

BEACON CONFERENCE PROCEEDINGS

 24th annual
BEACON
CONFERENCE

**24th Annual
Beacon Conference
June 3, 2016**

A conference for student
scholars at two-year colleges
sponsored by member colleges

Bergen Community College
Paramus, New Jersey 07652



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“Guadalupe the Sex Goddess”

Mentor Dr. Maria Makowiecka, Bergen Community College

Interdisciplinary and Multicultural Studies314-330

Daniela Rebolledo Fuentes, Language is Power: Improving the Cognitive Process
through Bilingualism

Mentor Dr. Nathan Zook, Montgomery College

Introduction to the Beacon Conference

The Beacon Conference for student scholars at two-year colleges is an annual event that began in 1993 as a grant-funded AACC/Kellogg Beacon project and is now sponsored by a coalition of junior and community colleges in the mid-Atlantic region. The primary objective of the conference is to showcase academic achievements of students on two-year college campuses.

Students are invited to submit scholarly work in a wide variety of subject area categories that encompass all areas of study at two-year schools, from the humanities, social sciences, natural sciences, to technical fields and special areas, such as computer applications and multicultural studies. Three community college faculty with expertise in a particular field read and rank the papers in each category. The authors of the top three essays in each discipline are invited to present their papers at the Beacon Conference hosted by one of the sponsoring colleges on the first Friday of June. Out of three finalists in each subject area, one winner is selected by a judge from a four-year university. Panel winners are chosen on the basis of the quality and originality of research, written work, and oral presentation. Prizes of \$100 are awarded to both authors of the winning papers and their faculty mentors. In addition, the fourth-ranked students in each category are invited to present the highlights of their submissions during the Poster Session which precedes the Award Ceremony held at the conclusion of the conference day.

The Beacon Conference is a great opportunity for students and faculty of two-year colleges to receive recognition for their outstanding work. The project also fosters a climate of community through (1) the collegiality that develops among colleagues working on a joint project; (2) the intense relationship that grows between students and their faculty mentors; (3) the interactions among students submitting to, presenting at, and attending the conference; (4) the connections between the two-year colleges and neighboring four-year institutions which supplied panel judges; and finally (5) the communal spirit at the conference itself. Usually, 120–170 students submit papers for the competition. The level of the papers submitted each year, the quality of the papers presented and, especially, the superiority of the winning papers illustrate that community colleges are the place for high caliber academic accomplishments.

Additional information is available at <http://www.beaconconference.org>.

BEACON 2016

A Conference for Student Scholars at Two-year Colleges

The Beacon Conference is an annual conference that celebrates the achievement of two-year college students. The conference is funded by the coalition of member colleges listed below and the sponsors who support it. The mission of the conference is to showcase the work of students attending two year colleges in a range of academic disciplines and to promote an exchange of ideas among them. Additional information is available at www.beaconconference.org.

2016 Members of the Beacon Coalition of Community Colleges

Bergen Community College, NJ

Borough of Manhattan Community College, NY

Dutchess Community College, NY

Erie Community College, NY

Lehigh Carbon Community College, PA

Mercer County Community College, NJ

Middlesex County College, NJ

Montgomery College, MD

Northampton Community College, PA

Orange County Community College, NY

Passaic County Community College, NJ

Reading Area Community College, PA

Rockland Community College, NY

Ulster County Community College, NY

Westchester Community College, NY

The 2016 Beacon Conference is hosted by Bergen Community College

2016 Conference Co-Directors: Dr. Maria Makowiecka and Dr. Sarah Shurts

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2016 Beacon Conference Schedule at a Glance

8:15-9:00 a.m.	Registration and Breakfast in the Moses Family Center/Technology Building	TEC-128
9:00-10:30 a.m.	Session I Concurrent Panels	
	Allied Health/Nursing	TEC-201
	Interdisciplinary Medical Therapy	TEC-202
	Business and Economics	TEC-203
	Education	TEC-204
	History/International	TEC-205
	Political Science/Social Justice	TEC-206
	Literature and Identity	TEC-214
10:30-10:45 a.m.	Coffee Break	
10:45-12:15 p.m.	Session II Concurrent Panels	
	Allied Health and Biomedical	TEC-201
	Literary Revisions	TEC-202
	Philosophy and Religion	TEC-203
	Interdisciplinary History	TEC-204
	Psychology	TEC-205
	Chemistry	TEC-206
	Sociology	TEC-214
12:20-1:30 p.m.	Lunch and Welcome Remarks by Dr. William Mullaney, Vice President of Academic Affairs	TEC-128
	College Fair	TEC-128
1:30-3:00 p.m.	Session III Concurrent Panels	
	Biology and Genetics	TEC-201
	Visual and Performing Arts	TEC-202
	Women's and Gender Studies/LGBTQ	TEC-203
	IT and Engineering Technology	TEC-204
	Identity in American Literature	TEC-205
	Interdisciplinary and Multicultural Studies	TEC-206
3:00-4:00 p.m.	Poster Session and Dessert	TEC-128
4:00-5:00 p.m.	Awards Ceremony	TEC-128

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We would like to thank the generous sponsors of the 24th Annual Beacon Student Conference

Faculty Sponsors

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Beacon Conference Member Colleges

Bergen Community College Sponsors

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Fairleigh Dickinson University
Montclair State University
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Rutgers University
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We appreciate the assistance and dedication of the following people who contributed their time and energies:

The Beacon Steering Committee, all our faculty readers and volunteer panel moderators, BCC student volunteers, Honors Committee, Dr. Kathleen Williams, Dr. Coleen DiLauro, Dr. Suzaan Boettger, Dr. Amy Ceconi, Professor Maureen Ellis-Davis, Dr. Christine Eubank, Professor Linda Hall, Professor Mecheline Farhat, Dr. Anne Maganzini, Barbara Mollino, Azize Ruttler, Department of Public Relations: Larry Hlavenka, Robyn Bland, Tom DePrenda, Cristina Grisales, Theresa Smith, Sonia Rose, Joseph Irvin, Media Technologies, Department of Buildings and Grounds, and Dr. Michele Iannuzzi-Sucich serving as the Beacon Conference Corresponding Secretary

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24TH BEACON CONFERENCE PROGRAM Bergen Community College, June 3, 2016

SESSION I 9:00-10:30 a.m.

1. Allied Health/Nursing Room TEC-201

- i.** Bethany Kazimir, Inhaling the Truth: A Deeper Look at Substance Abuse and Oral Health
Mentor - Dr. Linda Hall, Bergen Community College
- ii.** Kevin Birungi, Mechanisms of Alzheimer's Disease and Implications for Treatment
Mentor - Dr. Carole Wolin, Montgomery College
- iii.** Kathy B. Ciolkosz, Routine Childhood Vaccinations
Mentor - Dr. Michele Iannuzzi-Sucich,
Orange County Community College, SUNY

Judge Dr. Julie Fitzgerald, Ramapo College of New Jersey

Moderator Dr. Amy Ceconi, Bergen Community College

Readers Dr. Patricia Losito, Erie Community College
Dr. Stephanie Miller, Lehigh Carbon Community College
Dr. Wendy Greenspan, Rockland Community College

2. Interdisciplinary Medical Therapy Room TEC-202

- i.** Janelle M. Zimmerman, Old Order Mennonite Illness Narratives
Mentor - Professor Danielle Kranis, Reading Area Community College
- ii.** Wendy Risso, Sounding Out the Future of Music Therapy: Bridging Nations Together Through the Healing Power of Music
Mentor - Professor Shweta Sen, Montgomery College
- iii.** James Findlay Kennedy III, Voices of the Silent- A Cross-Cultural Study of Reminiscence Therapy, Ethics, and the Elderly
Mentor - Dr. Heather Ganginis-Del Pino, Montgomery College

Judge Dr. Marycarol Rossignol, Fairleigh Dickinson University

Moderator Dr. Coleen DiLauro, Bergen Community College

Readers Dr. Anne Maganzini, Bergen Community College
Dr. Elaine Olaoye, Brookdale Community College
Dr. Kathleen Mayberry, Lehigh Carbon Community College

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3. Business and Economics Room TEC-203

- i.** Daniel Waclawiw, Seeing Green: The Economic and Ecological Benefits of Hemp Legalization
Mentor - Professor Shweta Sen, Montgomery College
- ii.** Charlotte Grace Stoliker, Hello Hybrid: A New Approach to Philanthropic Business
Mentor - Dr. Nathan Zook, Montgomery College
- iii.** Zachery Lee Stackhouse, Advancing Technology Taking Away American Jobs
Mentor - Professor David Leight, Reading Area Community College

Judge Dr. Vidya Atal, The Feliciano School of Business at Montclair State University

Moderator Professor Alfred Cupo, Bergen Community College

Readers Dr. Christy Hediger, Lehigh Carbon Community College
Dr. Matt Connell, Northampton Community College
Dr. Rachel Plaksa, Lehigh Carbon Community College

4. Education Room TEC-204

- i.** Maxwell Kent Johnson, A Mind Without Music: the Monotony of American Primary and Secondary Education
Mentor - Stephen M. Burke, Rockland Community College
- ii.** Jenny S. Rose, The Deficiencies within Supportive Services Available to Emerging Adults with Autism Spectrum Disorder
Mentor - Dr. Anne Maganzini, Bergen Community College
- iii.** Sana Azizah Khan, The Consequences of Homelessness on the Emotional, Social and Academic Development of Adolescents
Mentor - Dr. Anne Maganzini, Bergen Community College

Judge Dr. Alison A. Dobrick, William Paterson University

Moderator Dr. Benicia D'Sa, Bergen Community College

Readers Dr. Bethany Zornek, Lehigh Carbon Community College
Dr. Sarah Shurts, Bergen Community College
Dr. Sonja Fisher, Montgomery College

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5. **History/International Room TEC-205**

- i.** Catherine Marie Courtadon, *Dynastic Insecurity in Tudor England: Effects on the Actions and Legacies of Henry VIII and Elizabeth I*
Mentor - Professor Andrew Jacobs, Rockland Community College
- ii.** Haydn R. Curtis, *The 151st Regiment: Nine Months and More*
Mentor - Professor John Lawlor, Reading Area Community College
- iii.** Daneris Santiago, *Vilifying Columbus or Redefining Genocidal Intent?*
Mentor - Dr. Sarah Shurts, Bergen Community College

