as learning experiences for students. Many students do not attend class with the intention of being disruptive or misbehaving. For some students, it's the lack of a skill that prohibits them from learning. For others, it could be the result of deeper problems the student may be encountering. It could be that the student needs to be taught how to channel thoughts and feelings, or it could be that the student can't focus because something else is taking precedence in his or her mind. That's where expressive pedagogy can be instrumental in limiting negative behavior and the need for punishment by providing students with the opportunity to self-reflect and channel thoughts, by teaching students how to cope with internal emotions in an external form, and by relieving stress and preparing them to learn for the day. This could save the student from continuous punishment, and it could better equip the student to learn without a boggled mind.

While expressive pedagogy might not eliminate all disciplinary problems in the classroom or transform every student into a confident, self-aware person, there is a chance that it could drastically decrease the number of behavioral issues and the need for punishment. Because studies such as Dr. Pennebaker's research on the benefits of writing after a trauma suggest that expressivism can be highly therapeutic for students, it carries the potential to eliminate many of the behavior issues that teachers usually encounter. Unlike other forms of punishment, expressivism is highly rewarding and informative. It allows students to learn more about themselves and the world around them. As Pennebaker stated, "The ways that individuals talk and write provide windows into their emotional and cognitive worlds" (3). Sometimes, all a student needs is a window into his or her own soul, and expressive writing can be that window. It's remarkable what can happen when students learn to dig into their inner-being and pull out fragments of thoughts, emotions, wonders, and fears through language. Not only could behavioral issues be diminished, but students could also grasp the power of writing and language. It's important to note that the benefits and usefulness of this pedagogy go far beyond self-realization and lessening negative behaviors as it can lead to an increase in knowledge, focus, involvement, and much more.

Not only could expressive writing lessen the need for classroom punishment and improve student involvement, but it could also lead to greater learning and more successful students. Because of its ability to lessen anxiety and behavioral issues, expressive pedagogy also has the potential to improve test scores. At the least, expressive writing could relieve students from some of the stress and test anxiety, which would help them immensely on exams. Ramirez explains how worry and anxiety compete with a student's working memory and jeopardizes student test scores. He writes, "If the ability of working memory to maintain task focus is disrupted because of situation related worries, performance can suffer" (211). If a student's thoughts of worry and anxiety are competing with

the learning, most often the thoughts of worry will overrule learning. If students were able to write about their worries or test anxieties, they would have a source to channel that fear of testing.

Writing expressively can also lead to better learning and test scores because this form of writing creates better thinkers. In a study of how to successfully implement expressive writing in classrooms, Doug Foulk and Emily Hoover found that students who engage in expressive writing asked more numerous and thoughtful questions. When students ask thought-provoking questions they will inevitably become more engaged in the learning process. This will allow students to retain information and perform better on exams.

Students will become better writers if they are allowed to write about the things that matter to them. Their performance will increase drastically when the learning becomes important to them in their own way. Every student will learn and process information differently. Expressive writing gives students the chance to learn their voice and the power of words. They'll become confident in their ability to successfully convert their thoughts into words, which could lead to thought-provoking questions and better communication. The problem is not that Johnny can't write. The problem is that Johnny hasn't been given the opportunity to write about the things that matter to him. Expressive writing benefits students in many ways, and with the proper implementation, it could truly change the way students learn.

References

- “10 Authors Share What Inspired Them to Write Their Books.” *Penguin Teen*, 11 July 2017, www.penguinteen.com/10-authors-share-inspired-write-book/.
- Berlin, J.A. *Rhetorics, Poetics, and Cultures: Refiguring College English Studies*. National Council of Teachers of English, 1996. “Comp Rhet @ USC.” Comp Rhet USC, comprhetusc.wordpress.com/tag/christopher-burnham/.
- Cothran, M. “Why Johnny Still Can’t Read.” *Foundation for Economic Education*, Feb. 2019, fee.org/articles/why-johnny-still-cant-read/
- Foulk, Doug, and Emily Hoover. “Incorporating Expressive Writing into the Classroom.” ser. 16, 1996. 16, writing.umn.edu/isw/assets/pdf/publications/Foulk_Hoover.pdf. Ed. Lillian Bridwell-Bowles and Holly Littlefield.
- Girmus, Ronald. “How to Motivate Your Students”. 2011, files.eric.ed.gov/fulltext/ED534566.pdf. “James Pennebaker’s Opening Up: The Healing Power of Expressing Emotions.” *Apcswb.wordpress.com*, 30 Jan. 2015, apcsweb.wordpress.com/2015/01/30/james-pennebakers-opening-up-the-healing-power-of-expressing-emotions/.
- Macrorie, K. *Telling Writing*. 4th ed., Boynton/Cook Publishers, 1985.
- Nunley, K. “Why Punishment-Based Systems Don’t Work: Yet We’re Stuck with Them.” 1998. *Dr. Kathie Nunley’s Layered Curriculum Website for Educators*, www.help4teachers.com/punishment.htm.
- Ramirez, G., Beilock, S.L. “Writing About Testing Worries Boosts Exam Performance in the Classroom.” *Science*, vol. 331, no. 6014, 2011, pp. 211–213. JSTOR, www.jstor.org/stable/40986499.
- Warnick, C. “Expressive Pedagogies in the University of Pittsburgh’s Alternative Curriculum Program, 1973-1979.” *Critical Expressivism: Theory and Practice in the Composition Classroom*. Ed. Roseanne Gatto and Tara Roeder. Parlor P, 2014. 189-200.
- Willis, J. “The Neuroscience Behind Stress and Learning.” *Edutopia*, George Lucas Educational Foundation, 18 July 2014, www.edutopia.org/blog/neuroscience-behind-stress-and-learning-judy-willis.

Fall 2019

Quest for the Mathematically Ideal Font Using Principal Component Analysis

Moises Ponce & Rachel Wood

Dr. Jason Schmurr

Dr. Richard Moy, Faculty Mentor

Lee University

Quest for the Mathematically Ideal Font Using Principal Component Analysis

Moises Ponce & Rachel Wood

Lee University

Quest for the Mathematically Ideal Font Using Principal Component Analysis

Abstract

Does the perfect font exist? Most of what we read nowadays is on an electronic screen. Whether it be a computer, smart phone, tablet, or other accessories, much of our daily readings are through these mediums. There is quite a bit of variation in this plethora of fonts and it can be difficult to differentiate between them all and decide which is most readable and aesthetically pleasing. The goal of this project is to identify characteristics of fonts that make them pleasing or effective in various contexts, and then leverage that knowledge to design better fonts. This will be done primarily using the statistical method known as Principal Component Analysis.

Introduction

A characteristic of the modern world today is the heavy utilization of electronic screens as the medium through which information is read from. Print is no longer the dominant medium. Often times, it is supplementary to electronic device readings (Hillesund, 2010).

Electronic screens utilize a pixel-orientated display. The computer then commands the pixels on the screen to display an image. Either to light up, change color, or turn off pixels (Jacobs, 2017). This means that pixels render the fonts displayed onto a screen by being activated.

The information of the style of text is called a typeface. Typeface is the design of the letter. For example, Arial is a Typeface. A font is the application of such a design. When a particular point size or variation of a typeface is used, this is known as a font. For example, Italic Arial in a point size 12 is a font. Even using normal Arial in any point size is a font. For this reason, the word ‘font’ shall be used for the entirety of the paper, since we are using particular styles of Typefaces (Zramdini & Ingold, 1998). The reason being is that a particular variation of the typefaces are used.

A font file format that is widely accessible and highly popular is TrueType Font files (otherwise known .ttf files). Their ease in rescalability and wide usage proves

advantageous for our intents and purposes. These font files store information involving the font (Zongker et al., 2000). The glyph outline of a font informs the pixels what to darken and what to whiten. This information can then be converted into bitmaps. Bitmaps are matrices of pixels of an image. These pixels form an image which in our case are characters from a font (Phinney, 2004; Jacobs, 2017).

There are two fonts of interest: Serif and Sans Serif.

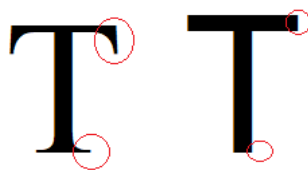


Figure 1. Serif Font (left) and Sans Serif Font (right)

The difference between these two families of fonts is that Serif has a decorative stroke at the end of a straight line while Sans Serif does not

These two families prove to be quite popular due to their high readability. In this case, readability is defined as the rate and comfort a reader reads and understands text (Mohammad Ali et al., 2013). For both families, they are equally readable, when examining only the variable of whether they are Serif or a Sans Serif font. In fact, there is no statistically significant difference between the readability of Serif and Sans Serif on a computer screen (Mohammad Ali et al., 2013; Beymer et al., 2008).

Another feature that is present in some font types is kerning. The presence of kerning in the font information allows for the outline of a character of a font to contact the outline of the preceding character. If kerning was not present then each character would have a block of space between it in any character neighboring it. The presence of kerning allows for a character to be within that space (Muraoka & Hashimoto, 1995). It should be noted that no font being utilized will have kerning for our analysis examines an N-by-N bitmap image of a font. Allowing kerning would be an unnecessary variable to consider.

Expounding upon that note, what of the font size? Font size is a characteristic that affects the readability of a font. In a clear example, reading text in point size 16 in a word document is far more readable than text in point size 8. It stands to reason a larger text is more readable. There is an optimal text size that is to be considered. When it comes to readability, a point size of 14/18 is the most readable font size (Rello et al., 2016), yet it only minutely improves the readability.

For our analysis, a much larger point size was used. A point size of 16 or less would be too gray-scaled for our PCA and would not provide an ample amount of data. A point size of 40 was utilized in order to reduce the amount of gray-scale in our analysis. Analyzing a point size smaller would not provide enough data for our analysis to truly detect variation in a font that would find the mathematically ideal font.

Often times, there is a disconnect between which font is more readable and which font is more aesthetically pleasing. In reality, both worlds can coexist when a pattern has been established. Thus, a call for a statistical analysis is necessary to interrogate this question.

Background of the Study

Reading text on a screen is more prevalent than ever in today's society. In recent years, a paradigm shift has emerged where paper is no longer the domineering format (Ferrari & Short, 2002). Most of the information we receive is procured from computer or phone screens. The text from which this information is broadcasted comes in various styles, strokes, sizes, and other metrics. An issue that arises from this is the relationship between readability and fonts.

There have been studies and claims regarding which fonts are the most readable. However, there are two font families that prove to be the most popular on websites, academic papers, emails, et cetera. Sans Serif and Serif fonts dominate the text on the computer screen, yet is there one family more readable than an other? Before, Sans Serif performed better than Serif fonts did on a computer screen in terms of readability (Mohammad Ali et al., 2013). With advancements to the resolutions of electronic

screens, this difference in performance has been narrowed so much so that there is no statistically significant difference between the readability of a selection of popular Serif and Sans Serif fonts (Mohamad Ali et al., 2013). Both are highly readable font families and thus both were used.

What of point size? Though, a point size of 16 is highly readable, this does not translate that a point size of 16 should be used in our analysis. In order to reduce the grayscaling of our bitmap and to improve the amount of data for our Principal Component Analysis, all of the characters used are in a point size of 40. Also, the question of color may be questioned. Seeing how most text read are in black and white, then the fonts in question are all in monochrome i.e. black-and-white.

There are numerous fonts that are available on the web, especially for both Serif and Sans Serif. Some fonts have characteristic that might make it more mathematically ideal than others. There must be some variation in the character across a number of fonts that gives a higher perceived aesthetically pleasing quality.

For example, in a study done by Bernard et al., in examining the attractiveness of a selection of fonts in 12 point and 14 point size, it is evident some fonts performed better than others even though they should all be highly readable fonts, being that they are either Serif or Sans Serif (Bernard et al., 2001). Surely then there must be some features of a font that helped inform their decision.

The characters between different fonts can be inter-compared in order to determine the variables in which determine what makes a font pleasing. Thus, a mathematically ideal font can be found through statistical analysis of variation between characters across a basis of fonts. However, there is a great number of variables to examine between the bitmaps of characters. A reduction in the dimensionality of the data is necessary in order to proceed. From there, a statistical analysis known as Principal Component Analysis will measure the variation between the most dominant features between a selection of fonts for whichever characters are being analyzed.

Methods

Utilizing the Python programming language, the bitmap information of a font is extracted from its True Type Font file (or .ttf file). Bitmap information from a TrueType Font file is extracted via the Python Image Library (PIL). Using the modules ImageFont, ImageDraw, and Image, an extraction is done.

The point size being taken is point size 40 to reduce the amount of gray-scale present and 30 characters are being analyzed: all 26 lowercase characters and 4 uppercase (J, M, P, and S). The total number of fonts being analyzed are 42. Further details shall be expounded upon later into the paper in the **Survey** section.

Setup

The bitmap image that is extracted is represented as a matrix whose dimensions is the same as its pixel dimensions. The bitmap is a monochrome image where each pixel is an integer between 0 to 255. The integer value of 0 represents black, 255 represented the color white, and an integer value in between these two values is some sort of gray-scale.

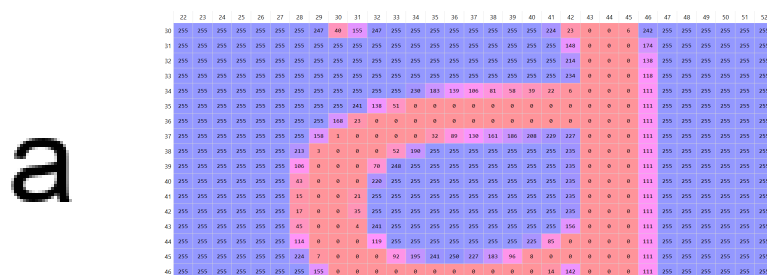


Figure 2. The character of lower case A in a bitmap image (left) represented as a matrix (right).

Problem of Window Size. This extraction of the bitmap creates a bitmap (.bmp) file that is a pixel-by-pixel image. The question then is raised on what dimensions should this image be. Python captures the character requested; however, if the window parameters given is too small, then parts of the character will be cutoff. For example, if it is requested for the character, lowercase g, to be extracted and that the

dimensions of the image be 45-by-45 pixels, then part of the character will not be present.



Figure 3. Above are 45-by-45 pixel .bmp of the characters lowercase G, lowercase J, and lowercase Q in the font Arial (from left to right, respectively).

If this remained unchanged then this would affect, then utilizing Principal Component Analysis would not be informed of all the information of each character.

Problem of Centering. Another problem is that not each image is centered. If this particular issue is not remedied then this would create noise for our Principal Component Analysis as this would lead to most of the variation detected not coming from difference between the fonts, but from a character not being centered. If one character of lowercase ‘b’ is on the top left corner in one bitmap and in another lowercase ‘b’ for another font is on the bottom right corner, then our PCA would not detect the variation of what makes a font mathematically ideal. Rather, this case would describe the variation between these characters being from the absence and the presence of a whole bitmap rather than subtle differences.

Solving the Dilemma. To remedy this issue, through testing, extracting a 75-by-75 pixel bitmap image from Python will collect the entirety of the bitmap information of a character. This window has worked on all fonts tested.

To remedy the centering issue, the center of the image must be found. By using the pixel integer values as a weight, we could pinpoint the center of an image. In this instance, black was utilized as a physical weight attribute, while white represented the absence of mass in the image. For this reason, in our recentering process, the integer value of black was 255 and the value of white was 0. Once the centering is complete, 255 is subtracted from all entries in the matrix to correct the colors. Any sort of gray-scale would also be a weight, where the integer value subtracts 255 to get its new weight.

The process calls for finding the moment of x and y in the system. By doing this, the center of mass of the image is established. Once the center of mass is found for the character, the center of the image must also be computed our program. This is important because we will supplant the center of the image with the center of the character. Our script redraws the image by shifting the position of a given character so that the center of mass of a character coincides the geometric center of the original image.

From there a new image is created where the letter is centered. This new image is then utilized in a principal component analysis (Turk & Pentland 1991).



Figure 4. The 75-by-75 pixel and centered image of the characters lower case G, J, and Q in the font Arial (from left to right, respectively).

Reduction in Dimensionality. From here, the last preparatory objective is transforming these 75-by-75 (N -by- N) pixel images into vectors from which our PCA could analyze. As of now, we have an 75-by-75 image array. In order to perform a more accurate statistical analysis a reduction in dimensionality is needed (Jolliffe, 2002). We shall reduce the dimensionality of the image by transforming this array into an $N^2 \times 1$ vector or in our case a $75^2 \times 1$. This simplified the variation between the images by doing a vector by vector comparison, which diminished the amount of variables being examined.

Principal Component

By using Principal Component Analysis, we found the vectors which best describe the most prominent variations for each character across the subspace of our bitmap images in different fonts. We call this subspace our "font space".

For our analysis a matrix of matrices is being utilized. Each matrix inside of this matrix is a particular character (from the 30 characters outlined being used earlier).

Each vector within this character matrix is a font vector of N^2 length. For example, inside the matrix is the character lowercase A matrix. Each vector inside the character matrix is lowercase ‘a’ in a font style. Each font vector is in alphabetical order for organizational purposes.

The Eigenletter

The ‘Eigenletter’ is the resized vector of a Principal Component i.e. the eigenvector. All of the fonts can be represented as some combination of the Eigenletters. These Eigenletters display the most prominent features of a font and the higher the (positive) eigenvalue, the more prominent that feature is.

Let the training set of font images of a particular character be $\Gamma_{i1}, \Gamma_{i2}, \Gamma_{i3}, \dots, \Gamma_{iJ}$, where i is the particular character and J is the number of fonts being utilized.

An average character vector across J fonts shall be called Ψ . We found Ψ by $\frac{1}{J} \sum_{n=1}^J \Gamma_{in}$. We then used Ψ to find the difference vector between each font vector in a character matrix. This difference vector $\Phi_{ik} = \Gamma_{ij} - \Psi$ is stored in a matrix A_i .

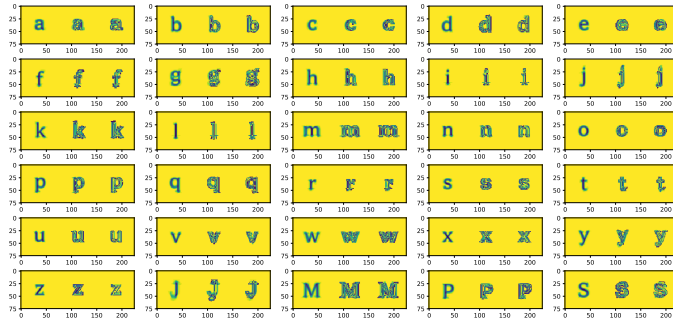


Figure 5. The average character across 38 fonts (left), the first principal component (center), and second principal component (right) pictured above.

This A_i matrix is $[\Phi_1 \Phi_2 \dots \Phi_J]$. Let the covariance then be equal to the following:

$$C_i = A_i A_i^T$$

This C_i matrix is a 5625-by-5625 matrix array. There is a covariance matrix for each character being utilized. From each covariance matrix, the eigenvalues and

eigenvectors of our eigenletter was found. However, recall that each covariance matrix is a 5625-by-5625 matrix. This means that there are 5625 eigenvalues and corresponding eigenvectors that need to be found. This would prove to be an inefficient and unnecessary task to complete, instead, a fact about our covariance matrix shall be exploited.

Covariance Matrix Manipulation. There is a fundamental relationship between three components of a matrix: the column of a matrix, the row of a matrix, and the null of a matrix. The Rank Theorem is a tool that will reduce the number of eigenvectors to examine (Lay & Lay & McDonald, 2016):

Theorem. $\text{Rank } B + \dim(\text{Nul } B) = n$,

where n is the number of columns of Matrix B

With this theorem, recall that matrix A is a 75^2 -by- M matrix, where M is the number of fonts used.

Matrix A^T is a M -by- 75^2 . By applying the Rank Theorem to this matrix, we find the following:

$$\text{Rank } A^T + \dim \text{Nul } A^T = 75^2$$

$$M + \dim \text{Nul } A^T = 75^2$$

$$\dim \text{Nul } A^T = 75^2 - M$$

$$\text{Nul } A^T = \{\vec{x} : A^T \vec{x} = \vec{0}\}$$

What this displays is that all eigenvectors of A^T have an eigenvalue of 0 if it belongs to the Null space. Let's examine the covariance matrix $C = AA^T$.

Let some vector $\vec{x} \in \text{Nul } A^T$. From this, then

$$C\vec{x} = AA^T \vec{x}$$

$$C\vec{x} = A\vec{0}$$

$$C\vec{x} = \vec{0}$$

This means that the vector \vec{x} was an eigenvector of C with an eigenvalue of zero. This infers that a maximum of M eigenvectors exist in our covariance matrix that are significant to our study.

Classification

The goal of this analysis is to predict any sort of font preferences that individuals may exhibit. A question to consider: Is it possible to utilize survey data of participants font preferences to predict which fonts are more pleasing using mathematical analysis? If this is the case then using Principal Component Analysis is the key in creating a mathematically ideal font.

Serif versus Sans Serif

Before applying further work into font preferences, an analysis is to be done in regards to stratifying whether a font is Serif or Sans Serif. The first Principal Components have the most variation of a character within a selection of fonts. This does mean that the variation that makes a font Serif or Sans Serif should be included in these first Principal Components. If a classifier cannot accurately determine whether a font is either in the Serif or Sans Serif font family, then our PCA may have failed.

This line of thinking involves the idea that these Principal Components contain the most prominent variation of a character across any number of fonts. If there is too much variation, the analysis detect variations that do not involve the the most prominent features of an eigenletter. If, instead, variations are detected that are not font related or from outliers in metrics such as weight and height, then our analysis would be inconclusive. For example, one concern is the varying weight between fonts. Fonts such as Abrilfat Face and Archivo Black are fonts that are significantly thicker visually and mathematically. This thickness can create noise in which the Principal Component Analysis picks up on this noise and leads to the Principal Component Analysis being invalid. This difference in weights did turn out to be a factor that affected our Principal Component Analysis. This was remedied by removing these two fonts. This removal will be seen in further sections.

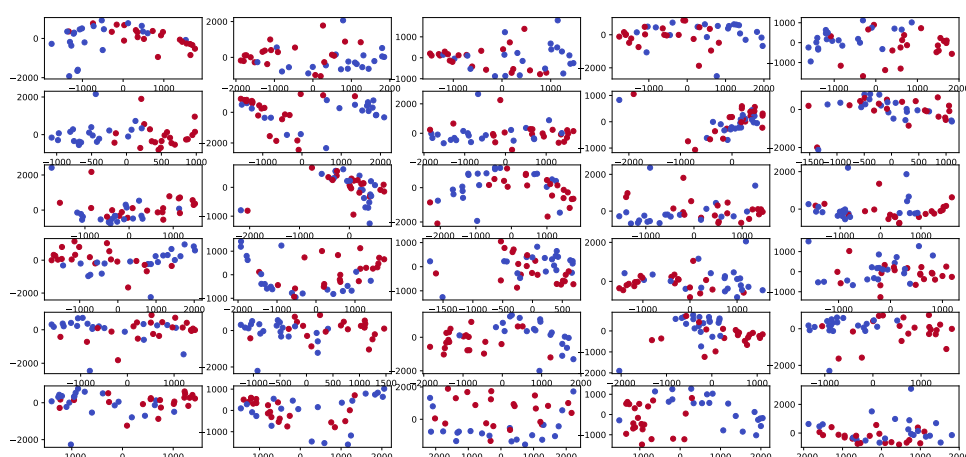


Figure 6.1. A Scatter-plot Mapping of the First Two PCs of Serif (red) and Sans Serif (blue) fonts.

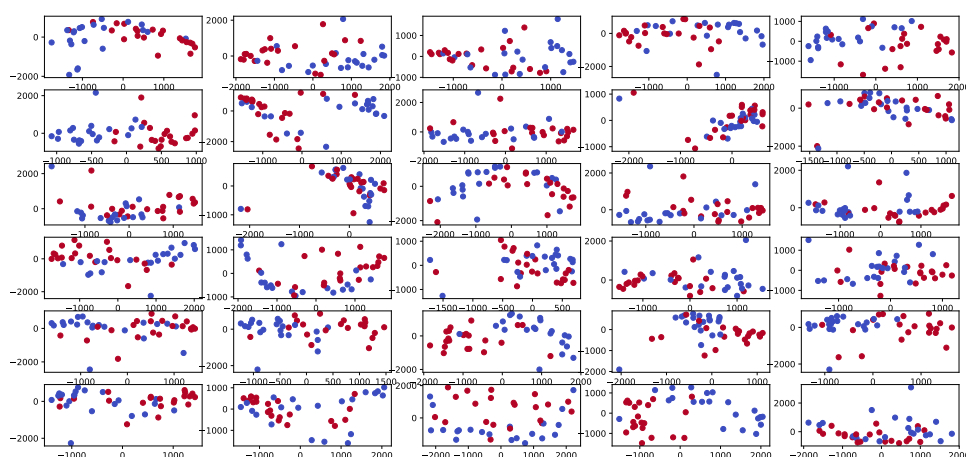


Figure 6.2. A Scatter-plot Mapping of the First Two PCs of Serif (red) and Sans Serif (blue) fonts without Abril and Archivo.

The scatter plots above map the first and second Principal Component against each other. Each point in the scatter plot is a font whose position is determined by the eigenvalue of its first and second Principal Component. If a point is colored blue then that is an indication that the font belongs to the Sans Serif family. If a point is colored red then that is an indication that the font belongs to the Serif family.

From a visual standpoint, there is evident clustering in the scatter plots. Clustering of Serif fonts in one quadrant and clustering of Sans Serif fonts in another

was seen in the plots. This helps further the idea that the Principal Component Analysis has separated the most important features from a character across any number of fonts. Thus, the first few PCs should house information on whether a font is Serif or Sans Serif. Classifying whether a font is Serif or Sans Serif will be the next step before analyzing font preferences in order to create a new mathematically ideal font.

Classifying Serif Versus Sans Serif

A handful of classifiers were examined to see if there was a way to classify the first two Principal Components and if there may be some classifiers that perform better than others. For a classifier to be successful, it must predict whether a font is Serif or Sans Serif with a degree of accuracy better than chance. The prediction of these classifiers is based on the relationship of a training set and a testing set. A classifier is trained on using a training set from the total number of fonts being used. The classifier then predicts a testing set whether it is Serif or Sans Serif using the data from the training set. The training set of our analysis was the fonts used in the first survey and the testing set was the fonts used in the second survey.

Survey

To better understand font preferences, data is necessary to supplement this blank in knowledge. A survey was conducted on the populace of Lee University using different email-listings. Of course, this survey is not designed to perform an analysis on the Lee University general student/faculty body, nor, is it meant to make a conclusive statement on any general population.

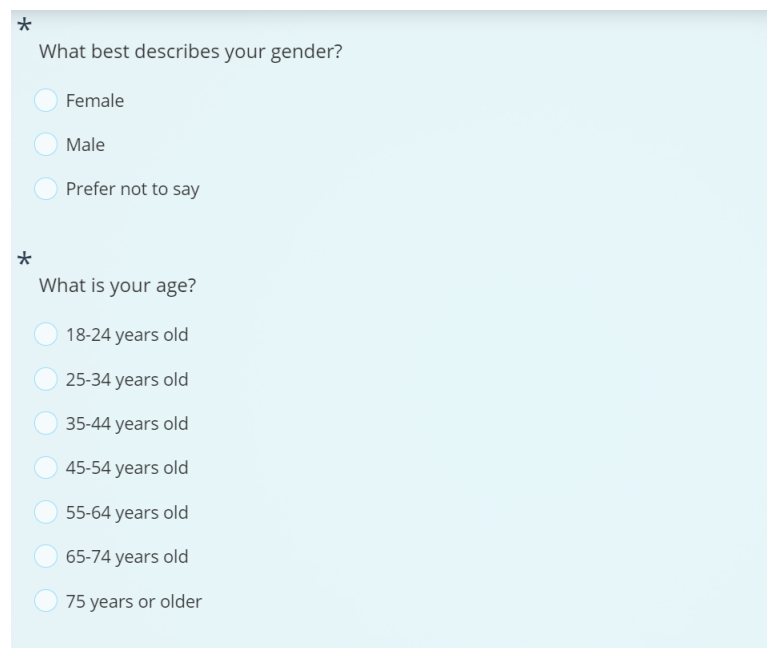
Completion of the survey did require participants to consent to providing data for our research. If consent was not provided, the survey would not allow the submission of a survey. As a matter of fact, it did not allow participants to advance to the questions on font preferences.

The platform the survey was on was SurveyLegend. The only way to access the survey is via a link procured through an email sent out by our team. A total of two surveys were sent out. Survey #1 had 22 fonts being questioned and Survey #2 had 26

fonts being questioned. Four of the fonts on the second survey were duplicates from the first survey. This was done to inter-compare both surveys. Two other fonts were removed due to technical difficulties. In total, Survey #2 had 20 new fonts to our analysis.

Survey Design

Both surveys had a section asking participants basic demographic questions. Participants were asked to select a gender they identified with and were asked to provide which age range they fell under. These demographic questions will help in not only get a better understanding between font preferences between age groups and gender groups, but also help create different fonts for each group for future analyzes.



★
What best describes your gender?

☐ Female

☐ Male

☐ Prefer not to say

★
What is your age?

☐ 18-24 years old

☐ 25-34 years old

☐ 35-44 years old

☐ 45-54 years old

☐ 55-64 years old

☐ 65-74 years old

☐ 75 years or older

Figure 7. An excerpt of the demographic question portion of the survey. In order to

limit variables for the participants, the first survey represented each of the 22 fonts in a separate, yet identical, paragraph. The only changing variable was the different fonts. A consequence of this is that it is noted that even though the passages are the same point size, they have varying widths and thus some passages appear longer than others. This factor is a consequence of the change in font and thus the not focus of the study.

**Jack quietly moved up front and seized
the big ball of wax. Just keep examining
every low bid quoted for zinc etchings. My
faxed joke won a pager in the cable TV
quiz show. My girl wove six dozen plaid
jackets before she quit. Pack my box with
five dozen liquor jugs. Six big devils from
Japan quickly forgot how to waltz.**

Figure 8. An excerpt passage in the font Archivo Black(Sans Serif).

Jack quietly moved up front and seized the big ball of
wax. Just keep examining every low bid quoted for zinc
etchings. My faxed joke won a pager in the cable TV quiz
show. My girl wove six dozen plaid jackets before she
quit. Pack my box with five dozen liquor jugs. Six big
devils from Japan quickly forgot how to waltz.

Figure 9. An excerpt passage in the font Times New Roman(Serif).

From the passage, a total of 30 different characters were used (excluding the period). All the lowercase characters and uppercase characters J, M, P, and S in the Latin alphabet were used in the passages. This then means that for our analysis a total of 30 covariance matrices are needed. All of the upper case cannot be used since there is no preference data since the survey only dealt with 30 different letters. The 'period' is not part of our analysis since a 'period' is simply a pixelized circle with varying weight.

The second survey used the same passage except in a new selection of fonts. To compare the scores of the first survey to the scores of the second, the second survey reused four fonts from the first survey. The highest rated Serif and Sans Serif fonts, Times New Roman and Franklin Gothic, respectively, and the lowest rated Serif and Sans Serif fonts, Courier and Comic Sans, respectively, were those four repeats.

Results

The purpose of the surveys was to collect preference data for our Principal Component Analysis. It is important that certain combinations of PCs had a rating attached to it in order to create a mathematically ideal font. By performing a regression on our Principal Component Analysis coupled with our font preferences data, a new font is created that would be mathematically ideal according to our analysis.

K Nearest Neighbors Regression

By performing a K Nearest Neighbors Regression onto our Principal Component Analysis, a new font is achieved. Each combination of Principal Component from a font is attached with a rating from the survey data. This rating is the average rating from the survey (depending on which survey the font is introduced in).

In a similar fashion to the K Nearest Neighbors Classifier, by mapping the first two Principal Components and applying each font being mapped with a rating, then each point (font) has a weight behind it. A 100-by-100 grid is created. 10,000 points are tested where the 3 Nearest Neighbors to that point have their scores added and averaged. The coordinates of the point with the highest average of three ratings will then have the eigenvectors be added to each other. From there, the average vector is added to this ideal component vector, since this ideal component vector is comprised of the variation away from the mean that is indicative of the most mathematically ideal. The average is added since the ideal component is the variation from the mean that demonstrates the predicted highest score using a K Nearest Neighbor Regression. This new ideal component vector is then reshaped into a 75-by-75 bitmap image. This whole process is replicated through each character.

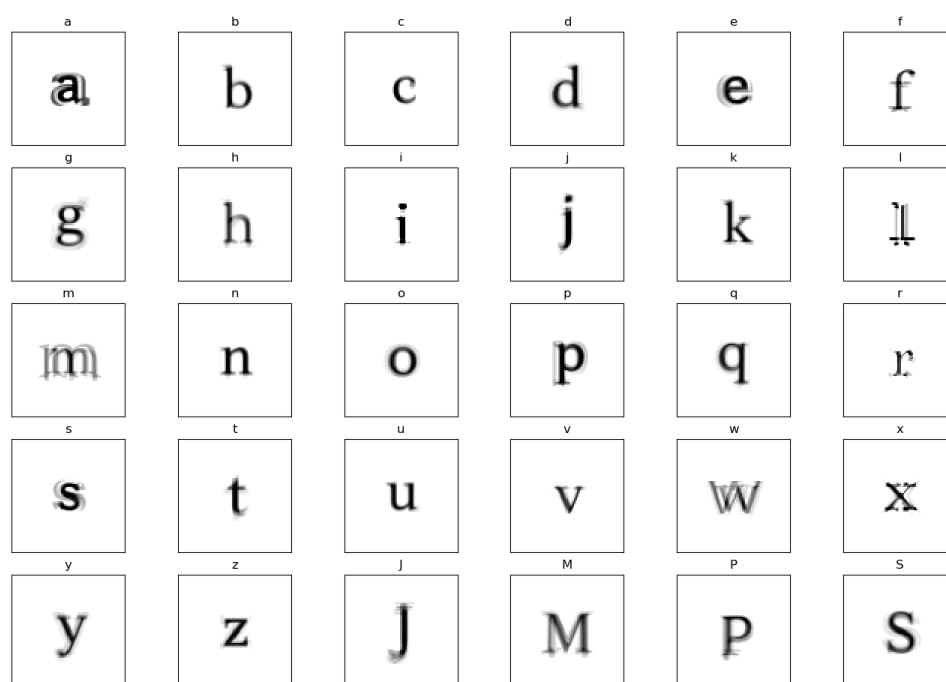


Figure 10. The Ideal Font using 22 fonts and 2 PCs.