Judge Dr. Jeff Strickland, Montclair State University

Moderator Dr. Christine Eubank, Bergen Community College

Readers Dr. Lauren Braun Strumfels, Raritan Valley Community College
Dr. Martha Brozyna, Passaic County Community College
Dr. Rene Rojas, Erie Community College

6. **Political Science/Social Justice Room TEC-206**

- i.** Christian Y. Gbewordo, *Ethical Assessment of HIV/AIDS Clinical Trials in South Africa*
Mentor - Professor Carole Wolin, Montgomery College
- ii.** Alexander Agishtien, *Obama's Wilsonian Mistake*
Mentor - Professor Stephen Burke, Rockland Community College
- iii.** Linda DePaolis, *Reforming Incarceration for Nonviolent Drug Offenders*
Mentor - Dr. Mira Sakrajda, Westchester Community College

Judge Dr. Kyle T. Kattelman, Fairleigh Dickinson University

Moderator Professor Mecheline Farhat, Bergen Community College

Readers Dr. Denise Francois-Seeney, Northampton Community College
Dr. Jennifer Gasparino, Passaic County Community College
Dr. Richard Bergeman, Lehigh Carbon Community College

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7. Literature and Identity Room TEC-214

- i.** Kathryn Colombo, *I Know Who I Am and Who I May Be If I Choose: An Examination of Fact, Fantasy, and Don Quixote as an Iconoclast*
Mentor - Dr. Andrew Tomko, Bergen Community College
- ii.** Kaylin Bourke, *Chastity as a Feminine Virtue*
Mentor - Dr. Katherine Lynch, Rockland Community College
- iii.** Luis Rosales, *Exiled and Oppressed: The Formula for Timeless Retribution*
Mentor - Dr. Lucy Laufe, Montgomery College

Judge Professor Sara Remedios, Columbia University

Moderator Dr. Daniel Salerno, Bergen Community College

Readers Dr. Andrea Laurencell Sheridan, Orange County Community College
Professor Jennifer Yanoti, Dutchess Community College
Professor Patricia Phillips, Dutchess Community College

SESSION II 10:45-12:15 p.m.

1. Allied Health and Biomedical Room TEC-201

- i.** Kuni Nishimura, *Specialized Functions of the Separated Hemispheres of the Brain: A 40-Year Research Review*
Mentor - Dr. Ann Brown, Bergen Community College
- ii.** Van-Nhan Nguyen, *Regenerative Technology: A Three-Dimensional Issue*
Mentor - Dr. Nathan Zook, Montgomery College
- iii.** Shannon Sander, *Effects of Exercise on the Brain*
Mentor - Professor Sheila Stepp, Orange County Community College

Judge Dr. Cristina Perez, Ramapo College of New Jersey

Moderator Professor Robert Dill, Bergen Community College

Readers Dr. Abel Navarro, Borough of Manhattan Community College
Dr. Holly Morris, Lehigh Carbon Community College
Dr. Melanie Rie, Rockland Community College

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2. Literary Revisions Room TEC-202

- i. Fernanda Jimenez Cano, Sor Juana Inés and Proto-feminism
Mentor - Dr. Maria Makowiecka, Bergen Community College
- ii. Egnatia Vaso, The Uniqueness of Marvell as a Neo-Catullan Poet
Mentor - Dr. Daniel Salerno, Bergen Community College
- iii. Su Jung Yang, By Their Fruits: An Analysis of Juxtaposition in Character Development in Charles Dickens's Hard Times
Mentor - Dr. Geoffrey Sadock, Bergen Community College

Judge Dr. Carrie Shanafelt, Fairleigh Dickinson University

Moderator Dr. Dorothy Altman, Bergen Community College

Readers Dr. John Wang, Montgomery College
Dr. Katherine Lynch, Rockland Community College
Dr. Keith Elphick, Montgomery College

3. Philosophy and Religion Room TEC-203

- i. Cormac Godfrey, The Evolution of Modern Culture: How Natural Selection Dictates Our Values
Mentor - Dr. Michael Redmond, Bergen Community College
- ii. Elizabeth Rice, Revealing the Divine: Light in Church Architecture
Mentor - Dr. Christina Devlin, Montgomery College
- iii. Amie Fye, An Exploration of Religious Fanaticism in the Work of Salman Rushdie
Mentor - Professor Jamie Gillan, Montgomery College

Judge Dr. Ki Joo (KC) Choi, Seton Hall University

Moderator Dr. Peter Dlugos, Bergen Community College

Readers Dr. Dwight Goodyear, Westchester Community College
Dr. Ellen Zimmerli, Lehigh Carbon Community College
Dr. Krista Roehrig, Lehigh Carbon Community College

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4. **Interdisciplinary History Room TEC-204**

- i.** Mayana Suzanne Berman, Honduras on a Cloud
Mentor - Professor Maria Sprehn, Montgomery College
- ii.** Lori Wysong, The Museum Quandary: Where Should a Culture's Artifacts Reside?
Mentor - Professor Effie Siegel, Montgomery College
- iii.** Nada Babaa, Remembrance as Resistance: The Preservation of Palestinian Identity in the Diaspora
Mentor - Dr. Nathan Zook, Montgomery College

Judge Dr. Megan Moran, Montclair State University

Moderator Dr. Kil Yi, Bergen Community College

Readers Dr. Anne D'Orazio, Westchester Community College
Dr. Jodi Greene, Reading Area Community College
Dr. Robert Pucci, Ulster Community College

5. **Psychology Room TEC-205**

- i.** Connor Rhodes, Beneficial Addiction to Thrill-seeking Behavior Psychology
Mentor - D. Elaine Torda / Professor John Pernice, Montgomery College
- ii.** Josephine M. Maresca, Bystander: Stand by or Take Action? Research and Processes Involved with Bystander Intervention Psychology
Mentor - Dr. Ann Brown, Bergen Community College
- iii.** Allan Chapman, Creating the "Perfect" Beast – The Many Implications of IVF
Mentor - Professor Reza Ziai, Bergen Community College

Judge Dr. Donna Crawley, Ramapo College

Moderator Dr. Mina Ahn, Bergen Community College

Readers Dr. Nancy Egan, Lehigh Carbon Community College
Dr. Sam Bergmann, Montgomery College
Dr. Stacy Casden, Rockland Community College

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6. Chemistry Room TEC-206

- i. Samuel Wieczerezak, The Cyclopropanation of Para Chloro Styrene
Mentor - Dr. Brian Lavey, Middlesex County College
- ii. Sarah Anne Schneider, Kinetics of Aquation of Pentaamminechlorocobalt (III) and Kinetics of Decomposition of Tetraamminecarbonatocobalt (III) Revisited. Synthesis, characterization, and determination of pKa of coordinated water in aquopentaamminecobalt (III) trichloride
Mentor - Dr. Phalguni Ghosh, Middlesex County College
- iii. Kateryna Zhdanova, Bioremoval of 2-Chlorophenol by using solid wastes as an alternative for wastewater treatment
Mentor - Dr. A. Navarro, Borough of Manhattan Community College

Judge Dr. Alan Rosan, Drew University

Moderator Professor Linda Nelson, Bergen Community College

Readers Dr. Coleen Spease-Mikucki, Lehigh Carbon Community College
Dr. Marty Epstein, Westchester Community College
Dr. Mary Engel, Lehigh Carbon Community College

7. Sociology Room TEC-214

- i. Carly Ryan, Tattoos: The Good, The Bad and The Appropriated
Mentor - Dr. Elaine Torda / Professor Andrea Laurencell-Sheridan
Orange County Community College
- ii. Taylor Natiello, Disclosure and Closeness of Relationship Partners: The Role of Technology, Disclosure Type, and Nonverbal Communication Methods
Mentor - Professor Timothy Molchany, Northampton Community College
- iii. Kevin Carl Milton, The Big Black Man Syndrome and Policing Since the 1990's
Mentor - Dr. John Riedl, Montgomery College

Judge Dr. Lyndal Khaw, Montclair State University

Moderator Professor Maureen Ellis-Davis, Bergen Community College

Readers Dr. Alison Diefenderfer, Lehigh Carbon Community College
Dr. Christine Bowditch, Lehigh Carbon Community College
Dr. Elizabeth Miller, Westchester Community College

Lunch, Speaker, and College Fair 12:15-1:30pm Room TEC-128

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SESSION III 1:30-3:00 p.m.

1. **Biology and Genetics Room TEC-201**

- iv.** Nicole Obongo, The Globalization of Genetically Modified (GMO) Food
Mentor - Professor Shweta Sen, Montgomery College
- v.** James M. DeNatale, Genetically Modified Organisms: Solution or Genetic Pollution
Mentor - Professor Michael Feyers, Reading Area Community College
- vi.** Michael Schlag, Veganism: Healthy, Sustainable, Ethical Change
Mentor - Dr. Elaine Torda / Dr. Damon Ely, Orange County Community College

Judge Dr. Joost Monen, Ramapo College

Moderator Dr. Judith Fitzpatrick, Bergen Community College

Readers Dr. Eric DeAngelo, Lehigh Carbon Community College
Dr. Jacalyn Speicher, Northampton Community College
Dr. Luis Jimenez, Bergen Community College

2. **Visual and Performing Arts Room TEC-202**

- i.** Alberto Chamorro, Simulated Truth: A Study of Simulacra in Modern Photography
Mentor - Dr. Suzaan Boettger, Bergen Community College
- ii.** Diana Saravia, Humans, Friends or Foes? An Analysis of Cinematic Representations of Animal Captivity
Mentor - Dr. Elaine Torda/ Professor Geoffrey Platt, Orange County Community College
- iii.** Peter Thomas Winnard, From Lady Constance
Mentor - Dr. Cheryl Tobler, Montgomery College

Judge Dr. Meredith Davis, Ramapo College

Moderator Dr. Denise Budd, Bergen Community College

Readers Dr. Denise Budd, Bergen Community College
Dr. Donald Anderson, Westchester Community College
Dr. Eileen MacAvery Kane, Rockland Community College

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3. Women's and Gender Studies/LGBTQ Room TEC-203