With the original fonts of the first survey being used, an ideal font is achieved that is mathematically ideal by means of using a regression to predict the most pleasing font. A careful investigation does reveal that this creation still appears ghostly in appearance. In many respects, some characters look no better than the eigenletters as seen in the **Methods** section.

However, the analysis is improved by permitting more data. One example of this improvement is by utilizing more Principal Components to our analysis. Adding a third component adds another layer of depth to our analysis. Another implementation to improve our ‘Ideal Font’ is introducing more fonts with font preference data.

The Ideal Font

Creating a more mathematically ideal font comes from various outlets. One such outlet is utilizing more Principal Components. However, using more than three or four may prove counterproductive. Using too many Principal Components will create a font that does not just have the most important features with the highest eigenvalues, but also allow features that do not matter as much (i.e. those with lower eigenvalues).

Though PCA captures the variables of a character across a multitude of fonts that are the most important features, the covariance matrix first PCs have the highest eigenvalues. Using more PCs with lower eigenvalues will affect our ideal font.

Another way to improve the ideal font is by using more fonts. The second survey should also provide more data to improve the font. The second survey has data on 20 additional fonts, 10 serif and 10 sans serif.

Using Three PCs. Adding a third component aids in the regression by examining another component that holds the greatest variation among a character across a variety of fonts. One of the notable changes between using the two versus three Principal Components is that a lot of the ghostly afterimages seen in characters such as the letter ‘a’ and ‘e’ has dissipated a great deal. It is interesting to note is that the characters have serif font characteristics (i.e. the decorative stroke) even though an equal amount of serif and sans serif fonts were used in the analysis.

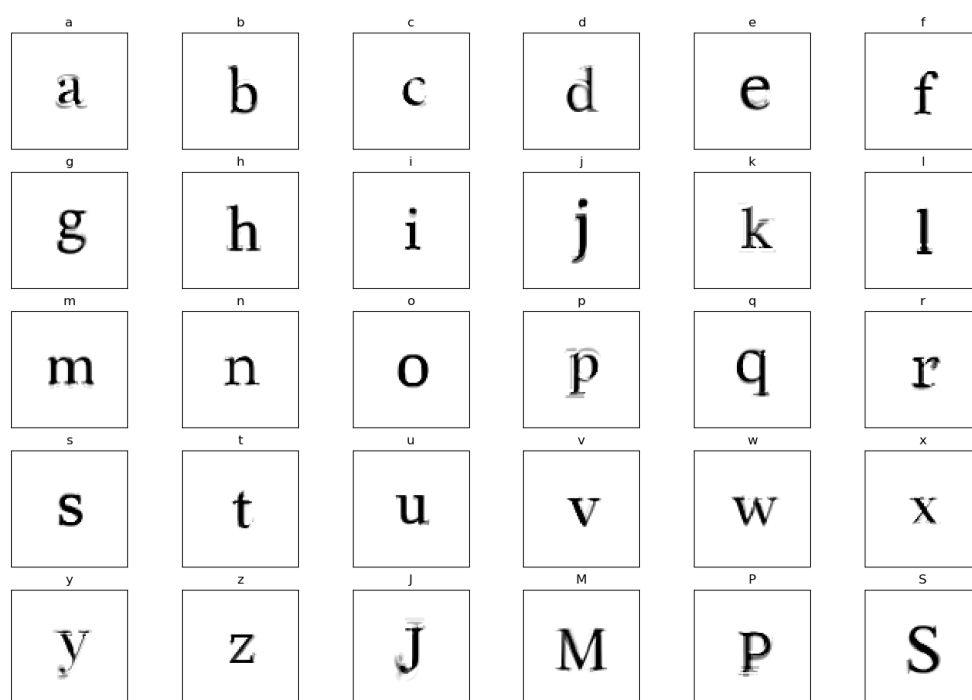


Figure 11. The Ideal Font using 22 fonts and 3 PCs.

Using both surveys. Adding more fonts changes the Principal Components being examined. Our analysis will find different variations that are deemed to be the

most important features to making a mathematically ideal font. From this image of the ideal font, a shift away from a serif look and more to a sans serif font is achieved.

Forty-two fonts are being utilized in this regression. Twenty-one of those fonts are serif and twenty-one are sans serif.

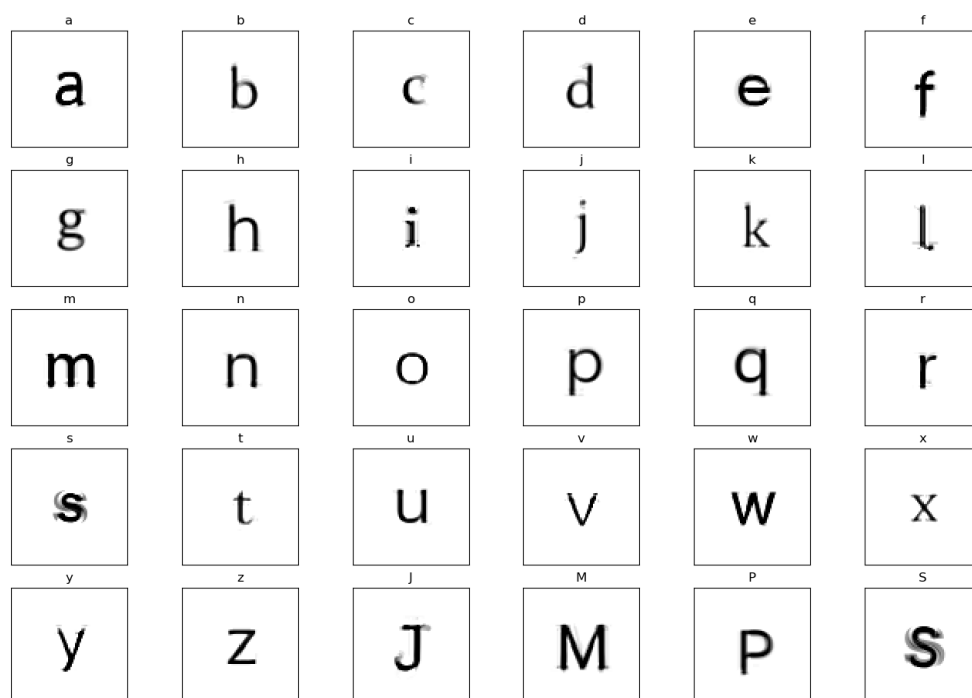


Figure 10. The Ideal Font using 42 fonts and 2 PCs.

Best of both worlds. By implementing both tactics, a different and new result was created. Using more fonts changes the eigenvector and eigenvalues being used in the analysis and using three Principal Components does provide more information for the Ideal Font to draw from. There is also still some characters that are ghostly in image like the character of lower and uppercase S. It is an improvement when comparing the same fonts using two PCs. Some characters are also considerably heavier than other characters. Lowercase ‘c’ is fairly thin; however, uppercase ‘P’ is much thicker.

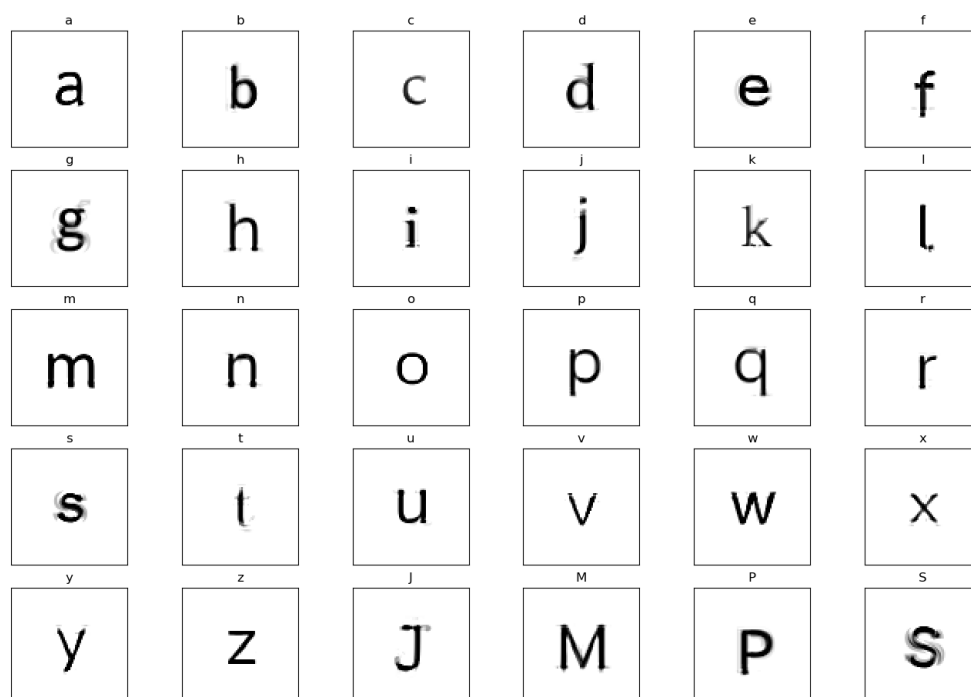


Figure 12. The Ideal Font using 42 fonts and 3 PCs.

However, our analysis did detect that Abril Fatface and Archivo Black may be an outlier in our analysis. With more fonts present, its effects may not be as prominent as it was with 22 fonts. Abril Fatface and Archivo Black being heavier or thicker fonts may be influencing some of the characters to be thicker. This may be an outlier since it may be that the variation between Abril Fatface/Archivo Black and the rest of the fonts may go beyond what makes a font mathematically ideal. This extra thickness may not be entirely involved with font preferences. Since PCA is sensitive to variation in this fashion then this extra thickness may be included in our data and not truly represent a mathematically ideal font. An analysis that excludes these two fonts was performed.

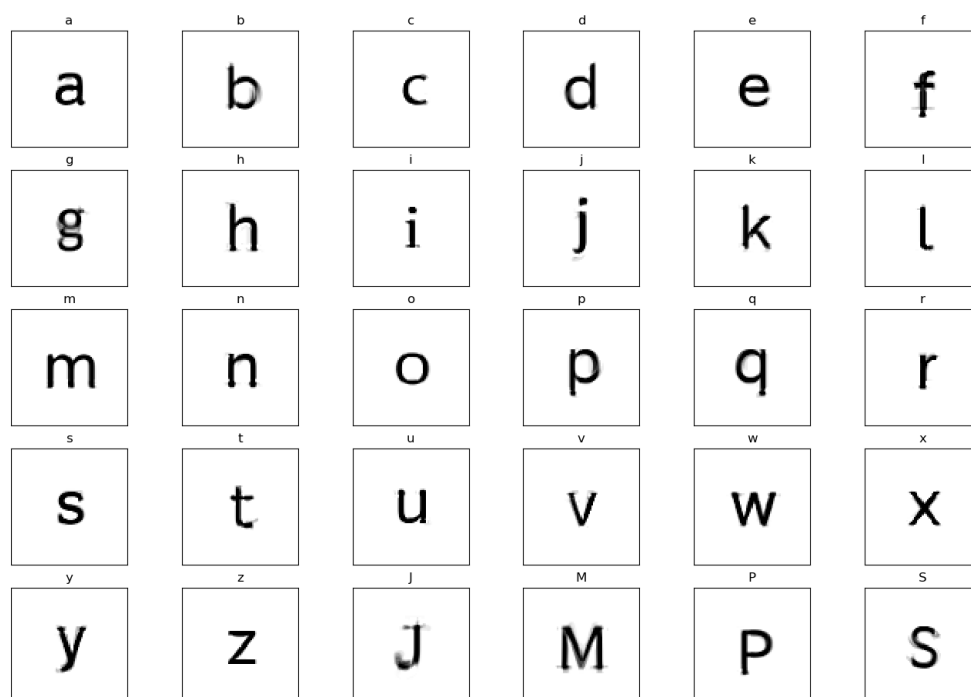


Figure 13. The Ideal Font using 40 fonts and 3 PCs.

By removing Abril Fatface and Archivo Black, the total number of fonts is now forty. Twenty fonts were serif and Twenty were sans serif in this analysis.

Future Research

As discussed in the prior section, using more PCs improved the Ideal Font analysis. However, if all of the PCs were to be applied then using lower eigenvalued PCs may decay the precision of our analysis. Not only that, but the regression may not be able to predict the Ideal Font with a high level of dimensionality.

Regression refinement is also a worthwhile avenue to explore. Not all Regression Models were examined and not all received as much attention as K Nearest Neighbors. There could very well be a Regression Model that could yield slightly better results. Our K Nearest Classifier proved to be quite useful, but that does not mean K Nearest Neighbors is the ultimate Regressor for our PCA.

A great way to improve the Ideal Font is by providing more survey data. There is a clear difference between the Ideal Font of Survey #1 versus the Ideal Font using both

surveys. By using more fonts with preference scores, the regression done to our PCA should create a more ideal font.

Other metrics aside from font preference could very well be added to our analysis to establish a relationship between the two. The characters of a font have length, width, weight, varying glyph outlines (such as a curly ‘g’ versus a curved ‘g’), and other font character measurements. Adding these values into our PCA should provide more information for our regression onto our PCA to determine an Ideal Font.

Finally, it may be in our best interest to implement a smoothing function for our Ideal Font. Even with more data being implemented, some characters may still have some gray-scale of pixels that are ghostly afterimages from the linear combinations. This does not mean our Ideal Font failed. It simply means that the combination of eigenletters left some gray-scale pixels that would not fit a smooth glyph outline of a font. A smoothing function will then remove these pixels and add gray-scale pixels that would be part of a possible glyph outline of a font. Of course, this course of action will require another program to determine whether a pixel should be gray-scaled or be white.

Conclusion

Principal Component Analysis is a technique that can be used to detect the most important features of an image. By applying a parameter such as preference rating, now these features have a weight of prominence that can be used to find the variation that is deemed to be the most mathematically ideal.

Other components can also be analyzed by using a similar process to our font preference. It may be that by establishing a relationship to font metrics that this may help narrow down, in our regression, what the Ideal Font should look like.

The method of finding the mathematically ideal font still needs refinement and further testing; however, the methodology behind it demonstrates that further tests and refinements to our methodology can quite possibly yield the mathematically ideal font.

Acknowledgements

We thank all participants in our surveys. I personally thank my faculty mentor, Dr. Schmurr, and my research partners, Dr. Moy and Rachel Wood.

References

- Hillesund, T. (2010) Digital Reading Spaces: How expert readers handle books, the Web, and electronic paper. *First Monday*. 15, 4.
- Jacobs, M. (2017). A brief history of TrueType. *Microsoft*. Archived from the original on 2019.
- Zramdini, A., & Ingold, R. (1998). Optical Font Recognition Using Typographical Features. *IEEE Transactions On Pattern Analysis And Machine Intelligence*. 20, 8.
- Zongker, D., & Wade, G., & Salesin, D. (2000). Example-Based Hinting of TrueType Fonts. *Proceedings of the 27th annual conference on Computer graphics and interactive techniques*. 27, 411-416.
- Phinney, T. (2004). TrueType, PostScript Type 1, & OpenType: What's the Difference?.
- Mohammad Ali, A.Z., & Wahid, R., & Samsudin, K., & Idris, M. (2013). Reading on the Computer Screen: Does Font Type has Effects on Web Text Readability? *International Education Studies*. 6, 3.
- Beymer, D., & Russell, D., & Orton, P. (2008). An Eye Tracking Study of How Font Size and Type Influence Online Reading. *British Computer Society*.
- Muraoka, Y., & Hashimoto, M. (1995). U.S. Patent No. 5,399,029. *Washington, DC: U.S. Patent and Trademark Office*.
- Bernard, M., & Mills, M., & Frank, T., & McKown, J. (2001). Which Fonts Do Children Prefer to Read Online? *Usability News*. 3, 1.
- Rello, L., & Pielot, M., & Marcos, M. (2016). Make It Big! The Effect of Font Size and Line Spacing on Online Readability. *In Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems*.

2017 Edition, 709–721.

McDonald, J., & Lay, S. R., & Lay, D. C. (2016). Student study guide, Linear algebra and its applications, fifth edition. *Boston: Pearson*.

Turk, M., & Pentland, A. (1991). Eigenfaces for recognition. *Journal of Cognitive Neuroscience*, 3(1), 71-86. <http://dx.doi.org/10.1162/jocn.1991.3.1.71>

Jolliffe, I.T. (2002). *Principal Component Analysis* (2nd ed.). New York: Springer.

Fall 2019

Establishing Criteria for the Orthodox, the Heterodox, and the Heretical

Tyler Price

Dr. Christopher Stephenson, Faculty Mentor

Lee University

Establishing Criteria for the Orthodox, the Heterodox, and the Heretical

Tyler Lee Price¹, Dr. Christopher Stephenson, Faculty Mentor ²

Lee University

Introduction

Many of the historical liturgical traditions such as the Catholic, Orthodox, and Anglican traditions have written statements that establish definitions and criterion for orthodox, heterodox, and heretical thought. As a result, they understand the traditional or agreed upon doctrines their specific denominations adhere to and how far outside the bounds of traditional theological or doctrinal thought they may stretch before entering into the forbidden realm of heretical thought and doctrine. In mainline Protestantism, on the other hand, the words “truth” and “heresy” are commonly used with little to no meaningful reflection pertaining to their specific definitions and/or criteria.

It is uncommon for Protestants in the 21st century to ask themselves questions such as: “by what standard are we to judge what is truth and what is untruth?” , “how far outside of what is traditionally perceived as truth may one go before becoming a heretic?” , “what makes something heretical?” , and “can what has been traditionally perceived as truth be changed in light of new discovery?” . The purpose of this paper is to establish a universal criterion and definition for the terms orthodoxy, heterodoxy, and heresy. They will be defined in light of the Nicene creed, heterodenomenational catechisms, and theologians throughout the history of the church.

Establishing Criteria

Orthodoxy

Historically there has been a constant struggle to establish a firm ecumenical criteria and definition of what would be considered orthodox theology and doctrine. According to some, orthodoxy is defined by the Nicene creed. Others define orthodoxy by their specific denomination’ s catechism, and yet others define orthodoxy on a highly individualistic level meaning that the individual interprets scripture and reflects upon it theologically, therefore allowing the in-

dividual to establish their own criteria for what is to be considered orthodox. In this sense, orthodoxy is a completely subjective term that must be interpreted by the individual. So by what standard shall Christians come to define orthodoxy on an ecumenical, universal level? There must first be some formal understanding of the etymology of the word “orthodoxy” .

The English word “ortho” derives from the Greek word *ορθος* meaning “straight, erect, or upright” ¹ and the suffix -doxy derives from the Greek word *δοκεω* which is translated to “assumption” or “opinion” .² When the two words are made into the one word *ορθοδοκεω* , it comes to literally mean “right assumption” or “right opinion” when translated into English. The Christian Apologetics and Research Ministry defines orthodoxy as “the belief in the standards of accepted and true doctrines taught in the Bible” . So it can be deduced that orthodoxy has been traditionally understood as the right opinion about the truth, both theologically and practically, that Scripture teaches. In this section, there will be discussion as to what constitutes as orthodox thought in light of three categories: individual orthodoxy, creedal orthodoxy, and catechetical orthodoxy.³ Through the aforementioned three categories, a criteria for orthodox ecumenical theological thought may be established so that a proper definition and criteria may be established for heresy later on.

Individual Orthodoxy

In the 21st century, where it is common to find those who are highly individualistic about their theological reflections and individual doctrinal commitments, it is not uncommon to hear the words “what I believe is what I believe” and “everyone has to find their own [individual] path” . This indicates, in a highly individualistic culture, that there is no universally binding standard for what would be considered orthodox theological or doctrinal thought. Orthodoxy, in this sense, is completely relative and may only be found in the reflections of the individual. It is in this that one may not adhere or become loyal to any other doctrinal or theological truth that they have not apprehended as their own.⁴ No congregation or denomination may impose their specific doctrinal commitments to the individuals within the church.⁵ It is simply one’ s own individual interpretation of scripture, particularly the New Testament, that may dictate for them what may be considered orthodox. ⁶

The shift toward individualistic orthodoxy and theological subjectivism within

¹Joseph Henry Thayer, Thayer’ s *Greek-English Lexicon of the New Testament* (Peabody, MA: Hendrickson Publishing, 2017), 453.

²Thayer, 154

³Francis Brown, “What is Orthodoxy?,” *The North American Review* 168, no. 509 (April 1899): 409-17.

⁴Ibid, 410

⁵C Douglas Weaver, “The Baptist Ecclesiology of E.Y. Mullins: Individualism and the New Testament Church,” *Baptist History and Heritage* 43, no. 1 (January 1, 2008): 27.

⁶Ibid.,27

the 20th and 21st centuries following the Reformation allows individuals with varying beliefs to meet together to worship without being bound by dogmatic beliefs in their personal lives. The main point of the gathering, in this view, is not theological correctness, but it is “the common meditation, the atmosphere of celebration and beautiful prayers, well spoken.”⁷ E.Y. Mullins, a late 19th century Baptist minister and educator, like many proponents of this view, saw the use of creeds as a “barrier to genuine spirituality” in which a “barren intellectualism” and “dead orthodoxy” is bound to become apparent.⁸ Proponents of this belief pertaining to orthodoxy commonly believe that “no Christian or set of Christians is equipped with the necessary powers to determine absolutely the essentials of Christianity for any but themselves.”⁹ A theological subjectivist, or individual-defined orthodoxy, view does not have any concept of what would be considered “essential” belief binding upon all Christians.

In critique of this type of orthodoxy, individualism is highly problematic in the 21st century. It is in this individualistic view that people commonly refer to Jesus as their “personal” Lord and Savior, therefore it is in this “personal” relationship and “personal” revelation of Godself that the individual finds their personal beliefs. It is because of the individualistic perspective brought forth by the Reformers that the 21st century church is facing a resurgence of Monarchianism and a non-affirmation of the resurrection of Christ. Individually-defined orthodoxy, while liberating the individual from dogmatic theology, can lead to poor interpretations of scripture and even the possibility of developing heretical theological thought. So then to defend the Church against that possibility, shall we entrust orthodoxy to denominational catechesis?

Catechetical (Denominational) Orthodoxy

Liturgical church traditions throughout history have always had a clearly defined statement of faith, typically in the form of a set of questions followed by answers to those questions. This is commonly referred to as a catechism. The form of orthodoxy that will be explored in this section is the Catechetical form of orthodoxy, or a form of orthodoxy defined by each denomination’s specific catechism. It will be from this form of orthodoxy that a definition and criteria for heterodoxy will be established in a later section of this paper.

The term “orthodoxy” has a technical sense, and in this way, it refers to the collective religious thinking of a corporate body.¹⁰ As a result, the theological meanings of orthodoxy will vary with each specific tradition’s teachings, and as a result, what orthodoxy means to a Catholic may not mean the same thing to

⁷Bradley E. Starr, “Individualism and Reform in Troeltsch’s View of the Church,” *Modern Theology* 7, no. 5 (October 1991): 457.

⁸Weaver, 27-8.

⁹C. J. Cadoux, “The Proposed Creedal Basis of Christian Reunion,” *The Journal of Religion* 1, no. 6 (November 1921): 606.

¹⁰Brown, 411

an Orthodox Christian.¹¹ “Church orthodoxy must be found in that which the Church, as such, holds and is committed to, in fundamental and obviously necessary things, without which the Church will cease to be the divinely instituted society on Earth.”¹²

However, the catechetical, or denominational, form of orthodoxy is very narrow in scope, meaning that though it may be binding upon many, it still is not binding upon all. For instance, the Catechism of the Catholic church is only binding upon those within the Catholic Church, and the teachings of the Eastern Orthodox church are only binding upon those who find themselves accepted into the Orthodox church. Catechisms and confessions, though useful in creating a doctrinal identity, cannot be binding upon all Christians.¹³ This type of orthodoxy, in contrast to the individual orthodoxy expounded upon in the previous section, promotes a communal view of orthodox theology and doctrine rather than leaving it up to the individual. This allows each individual within a specific denomination to come together and be unified in way they think theologically. In some instances though, this type of orthodoxy can become something detrimental to those within a specific denomination, as certain adherents may become overly dogmatic when it comes to adherence to everything written in the specific tradition’s catechism. This can cause possible members with differing theological beliefs to be turned away. “Subscription to a long system, in any form, tortures sensitive minds, and drives away some of the choicest.”¹⁴ Though the use of confession and catechism may be useful in establishing a doctrinal and theological identity within a denomination, in some cases, they may become too rigid of a standard to be binding upon the Church at large, and therefore, cannot be an ecumenical standard of orthodoxy. So then what may we consider to be an ecumenically binding standard of orthodoxy?

Creedal Orthodoxy

This form of orthodoxy, as implied by the heading, is based on the Nicene-Constantinople creed that was first agreed upon and established following the council of Nicaea in June of 325 AD and finalized at Chalcedon in 451 AD. This form of orthodoxy has a long history beginning in the 2nd century AD. Many people such as Praxias, Marcion, the Ebionites (Gnostics), and Arius were causing divisions within the Church catholic at the time, and as a result, emperor Constantine called summoned all bishops to Nicaea in May of 325 AD so that they may stop the divisive disputes within the church from getting worse.¹⁵ The statement of faith, or creed, that was drafted and agreed upon at the ecumenical council at Nicaea in 325 AD reads:

¹¹James D. Davidson and Gary J. Quinn, “Theological and Sociological Uses of the Concept ‘Orthodoxy,’” *Review of Religious Research* 18, no. 1 (1976): 74.

¹²Brown, 411

¹³Weaver, 27

¹⁴Brown, 413

¹⁵Lewis Ayres, *Nicaea and Its Legacy: An Approach to Fourth-Century Trinitarian Theology* (Oxford: Oxford Univ. Press, 2010), 18.

We believe in one God, the Father, the Almighty, maker of heaven and earth, of all that is, visible and invisible.

We believe in one Lord, Jesus Christ, the only Son of God, eternally begotten of the Father, God from God, Light from Light, true God from true God, begotten, not made, of one Being with the Father; through him all things were made. For us and for our salvation he came down from heaven, was incarnate from the Holy Spirit and the Virgin Mary and was made man. For our sake he was crucified under Pontius Pilate; he suffered death and was buried. On the third day he rose again in accordance with the Scriptures; he ascended into heaven and is seated at the right hand of the Father. He will come again in glory to judge the living and the dead, and his kingdom will have no end.

We believe in the Holy Spirit, the Lord, the giver of life, who proceeds from the Father [and the Son], who with the Father and the Son is worshiped and glorified, who has spoken through the prophets.

We believe in one holy catholic and apostolic Church. We acknowledge one baptism for the forgiveness of sins. We look for the resurrection of the dead, and the life of the world to come. Amen.¹⁶

This creed, finalized in 451 AD, following the ecumenical council at Chalcedon, was the unifying statement of faith that defined the essential beliefs of the Christian church pertaining to the divinity of Christ and the nature of the procession of Holy Spirit.

In contrast to a catechetical form of orthodoxy, which is the doctrinal, theological voice of a singular denomination, a creedal form of orthodoxy was the voice of the entire church. “Ecumenical belief is the only orthodoxy.”¹⁷ creed, as well as the Apostle’s Creed, according to the Anglican Church in North America’s catechism, is “the sufficient statement of the Christian faith”¹⁸ This form of orthodoxy found within the creed Nicene “testifies of Church unity and demands it.”¹⁹ It is in the Nicene creed that the essential beliefs of the Christian faith are stated, and because it has historically been agreed upon ecumenically, it is binding upon all believers within the church. This form of orthodoxy gives believers a clear standard of “right belief” and allows believers to have differing theological opinions without causing division and faction within the church.

¹⁶J.I. Packer and Joel Scandrett, *To Be A Christian: An Anglican Catechism* (Wheaton, IL: Crossway, 2020), 70. (Accessed August 8, 2019) https://s3.amazonaws.com/acna/Anglican_Catechism_Extended_Edition.pdf.

¹⁷Brown, 413

¹⁸Packer and Scandrett, 6

¹⁹Brown, 413.

Criteria for Orthodoxy

In light of the three aforementioned forms of orthodoxy, the criterion for orthodoxy shall be established in this section.

Definition

Orthodoxy, being made up of the two Greek words “ortho” (proper, right, correct) and “dokēō” (teaching), literally means the “proper” or “correct” teachings that are found within scripture concerning theology, doctrine, and the practice in the daily life of the believer. The word itself has a technical sense to it in that religious orthodoxy must be binding upon all adherents within that specific religion. In the case of Christianity, orthodoxy must be binding upon all Christians at all times. So Christian orthodoxy essentially outlines the correct and proper teachings of the Christian religion that is to be binding upon all Christians.

Criteria

For something to be considered orthodox, it must be binding upon all believers, and therefore must be agreed upon ecumenically. *Individual* orthodoxy cannot be binding upon all believers because then it would not be considered one’s own created standard of orthodoxy. One, in the individual orthodoxy model, cannot be loyal to any other truth other than that which they themselves perceive as truth. Because this model is based entirely upon the individual’s perception of truth, it cannot be something that is agreed upon ecumenically, and therefore, it cannot be a standard of orthodoxy that is binding upon all Christians. *Catechetical*, or denominational orthodoxy, though it is more widely agreed upon than individual orthodoxy, has too much diversity from denomination to denomination. For instance, the Church of God (Cleveland, TN) affirms the doctrine of the “baptism into the Holy Spirit” with initial evidence of speaking in tongues.²⁰ The Anglican Church in North America does not affirm this doctrine. Because of this differentiation in doctrinal commitments, the Church of God belief cannot be binding upon those within the ACNA, and therefore cannot be binding upon all Christians because it has not been agreed upon ecumenically. The *creedal* model of orthodoxy, in contrast to the *individual* and *denominational* models of orthodoxy, has been agreed upon ecumenically throughout history and has established the essential truths contained within scripture. Not only has it been agreed upon throughout history, but it also is general enough to allow for theological diversity amongst Christians without causing a divide within the church. So, for a standard of orthodoxy to be established, it must:

1. be binding upon all Christians,

²⁰Church of God International Executive Committee, *Our Statements of Faith* (Cleveland, TN: Pathway Press, 2017), 4.

2. be agreed upon ecumenically,
3. must contain only the essential truths that lie within scripture,
4. and be general enough to allow for theological diversity within that standard of orthodoxy

Heterodoxy

Heterodoxy, a term not commonly heard within the protestant evangelical tradition, is not an easy term to define. It is a term that is extremely nuanced in the way that it must be presented. The word “heterodoxy”, made up of the word “hetero”, which means “other” or “of a different type” and “dokēō”, which means “opinion” or “teaching, literally would mean that heterodoxy is an opinion or teaching that is “not in agreement with accepted doctrinal beliefs of a church.” This term, to avoid being used interchangeably with the term “heresy”, can only be defined within a catechetical form of orthodoxy. So in this specific case, to specific denominations, a heterodox view is any doctrinal or theological belief that falls outside of the bounds of their own catechesis or doctrinal statement of belief without going outside of the bounds of the essentials. To further explain this concept of orthodoxy, there will be an examination of the Catechism of the Catholic Church, the Orthodox Church, the Anglican Church, and the Pentecostal Catechism written by James Beaty in light of the doctrine of transubstantiation.

One issue that has been debated throughout the history of the church, especially after the Reformation, is the issue of whether the body and blood of Christ are truly present when partaking of the Eucharist, or transubstantiation, or whether communion is simply something that unifies believers and provides a means of contemplating the cross. Catholic doctrine affirms the doctrine of transubstantiation in the Eucharist.²¹ In the Orthodox church, like the Catholic Church, “it is strictly understood as being the real presence of Christ, His true Body and Blood mystically present in the bread and wine.”²² Following the Reformation, however, transubstantiation became a doctrine that was no longer affirmed in many protestant churches. The Anglican Church in North America²³ and Pentecostals, like many protestant denominations and belief systems, do not affirm the doctrine of transubstantiation within the Eucharist. From the perspectives of the Catholic and Orthodox churches, if heterodoxy were to be defined in light of the catechetical or denominational form of orthodoxy, Anglicans and Pentecostals would not have an orthodox view of the presence of

²¹Catholic Church, *Catechism of the Catholic Church: With Modifications from the Editio Typica.*, 2nd ed. (New York: Doubleday, 2003), 395.

²²Thomas Hopko, *The Orthodox Faith*, vol. 2 (Yonkers, NY: St Vladimir’s Seminary, 2016), 32.

²³The Anglican Church in North America, *The Book of Common Prayer* (Huntington Beach, CA: Anglican Liturgy Press, 2019), 783.

Christ in the Eucharist, but instead, their non-transubstantiation view would be considered a heterodox view. Likewise, from the view of Pentecostals and Anglicans, who do not affirm the doctrine of transubstantiation, Catholics and Orthodox Christians would have a heterodox view. However, it is important to note that these doctrinal differences would not be considered heretical views because they would not stray outside the bounds of the essentials of the Christian faith as defined in the Nicene-Constantinople creed.