- i.** Ashley Magliaro, Stopping the Stigma: An Exploration of Human Rights and Sexuality
Mentor - Dr. Nathan Zook, Montgomery College
- ii.** Olivia S. Mata, Tattoo Culture Amongst Women
Mentor - Professor Jo Stokes, Westchester Community College
- iii.** Amber Mae Krautter, Time versus Money
Mentor - Professor Randy Boone, Northampton Community College

Judge Dr. Cynthia Ninivaggi, Georgian Court University

Moderator Professor Caroline Kelley, Bergen Community College

Readers Dr. Carrie Myers, Lehigh Carbon Community College
Dr. Christine Eubank, Bergen Community College
Professor Michael Hall, Dutchess Community College

4. IT and Engineering Technology Room TEC-204

- i.** James Christopher Hoxie, The Robotic Revolution: Is There a Place for Humans?
Mentor - Professor Shweta Sen, Montgomery College
- ii.** Yechan Choi, The Unattainable Artificial Consciousness
Mentor - Professor David Carter, Montgomery College
- iii.** Bianca Marie Noveno, Space for Humanity: Exploring the Impacts of Space Agencies and Technologies on Human Lives
Mentor - Professor Shweta Sen, Montgomery College

Judge Dr. Ramana Vinjamuri, Stevens Institute of Technology

Moderator Professor David Wang, Bergen Community College

Readers Dr. Jim Rommens, Lehigh Carbon Community College
Dr. John Watkins, Westchester Community College
Dr. Sharon Trimble, Northampton Community College

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5. Identity in American Literature Room TEC-205

- i.** D'Lena Duncan, "What America Must Become:" An Analysis of Nation & Identity in "The Fire Next Time"
Mentor - Dr. Christina Devlin, Montgomery College
- ii.** Elvia M. Asencio, Rewriting the Virgin of Guadalupe in Gloria Anzaldua's "Coatlolopeuh, She Who Has Dominion Over Serpents" and Sandra Cisneros' "Guadalupe the Sex Goddess"
Mentor - Dr. Maria Makowiecka, Bergen Community College
- iii.** Christine Cillo, Sleep on It
Mentor - Dr. Jennifer Myskowski, Lehigh Carbon Community College

Judge Dr. Ed Shannon, Ramapo College

Moderator Dr. Alan Kaufman, Bergen Community College

Readers Dr. Geoffrey Kenmuir, Passaic County Community College
Professor Jodi Corbett, Reading Area Community College
Professor Randy Boone, Northampton Community College

6. Interdisciplinary and Multicultural Studies Room TEC-206

- i.** Daniela Rebolledo Fuentes, Language is Power: Improving the Cognitive Process through Bilingualism
Mentor - Dr. Nathan Zook, Montgomery College
- ii.** Carlos Eduardo Puerta, The Secret to Memory is a Joke: How Humor Can Improve Our Lives
Mentor - Dr. Nathan Zook, Montgomery College
- iii.** Yasaman Hosseini, Harnessing Happiness: A Survey of Global Contentment
Mentor - Dr. Nathan Zook, Montgomery College

Judge Dr. Anne Langan, College of St. Elizabeth

Moderator Dr. Anne Maganzini

Readers Dr. David Lucander, Rockland Community College
Professor Dawn Gieringer, Reading Area Community College
Dr. Keith Chu, Bergen Community College

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Poster Session 3:00-4:00 p.m. in TEC-128.

1. Allied Health/Nursing

Ronald Peifer, Correlation: Between Sleep Deprivation, Personal Injury/
Illness, Medication Errors, and Salary

Mentor - Professor Stephen Nardozi, Westchester Community College

2. Interdisciplinary Medical Therapy

Katie Rose Turlik, Ashville's Lung Fever: A Literary Analysis of Tuberculosis

Mentor - Dr. Christina Marie Devlin, Montgomery College

3. Business and Economics

Thiago Fernandes Veronez, Community College Students' Beliefs about
America's College Promise Proposal

Mentor - Professor Martin Lecker, Rockland Community College

4. Education

Tzipora Hertz, Early Childhood Education as a Solution to Poverty

Mentor - Dr. Stephen Burke, Rockland Community College

5. History/International

Omar Rivera, Report on Guatemala, El Salvador and Nicaragua (1945-1989)

Mentor - Ilan Ehrlich, Bergen Community College

6. Political Science/Social Justice

Luisa del Carmen Peralta Martinez, Turning Prisons into the Hands of
For-Profit Private Prisons

Mentor - Dr. Christine Bowditch, Lehigh Carbon Community College

7. Literature till 1650

Brenna Webb, "Best Beware My Sting"

Mentor - Professor Nancy Trautmann, Northampton Community College

8. Allied Health and Biomedical

Antonio Del Vecchio, Stem Cell Differentiation of Cardiomyocytes for
Regenerative Therapy

Mentor - Dr. Mira Sakrajda, Westchester Community College

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9. Literature since 1650-modern

Christian Dominguez, Everyman's War: William Faulkner's "Barn Burning" and the Defeated Southern Psyche

Mentor - Dr. Andrew Tomko, Bergen Community College

10. Philosophy and Religion

Daniel Kutuzov, A Divergent Approach to an Ancient Question

Mentor - Dr. Michael Redmond, Bergen Community College

11. Interdisciplinary History

Andrew Fenwick, Understanding What Caused America to Implement Genocide

Mentor - Dr. Sarah Shurts, Bergen Community College

12. Psychology

Deidra Imani Margaret Womack, The Effects of Scapegoating and Persecuting Theocratic Groups Because of Extremism Psychology

Mentor - Dr. Reza Ziai, Bergen Community College

13. Visual and Performing Arts

Gabrielle Green, The Necessity of Music: Keeping Young Minds Sharp

Mentor - Professor Shweta Sen, Montgomery College

14. Sociology

Alisson Perez Vasquez, Family Support During Schizophrenia

Mentor - Professor Herver Horner, Bergen Community College

15. Biology and Genetics

Bhakti Patel, Exploring Scientific Research: The Importance of Global Access to Human Germ-line Gene Therapy

Mentor - Professor Shweta Sen, Montgomery College

16. Chemistry

Jasmine Du, The Preparation of a Salt

Mentor - Dr. Adessa Butler, Rockland Community College

17. IT and Engineering Technology

Nolan T. Carbone, Reinventing the Web

Mentor - Dr. Katherine E. Lynch, Rockland Community College

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18. Identity in American Literature

Daniel Noah Daly, Mortality in Life and Manga

Mentor - Dr. Katherine E. Lynch, Rockland Community College

19. Interdisciplinary and Multicultural Studies

Lauren Patrice Clemente-LaRoche, Cultural Appropriation: Are Minorities Too Sensitive?

Mentor - Professor Randy Boone, Northampton Community College

Multiple Presenters Posters

1. GAMING GROUP POSTER

John Olesko, Matthew Calamari, and Joshua Rovins, Rick O' Chet

Mentor - Professor Stephen Gonzalez, Bergen Community College

2. PSYCHOLOGY GROUP POSTER

Madelin Pereira and Ariel Corenthal, The Power of Emotional Intelligence Psychology

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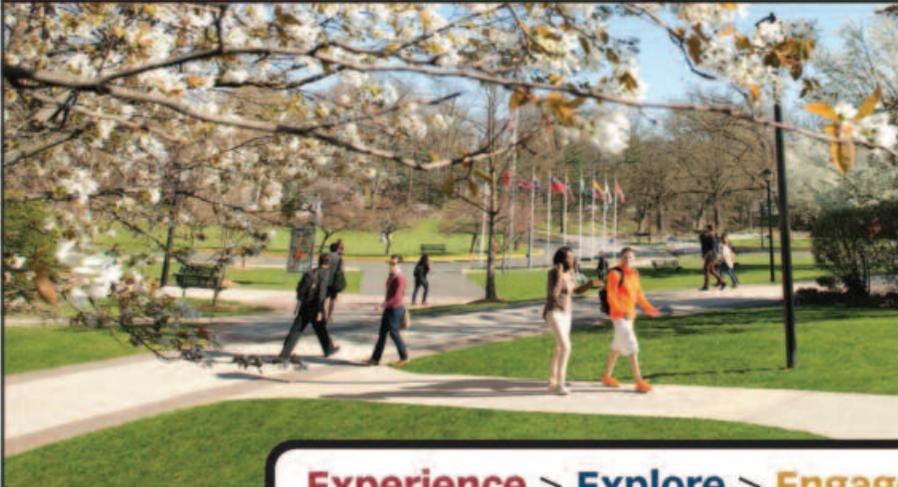
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Allied Health/Nursing

Kevin Birungi, Mechanisms of Alzheimer's Disease and Implications for Treatment

Mentor Dr. Carole Wolin, Montgomery College

MECHANISMS OF ALZHEIMER'S DISEASE AND IMPLICATIONS FOR TREATMENT

Alzheimer's disease is a degenerative disorder that progresses with the deterioration of the brain. It occurs due to the loss of nerve cells and connections between them. Alzheimer's disease (AD) is the most common cause of dementia. In 2010, 35.6 million people were estimated to be affected with an increase of 7.7 million new cases per year. In 2013, 36 million people worldwide were reported to have Alzheimer's disease (Wimo *et al.*, 2013). Furthermore, it is expected that 72 million people will have Alzheimer's disease by 2050 (Prince *et al.*, 2011). The disease commonly affects middle and late life, and incidence rises at a rate of 0.5% per year from ages 65 to 80, and 2% to 3% per year afterwards. At this time there is no cure for this devastating and increasingly common disease. In this paper, I will explore the characteristics of the disease, the mechanisms that account for them, and the implications for future treatment options.

Symptoms of AD

Initially, AD presents itself in the form of three primary groups of symptoms. The first group involves the decline in both cognitive and mental functions (Vivek *et al.*, 2012). These include memory loss, language difficulties, and executive dysfunction (loss of higher level planning and intellectual coordination skills). Psychiatric and behavioral disturbances such as depression, hallucinations, delusions, and agitation portray the second group (Burns *et al.*, 1990). The third group encompasses difficulties with performing activities of daily living.

This means in the earliest stages of Alzheimer's, a person experiences an increase

of memory lapses that resemble everyday forgetfulness, followed by an inability to recall recent events or assimilate new information and ideas. For example, people with the disease repeat questions that have just been answered. They start routine actions and can no longer finish them. Their judgment declines and they lose the capacity to manage finances or organize social activities. Driving, preparing meals, and using even the simplest tools become difficult eventually. Their language becomes simpler and less coherent, and they cannot follow conversations. They get lost in familiar places and forget the day of the week and the time of the year. In late stages they no longer recognize people they have known all their lives. Their sleep is disturbed, and toward the end basic physical functions are affected. Bowel and bladder control fail, then the capacity to walk, sit up, and swallow solid food. In some respects, capacities are lost in the same order in which they were acquired in childhood, so the last stage resembles infancy. Nonetheless, the rates of the disease's progress and mental decline vary from person to person even though the course of the disease is relentless.

Progression of brain degeneration

Before the symptoms are recognized, images of the brain provided by CT, PET, and SPECT scans show atrophy as well as lowered blood flow and energy consumption in the brains of people with AD. The nerve cells stop functioning, lose connections with each other and ultimately die. Death of many neurons in key parts of the brain causes those areas to atrophy and results in substantial abnormalities of memory, thinking, and behavior. During the early stages, neuron destruction is particularly widespread in the parts controlling memory, especially the hippocampus. As nerve cells in the hippocampus break down, short term memory fails and the ability to do familiar tasks begins to decline as well. Great damage also occurs in the cerebral cortex, particularly the areas responsible for language, reasoning, perception and judgment (temporal, frontal and parietal lobes). This results in unwarranted emotional outbursts, disturbing

behaviors and episodes of extreme agitation.

The continuum of AD is considered to have three stages. The first stage is the preclinical stage, in which “patients are completely asymptomatic yet harbor AD neuropathology as indicated by biomarkers such as amyloid PET” (Rafii and Aisen, 2015.) The second stage is the prodromal stage that is characterized by episodic memory, and patients have significant impairment in a single cognitive domain. The final and third stage is familiarly known as the dementia stage, which involves multiple cognitive domains characterized by accompanying functional deficit.

The characterization of the preclinical stage of AD using biomarkers now allows for the earliest point in the treatment of AD to be initiated. This is because individuals are at high risk of progressing to further mental deterioration even although cognitive and behavioral effects of AD are not yet apparent, (Rowe *et al.*, 2010). “The FDA has provided guidance on developing drugs for preclinical AD that indicate an effect on a valid and reliable cognitive assessment used as a single primary efficacy measure that may be considered for approval in the context of positive biomarkers of AD” (Kozauer and Katz, 2013.) The preclinical stage is now defined in healthy adults over 65 to have 5 stages. The first two stages are Suspended Non – AD Pathophysiology and an unclassified category, which are usually in healthy adults (Jack *et al.*, 2012). The classification of the stages that follow utilizes the three stages of preclinical AD developed by the National Institute on Aging and the Alzheimer’s Association. (Sperling *et al.*, 2011). The third stage simply involves the presence of amyloid accumulation in the brain, whereas the fourth is characterized by signs of neuronal injury and the fifth stage involves subtle cognitive impairment.

Characteristics of AD

AD is characterized by the accumulation of neuritic plaques, neurofibrillary

tangles, and the reduction in certain levels of crucial neurotransmitters. Although it is unclear whether these abnormal brain deposits are the cause or a byproduct of AD, researchers have come to understand better how plaques and tangles are formed.

Amyloid plaques develop in areas of the brain that are related to memory, and their development begins in the hippocampus and limbic system. Amyloid plaques are waxy sheets of non-functional tissue with a core that consists of a substance called beta amyloid, a starchy protein derived from the breakdown of amyloid precursor protein (APP). APP is routinely manufactured by most brain cells and the molecule is normally split into smaller soluble particles to be cleared from the body once its work is done. This is done by enzymes called secretases, which split the protein in two and form the beta-amyloid fragment. Researchers recently identified beta-secretase as one of the cleavage enzymes. When APP is cut in a wrong place, this causes the beta-amyloid to become insoluble. The insoluble beta-amyloid forms the clumps into plaques, which are soon surrounded by remnants of dead neurons.

Neurofibrillary tangles are residues of decay that appear when microtubules collapse and become twisted into paired helical filaments. These protein fibers resemble two threads wound around each other. They are made of a substance called tau protein, which normally girds and stabilizes microtubules but is deformed by the attachment of excess phosphate molecules when certain enzymes fail. Since microtubules act like train tracks to carry nutrients from one destination to another, tau normally serves as the supporting “railroad ties.” However, in AD the protein becomes hopelessly twisted and this disrupts the function of microtubules. Consequently, this defect clogs communication within nerve cells and eventually leads to their death.

Furthermore, reduction in the levels of certain neurotransmitters that are necessary for healthy brain function is another characteristic of AD. Acetylcholine, a neurotransmitter crucial to memory and learning is produced in the brain by cholinergic

neurons that are plentiful in the hippocampus and the cerebral cortex. With the progression of the disease, acetylcholine levels drop dramatically. Levels of neurotransmitters involved in many brain functions like serotonin, norepinephrine, somatostatin and GABA are diminished in almost half of the patients with AD.

Causes of Alzheimer's diseases:

Scientists have not yet pinpointed the true cause of the disease despite the tremendous advances in their understanding of AD. In some patients AD is caused by a single underlying factor while in most, many factors interact to bring the disease. Nonetheless, old age is the strongest risk factor for AD. The other risk factors include Down syndrome, a family history of dementia and the presence of a specific form (E4) of the gene that makes apolipoprotein E, which is a protein. Furthermore, women are at a higher risk for AD than men, and high blood pressure, high blood cholesterol, heart attacks are also risk factors. On top of those, another potential risk factor is head injury. Others include immune system malfunctions, endocrine (hormonal) disorders, slow-acting viruses or bacteria, vitamin deficiencies, exposure to electromagnetic fields, and accumulation of metals such as zinc, copper, aluminum, and iron in the body.

Moreover, genetics play a significant role in AD. "Early onset (< 65) of familial AD (EOFAD) is caused by defects in any of three different genes: the beta amyloid protein precursor (APP) on chromosome 21, the presenilin 1 (PSEN1) on chromosome 14 and the presenilin 2 (PSEN2) on chromosome 1" (Goate *et al.*, 1991). These mutations are rare, and are transmitted in an autosomal dominant fashion. They have contributed greatly to our current knowledge about pathogenesis of AD since they result into specific phenotypic profiles to patients with dementia.

Nevertheless, the apolipoprotein E (APOE) gene is the most prevalent risk factor for AD. It plays a role in the formation of amyloid plaques and is one of the lipoproteins

that carry cholesterol and other fats in the blood. Moreover, its production is directed by a gene located on the chromosome 19 and it exists in three different versions known as alleles – APOE E2, APOE E3, and APOE E4. Two APOE genes are carried by each person, one inherited from each parent. People who inherit the relatively rare APOE E2 are at a lower risk for AD than others, and the age of onset is later if they get the disease. The most common variety is the APOE E3, which is believed by researchers to play a neutral role in AD. On the other hand, APOE E4 is linked with an increased risk or earlier onset of AD.” Individuals with at least one copy of APOE E4 have a 29% risk of developing AD, compared with a 9% risk in those with no APOE E4. A person with two copies of APOE E4 (approximately 3% of the white population) has a 50% chance of developing AD by age 80” (Cacabelos *et al.*, 2012). Therefore, APOE E4 appears to speed up the AD process and lower the age of onset of the disease. For example, the average age when AD arises is 84 in those with no copies of APOE E4, 75 in those with one copy, and 68 in those with two copies. However, increased risk does not guarantee illness and the presence or absence of APOE E4 in the blood sample cannot predict who will get AD. Therefore, a person can have APOE E4 and never get the disease.

Nutrition is another factor that plays an important role both in the cause and prevention of AD. Antioxidants, vitamins, polyphenols, and fish have been reported to decrease the risk of AD, while saturated fatty acids, high-calorie intake, and excess alcohol consumption are identified to increase the risk (Venturini *et al.*, 2014).

Additionally, cholesterol is increasingly recognized to play a major role in the pathogenesis of AD, which is based on four lines of investigation. The first line of investigation is the mobilization and redistribution of cholesterol in the brain that is coordinated by lipoprotein ApoE4, which also affects the age of AD onset (Loy and Schneider, 2006). The second line of investigation is that intracellular cholesterol stimulates alpha secretase and amyloid precursor protein. Additionally, cholesterol lowering drugs (statins) reducing the prevalence of AD is the third line of investigation,

and the fourth line is elevated plasma cholesterol in midlife being associated with an increased risk for AD. For all intents and purposes, many findings are consistent with the concept that AD is a dietary fat induced phenotype of vascular dementia, and accumulation of beta amyloid – lipoprotein complexes may be an amplifier of dietary induced inflammation.

Good nutrition, physical activity, and environmental enrichment confer a synergistic reduction in AD risk. Most vitamins have been studied to have a direct evaluation in the setting of cerebral function (Bourre, 2006). Meaning that even in absence of deficiency in some vitamins, individuals with low serum concentrations of vitamin B12 and folate may have an increasing risk to develop Alzheimer’s disease (Malouf *et al.*, 2003). Subjects with low levels and those with normal levels of both vitamins were compared in a study by those with low levels seemed to have a double risk of developing Alzheimer’s disease.” Therefore, the risk of dementia associated with low levels of vitamin B12 and folic acid is greater also in subjects with good cognitive basic functions.

In research carried out by Ferland (2012) on antioxidant properties of vitamin K, Vitamin K has been found to be involved in nervous tissue biochemistry. This is because the research indicates that the vitamin concentration is lower in the bearers of the gene APOE4. In addition, recent studies have demonstrated the abilities of vitamin K to inhibit the cellular death linked to nervous cells oxidation. This is convincing evidence that vitamin K has important actions in the nervous system as a unique cofactor to the alpha - glutamyl carboxylase enzyme. Thus, “vitamin K contributes to the biological activation of proteins Gas6 and protein S, ligands for the receptor tyrosine kinases of the TAM family (Tyro3, Axl, and Mer)” (Ferland, 2012). This has led to the suggestion that vitamin K may have an effect on neuronal damage and that supplementation can benefit in the treatment of AD.

AD Pathogenesis Theories:

Even though the precise mechanisms in AD progression remain unclear, there are three major theories that are presently regarded as most likely to explain the molecular basis of AD and hence, serve as the bases for therapeutic development.