Criteria for Heterodoxy

Heterodoxy, in one sense, is personal, that being that each person within a singular denomination may have diverse theological and doctrinal beliefs that may differ from the established beliefs and theological commitments of the particular denomination. However, in a greater sense, heterodoxy is corporate. It is corporate in the sense that each denomination has beliefs that may differ from one another. It has been determined in the last section that heterodoxy is any belief (both individual and denominational) that is contrary to the established doctrinal commitments set by a denomination. So for a view to be heterodox, it must be:

1. Outside of the doctrinal commitments of a specific denomination,
2. Within the bounds of creedal orthodoxy,
3. and it cannot be equated with heresy

Heresy

Throughout church history, heresies have not been uncommon. The longest standing church tradition, the Catholic Church, defines heresy as “the obstinate post-baptismal denial of some truth which must be believed with divine and catholic (universal) faith,²⁴ or it is likewise an obstinate doubt concerning the same.”²⁵ In this, heresy must be defined as a belief that is opposite of or a strong doubt of a doctrine that would be considered orthodox and binding upon all Christians. If a creedal orthodoxy is the only way to catholically define the essentials for the Christian faith, then heresy must be the denial of some doctrine or belief stated within the Nicene-Constantinople creed. Tertullian (155-220 AD) wrote in his work *The Prescription Against Heretics* that “Of these practical effects are false doctrines, called in Greek ‘heresies’, a word used in the sense of that choice which a man makes when he either teaches

²⁴“Believed that with catholic faith” means that the truth must be binding upon all Christians

²⁵Catholic Church, 562

them (to others) or takes up with them (for himself). For this reason he (Paul) calls the heretic condemned, because he has himself chosen that for which he is condemned.”²⁶ Heresy, in this case, is a false doctrine believed within the church and perpetuated by those who develop the doctrine. Typically, the heretic believes that they are correct theologically and that those who oppose them are incorrect and should be considered heretics.

Beginning with Marcion in the 2nd century AD, who, because of the wrathful nature of God in the Old Testament, denounced YHWH, the Jewish scriptures, and proclaimed that creation was evil,²⁷ heresy is a phenomenon that has been not been scarcely seen throughout the history of the church. Walter Bauer, who published *Rechtgläubigkeit und Ketzerei im ältesten Christentum*,²⁸ “sought to show that in the first two Christian centuries orthodoxy and heresy did not stand in relation to one another as primary and secondary”²⁹ through attempting to prove that the documents most likely to be preserved by the Church were documents that would reflect the theological and doctrinal positions that would gradually become dominant within the early church as well as that the Christianity of Edessa, Egypt, Rome, and Asia Minor would differ from one another.³⁰ Though Bauer’s work sparked interest in this field and seemed revolutionary, it no longer seems to be that way. “It has been partly corroborated, partly paralleled by the NT studies that have investigated the origins of the earliest Christianity which he examined in postcanonical history.”³¹ The existence of such documents as I Clement, the Didache, and the epistles of Ignatius indicate that a universal standard of orthodoxy, and a criterion for heresy, did indeed exist in the first and second century church.³²

A defining feature of heresy is its ability to cause fragmentation and instability within the Church that would otherwise be unified.³³ Tertullian notes that heresies are “produced for the weakening and the extinction of faith”³⁴, and that heresies have a tendency to derive from people within the Church that were overly curious with regards to the established theological statements of the

²⁶Tertullian, *Prescription Against Heretics*, 6.

²⁷David E Wilhite, *The Gospel According to Heretics: Discovering Orthodoxy through Early Christological Conflicts* (Grand Rapids: Baker Academic, 2015), 22.

²⁸Translated in English as *Orthodoxy and Heresy in Earliest Christianity*.

²⁹Daniel J. Harrington, “The Reception of Walter Bauer’s Orthodoxy and Heresy in Earliest Christianity during the Last Decade,” *Harvard Theological Review* 73, no. 1 2 (April 1980): 289.

³⁰A. Thomas Kraabel, “Orthodoxy and Heresy in Earliest Christianity,” *Encounter* 33, no. 4 (January 1, 1971): 416–18.

³¹Bruce Francis Vawter, “Orthodoxy and Heresy in Earliest Christianity,” *The Catholic Biblical Quarterly* 34, no. 2 (April 1972): 201.

³²Paul Woolley, “Orthodoxy and Heresy in Earliest Christianity,” *The Westminster Theological Journal* 34, no. 2 (May 1, 1972): 184.

³³Alister E McGrath, *Heresy: A History of Defending the Truth* (New York: Harperone, 2010), 85.

³⁴Tertullian, 2.

Church catholic.³⁵ The Arian controversy, usually considered the Arch-heresy, caused such a great division within the church that Constantine, the emperor of the Roman Empire, called the Council of Nicaea in 325 AD, which would determine the fate of Arius and all of those who followed.

Criteria for Heresy

In the previous section, the definition of heresy was established as any doctrinal or theological commitment that falls outside of the bounds of the Nicene-Constantinople creed, which was finalized in 451 AD. Heresy must be defined in light of a creedal standard of orthodoxy, as individual and catechetical (denominational) orthodoxies are too narrow in scope and would establish an entirely subjective standard of heresy. The criteria for heresy is that:

1. Heresy is an incorrect teaching regarding any of the established doctrines within the Nicene creed,
2. Heresy is divisive in nature,
3. And Heresy is destructive to the Christian faith

Conclusion

In a church culture where the individual reigns supreme and where the individual's own theological reflections are their own personal standard of orthodoxy, an ecumenically binding standard of orthodoxy must be established so that each individual who becomes part of any Christian faith community may be made aware of what would be considered "essential" theological belief. The focus of this paper was to establish criterion and definitions of the three terms orthodoxy, heterodoxy, and heresy so that each individual may understand not only the essentials, but how far outside the bounds of their ecclesial tradition's doctrinal and theological commitments they may go theologically before falling into the "trap" ³⁶ of heresy. Orthodoxy, a concept which may seem elusive to most, must be defined in light of the Nicene creed because it meets the criterion of being general enough to allow for theological diversity, ecumenically agreed upon, and containing only the necessary "essential" truths found within scripture. It is because it meets the aforementioned criterion that it may be binding upon all Christians. Heterodoxy, often a term foreign to Christians who find themselves outside of the realm of clergy, must be defined in light of a catechetical orthodoxy because it meets the criterion of being outside the bounds of a specific denomination's theological and/or doctrinal commitments without denying any of the essentials of the Christian faith established within

³⁵Wilhite, 16.

³⁶Tertullian, 3.

the Nicene creed. Heresy, a destructive, divisive category of Christian thought, should, like orthodoxy, be defined in light of a creedal standard of orthodoxy, as heresy is simply the obstinate denial of or the obstinate doubt of any Christian doctrine deemed to be essential and binding upon all Christians. In establishing ecumenical definitions and criterion for the orthodox, the heterodox, and the heretical, it is desirable that this paper would allow for meaningful dialogue within the highly divided church culture of the 21st century.

References

- Ayres, Lewis. *Nicaea and Its Legacy: An Approach to Fourth-Century Trinitarian Theology*. Oxford: Oxford Univ. Press, 2010.
- Brown, Francis. "What Is Orthodoxy?" *The North American Review* 168, no. 509 (April 1899): 409–17.
- Cadoux, C. J. "The Proposed Creedal Basis of Christian Reunion." *The Journal of Religion* 1, no. 6 (November 1921): 592–607.
- Catholic Church. *Catechism of the Catholic Church: With Modifications from the Editio Typica*. 2nd ed. New York: Doubleday, 2003.
- Church of God International Executive Committee. *Our Statements of Faith*. Cleveland, TN: Pathway Press, 2017.
- Davidson, James D., and Gary J. Quinn. "Theological and Sociological Uses of the Concept 'Orthodoxy.'" *Review of Religious Research* 18, no. 1 (1976): 74.
- Harrington, Daniel J. "The Reception of Walter Bauer's Orthodoxy and Heresy in Earliest Christianity during the Last Decade." *Harvard Theological Review* 73, no. 1–2 (April 1980): 289–98.
- Hopko, Thomas. *The Orthodox Faith*. Vol. 2. Yonkers, NY: St Vladimir's Seminary, 2016.
- Kraabel, A. Thomas. "Orthodoxy and Heresy in Earliest Christianity." *Encounter* 33, no. 4 (January 1, 1971): 416–18.
- McGrath, Alister E. *Heresy: A History of Defending the Truth*. New York: Harperone, 2010.
- Packer, J.I., and Joel Scandrett. *To Be A Christian: An Anglican Catechism*. Wheaton, IL: Crossway, 2020. https://s3.amazonaws.com/acna/Anglican_Catechism_Extended_Edition.pdf.
- Starr, Bradley E. "Individualism and Reform in Troeltsch's View of the Church." *Modern Theology* 7, no. 5 (October 1991): 447–63.
- Tertullian. *The Prescription Against Heretics*.
- Thayer, Joseph Henry. *Thayer's Greek-English Lexicon of the New Testament*. Peabody, MA: Henderickson, 2017.

The Anglican Church in North America. *The Book of Common Prayer*. Huntington Beach, CA: Anglican Liturgy Press, 2019.

Vawter, Bruce Francis. "Orthodoxy and Heresy in Earliest Christianity." *The Catholic Biblical Quarterly* 34, no. 2 (April 1972): 201–2.

Weaver, C Douglas. "The Baptist Ecclesiology of E.Y. Mullins: Individualism and the New Testament Church." *Baptist History and Heritage* 43, no. 1 (January 1, 2008): 18–34.

Wilhite, David E. *The Gospel According to Heretics: Discovering Orthodoxy through Early Christological Conflicts*. Grand Rapids: Baker Academic, 2015.

Woolley, Paul. "Orthodoxy and Heresy in Earliest Christianity." *The Westminster Theological Journal* 34, no. 2 (May 1, 1972): 183–86.

Fall 2019

Lavender Oils Effect on Anxiety Levels in Zebrafish

Alyshia Smith

Dr. Sherry Kasper, Faculty Mentor

Lee University

Lavender Oils Effect on Anxiety Levels in Zebrafish

Alyshia Smith¹ and Dr. Sherry Kasper, Faculty Mentor²

¹Lee University

Abstract

The purpose and goal of this research was to observe whether lavender essential oils do, in fact, relieve stress in the anxious behavior of zebrafish based on the zebrafish behavioral change. Due to the increase of anxiety frequently reported in the United States and use of essential oils for relief, a research study was conducted. In this study, the effect of lavender oil on anxiety within Zebrafish was tested. Zebrafish are acceptable models due to the fact that they share 81.8% of their proteins associated with the human brain and they have a similar cortisol release response (Yang, Zou, Fu, & He, 2013). In this study, the zebrafish were all placed in a novel tank, which is shown to induce a stress response, after exposure to different doses of lavender oil. Findings indicated a trend for a decrease in the zebrafish diving behavior compared with the control group, which received no oil. Based upon the results there was no significant change in cortisol levels within the Zebrafish. The lavender could have had a small affect but because the fish felt they could not breathe or was coated with the oils it normalized the affect.

Introduction

Stress and anxiety are issues that are increasing within the United States. In addition, 77% of people report having regular physical symptoms caused by stress (Batson, 2011). Lavender essential oils are widely regarded as an effective remedy to relieve anxious behavior in stressed individuals. This study was conducted of five different trials with four fish in each. There were different doses of lavender in each trial for the fish so that comparing could take place. When presented with a negative stimuli, zebrafish begin to dive to the bottom of the tank. This negative stimuli was being placed in a novel tank. Zebrafish have a “high sensitivity” of “anxiety-related behaviors.” (Stewart et al., 2012) During the novel tank test “zebrafish exhibit robust behavioral responses to anxiety evoked by novelty.” (Cachat et al., 2010) It appears that when zebrafish are exposed to a novel tank it increased them in “locomotion and erratic movements similar to those evoked in rodents by predator stress.” (Stewart et al., 2012).

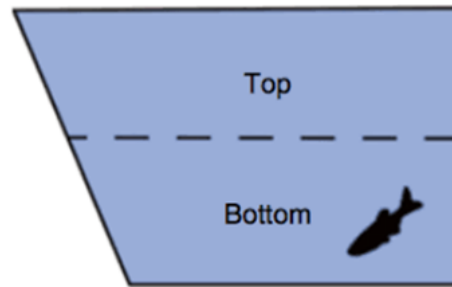


Figure 1: Zebrafish in a Novel Tank

In Figure 1 a novel tank can be seen.

If the lavender do in fact work the zebrafish amount of time on bottom would decrease despite being in a novel tank. Zebrafish can be great for this study to compare with humans because they share 81.8% of their proteins associated with the human brain and they have a similar cortisol release response (Yang, Zou, Fu, & He, 2013). It was found that the “use of human salivary cortisol assays provides physiological evidence measuring the endocrine stress response in individual zebrafish that can be associated with anxious behavioral responses.” (Canavello et al., 2010).

Literature Review

Anxiety has become prevalent within society and many have turned to alternative medicines such as essential oils. Aromatherapy is a “form of complementary and alternative medicine (CAM) that uses plant essential oils to affect the mood or health of the patient.” (Setzer, 2009) Lavender essential oil is the most popular and is particularly used for the treatment of anxiety. This is believed to decrease stress that people encounter. Although aromatherapy is popular and said to be effective, there is no real scientific research behind these claims. Therefore, we hope to directly test the effects of lavender oil on the anxiety behavior of Zebrafish. Zebrafish are a small 4-cm long tropical freshwater fish from South East Asia that is known for its predictable stress response (Cheung, Chatterjee, & Gerlai, 2013). When zebrafish are stressed they dive to the bottom of their tank. Likewise, “stress response relies heavily on the hypothalamic-pituitary-adrenocortical (HPA) axis and its pleiotropic final effector glucocorticoids (GCs).” (Yeh, Glöck, & Ryu, 2013) This is one reason zebrafish are a great model for testing lavender essential oil effectiveness. If the lavender oil works there will be a decrease in the amount of times the zebrafish spend at the bottom of the tank. Another reason zebrafish are a great model is that they “share 81.8% of the genes associated with mental disorders in humans and have a similar endocrine response such as the release of cortisol.” (Yang,

Zou, Fu, & He, 2013).

Methadology

There was a total of 25 fishes purchased from Petco. The fish were allowed time to habituate to their environment for one week. We then tested their behavioral response to stress with lavender. This consisted of five trials made up of four fish. The first trail was a control where the zebrafish was placed in a pretreatment tank for 5 minutes with no lavender and then in another tank for 10 minutes to examine their behavior. During the 10 minutes the amount of seconds the fish were on top and bottom was kept tracked of which can be seen in Table 1. After the control trail the steps were repeated by adding 4 drops, 8 drops, 20 drops, and 40 drops of lavender in each new trial in the pretreatment tank. The numbers in each trial represented below is the percent time the fish were on the top portion of the tank. The amount of seconds for each fish on top of the tank was counted then divided by 600 seconds (10 minutes).

Control	4 Drops	8 Drops	10 Drops	40 Drops
.991	.3695	.2578	7.99e-4	0
.2498	.0256	.0361	0	0
.1903	0	.0683	.0543	0
.2744	.2553	.2054	.0037	0

Table 1. Zebrafish percentage of time on top with an without lavender drops

This data did not support our previous hypothesis. The 20 and 40 drops of lavender we found to be too much on the zebrafish. In other words, these doses caused the zebrafish to exhibit odd behavior such as swimming on their backs, etc. Therefore, we will not use these doses in future experiments. Additionally, there was an outlier in the control group which could explain why the control is the highest and seems the best for the fish. It is believed there was some effect with the lavender oil. However, there was some behavioral evidence that the lavender oils either coated the fish or interfered with breathing. Therefore, this would normalize the effect. Lastly, cortisol was extracted from the fish. There was one-week habituation time between the behavioral assays and the cortisol tests. The zebrafish was placed into the pretreatment for 5 minutes and then the novel tank for 10 seconds. Next, the zebrafish were immediately placed in liquid nitrogen to freeze. Once they were frozen they were stored in the -80o freezer for later examination. The fish were homogenized into a solution of 500 microliter of PBS. Next, 5mL of Diethyl ether was placed into each tube and vortexed each tube for a minute. They were then centrifuged for 5 minutes at 3500. The yellow layer was then removed and the steps were repeated starting at 5mL of diethyl ether. The tubes overnight under a hood and was left with of cortisol for that fish in the tube. A carrier oil of pure olive oil was introduced to

four fishes with only 8 drops. The behavioral of the fish were within the same range as the fish who experienced 4 and 8 drops of lavender. The results of the fish percentage on top can be found below.

Fish 1	Fish 2	Fish 3	Fish 4
.0058	.2767	.0652	0

Table 2. Zebrafish percentage on top with pure olive oil

The next part of the research consisted of measuring the level of cortisol. According to Yeh, Glöck, & Ryu, (2013) Specifically, for zebrafish, “cortisol is currently being measured using radioimmunoassay (RIA) and ELISA.” (p. 1) Elisa Assay kit was used to determine the cortisol of each fish. The directions supplied in the kit were followed. A spectrophotometer was utilized to determine the colors change in the well plate that allowed for the cortisol level to be read. Below in Figure 2 the well plate and all three of the well plate set ups can be seen.