The cholinergic hypothesis, which led to the development of the only drugs currently approved to treat mild to moderate dementia, was the first theory proposed to explain AD. It is based on the finding that a loss of cholinergic neurons in the Nucleus Basalis of Meynert (NBM) consequently, leads to cholinergic activity that is observed in AD patients. There are many experimental studies in humans and non-human primates showing that acetylcholine plays a role in learning and memory. The studies reported that by blocking central cholinergic activity with scopolamine, memory deficits seen in aged individuals were demonstrated in the young subjects and that these impairments could be treated with the cholinergic agonist physostigmine. Thus, this theory led to the utilizing of another type cholinergic agonist, acetyl cholinesterase inhibitors during the early clinical trials. This showed promise in reversing the memory impairment in AD patients.

The amyloid hypothesis is the second and most prevailing theory of AD. It mainly postulates the role of soluble beta amyloid fragments not only as synaptotoxic but also as leading to plaque accumulation and subsequent development of intracellular neurofibrillary tangles (NFTs). The hypothesis is supported by the findings that amyloid precursor protein (APP) is located on chromosome 21, and due to the replication of this chromosome, it may account for the increased prevalence of dementia in older people with Down syndrome (Ness *et al.*, 2012). Additional support for this hypothesis comes from inherited forms of AD, “where mutations have been found within APP leading to autosomal-dominant forms of this disease and from the recently discovered protective effects of an Icelandic mutation (A673T), which leads to a reduction in beta amyloid

formation” (Jonsson *et al.*, 2012).

The tau hypothesis is the third hypothesis, which is gaining greater acceptance. It asserts that abnormalities in the intracellular protein tau are causative. This can be concluded from observations like tau oligomers being neurotoxic, clinical symptoms correlating most closely with tau pathology, and the fact that anomalous tau hyperphosphorylations constitute a common final pathway to other dementias. Anomalous signaling leads to tau hyper phosphorylation through the Fyn kinase pathway. Moreover, tau modifications lead to its oligomerization and the development of NFTs, which results into abnormal intracellular trafficking, collapse of the microtubule-based cytoskeleton, and subsequent neuronal demise. Nevertheless, increasing evidence indicates that the tau hypothesis provides close approximation to clinical observations in AD patients. “These include the observation that severity of dementia correlates with increasing accumulation of NFTs and level of hyperphosphorylated tau species in the cerebrospinal fluid (CSF) of AD patients that also correlates with the extent of cognitive impairment” (Maccioni, 2006).

Drug development and treatment for the disease:

Currently, there is no treatment that can prevent or cure AD. The search for effective drug therapy is focused on preventing the destruction of neurons, with the ultimate goal of preserving cognitive function for as long as possible. Researchers have explored different theories regarding AD like the ones discussed above.

One theory based on the fact that memory deficits in AD are due to a deficiency of the neurotransmitter, acetylcholine, which has been explored by researchers, who have sought ways to boost the amount of acetylcholine in the brain. This has been done by administering substances containing it, stimulating the brain to manufacture it in increased quantities, and by preventing the breakdown of the limited quantities of

acetylcholine that the brain is able to make. Particularly, supplements of lecithin and choline (two substances used to produce acetylcholine in the body) are now available in health food stores and are given to AD patients with the hope of improving their mental function.

Furthermore, cholinesterase inhibitors are employed. They work by slowing the breakdown of acetylcholine. These medications were the first drugs to be approved by the U.S. Food and Drug Administration (FDA) for the treatment of AD. Even though they do not halt the progression of AD, they ease some of its symptoms. In addition The American Academy of Neurology has concluded that good evidence exists for the use of vitamin E in an attempt to slow the progression of AD. However, large doses of vitamin E have been associated with bleeding in some patients deficient in vitamin K, despite the fact that it is generally safe.

Experimental therapies:

Anti- amyloid strategies targeting beta amyloid plaques

Passive anti – amyloid immunotherapy

Immunizations with beta amyloid were seen to clear amyloid pathology and lead to cognitive improvements in mouse models of AD by Schenk and coworkers in 1999. The idea was expanded to show that passive immunization with beta amyloid antibodies can be similarly effective in humans. Thus, passive immunotherapy remains the leading approach to disease – modifying treatment. The monoclonal antibodies target various domains of the beta amyloid peptide and prevent aggregation of accelerate removal. For example, Solanezumab, a monoclonal antibody is directed against the mid – domain of the beta amyloid peptide, where it recognizes soluble beta amyloid and not the plaque form. Its therapeutic rationale is to exert benefit by sequestering beta amyloid and removing small soluble species of beta amyloid that are synaptotoxic. Other antibodies

developed include Crenezumab, an antibody that binds to all forms of beta amyloid, including oligomers and fibrils and Gantenerumab, a monoclonal antibody designed to bind to a conformational epitope on fibrillar beta amyloid (Bohrmann B et al, 2012). This antibody acts centrally to disassemble and degrade amyloid plaques by recruiting microglia and activating phagocytosis.

On the other hand, another approach in AD therapeutic development besides removal of beta amyloid has been to reduce its production. Since the beta amyloid peptide is cut out of APP by the sequential action of beta and gamma – secretases, recent genetic evidence shows that mutations near the beta – secretase cleavage site that prevent such cleavages lead to decreased production of beta amyloid and are protective against developing AD dementia.

Active anti – amyloid immunotherapy

Active anti-amyloid immunotherapy is an active vaccination strategy that aims to elicit a strong antibody response while avoiding inflammatory T cell activation. Clinical trials are underway by Novartis Pharmaceutical using an active beta amyloid vaccine, CAD106. It consists of multiple copies of beta amyloid1-6. At this stage Phase 1 data looks promising (Winbald *et al.*, 2012).

Anti – tau strategies

Despite its critical role in neurodegenerative disease, therapies targeting tau have not progressed as quickly as those targeting beta amyloid, likely because tau aggregates are found intra – neuronally, which complicates target engagement. Nonetheless, passive and active immunizations against tau have been analyzed in mice using several different mouse strains and phospho– tau peptide despite the lack of understanding as to which forms of tau are neurotoxic.

Conclusion:

Therefore, since scientists have found a way to help manage behavioral symptoms, they are now developing therapies that target specific genetic molecular or cellular components that can stop or prevent the actual underlying cause of the Alzheimer's disease. Along with these new developments, although there is no definitive evidence about what can prevent Alzheimer's, scientists believe a healthy lifestyle that includes a healthy diet, physical activity, appropriate weight, and no smoking maintains or improves overall health and prevents or lowers the risk of contracting many chronic diseases like heart disease and diabetes.

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Interdisciplinary Medical Therapy

Janelle M. Zimmerman, Old Order Mennonite Illness Narratives

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Abstract

The Groffdale Conference Old Order Mennonite church communities represent a unique and under-studied subculture in the United States. In the interest of preparing healthcare professionals to provide culturally competent care, this paper details themes revealed in analysis of selected illness/trauma narratives written by members of this community. Listening to narratives from within a people-group represents a unique opportunity to gain insight into their worldview. Faith and tradition are consistent themes in Old Order approaches to the illness experience, manifested by support from family, friends, and the wider faith community, reliance on faith and tradition—including horse-and-buggy transportation—and the use of complementary and alternative medicine. Aspects of the culture's responses in healthcare settings may lead to conflict and disagreement with healthcare professionals, and act as barriers to access to care. Based on these themes, the author suggests practical actions healthcare professionals can take to respect and work with these crucial aspects of Old Order Mennonite culture in the healthcare setting.

Learning from Our Patients:

Old Order Mennonite Illness Narratives with Implications for Clinical Practice.

Humans tell stories for many purposes; to teach, to explain to entertain, and—most importantly—to make sense of our world. Stories, or narratives, provide an index of the narrator’s worldview, what he or she believes to be true about the world. Narratives often arise out of chaos and pain, trying to explain and make sense of the experience. The details of what members of a group choose to include in their illness narratives provides insight into the values of their culture and belief system. Understanding these values allows nurses and other healthcare professionals to provide appropriate and culturally sensitive care to the patient (Leininger & MacFarland, 2001).

This study focuses on the Groffdale Conference [Wenger] Old Order Mennonites, who are a small sub-group of the larger Old Order community. Recent years have seen tremendous increases in the amount and quality of scholarly research on the so-called “Plain Communities,” or members of Old Order and conservative Mennonite and Amish church communities (for overview, see Anderson, 2013). Nonetheless, there remains a significant dearth of studies by and for healthcare providers, leading to multiple gaps in understanding.

The Old Order Mennonite (OOM) communities are part of a relatively small group of Anabaptist sects who have maintained a distinctive theology and cultural practice¹. The Groffdale Conference Old Order Mennonite group that are the focus of this study are of Swiss-German ethnic background (Anderson, 2013), choose to use horse-and-buggy transportation, and are among the more conservative of the Old Order Mennonite groups (Anderson, 2013; Scott, 1996). Though often mistaken for the Old Order Amish (OOA), the OOM are a distinctly separate group with a different culture, subtly different beliefs,

¹ Harold Bender’s articulation of the “Anabaptist Vision” (1943; Schlabach, 2015), defines contemporary OOM belief, with its insistence on a personal commitment to faith, a visible church community, love and nonresistance, and separation from the world. They emphasize the working out of faith through a personal relationship with God, manifested as membership within and obedience to the OOM church community at the local and national levels.

and moderately different responses to healthcare interventions and teaching efforts.

These narratives, and the analysis of them, are specific to the Groffdale Conference Old Order Mennonite. Conclusions and recommendations are reasonably likely to be applicable to all Old Order groups, but more research will be required before this conclusion can be definitively stated. This paper therefore makes recommendations only for the Groffdale Conference group. Clinicians are advised to observe and ask questions before assuming that the conclusions as presented here apply directly to their current patient.

Background

Throughout human history, we have told stories about illness and trauma. The Biblical account of Job, Norman Cousins's *Anatomy of an Illness* (1979), the anonymously authored *Story of Erma Zimmerman When She Lost Her Legs in an Auger Accident* (2013)—all are part of the genre of illness narratives, and each reveals something of the beliefs and values of the narrator. The clinical/medical account of illness in OOM does not much differ from that of the general population, i.e., a physician will describe heart failure in the OOM patient in the same way as any other patient. However, the narrative/personal account of illness, being filtered through the worldview, is unique from that of the general population, and reveals something of the values of the narrators and their community.

The Old Order Mennonite community has received relatively little scholarly attention, especially in comparison to the OOA communities. There are a small number of studies of OOM health in Canada, including Good Gingerich and Lichtman's work (2004 & 2006) on informal lay helpers, Wenger's study (2003) of health understandings among the OOM & OOA, and Dabrowska and Bates' study (2010) of health beliefs of OOM women. Studies related to health of OOM in the United States are also few, but

include Nolt's analysis (2011) of directions in mental health treatment, Garret-Wright, Jones and Main's exploration (2014) of childhood nutrition, Carraba and colleagues' report (2011) on farm safety education in OOM schools in New York state, Adams' health survey (2014), and Esliger and colleagues' analysis (2010) of physical activity levels. Others have focused on the genetic disorders found in the Old Order populations (cf. McKusick, Egeland & Hostetler, 1964; Morton et al, 2003; Strauss & Puffenberger, 2009; Xin, 2014).

Some research on Amish populations has included OOM as a portion of the study populations. Yost (2015) found that members of the Groffdale Conference OOM community living in Pennsylvania had a similar incidence of health conditions as the Old Order Amish in the same geographical area, and both groups reported lower incidences of all health conditions than the general population. However, clinicians and service providers familiar with both groups state that they see significant differences between the cultures. Therefore, research findings in OOA communities cannot be extrapolated wholesale to the OOM. The author intends to begin to correct this inequality in the research literature related to healthcare in the OOM communities by providing a thoughtful insider (emic) perspective combined with the analytical (etic)² perspective of a social scientist/researcher.

Documents

This preliminary exploration of attitudes and beliefs affecting healthcare practices in Old Order Mennonite (OOM) communities is based on systemic analysis of published narratives of illnesses, accidents and deaths occurring within the group. In accord with Erving Goffman's (1959) theory of narrative as the performance and presentation of preferred identity, I focus on published accounts of healthcare encounters from an emic

² Here, I use the anthropologic definition of emic and etic (meaning simply insider versus outsider), as compared to the linguistic definition more commonly used. For a brief discussion on this usage as well as associated difficulties, see Agar (1980), especially chapter 10.

(insider) perspective. These accounts provide a unique look into the OOM worldview as it relates to healthcare and the healthcare/nursing profession. These narratives are usually informal, often self-published, and may appear simplistic in their non-adherence to conventional writing, editing, and publishing practices. These are not objective accounts, but are positional and subjective (Goffman, 1959), reflecting the authors' viewpoints and perspective on their lived experiences. They are narrative accounts of experience which arose from within crisis and chaos.

The accounts included in this study were chosen based on the church affiliation of the individuals and families featured in the accounts, selecting for Old Order Mennonites. Several accounts proved to be about individuals with affiliations other than Groffdale Conference Old Order Mennonite. However, there were an insufficient number to provide an accurate representation of any other group; these were, therefore, excluded from the study. The nine accounts used in this study are summarized in the table below. All are written in the English language, with only a few phrases in the Pennsylvania German dialect.

Anonymous. 2013. *Strength for Life's Pathway: The Story of Erma Zimmerman When She Lost Her Legs in an Auger Accident* A fourteen-year-old girl suffers a traumatic bilateral amputation in a farming accident. The narrative covers the day of the accident and the nine months immediately following³. Recovery includes numerous surgeries and intensive rehabilitation with her prostheses.

Hurst, Alma. 2008. "Trust in the Lord." A forty-six year-old male suffers multi-system trauma due to a motor vehicle-horse-drawn cart collision. Treatment includes several emergent surgical procedures as well as later additional surgery and rehab. The narrative extends to three years following the accident.

Leid, Ella. 2008. "God's Grace is Sufficient." A young farmer (age unspecified) suffers a traumatic amputation of the lower leg in a farming accident. Recovery includes extended healing time due to infection, with emotional difficulty for the patient and his spouse in handling the inactivity needed for healing. The narrative covers the year after the accident in some detail, and gives an update twenty-five years later.

Martin, Harvey & Esther. 1988. *The Long Night: The Story of the Sudden Death of Mrs. Aaron Hurst Following a Routine Kidney Transplant*. Kidney transplant with brother as donor. Post-operatively experiences a heart attack and brain death, possibly due to a cerebral aneurysm. Focus on faith and witness. Details one week span of hospitalization and death.

Sauder, Sara. 2008. "Strength for Each Day." A nine-year old boy suffers a traumatic brain injury in a collision with a motor vehicle. The narrative gives a detailed account of the accident and the months immediately following, during stabilization and intensive rehab. The narrative extends to fifteen years post-trauma.

³ Exploration and analysis of the narrative arc in these accounts is beyond the scope of this paper, but is the focus of a separate paper currently in progress by the author.

Sensenig, Norene. 2014. *Eldon: An Undaunted Child in the Midst of Cancer's Storm*

A four-year-old boy is diagnosed with cancer and undergoes intensive treatment, but dies two years later. The narrative covers the diagnosis, treatment, and familial response, especially the emotional difficulty of watching a child suffer with a terminal illness and severe pain.

Weaver, Edna. 2008. *Lord, Give Me Rest* A thirty-four year-old man is crushed under farm machinery and sustains a spinal cord injury. After intensive treatment and therapy, he dies of respiratory complications. The narrative details the months between injury and death, and ends a year after his death.

Wenger, Raymond & Anna. 2009. *Heartaches on Life's Pathway*.

A farm family experiences many medical difficulties in caring for their young son with cystic fibrosis. The narrative details the child's treatment and progress, as well as short accounts of various emergencies of others in the family. Emphasizes the importance of advocacy and assertiveness in relating to healthcare professionals.

Zimmerman, Ellen. 2008. "A Burden Shared." This narrative covers the first fourteen years-of-life of a child with Hirschprung's disease and pseudo-neuropathic obstruction. Involves multiple surgical procedures and intensive medical treatment.

Method

The implicit goal of this research is to hear the voice of the OOM people, to know how their values and beliefs affect their approach to healthcare. To this end, I chose to use content analysis rooted in grounded theory, using an inductive approach where the narratives (the data) are examined without predetermined hypotheses (Strauss & Corbin, 1980; Saldaña, 2013). Following standard thematic coding procedure (Saldaña, 2013;

Strauss & Corbin, 1980), coding followed an iterative process to ensure that the themes as developed do indeed reflect the subjects' lived experiences.

Conventional content analysis is a rigorous research methodology, providing an in-depth analysis of qualitative data (Evans and Rooney, 2011; Krippendorff, 1989). Krippendorff (1989) states that "content analyses...shed light on the kinds of values expressed and attitudes held" by individuals within a group (p. 405). Content analysis is also content-sensitive and flexible, permitting researchers to draw inferences directly from data in context (Elo and Kyngäs, 2007, 107). Grounded theory and content analysis permit the subject of the research to tell their own story. The researcher's task is to hear and take notice of the concepts and themes which are implicit within the narratives.

Limitations

This is an exploratory study with a limited number of narratives. Several themes were consistently observed, while others need further study to confirm or modify. Any normative terms here need to be accepted with caution, for this is a sample and a representative experience.

This study is based primarily on written narratives, and the researcher did not attempt to contact the authors to clarify meaning or expand on important themes. This limitation was minimized by consultation with knowledgeable individuals within the OOM communities as well as with healthcare professionals familiar with the Old Order communities.

Results

The analysis confirmed the primacy of faith and tradition in the OOM community. The distinctive OOM faith-based worldview is manifested as strong community support coupled with a unique approach to healthcare. Traditional modes include use of complementary and alternative medicine and use of horse-and-buggy transportation,

which may lead to tension and potential conflict with healthcare providers. Horse-and-buggy transportation and financial limitations are also barriers to healthcare access.

Discussion and Clinical Implications

This section discusses the values and beliefs of the OOM community as revealed through a grounded theory content analysis of illness narratives. The first section explores the unique worldview of the OOM community and how this affects beliefs and values surrounding healthcare. The second section explores some of the differences and tensions which arise when OOM patients enter the healthcare system. Each section includes recommendations for healthcare providers.

A Unique Worldview

The concept of worldview as foundational to human response and behavior has been the subject of numerous scholarly writings (cf. Noebel, 1991; Sire, 2000). Beliefs direct actions. Nowhere is this more evident than in a community of relatively homogenous beliefs (Lee, 2000) whose distinctness from the society around them sets the results of their actions in sharp relief.

The OOM worldview is rooted in faith and tradition. Given that religious faith is the bedrock of this community, the consistency of the expressions of faith, trust in God, and prayer is not surprising. OOM are not fatalistic, but practice *gelassenheit*—a quiet acceptance and surrender to God’s will as revealed through circumstances. The chaos of pain and loss is situated in a more meaningful narrative pattern undergirded by a belief in a cosmic orderliness, which may be invisible on earth but will be revealed in heaven. Bender’s articulation of the “Anabaptist Vision” (1943; Schlabach, 2015), defines contemporary OOM life, with its insistence on a visible church community and separation from the world. The principle of separateness extends to all interaction with the medical establishment, including that which they initiated themselves. This is a doing

church⁴, and the communal ideology informs every detail of daily life.

The expression of faith is strongly related to tradition in the Groffdale OOM community, and no discussion of faith in OOM communities is complete without considering the '*Ordnung*'; a set of guidelines and prohibitions developed over many years to regulate community practice. The *Ordnung* represents the congregation's best effort to live out Jesus' Sermon on the Mount (Matthew 5-8), and is revised biannually based on input from the membership. While to outsiders the *Ordnung* often seems solely restrictive in nature, to members of the community it represents a solid, God-inspired guide to conduct, helping to define their identity and promote order and unity (Kraybill & Bowman 2001, p. 73).