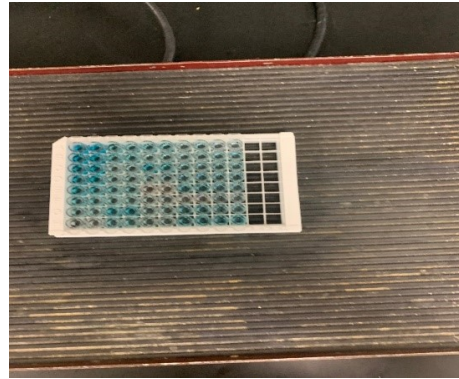


Figure 2: Example of a Well Plate

	1	2	3	4	5	6	7	8	9	10	11	12
A		S ₀	S ₀	5	5							
B		S ₁	S ₁	2	2							
C		S ₂	S ₂	3	3							
D		S ₃	S ₃	4	4							
E		S ₄	S ₄									
f		S ₅	S ₅									
G		S ₆	S ₆									
H		S ₇	S ₇									

Table 3. Test 1.

Table 3 above, displays the practice test that was first applied to the four samples to test the kit. The results were good and within the range. Tubes were numbered for identification purposes.

Number 2 is the 4 drops of lavender, 3 is the 8 drops of lavender, 4 is the 20 drops of lavender, and 5 is the 40 drops of lavender.

1	2	3	4	5	6	7	8	9	10	11	12
A	S ₀	S ₀	6	6	15	15					
B	S ₁	S ₁	8	8	16	16					
C	S ₂	S ₂	9	9	17	17					
D	S ₃	S ₃	10	10	18	18					
E	S ₄	S ₄	11	11	19	19					
f	S ₅	S ₅	12	12	20	20					
G	S ₆	S ₆	13	13	21	21					
H	S ₇	S ₇	14	14							

Table 4. Test 2

All results other than number 13 were in the range. Numbers 6, 11, 16, and 21 was the group of control which received 0 drops of lavender. Numbers 7, 12, 17 was in the 4 drops of lavender group. Number 7 was not in this well plate because the tube broke. Numbers 8, 13, and 18 consisted of the 8 drops of lavender. Numbers 9, 14, and 19 consisted of the 20 drops of lavender and numbers 10, 15, and 20 consisted of the 40 drops of lavender. Due to 13 being outside of the range, it was repeated in the third set.

1	2	3	4	5	6	7	8	9	10	11	12
A	S ₀	S ₀	1	1							
B	S ₁	S ₁	2	2							
C	S ₂	S ₂	3	3							
D	S ₃	S ₃	4	4							
E	S ₄	S ₄	13	14							
f	S ₅	S ₅									
G	S ₆	S ₆									
H	S ₇	S ₇									

Table 5. Test 3

This is of the 4 fishes that were placed in pure olive oil and number 13 that had to be repeated. It was diluted to get a number in the range.

Figures 3 and 4 display all of the fish cortisol levels and behavioral test which are below.

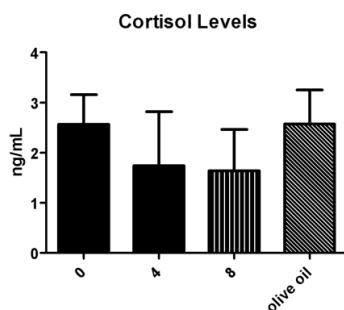


Figure 3: Figure 3 Cortisol Numbers

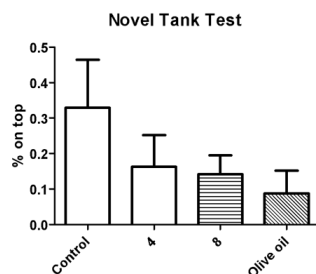


Figure 4: Figure 4 Behavioral Test

Findings

Due to essential oils being very popular for stress relief my theory was that there would be a decrease in the anxious behavior the zebrafish have after using the lavender. However, this was not the case. There may be several possibilities. First, the control group had very high numbers which were not seen in the previous study. This will need further investigation as to why their numbers were higher than before; however, it is perceived that this contributed to the leveling out of the numbers in the behavioral study. Second, especially at the higher doses, the oils seemed to almost coat the fish. It was difficult for them to swim and some died or did not move at all. Therefore, even at the lower levels, it could be that the lavender was having negative effects on swimming and breathing. If this is the case, the stress from this alone would increase the time at the bottom of the tank. Finally, there was not a room that was separate from all other people. In the early stages, there was a class in the other room which could have stressed the fish. Therefore, the early behavioral numbers could be skewed.

Conclusions

Stress and anxiety are issues that are increasing within the United States and many are in search of ways to alleviate this issue. The purpose of this study was to see if lavender is a way to treat this issue. In this study a significant change within the zebrafish was not seen, therefore it is not possible to say lavender is effective based on this study. Some limitations in this research could have been that the sample size was too small, and that there was a huge outlier in the control group which made it big compared to the other trails. If this trail is to be continued there is a chance that there can be correlation between lavender being helpful with stress.

References

- Batson, J. (2011). Daily Life - The American Institute of Stress. Retrieved from The American Institute of Stress website: <https://www.stress.org/daily-life>
- Cachat, J., Stewart, A., Grossman, L., Gaikwad, S., Kadri, F., Chung, K. M., ... Kalueff, A. V. (2010). Measuring behavioral and endocrine responses to novelty stress in adult zebrafish. *Nature Protocols*, 5(11), 1786–1799. <https://doi.org/10.1038/nprot.2010.140>
- Kalueff, A. V. K., & Cachat, J. M. (Eds.). (2011). Measuring Endocrine (Cortisol) Responses of Zebrafish to Stress. *Neuromethods*, 51, 6–11. https://doi.org/10.1007/978-1-60761-953-6_11
- Setzer, W. N. (2009). Essential Oils and Anxiolytic Aromatherapy. *Natural Product Communications*, 4(9), <https://doi.org/10.1177/1934578x0900400928>
- Stewart, A., Gaikwad, S., Kyzar, E., Green, J.,
- Roth, A., & Kalueff, A. V. (2012). Modeling anxiety using adult zebrafish: A conceptual review. *Neuropharmacology*, 62(1), 135–143. <https://doi.org/10.1016/j.neuropharm.2011.07.037>
- Yeh, C.-M., Glöck, M., & Ryu, S. (2013). An Optimized Whole-Body Cortisol Quantification Method for Assessing Stress Levels in Larval Zebrafish. *PLoS ONE*, 8(11), e79406. <https://doi.org/10.1371/journal.pone.0079406>

Volume 3

Article 19

Fall 2019

Biblical Literacy and Habits among the d/Deaf

Kylie Sommer

Dr. La-Juan Bradford, Faculty Mentor

Lee University

Biblical Literacy and Habits Among the d/Deaf

Kylie Sommer¹, Dr. La-Juan Bradford, Faculty Mentor ²

Lee University

This research project aims to discover how the d/Deaf use the Bible. There are two ends on the scale of d/Deaf identity. When one identifies as “deaf” they view their deafness as a disability and a handicap to be fixed. When one identifies as “Deaf” they view their deafness as a defining part of their identity. They identify with the larger Deaf community and are proud of their Deafness.

Literacy levels among both the deaf and the Deaf vary and therefore it can be difficult for them to read the Bible in English. For individuals who communicate primarily in American Sign Language (ASL), learning to read in English requires them to develop some level of bilingualism. Brown (2009) poses a d/Deaf individual learning to read and write in English is the equivalent of “an English-speaking child whose first experience with reading was an attempt to master Chinese characters. . . . Fortunately, there are methods that help this decoding process to be less mysterious.” (p. 12)

Currently, the Bible is being translated into a variety of world sign languages. To this day, none of these sign language translations are complete. Through observing the ASL Bible, surveying a small group of d/Deaf individuals, and reading literature about this topic, it appears that sign language Bibles are more accessible to some d/Deaf individuals, perhaps in relation to their standing on the sliding scale of d/Deafness. This conclusion can be contributed to the many sign language Bible translations, which offer the d/Deaf a Bible in their native language and is developed with their culture in mind. This is a pilot study and therefore it is difficult to draw many firm conclusions. Further research will be put into this topic in the future.

Literature Review

The articles that were collected for this research covered a variety of topics in order to find information on this grossly under-researched matter. The

topics of the articles include those about d/Deaf Christianity, d/Deaf literacy and language, and sign language Bibles. Through observing information about these three topics, information has been compiled pertaining to d/Deaf Biblical literacy and habits.

0.1 d/Deaf Christianity

d/Deaf Christianity is a matter of identity. Individuals who identify with the Deaf community take pride in their culture and language. In Monaghan's 1991 account of two Deaf churches in Maryland, a group of Deaf Christians split from their hearing church in order to establish a Deaf church. The individuals felt that their needs and rights were not being upheld within the hearing church; they began their own church in the hopes of being able to attend services in their first and primary language, sign language (Monaghan, 1991).

Monaghan, (1991) observed that the churches became communities where Deaf culture and Christian culture collided into one. The services fulfilled common Christian customs found within church services yet did so in a manner accessible to the Deaf congregation. For example, the church services consisted of a time of worship similar to most Christian churches. The worship was done in a variety of sign language forms and included a beating drum. The churches also took part in a variety of sign language forms, including formal signing for sermons and conversational signing for times of fellowship.

In the book *Signs and Wonders*, Tracy Ann Morse wrote about how chapel services in d/Deaf schools promoted the usage of sign language. The schools believed that the easiest and most practical way to conduct chapel services was in sign language. Thus, the students were presented religious services in their native language. Morse (2014) posits that "sign language was the only means to convey abstract religious theology to the deaf and the only medium that would lead to the conviction of the deaf" (p. 72).

d/Deaf Christianity is a matter of joining Deaf culture and Christian culture. When church services and other d/Deaf Christian events are held within the language and customs of the d/Deaf, Christianity becomes more accessible to the Deaf community.

0.2 Deaf Literacy and Language

In the Deaf community, there is a strong connection between culture and language. Joanna Kobosko (2010) conducted a study on how d/Deaf adolescents identify. In her study she used Glickman's four category model of d/Deaf cultural identity. The model has four stages of identity: Hearing stage, Marginal stage, Immersion stage, and Bicultural stage. This model measures how d/Deaf individuals relate to both the d/Deaf and hearing communities. The study concluded that d/Deaf adolescents who used oral language had higher results in the

Hearing category of the model. This means that they more strongly identified with hearing culture. On the other hand, d/Deaf adolescents who used sign language had higher results in the Immersion category of the model. Meaning, these individuals more strongly identified with Deaf culture and sign language. Simply put, this implies that language usage has a large impact on d/Deaf cultural identity and personal identity (Kobosko, 2010).

Shirley Huang's (2017) article detailed how d/Deaf individuals who are bi-cultural and bilingual identify with cultures based on the languages they are comfortable with. The article told of a family with two d/Deaf children who were fluent in ASL, English, and Cantonese. The children most preferred using ASL, for they believed that it was their personal language as d/Deaf individuals. The article argues that individuals who strongly identify as Deaf prefer sign language as their native language (Huang, 2017).

For Deaf individuals, identity is rooted in the fact that they sign. Thus, their religious identity is affected by their cultural and lingual identity. One could conclude that Deaf individuals would find signed Bibles more accessible both culturally and lingually.

0.3 Sign Language Bibles

Sign Language Bibles have a profound impact in their respective d/Deaf communities. In an article focusing specifically on the d/Deaf Indian community, Friedner (2016) describes the grueling translation process as well as the effect of sign language Bibles. For the d/Deaf translators, sign language Bibles are all about "understanding." The word understanding, to the d/Deaf means that an individual knows the sign for something as well as the sign's meaning. If the individual truly understands, they are able to share the signs with others. To successfully translate Scripture into this form of Indian Sign Language, the translators chose to have the videos screened by Deaf individuals who could attest confirm that the translation was understandable (Friedner, 2016).

With various perceptions definitions are very similar. "Heart language" is an idea popular among missionaries. Heart language refers to a speaker's first native language. But more importantly, Friedner (2016) stated that, "... heart language is the language through which God will be able to communicate to a group of people." (p. 8) In missions literature, it is the medium through which one speaks to the soul. Missionaries believe that an individual's heart language is key to them being successfully evangelized. For the Deaf community, their heart language is the form of sign language they communicate through. Thus, sign language Bibles are sharing Scripture with Deaf individuals in their own heart language (Friedner, 2016).

Still, the heart language is a topic deserving of debate. Some scholars believe that bilingual individuals do not need to be presented Scripture in their mother

tongue to best understand it. Nehrbass (2014) conducted a series of experiments on whether or not the heart language is the most effective way to present Scripture to individuals. He concluded that if someone is truly bilingual, they do not necessarily understand the Bible in their heart language any better than in their second language. On the other hand, he determined that there are instances when it is necessary to be presented Scripture in the heart language. Nehrbass (2014) poses that, “in many cases, the reason to translate into the vernacular is to enable monolingual speakers to understand the Scriptures.” (p. 101) A d/Deaf individual who is fluent in ASL, may not be as confident in English. As previously stated, if a d/Deaf individual communicates fluently in both ASL and English, they would be considered bilingual. Therefore, if a d/Deaf individual is most comfortable using ASL, they will likely be most comfortable receiving Scripture in ASL. As Nehrbass mentioned, “if the Bible is to have an impact on every domain in life, it should use the language of everyday life.” (p. 101)

For her dissertation Lombaard (2005) studied the accessibility of both the written Bible and the signed Bible among Deaf individuals in South Africa. Lombaard’s (2005) research concluded that “Biblical material in Sign Language is more accessible than printed material to deaf born people, who use Sign Language.” (p. 98) The results of her study were largely influenced by the education and literacy levels among the Deaf individuals surveyed (Lombaard, 2005). The individuals surveyed suggested that a Bible for the Deaf should be written in simpler language with plenty of visual aids. Additionally, it should be noted that her research conclusions applied to d/Deaf born individuals. Such individuals likely identify with the Deaf community, and view sign language as their language. Again, this implies that every individual case is different.

For d/Deaf individuals, sign language Bibles are their only options for a Bible in their native and heart language. An individual’s ability to engage with the print Bible is as strong as their confidence with the written language being utilized. Due to this fact, it is understandable why research concludes that some individuals prefer using sign language Bibles as opposed to print Bibles.

Survey Analysis

A portion of this research included the administering of a survey. A survey was given to a small group of d/Deaf individuals. The three individuals were asked to answer a variety of questions that would give insight into their interactions with the Bible. The questions were written in order to determine how the individuals answered in relation to their experiences with both the ASL Bible and the print Bible.

The first question posed was, “When you read the Bible, do you enjoy it?” All three participants answered “yes” in some capacity. A direct quote from one

survey that illustrates both the strained literacy and one individual's passion for the Bible is: "I love mcuh Bible". Similarly, when asked "When you use the ASL Bible, do you enjoy it," two individuals answered "yes," while the third answered that they had no experience with the ASL Bible. Overall, these results show that the d/Deaf individuals have positive interactions with both types of Bibles.

Another question inquired, "on a scale from 1-10, when you read the Bible how much do you understand?" The average response among all participants was 8.3. If the participant without any experience with the ASL Bible is factored out of that response for the sake of comparison, the number becomes 7.5. When posed the same question but in relation to the ASL Bible, the two that have experience with the ASL Bible answered an average of 9.5. Therefore, among the participants with experience with both forms of the Bible, there is a significantly higher level of comprehension when using the ASL Bible.

The individual with no experience with the ASL Bible claimed that they had a 10 out of 10 comprehension level of the print Bible. One could speculate that if they had such a high level of comprehension of the English print Bible and no experience with the ASL Bible, they are likely more confident with English than the other individuals. This point further illustrates the fact that literacy levels, level of bilingualism, and personal language identity, have a large impact on Bible reading habits among the Deaf.

A variety of questions were asked about how the individuals access and use both forms of the Bible. One question asked which translation of the print Bible the individuals use. Two said they use the King James Version and one said they use the New Century Version. When asked if the individuals have the print Bible downloaded on their phones two answered "yes" and one answered "no". The individuals were then asked if they have the ASL Bible downloaded on their phones. The two that did have the print Bible on their phone did not have the ASL Bible on their phone. The one individual that did not have the print Bible on their phone answered that they did have the ASL Bible on their phone (this individual also answered that their comprehension of the ASL Bible was a 10 out of 10).

The individuals were then asked if there was anything they disliked about the print Bible. One answered that they did not dislike anything about the print Bible. One answered that they disliked the small print. Another individual answered that it was hard to understand. The same question was posed in regards to the ASL Bible. The individuals did not present anything that they disliked about the ASL Bible.