Tradition is grounded in faith, even as the visible workings of faith are grounded within tradition. Tradition in this sense is a reliance on community norms and community mores, including use of the *Ordnung*—rules governing the church community—to guide and support decisions. The use of tradition in this sense is not so much a deliberate effort to maintain tradition⁵; rather tradition serves as a source of comfort and strength to aid in facing the disruption of the normal family setting and accompanying routines. Traditional gender roles are maintained as much as possible; patriarchal decision-making norms are upheld where possible. For example, Earl Brubacher suffers a farm accident which leaves him permanently disabled (Weaver, 2008). Respecting his position as head of the family, his family asks him to direct continuing farm work at home. When treatment appears to be futile, his decision to seek life-sustaining treatment is respected even when the family would have been willing to withdraw life-support (p. 26). The individual is highly valued as a member of the group; not as an autonomous individual, but as an integral and vital part of the larger

⁴ Members of the OOM describe themselves as a "doing church", distinct from the practice of churches which emphasize personal faith and de-emphasize the importance of obedience to church guidelines.

⁵ OOM do indeed often seek to maintain tradition for its own sake. However, in these narratives, tradition appears most often as a source of comfort and support.

community. The tremendous value conferred on the individual is based largely on membership in the community.

The patient does not enter the medical system alone, but the entire family and even community will partake in the experience, offering love and support to the best of their ability. Insofar as the individual is seen as an individual, their identity is rooted within the community, their value based on belonging. “Who I am” is largely defined in the context of being a member of an OOM community—what makes the self/individual unique is secondary and of less importance. Anthropologist Edward T. Hall deftly points out some of the differences between low and high context cultures. In many high-context cultures, among them the OOM, “the bonds with the parents, grandparents, and even ancestors are not severed but are maintained and reinforced... The child moves into the larger and more real world of the adult, but he does not, even under normal circumstances, establish an identity for himself apart from that of his community” (p. 226). This is not to say that the OOM patient will not identify as an individual. Indeed, in the area of medical care perhaps more than most, there is considerable individual latitude in decision making. The OOM community is a high-context culture where members recognize context-dependent variability, thus allowing surprisingly individualized solutions within a relatively strictly regulated community.

The OOM relationship to healthcare and its providers is one of dynamic negotiation. When patients or families appear uncomfortable with treatment choices—or, more often, with clothing, therapeutic devices, transportation plans and so forth—careful questioning may reveal a real or perceived conflict with tradition or the *Ordnung*. Allowing time for family conferences and communal decisions where possible will help to alleviate some of this unintentional discomfort and distress.

The practical outworking of faith includes a strong community-based support system for patients and their families. Support comes from siblings and spouses, from

the immediate church community, from non-OOM friends and neighbors, and from geographically distant church members and members of other Old Order or conservative groups. Support from immediate and extended family is recorded as immediate, continuing and unquestioned, though narrators frequently express their appreciation for the tremendous outpouring of support they received. The account of Erma Zimmerman's traumatic amputation (Anonymous, 2013) in a farm accident is typical. "[T]he help and support of others has been tremendous. What would they do without friends, relatives, and a supportive church group?" (p. 52). Support manifested as physical presence, spiritual and emotional support, or as assistance with work and financial obligations.

In the clinical setting, community support often manifests as multiple family members accompanying the patient, or as large numbers of visitors to patients in acute in-patient settings. Healthcare professionals are often frustrated by family members and visitors crowding the exam rooms, in-patient rooms, and hallways. A more positive response involves including family members in care wherever appropriate, providing information—"You can never give them too much information!" (M. Seidel, personal communication, June 2015)—and sometimes helping family to realize that for the patient's own best interest they should remain in a waiting area or visit in moderation.

Differences and Tensions

Given the cultural differences—especially the OOM's concern for maintaining a sense of separation—occasional tension between the OOM and healthcare professionals is natural. Conflict and disagreement with healthcare professionals about treatment options and the direction of treatment are a near-constant theme in these narratives. This section details various areas in which tension and conflict may arise.

The OOM approach to death and dying.

The OOM approach to death reflects their worldview. Four of the nine OOM

narratives include the death of the protagonist. In the clinical narrative, death equals failure. In an interesting twist, the OOM accounts do not see death as the ultimate failure, but as entry in God's presence. In this community, death is an acceptable ending. This type of narrative is a variation of Frank's (1995) restitution narrative as a way to explain illness⁶. Death is viewed as a restitution to a better state and thus an acceptable ending. The OOM see death as a necessary step in reaching the ultimate goal of eternal life in the presence of God. Death is therefore not the end of life but the doorway into a fuller life. This difference in what is considered to "have won" helps to explain objections against heroic treatment. Awareness and sensitivity to this view of death are crucial for the healthcare professional.

Technology use in the clinical and home settings.

There is a firm distinction between the home and the office/clinic/hospital setting, which requires awareness and sensitivity when planning care before and after discharge. OOM exhibit willingness to utilize high-tech equipment in healthcare—such as ventilators, dialysis machines, computerized intravenous pumps, and imaging equipment—despite careful limitations on the use of similar technology within the home setting. There is also a notable willingness to suspend some of the typically enforced restrictions on non-medical technology while within the hospital settings. Children especially may be permitted to watch movies and television, use computer assisted technology, and use other typically forbidden items, while within the hospital setting. This suspension of the normal rules will not usually continue once the patient is discharged to the home setting.

In keeping traditions, families who are in an unfamiliar healthcare setting may break mores, but not taboos. Thus Rufus, who experiences a traumatic brain injury

⁶ Frank (1995) posits three dominant narrative types among illness narratives, including the restitution narrative, the chaos narrative, and the quest narrative. Restitution represents a return to health and normalcy—a restitution to wellness.

(Sauder 2008), is permitted to use computerized learning systems while in the rehab hospital, but his parents are not comfortable with permitting him to use a computer when he returns to the local Old Order school, even when the therapists offer a free machine. They compromise with a battery-powered typewriter “rigged up” by a church member with a mechanical genius (p. 172), thus respecting both their son’s limitations and the Old Order community norms. Decisions about technology use beyond infusion pumps and common diagnostic equipment are usually decided on a case-by-case basis, requiring healthcare professionals to clarify what equipment the patient and the family will be comfortable using in each situation.

Complementary and alternative treatment.

Most healthcare professionals approach healthcare from a bio-physical perspective, favoring a scientific, evidence-based practice. The OOM seek care from these practitioners, but most OOM also accept and use complementary and alternative medicine (CAM). All OOM accounts mention the use of CAM, but are rarely explicit about which products and services are being used. Among those which are mentioned are chiropractic, B&W salve [used for burns and wounds, hence the name], essential oils, and chlorophyll. In *Eldon*, the use of CAM is framed in terms of morality; they see CAM as a temptation to run after futile promises instead of relying on God (Sensenig, 2014). Others in the OOM communities see CAM as being closer to the natural order, and therefore better. The use of CAM is always presented as being complementary—not competitive—to allopathic medicine. Healthcare staff should be aware that many OOM do use complementary and alternative medicine, but may be unwilling to mention this to healthcare providers for fear of negative comments. Nonjudgmental questioning during the medication history will overcome this reticence.

Traditionally the *Ordnung* of the Groffdale Conference OOM has encouraged members to use therapeutic modalities that are sanctioned by the American Medical

Association. Members are also strongly encouraged to use alternative medicine with caution due to its unproven nature and the potential negative spiritual impacts of occult medicine. This proscription is not absolute, and members are free to choose any therapy with the understanding that the church will not provide financial assistance to cover the costs of alternative medicine. Clinicians should recognize that healthcare decisions are an individual and family matter and are not prescribed by elders or religious leaders.

Financial considerations and mutual aid.

The OOM encounter several barriers to healthcare access arising from financial challenges related to their religious beliefs. Restrictions on use of technology and tools limit personal wealth (Kraybill & Bowman, 2001). Financial constraints often limit care, for although mutual aid will cover large amounts of the costs, there is a strong reluctance to utilize this source of aid for unnecessary testing and treatment. A physician pressured Anna Wenger (2009) to permit her son to have additional (and ultimately unnecessary but expensive) testing done, saying their community and friends would help to cover the cost. With considerable distress, Wenger refused, saying “I don’t want to use our friends that way” (p.9).

Many organizations offer reduced rates to self-pay patients who are members of the Plain community, thus allowing them to pay at rates equal to or slightly more than the amount that insurance would ultimately pay (Yost, 2015), although even these discounted rates still add up to millions of dollars which the community covers through mutual aid every year. Mutual aid is overseen by the deacons of the church and is rarely mentioned explicitly in these accounts.

The greatest barrier to access is the time and distance factor, related to reliance on horse and buggy transportation or hired drivers. OOM may limit visits to healthcare professionals because of the difficulty and expense associated with transport to the

facility (Wenger, 2009). James Cates (2014) suggests home visits or clinics strategically placed to be geographically accessible. Additionally, clustering appointments—for example, having examination, testing, and counseling scheduled sequentially on the same day—helps to alleviate the cost of transportation.

Conclusion

“One of the essential qualities of the Clinician is interest in humanity” according to physician Frances Peabody, “for the secret of caring for the patient is in caring for the patient” (Morton, 2012). Researchers and clinicians have a tendency to see the Old Order people as marginalized, even oppressed—a group in need of professional intervention to assist them to reach their true potential and to enable them to “join the modern world.” What this perspective overlooks—or at least marginalizes—is that the Old Order culture is a deliberately chosen way of life, with a carefully maintained boundary between themselves and the rest of the world. As Donald Kraybill has repeatedly emphasized in his prolific writings on the Old Order groups, these groups have carefully negotiated a compromise with technological advances—a compromise that permits them to maintain a distinct, valued, and unique culture (cf. Kraybill & Olshan, 1994; Kraybill & Bowman, 2001). True respect for this culture means understanding and working with their cultural values, not attempting to enlighten them in a wholesale fashion and introducing change only with careful, informed consideration of community values and norms.

Providing culturally sensitive care to members of Old Order groups requires awareness and sensitivity to the unique features of the culture. Dr. Holmes Morton, a pediatrician who specializes in genetic illness in the Old Order communities, speaks of the extraordinary “juxtaposition of Faith and Science” encountered in caring for members of the Plain community (2012, p. 67). The OOM accept death, question technology, often use alternative medicine, and face financial and transportation barriers to healthcare access—all of which must be considered in caring for members of this

community. Recognizing and understanding the points presented above will assist in establishing rich and rewarding professional relationships with the OOM.