Lastly, the individuals were asked whether they preferred the ASL or the print Bible. It appears that the question was poorly phrased. The individual with no experience with the ASL Bible, answered that they preferred the print

Bible. The other two individuals did not answer the question appropriately.

If a similar survey was given in the future, there would be minor adjustments to the questions and formatting. Primarily, the researcher hopes to have the survey presented to a larger d/Deaf group in ASL. The question about which form of the Bible the individuals prefer will hopefully be posed in a comprehensible manner. Another question would be included to gauge how the individuals identify on the sliding scale of d/Deaf identity. It seems highly probable that the results of this survey and how d/Deaf individuals interact with the Bible could be based on whether they identify as deaf, Deaf, or if their d/Deaf identity fluctuates.

ASL Bible Observations

A portion of this research was dedicated to comparing and contrasting the print Bible and the American Sign Language (ASL) Bible developed by the Deaf Bible Society. The methodology for this portion of the study involved picking six books from the Bible (three Old Testament and three New Testament) and observing them in part or in whole. The three books chosen from the Old Testament were the Book of Jonah, the Book of Ruth, and the Book of Lamentations. These three books were observed in their entirety. The three books chosen from the New Testament were the Book of John, the Book of Romans, and the Book of Philemon. The Book of Philemon was observed in its entirety, whereas the Book of John and the Book of Romans were observed in part. In order to compare and contrast the ASL version with the print Bible, the video recordings were watched and a variety of print Bible versions were read. The three print versions used in this observation were the New International Version, the English Standard Version, and the King James Version. It was observed that the ASL version is translated in a culturally accessible manner. It is a vibrant and visually appealing translation of Scripture. The ASL Bible itself is incomplete and full of inconsistencies.

Contrasting the ASL and Print Bibles

Culturally Appropriate Translation

The ASL Bible is a resource for the Deaf community to use in order to study the Bible in their native sign language. For this reason, the ASL Bible is translated in a culturally appropriate manner. The recordings are full of rephrasings, ASL grammatical structures, and ASL specific signs. There were many instances in which the signer did not use the signs for hear, talk, or listen, which are indicative of hearing culture. Instead, these signs were replaced for signs that are more culturally appropriate. For example, Jonah 2:2 says “I called out to the Lord, out of my distress, and he answered me” (ESV). Instead

of using the signs for “called out” and “answered,” the signer signed the passage as follows: “ I PRAYED. YOU SAW ME.” This is culturally appropriate, as it removes the notion of one needing to speak in order for God to acknowledge them. Instead, this translation incorporates the idea that God can see and communicate through the preferred language of all d/Deaf people.

The ASL Bible is a resource for the Deaf community to use in order to study the Bible in their native sign language. For this reason, the ASL Bible is translated in a culturally appropriate manner. The recordings are full of rephrasings, ASL grammatical structures, and ASL specific signs. There were many instances in which the signer did not use the signs for hear, talk, or listen, which are indicative of hearing culture. Instead, these signs were replaced for signs that are more culturally appropriate. For example, Jonah 2:2 says “I called out to the Lord, out of my distress, and he answered me” (ESV). Instead of using the signs for “called out” and “answered,” the signer signed the passage as follows: “ I PRAYED. YOU SAW ME.” This is culturally appropriate, as it removes the notion of one needing to speak in order for God to acknowledge them. Instead, this translation incorporates the idea that God can see and communicate through the preferred language of all d/Deaf people.

Vibrant and Visually Appealing

Due to the fact that ASL is a visual language, the ASL Bible is translated with strong visual imagery in mind. As previously mentioned, the signers use classifiers to set up scenes from Scripture and explain unusual ideas. Passages of Scripture that involve heavy classifier usage include (but are not limited to) Jonah in the fish (Jonah 1-2), Jesus foretelling the outpouring of the Holy Spirit (John 7), and the Crucifixion of Christ (John 19). Classifiers are also used to explain uncommon ideas. For example, in the Book of Ruth, the signer uses classifiers to visually represent the idea of gleaning crops from a field. The incorporation of classifiers to explain archaic and uncommon ideas is an advantage that the print Bible does not have. Often those words and phrases are left for the individual to define, yet the ASL Bible makes a point of explaining these ideas as visually as possible in order to promote understanding.

The ASL Bible is also vibrant in its usage of facial expressions to share mood and tone. It is often explained that facial expressions in sign language are the equivalent of vocal tone and accent in spoken languages. The use of facial expressions allows the individuals that are watching to understand the tone of a passage. For example, the signer for the passage of Christ’s crucifixion, brought the Scripture to life using vivid facial expressions. His own face often portrayed the emotional severity and anguish of the painful passage.

Inconsistencies

One downfall observed in the ASL Bible is the presence of inconsistencies across recordings. It appears that some recordings are much older than others and this affects the quality and leads to inconsistencies. There were visual, organizational, and linguistic inconsistencies among the recordings.

The visual inconsistencies are obvious in the quality of the recordings. As previously mentioned, there is no complete ASL Bible. It is very obvious that the Old Testament remains incomplete. Additionally, some recordings appear to be much older than other ones. The recordings that appear to be older have a grainy film quality. Whereas the newer recordings have a clearer quality and even a modern twist through the use of costumes.

The organizational inconsistencies come in the form of how the books are translated. The biggest difference in the organization is that some books are recorded verse by verse whereas other books are recorded without each verse being identified. For example, the Book of Jonah is recorded verse by verse. Each verse number is shown individually as small text on the screen, this identifies which verse is being signed. The Book of John, on the other hand, is not signed verse by verse. The first video recording is labeled “John 1:1-5.” That title is in the top right hand corner of the video. The chunk of verses being signed is identified, but the individual verses are not. The researcher found it much easier to compare the print and ASL Bible side by side when the recordings were done verse by verse.

Lastly, the linguistic inconsistencies were subtle. At times the signs used for certain words were inconsistent across the books. For example, the word Jehovah is fingerspelled in the Book of Jonah. In the Book of Ruth, though, a sign is used for Jehovah. There were also instances in which the sign for “Holy Spirit” was inconsistent. This was not necessarily distracting and did not make it harder to decipher, but it still is an inconsistency.

Comparing the ASL and Print Bible

It is very clear based on the effort put into both the ASL Bible and the variety of print versions of the Bible, that both work fervently to make Scripture accessible and comprehensive. The reason the print Bible is available in so many versions is because translators work to make it as understandable as possible for the audience. The same seems very apparent in the ASL Bible. The signing for the ASL Bible always appears to be based on context and comprehensibility. This is why the verses are sometimes signed out of order and with added historical context.

Conclusion

Sign Language Bibles are overall more accessible to d/Deaf individuals who identify sign language as their first language, in the same way that an individual who identifies Spanish as their first language finds a Spanish Bible most accessible. Alternatively, every d/Deaf individual is different and, therefore, their experiences with the Bible are different. There are patterns to be observed in this research among similarly minded d/Deaf individuals, but the beauty of d/Deaf identity is that it is personal and fluid. The same statement can be made of Christian identity.

From observing the ASL Bible, it is clear that sign language Bibles are made with the d/Deaf in mind. It is a gateway into Christianity for them and falls into agreement with their cultural and lingual identity. Not only are these translations more accessible culturally, but they are also translated into their own language.

This is a pilot study. In the future, the researcher hopes to survey a larger group of d/Deaf Christians. It appears that Biblical literacy and habits among the Deaf could be largely affected by personal d/Deaf identity. The next project would hopefully survey d/Deaf individuals about how their d/Deaf identity intertwines with their Christian identity and their Bible reading habits. Future research may also be done on how the d/Deaf relate to God.

SURVEY

1. When you read the Bible, do you enjoy it?

2. On a scale from 1-10, when you read the Bible how much do you understand? (1= "I do not understand anything in the print Bible"; 10= "I understand everything in the print Bible.")

1 2 3 4 5 6 7 8 9 10

3. What translation of the print Bible do you read?

4. Do you have the written Bible downloaded on your phone?

5. Is there anything you dislike about the print Bible? If so, what?

6. Do you prefer using the print version of the Bible or the ASL Bible?

7. When you use the ASL Bible, do you enjoy it?

8. On a scale from 1-10, when you use the ASL Bible, how much do you understand? (1= "I do not understand anything in the ASL Bible", 10= "I understand everything in the ASL Bible.")

1 2 3 4 5 6 7 8 9 10

9. Do you have the ASL Bible downloaded on your phone?

10. Is there anything you dislike about the ASL Bible? If so, what?

References

- Brown, E. (2009). *One student, two languages: Print literacy in deaf students*, 10–12, 25–26.
- Deaf Bible. (2019). Retrieved August 20, 2019, from Deaf.bible website: <https://deaf.bible/ASESLV/choose-video>
- Friedner, M. (2015). Understanding sign language Bibles through affective audits in South India. *Ethnos*, 81(5), 933–954. <https://doi.org/10.1080/00141844.2015.1031264>
- Huang, S. (2017). The relationship between language and culture: Evidence from the deaf bi-bi community. *Perspectives of the ASHA Special Interest Groups*, 2(14), 55–65. <https://doi.org/10.1044/persp2.sig14.55>
- Kobosko, J. (2010). How do deaf adolescents experience themselves? Deaf identity and oral or sign language communication. *Cochlear Implants International*, 11(sup1), 319–322. <https://doi.org/10.1179/146701010x12671177989552>
- Lombaard, S. C. (2005). *The accessibility of a written Bible versus a signed Bible for the deaf born person with sign language as first language* (pp. 98–101).
- Monaghan, L. F. (1991). The founding of two Deaf Churches: The interplay of deaf Christian identities. *Sign Language Studies*, 1073(1), 431–452. <https://doi.org/10.1353/sls.1991.0019>
- Nehrbass, K. (2014). Do multilingual speakers understand the Bible best in their heart language? A tool for comparing comprehension of translations in vernacular languages and languages of wider communication. *The Bible Translator*, 65(1), 88–103. <https://doi.org/10.1177/2051677013518301>
- Morse, Trace Ann. (2014). *Signs and wonders: Religious rhetoric and the preservation of sign language* (pp. 66–85). Washington, Dc: Gallaudet University Press

Fall 2019

A Balm for Friendship

Reese Swistek

Dr. Thomas Pope, Faculty Mentor

Lee University

A Balm for Friendship

Reese Swistek¹ and Dr. Thomas Pope, Faculty Mentor²

¹Lee University

If humans are truly social animals as Aristotle states in the *Politics* then it seems that for humans to make friends is a natural thing. If friendship is a natural thing would also imply a simplicity about it that would allow for all of humankind to participate in it, thus allowing all of humanity to possess that one possession that Socrates has long pined after. Hence, there would be no issue of how one is to approach being a friend nor would there be much profound discussion as to how one can make a friend. However, Aristotle does not admit that friendship (at least of virtue) is truly possible, much less that it can be inherent in man by nature. Indeed, man's position as a social animal only seems to imply that at least friendships of utility are necessary for a human's existence, as stated by Julia Annas in her essay about friendship and altruism, "The mistake seems to lie in trying in the first place to provide a proof for what is just a fact about people- that they need at least some friends for a satisfactory life." Beyond friendships of utility however, both Plato and Aristotle agree that there lies difficulty in establishing how friendship looks and, indeed, if friendship is even possible. Scholars have offered several interpretations into the responses that Plato and Aristotle offer and their efforts can be largely boiled down into two schools of thought. Those who believe that friendship is not truly possible or that friendship is based solely on egoism, and those who believe that friendship is real and exists not only for egocentric reasons but also for the good of a friend simply. However, it is also true that none of the preexisting ideas offer forms of how one can befriend one who is vicious to turn him into a more virtuous person overall. Nevertheless, if friendship does not exist at all, or if it does exist but serves only to serve oneself and provides no reason to provide help to the other, then the question of how one should befriend a vicious person is pointless because it is either impossible, or too much trouble to be bothered with during one's journey to reach one's good.

Before analyzing the schools of thought surrounding Platonic and Aristotelian writings about friendship, it must first be established what friendship is, and to what extent it differs from the friendships of utility that occur in the everyday life of humankind, if indeed there is any difference at all. Friendship

is defined as a relationship between humans that is characterized by reciprocal love, what Aristotle calls goodwill, and mutual admiration of the other's virtue, and is aimed at the goal of bringing all involved parties to the attainment of goodness. It therefore differs from friendship of utility because although there can exist goodwill and well-wishing in lesser friendships, there is not the same admiration of the other for itself that exists in true friendship.

Among the most prominent scholars who posit that friendship as defined above is not possible is David Bolotin. Bolotin bases his suppositions on the *Lysis*. And based on Socrates' arguments and line of questioning states that friendship in the truest form is not possible. This is the case because, according to Bolotin, "What each desires primarily is its own nourishment." Indeed, this seems to be in line with the *Lysis* for Menexenus does agree with Socrates on the claim that friends become friends for some end or a "first friend" and it should come as no surprise that this first friend is, for Socrates, wisdom, the end of philosophy. Therefore, Bolotin goes on to state that friendships are more or less, means for one to reach what one holds to be one's ultimate good. To the extent that a friend can help one become one step closer to the goal that one cherishes, a friendship will be maintained, however, if a friend cannot help one become closer to the good, then there will not be a friendship. Hence the claim in the *Lysis* that to the extent that friends are similar and not useful to one another, they will not be treasured, as Bolotin states, "According to this argument, only those who can be treasured as friends who offer one another something different from what they can each find in themselves." Thus, because friendship, at least according to Bolotin's interpretation, is not possible in the sense that is commonly held by the public, as a relationship wherein one values a friend for the friend's own sake, there is no true friendship in the world besides the one between one and the "first friend". All other friendships serve as only a way for one to reach the first friendship.

In agreement with Bolotin is Julia Annas, Annas' interpretation of the *Lysis* is in line with Bolotin. She states, "If it is right to take Plato this way, then the analysis of friendship can not unfairly be called egoistic, giving an I-referring basis to feelings and actions that are apparently altruistic." In other words, friendship cannot be defined as completely free of self-centered designs. Annas then goes on to state that unless there is an infinite regress of friendships that all offer something to someone, one must arrive at a first friendship or goal that one is aiming toward. Thus, in a similar fashion to Bolotin, Annas states that all friendships, outside of the first friendship that is the goal of each man, are instruments that are used by humans in order to progress to one's goal. This is not to say that there cannot be some altruistic leanings in friendships, however, it is saying that friendships commonly understood between humans are "I" centered and more or less hollow compared to the good that one is ultimately striving for.

Lastly, David Wolfsdorf lies more or less in line with the argument that

a true friendship does not exist among humans, that there is only one true friendship that can exist between one and one's good. Wolfsdorf posits this claim by stating, "The drive that governs *ptiMa* is, in fact, not interminable. There is some object that is desired for its own sake, for the sake of nothing else, and for the sake of which every other beloved object is loved." Wolfsdorf is more loath to present the first object as the only sort of friendship that can exist. Rather, Wolfsdorf considers Socrates' argument to be merely a segue to the argument of the neither good nor bad being a friend to the good and the nature of desire. Nevertheless, it remains that Wolfsdorf admits the fallibility of other friendships. If ultimately all friendships are aimed at some first object, then it does not matter how desires can be ordered, because one's ultimate desire will always be aimed at the first object for which one would engage in all other friendships. According to this school of thought, it is not worth considering how one can befriend a vicious person because if the friendship with a vicious person does not serve to bring one closer to the first friend then there is no need to befriend the vicious. Without the existence of friendship for the purpose of helping and improving the other there is no possible way to befriend a vicious person.

The next school of thought posits that friendship is indeed possible, and revolves more around Aristotelian texts as compared to Platonic texts. Mary P. Nichols is perhaps the most prolific scholar in this school of thought. Nichols analyzes and clashes with the interpretations that Bolotin presents. As opposed to Bolotin, Nichols posits that instead of philosophy being the first object that all humans seek out, philosophy represents the friendships that already exist in life, "It is not, then, that philosophy serves as the experience that friends ultimately seek, free of the illusions of friendship. Rather, philosophy must find its model in the experience of friends-an experience of one's own as another who cannot be assimilated or subordinated." According to Nichols, it is not that friendships are used as a means for one to reach one's ultimate goal, in other words, that friendships are defined by the goal that one is striving for, rather, it is the other way around, that philosophy, the first object that a virtuous man is searching for, is defined by friendship. Nichols offers that friendships perfectly personify a relationship with one's good. In the same way that friendships are a constant "acquiring" of a friend, mankind is in constant "acquiring" of its good. Friends must both release and acquire each other, while holding things in common they must also allow some things to remain private to themselves. In the same sense, as Aristotle states, men are halfway between beasts and gods. It is impossible to fully take into possession one's good, or, in other words, to become friends with one's "first friend" completely without allowing for it to be released. Therefore, friendship is not only possible for humanity, but it is also necessary for one to learn about how to reach one's "first friend." Friendships are not valued for what they can offer to one to reach a goal, rather they are valued in and of themselves because they teach one to value good and approach it. Lastly, friendship must be possible because one of the primary goals of the philosopher, according to Nichols, is to participate in friendship within one's

soul. Thus, valuing friendship with another for the simple admiration of the other is necessary if one is to also value oneself and engage in friendship with oneself.

James Haden is another prominent thinker within those who believe that friendship is not only possible but that it can be practiced for the sake of a friend. Haden posits that because the *Lysis* revolves around the concept of desire, especially in regards to the dialogue taking place at the festival of Hermes. Thus, the dialogue is rife with sexual desire and other desires that drive one to what one thinks is good. However, though it may seem that Haden is moving toward the same conclusions that the authors in the school of thought that friendship is impossible or ego-centered, Haden resists this by stating, “Plato is not thinking of animal survival but rather of the inner condition in which we are able to endure the loss or absence of particular things.” Haden then states, “The[e] individuality [of the friends] is transcended, though not erased, by the Good, which is not constrained by particularity.” Haden therefore resists Socrates’ conclusion that the like would be useless to each other in friendship, or that they would be assimilated into one to the extent that they are exactly the same. Rather, the nature of the first good is such that there is no need to state that friends exist only as goals to reach the good, they have their own intrinsic value and help to fulfill the desires of humankind.

Lorraine Pangle is a scholar that evaluates the works of Aristotle to analyze his views of friendship. Pangle posits that Aristotle believes, much more strongly than Plato, that friendship is possible and is engaged in almost primarily for the good of the other and for the sake of the other alone, not for some external goal that the other can help lead one to. Indeed, Aristotle does not consider the “neediness” that Bolotin’s impression of Plato implies worthy of the truly manly and virtuous men who alone can engage in the perfect form of friendship. Because of this, friendships can be formed solely for the sake of friendliness and benefitting the other, “Somehow there is an element of true goodwill in every friendship that turns upon pleasure, and even in the alliances and business partnerships. . .” If lesser friendships of pleasure and utility also include goodwill and pleasure in each other’s company, then it is surely the case that the perfect form of friendship includes these characteristics to an even larger degree. Perfect friendships therefore are formed from a sense of goodwill and well-wishing for a friend whom one admires for the friend’s virtue.

The debate over whether friendship is possible and for what purpose it is engaged in has no clear resolution. However, scholarship still leaves out the problem of how, or if, one can engage in friendship with a vicious person. Most take it as a given what Socrates states in the *Lysis*, that there is not a possibility to engage in friendship with a vicious man, because, similar to conclusions by Nichols, the vicious are not even friends to themselves and therefore cannot be friends with others. However, as Bolotin himself addresses, this seems to be in conflict with bands of criminals who work together and thus, to use an

Aristotelian term, are at least friends of utility. Therefore, there must exist some form of friendship that can exist between unjust men and just men and just men are even motivated to befriend unjust men. If one can gain more happiness and become closer to living the good life by making friends and living in common to work towards a virtuous goal, then surely befriending vicious men in order to rehabilitate them is also of worth for living a life that is the most virtuous and enjoyable among all other lives. Indeed, one who is able to bring to the sight of justice those who are lost in ignorance and vice, they would surely be lauded and praised as one who is so overflowing with virtue that they are able to pass it off to another.

In order to demonstrate how friendship with a vicious person should be approached, I posit that the vicious should first be presented with images of friendship. Before one befriends a vicious person the vicious person should first be shown what true friendship looks like. Otherwise, because friends hold much in common, there is risk of a virtuous man being corrupted by the vicious man. However, as has been shown by the work of Nichols, there are some things in friendship that are shared and some things that are kept private. Both friends are constantly changing and are therefore in a constant state of releasing certain aspects of the other while also clinging to other parts. Ultimately, because creating another vicious person should be avoided, images of friendship can be used so that the vicious person can understand how friendship changes oneself. Friendship is necessary for a happy life and for the pursuit of the good which all men are held to wish for. Thus, it would be unjust to leave behind all those who could be assisted by engaging in friendship with them.

References

- Annas, Julia. "Plato and Aristotle on Friendship and Altruism." *Mind*, New Series, 86, no. 344 (1977): 532-54. <http://www.jstor.org/stable/2253312>.
- Aristotle. *Aristotle's Politics*. Translated by Carnes Lord. Chicago, IL: University of Chicago Press, 2013.
- Bolotin, David. *Plato's Dialogue on Friendship: An Interpretation of the Lysis, with a New Translation*. Ithaca: Cornell University Press, 1989.
- Bryan, Bradley. "Approaching Others: Aristotle on Friendship's Possibility." *Political Theory* 37, no. 6 (2009): 754-79. <http://www.jstor.org/stable/25655519>.
- Haden, James. "Friendship in Plato's 'Lysis'." *The Review of Metaphysics* 37, no. 2 (1983): 327-56. <http://www.jstor.org/stable/20128009>.
- Hoerber, Robert G. "Plato's 'Lysis'." *Phronesis* 4, no. 1 (1959): 15-28. <http://www.jstor.org/stable/4181644>.
- Nichols, Mary P. "Friendship and Community in Plato's 'Lysis'." *The Review of Politics* 68, no. 1 (2006): 1-19. <http://www.jstor.org/stable/20452753>.
- Nichols, Mary P. *Socrates on Friendship and Community*. Cambridge, NY: Cambridge University Press, 2009.
- Pangle, Lorraine Smith. *Aristotle and the Philosophy of Friendship*. Cambridge, NY: Cambridge University Press, 2003.
- Sherman, Nancy. "Aristotle on Friendship and the Shared Life." *Philosophy and Phenomenological Research* 47, no. 4 (1987): 589-613. doi:10.2307/2107230.
- Wolfsdorf, David. "in Plato's 'Lysis'." *Harvard Studies in Classical Philology* 103 (2007): 235-59. <http://www.jstor.org/stable/30032224>.

Fall 2019

Proving That a Prime Number in the Form $4N+1$ Can be Expressed as a Sum of Two Squares

Japheth Varlack

Dr. Richard Moy, Faculty Mentor

Lee University

PROVING THAT A PRIME NUMBER IN THE FORM $4N+1$ CAN BE EXPRESSED AS A SUM OF TWO SQUARES

JAPHETH VARLACK

1. INTRODUCTION

This summer I worked with Dr. Richard Moy on a short research project. The goal of the project was to help familiarize myself with the various problem solving tools mathematicians have been using for centuries. We went over Pythagorean triples, square numbers, triangular numbers, and pyramidal numbers in order to help me recognize some of the more common patterns found in numbers. We talked about some of the proof techniques I should be comfortable with before tackling difficult problems, techniques including the axiomatic method, proof by contradiction, induction, and infinite descent. I was given several problems throughout the week in order to practice using these proof techniques. For the final two days, we looked at Pierre de Fermat's theorem on prime numbers that can be expressed as a sum of two squares. Keeping in mind the techniques we discussed throughout the week, we thought of how one might go about proving Fermat's theorem. The results are as follows:

2. LEMMA

Lemma 1. *Let c be an integer that is relatively prime to modulo p . Then if $ca \equiv cb \pmod{p}$, it follows that $a \equiv b \pmod{p}$.*

2.1. Proof. We know that $p|(ca - cb)$ because $ca \equiv cb \pmod{p}$ can be expressed as $ca - cb \equiv 0 \pmod{p}$. However, c is relatively prime to p , so p must divide $(a - b)$. Then it can be said that

$$\begin{aligned} a - b &\equiv 0 \pmod{p} \\ a &\equiv b \pmod{p} \end{aligned}$$

This completes the proof.

3. FERMAT'S LITTLE THEOREM

Proposition 1. *If p is a prime number and does not divide a , then $a^{p-1} \equiv 1 \pmod{p}$*

Date: August 2019.

3.1. Proof. Consider that the prime p is 7. All of the possible remainders for an integer that is divided by 7 are represented by the following set of numbers

$$0, 1, 2, 3, 4, 5, 6$$

Consider that the integer a is 9. If we multiply the set of possible remainders by 9, excluding 0 since that would simply represent a multiple of p , we get a new set of numbers

$$9, 18, 27, 36, 45, 54$$

If we divide this new set of numbers by the prime p , or 7, we get the remainders

$$2, 4, 6, 1, 3, 5$$

Notice that this is just a rearrangement of the remainders we stated earlier. We can then reason that

$$\begin{aligned} a * 2a * 3a * \dots * a(p-1) &\equiv 1 * 2 * 3 * \dots * (p-1) \pmod{p} \\ (p-1)!a^{p-1} &\equiv (p-1)! \pmod{p} \end{aligned}$$

We can simplify both sides by $(p-1)!$ because we know that:

-the set $a, 2a, 3a, \dots, (p-1)a$ does not contain any numbers equivalent to 0 since none of the numbers are divisible by p

-by Lemma 1, if $i * a \equiv j * a \pmod{p}$ then $i \equiv j \pmod{p}$

We are then left with the equation we started with

$$a^{p-1} \equiv 1 \pmod{p}$$

This completes the proof.

Corollary 1. *Every number a relatively prime to p has a multiplicative inverse which is a^{p-2} .*

3.2. Proof. In modular arithmetic, the inverse of a number is defined such that a number multiplied by its inverse is congruent to 1 in that modulo. We can show that any number a relatively prime to p will have an inverse in \pmod{p} by the observation

$$\begin{aligned} a * a^{p-2} &= a^{p-1} \\ a * a^{p-2} &\equiv 1 \pmod{p} \end{aligned}$$

This completes the proof.

4. WILSON'S THEOREM

Proposition 2. *If p is a prime number, then $(p-1)! \equiv -1 \pmod{p}$.*

4.1. Proof. We know by Corollary 1 that any number relatively prime to a modulo will have an inverse. In the case of a prime modulo, let's say $(\text{mod } p)$, any number from the number set $1, 2, \dots, p-2, p-1$ will have an inverse because they are all relatively prime to p . In addition, the inverses can be found within the same set so that we can pair a number with its inverse. For example:

$$\begin{aligned}(6)! &\equiv 1 * 2 * 3 * 4 * 5 * 6 \pmod{7} \\ &\equiv 1 * (2 * 4) * (3 * 5) * 6 \pmod{7} \\ &\equiv 1 * (1) * (1) * 6 \pmod{7}\end{aligned}$$

The only exceptions are 1 and $p-1$ because they are their own inverses. In the case of 1, it is obvious that $1 \equiv 1 \pmod{p}$. For the case of $p-1$, we can also express $p-1 \equiv -1 \pmod{p}$. Then we can see that

$$\begin{aligned}(p-1)! &\equiv 1 * 2 * 3 * \dots * (p-2) * (p-1) \pmod{p} \\ &\equiv 1 * (2 * 2^{-1}) * (3 * 3^{-1}) * \dots * (p-1) \pmod{p} \\ &\equiv 1 * (1) * (1) * \dots * (-1) \pmod{p} \\ (p-1)! &\equiv -1 \pmod{p}\end{aligned}$$

This completes the proof.

5. LEMMA

Lemma 2. *Let p be a prime of the form $4n+1$. Then there is a number a such that $a^2 + 1 \equiv 0 \pmod{p}$*

5.1. Proof. To show this, let's look at the factorial $(p-1)!$. We know that p is in the form $4n+1$, so $(p-1)!$ will be a factorial of a multiple of 4. This means that $(p-1)!$ will contain $4n$ elements. For example:

$$4! = 1 * 2 * 3 * 4$$

We can then split the factorial into two parts such that both parts will contain the same number of elements. In addition, each part will contain an even number of elements.

$$4! = (1 * 2) * (3 * 4)$$

We can then see that the two parts are equivalent to each other in modulo p .

$$\begin{aligned}4! &\equiv (1 * 2) * (3 * 4) \pmod{p} \\ &\equiv (1 * 2) * ((-2) * (-1)) \pmod{p} \\ &\equiv (1 * 2)^2 * (-1)^2 \pmod{p}\end{aligned}$$

So now we have a number, let's call it a , that is defined as $\left(\frac{p-1}{2}\right)!$ and has a square congruent to $(p-1)! \pmod{p}$. We also know by Wilson's Theorem that $(p-1)! \equiv -1 \pmod{p}$. Then we can show that

$$\begin{aligned}\left(\left(\frac{p-1}{2}\right)!\right)^2 &\equiv (p-1)! \pmod{p} \\ a^2 &\equiv (p-1)! \pmod{p} \\ a^2 &\equiv -1 \pmod{p} \\ a^2 + 1 &\equiv 0 \pmod{p}\end{aligned}$$

This completes the proof.

6. PRIME AS A SUM OF TWO SQUARES

Theorem 1. *An odd prime p can be represented as a sum of two squares if and only if p has the form $4n + 1$. Moreover, this representation is unique.*

6.1. Proof. Let's start with the simplest part of the proof, the "if and only if" part. We know that at least some prime numbers in the form $4n + 1$ can be expressed as a sum of two squares. For example: $5 = 2^2 + 1^2$ and $13 = 3^2 + 2^2$. However, there do not seem to be any solutions for prime numbers in the form $4n + 3$. This has to do with the nature of $a^2 + b^2$. We are taking the sum of the squares of either two odd numbers, two even numbers, or one odd and the other even. We know the sum of two even squares will be even, and we know that the sum of two odd squares will also be even. Then we just need to look at the case with one odd and the other even. Let's make a odd and b even. Then we can say that

$$a = 2i + 1 \qquad b = 2j$$

Then it follows that

$$\begin{aligned} a^2 + b^2 &= (2i + 1)^2 + (2j)^2 \\ &= 4i^2 + 4i + 1 + 4j^2 \\ &= 4(i^2 + i + j^2) + 1 \end{aligned}$$

This shows that if either a or b is odd and the other variable is even, then $a^2 + b^2$ must be equal to one more than a multiple of 4. Let's continue with the proof. We know by Lemma 2 that $a^2 + 1 \equiv 0 \pmod{p}$. We can then say that

$$kp = a^2 + 1^2$$

We can show that $a < \frac{p}{2}$ by removing the other possibilities. If $p < a$, then we can just get the remainder of a when divided by p . To show this, we can express a as $pn + R$, or some multiple of p plus a remainder. Because $p|pn$, $pn \equiv 0 \pmod{p}$. Then we can show that

$$pn + R \equiv R \pmod{p}$$

and it follows that

$$a \equiv R \pmod{p}$$

If $\frac{p}{2} < a < p$, then we can instead represent a by an integer that falls within the range $[\frac{-p}{2}, \frac{p}{2}]$. Since we will square a anyways, the sign does not matter. To show that $a \equiv \frac{p}{2} \pmod{p}$ does not exist, we simply have to realize that a is congruent to an integer. However, $\frac{p}{2}$ can not be an integer because p is odd. It follows that a can not be congruent to $\frac{p}{2}$.

Our goal is to show that we can find a smaller multiple of p that can also be expressed as a sum of two squares. First, we should generalize $a^2 + 1$ to be $a^2 + b^2$. Then we can take the remainders of a and b when divided by k such that $a \equiv r$ and $b \equiv s \pmod{k}$. We assume that $k > 1$ because if $k = 1$, then we would have already found the lowest possible multiple of p that can be written as a sum of two squares. In the same way we could adjust a to fit within the interval $[\frac{-p}{2}, \frac{p}{2}]$, we can adjust r and s to fit within the interval $[\frac{-k}{2}, \frac{k}{2}]$. We can see that $a^2 + b^2 \equiv r^2 + s^2$

$(\text{mod } k)$ because $a \equiv r$ and $b \equiv s \pmod{k}$. We know that $k|a^2 + b^2$, so it follows that $k|r^2 + s^2$. Then we can write

$$km = r^2 + s^2$$

We can then show that

$$m = \frac{r^2 + s^2}{k} < \frac{1}{k} \left(\left(\frac{k}{2} \right)^2 + \left(\frac{k}{2} \right)^2 \right) = \frac{k}{2} < k$$

By this we see that $m < k$, which is important to note. Then we can multiply the two equations we had earlier to get

$$k^2 mp = (r^2 + s^2)(a^2 + b^2) = (ar + bs)^2 + (as - br)^2$$

Now all we need to show is that $k|(ar + bs)$ and $k|(as - br)$. We know that $k|(a^2 + b^2)$, and we know that $a \equiv r$ and $b \equiv s \pmod{k}$. It takes a simple observation to see that

$$\begin{array}{ll} ar \equiv a^2 \pmod{k} & bs \equiv b^2 \pmod{k} \\ as \equiv ab \pmod{k} & br \equiv ba \pmod{k} \end{array}$$

Then it follows that

$$\begin{array}{l} ar + bs \equiv a^2 + b^2 \pmod{k} \\ as - br \equiv ab - ba \equiv 0 \pmod{k} \end{array}$$

Now we see that $k|(ar + bs)$ and $k|(as - br)$. Then we can divide k^2 from both sides of our combined equation from earlier. We are left with

$$mp = c^2 + d^2$$

Where $c = \frac{ar+bs}{k}$ and $d = \frac{as-br}{k}$. We know that $m < k$, so we have shown a way to find a smaller multiple of p expressed as a sum of two squares. We can repeat this process until we reach $1 * p$, which means we can always find a solution when p is in the form $1 \pmod{4}$. This completes the proof.