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Business and Economics

Charlotte Grace Stoliker, Hello Hybrid: A New Approach to Philanthropic Business

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Hello Hybrid: A New Approach to Philanthropic Business

The American Red Cross (ARC), like many other globally recognized nonprofit organizations, has faced intense criticism throughout the duration of its various programs. Despite its attempts at transparency, the Red Cross has been accused of misappropriating funds, not responding efficiently or effectively to disasters, and having a lackluster workforce. After the attacks on the World Trade Center on September 11, 2001, the Red Cross responded with a fervor that was later undermined by the overwhelming outpour of disapproval directed towards their reaction methods. In an attempt to create the most comprehensive plan given the resources and limited time, the Red Cross began selling the blood donations that were originally intended to be used to treat survivors of the terrorist attacks (Red). What the general public saw as a scheme to benefit and generate funds in an inappropriate manner during a time of despair and uncertainty was, to the Red Cross, a desperate aim to maximize potential resources. Jim MacPherson, CEO of America's Blood Centers throughout the duration of the attack and recovery, reported that only about "800 units [of blood] were used for injured parties", yet within 48 hours of the attack, the nation's blood supply had tripled (Red). This excess inventory was at risk of expiring after its 42 day shelf-life, and needed to be transported to outside parties who could use the blood for patients who were unrelated to the World Trade Center attacks.

As a result, the American Red Cross sold the excess blood supplies so that the donations could be utilized and help save lives. This alone would appear to be a suitable alternative to letting the blood expire, if not for the irresponsible handling of money

following the transactions. Paul Light, who studies American charities at the Brookings Institution, noted that “the Red Cross did not have the administrative infrastructure to handle this money”, so the ARC took this opportunity to update their telecommunications and freezer technology with the funds made from selling blood donations (Red). Donors and survivors alike were outraged at the Red Cross’ diversion of finances. These unsuccessful organizational strategies and lack of a strong administrative infrastructure has haunted the Red Cross in its later programs in response to Hurricane Katrina in New Orleans in 2005, where \$160 million was spent in overhead funding (American 12), and during the 2010 earthquake in Haiti, where the Red Cross raised \$448 million and built only 6 permanent homes (Meltzer).

The public lens has been quick to magnify any mistakes or missteps of the Red Cross, and distrust of this once very reputable organization has proliferated. The American Red Cross is just one example that illustrates how the nonprofit business model is not adequate for executing altruistic goals in a timely, effective manner, and how public suspicion and criticism of nonprofits is weakening the support that these organizations need. If conventional nonprofits, like the American Red Cross, were to incorporate beneficial characteristics of the more competitive, self-sustainable for-profit business model, these philanthropic entities would be able to adhere to their social missions and make the lasting impression that is needed to provide humanitarian relief through successful methodology.

Until recently, the nonprofit and for-profit sectors have been generally considered independent, with one catering towards the downtrodden and less fortunate, and the latter being responsible for executing lawful business activities. The perception that nonprofit organizations and for-profit organizations are mutually exclusive has proven detrimental as both parties struggle to achieve their various goals. Nonprofits face scrutiny when they fail to meet the needs of their clients with their limited resources and

time, and attempt to provide employees and executives with sufficient salaries without available funding. Anup Malani and Eric A. Posner of the Virginia Law Review describe the goal of nonprofits as “satisf[ying] the community-benefit designation under state law and compl[ying] with Section 501(c)(3) of the federal tax code”, meaning that nonprofits have to turn down any potential profit, whether it be from donations or leftover money from executing projects in order to receive tax exemptions (2019). However, as Roger A. Lohmann, director of the Nova Institute of Applied Sciences and professor at West Virginia University so eloquently asserts, it is difficult to acknowledge the term “nonprofit organization’ as a distinct and recognizable organizational form” (439). In fact, nonprofit organizations are often considered synonymous with the more equivocal term “social economy”, which serves as an umbrella category comprised of foundations, cooperatives, associations, and grass-roots groups that place a greater emphasis on social impact rather than profit. For the purposes of this paper, ‘nonprofit organization’ will refer to the organizations and groups that serve to effect positive change in quality of life, awareness of fundamental societal issues, and the betterment of humankind. ‘Nonprofit organization’ will not be referring to the ‘not-for-profit’ groups that are established for recreational purposes or the gathering of individuals for a shared activity or hobby, regardless of their meeting the qualifications of a 501(c)(3) or tax exempt organization.

If the entrepreneurs responsible for the current 501(c)(3) nonprofits wish to maintain a comfortable lifestyle or provide greater incentive for their employees, which would require more than just donations and grants, they would not “obtain the tax breaks offered to a similarly situated nonprofit firm” (Malani 2019). These executive directors are still service-oriented, but are concerned both with the needs of the catered demographic and with the population the organizations employ. Without funds to pay employees, workers may not be as motivated as employees that make a larger annual salary. Conversely, if a nonprofit secured income instead of rejecting it, donors would

become suspicious about how their money is being used and begin to question the transparency of the organization as a whole. As a result, donors pour their money into nonprofits that use a larger percentage of funds towards projects as opposed to salaries and advertising. The nonprofits using their donations for fundraising, salaries, advertising, and increasing their visibility to other possible donors are maximizing their potential donations by first hiring competent employees and then exposing their cause to a larger populace. However, people prefer to donate to organizations that use the majority of funds towards the explicit public-spirited goal. Thus, the nonprofit struggles to provide for employees, achieve goals, and secure the finances necessary for functionality while retaining a non-profit, socially-oriented status.

For-profits, on the other hand, adhere to rigid policies that have previously made having an altruistic agenda a difficult task. Bruce Seifert, Sara A. Morris, and Barbara R. Barktus of the *Journal of Business Ethics* illustrate a dichotomy between two competing corporate theories: the Corporate Responsibility Theory “which argues for more corporate philanthropy while Agency Theory argues for less” (196). The former argues that businesses are responsible both for making money and for interacting with the community, and the latter stresses the importance of resolving issues inside the agency itself as opposed to overextending the company’s reach. Both approaches have advantages and disadvantages for the businesses that operate within the two theories. Having an altruistic itinerary can be a strategic attempt at gaining visibility and popularity while fostering relationships, but it also diverts funds from the original purpose of the company. Chief Executive Officers of large corporations are expected to “balance the interests of multiple stakeholders, especially employees, customers, and shareholders”, a task that makes community issues less of a priority compared to the many elements of the industry that are necessary just for basic operationality (196). Klaus M. Leisinger and Karin Schmidt also examine another a corporate rationality that explains the pattern of a historically chronicled lack of philanthropy in the conglomerate

realm. According to Leisinger and Schmidt, the main responsibility of a business is to do no harm, and thus “people all over the world largely agree on what [...] should be avoided” in regards to the competitive business approach, but with little discussion about what businesses *should* do in the humanitarian domain (2). This being said, Leisinger and Schmidt admit that “‘doing good’ is gradually becoming part of society’s expectation” for businesses (2). The reality that making a social impact is becoming increasingly more important in corporations makes achieving various economic and social goals within reach, with for-profits beginning to take steps towards altering their existing business model. There is vast untapped potential in both the nonprofit and for-profit sectors, and as the for-profit realm broadens its role in society the nonprofit model is next to adapt to both address social issues and elicit positive changes while remaining competitive and functional.

Socially driven organizations have existed to serve the underprivileged long before the term nonprofit was applied. Local food services, financial aid, education supplementation, and medical care facilities were headed by individuals who wanted to channel their compassion for others in an organized, systematic manner. Now, with the increased guidelines and qualifications policing altruistic organizations as an attempt to simplify and compartmentalize nonprofits and for-profits, the line between philanthropy and entrepreneurship has blurred. While still considered independent from the corporate sphere, groups that were once not commercially motivated now have to develop “dynamic enterprises” or strategies to attract donors and foundations that could potentially provide them with grants (Lohmann 438). Despite the change in nonprofit administration that became more business-like, these groups are still discouraged from retaining any sort of profit as that would cause a deviation from the underlying “altruistic” infrastructure. It is a widely accepted perception that an organization is only truly altruistic if no profit is made, because profit would equate to individual gain and benefit. This belief is not entirely false; it is important for these organizations to keep

their mission in mind when developing policies and executing plans. But even employees face criticism if they want to benefit from a charity in any way, namely because their actions could be seen as motivated strictly by incentives and not by their desire to make a lasting, positive impact.

It is evident that the socialization of how people view the role of nonprofits and the employees who work for them influences their perceived capacity. Humanitarian activist and Harvard graduate Dan Pallotta discusses how conventional nonprofits are set up for failure, even in the name of the sector itself. Pallotta informs that the word profit is devised from the Latin word “proficere”, meaning progress (xiii). Therefore, the term nonprofit literally means “no progress”. Pallotta humorously yet accurately asserts that the name nonprofit “apologizes for itself before it starts” (xiii) creating an environment for a “pervasive distrust of how charities conduct their business (1). Nonprofits are expected to react and respond in a timely fashion without ample resources, and if they fail to fulfill their promises, they are seen as inadequate for the tasks they are responsible for. However, the emphasis on isolating the actions of nonprofit organizations and for-profit businesses has resulted in the neglecting to consider alternate forms of administration, which contributes to the perceived incompetence of nonprofits when plans cannot be executed. Fortunately, the recent flexibility and increase in philanthropy in the for-profit model has proven that a more fluid approach is possible for both sectors.

The growing emphasis on charitable activities in the for-profit realm has appropriately been termed corporate philanthropy. By utilizing this approach, both business and altruistic needs are addressed in the daily transactions of corporations. Consumers receive their products, shareholders receive a financial return, and the employees are paid their wages and feel satisfied knowing the firm they work for is helping others (Henderson 574). M. Todd Henderson and Anup Malani of the Columbia

Law Review comment on this trend, noting that while for-profits have generally acted as intermediaries between nonprofits and shareholders, now many “do not channel funds to nonprofits, but do many things at the expense of corporate profits” (573). This change illustrates a paradigm shift; for-profits that were once only responsible for business pursuits now use their economic and political power to assist those who the market could otherwise not help or affect. For instance, people living with leprosy on less than two U.S. dollars a day are “hardly a conventional customer base for high-value”, multinational pharmaceutical companies, yet many of these corporations have begun “donating medicines for [a] cure [for leprosy] and working with partner organizations involved in the fight against the disease” (Leisinger 5). Thus, Leisinger and Schmitt conclude, profit-based companies are taking a fundamental role in “making a difference and being a part of the ‘solution’ even where turnover and profit are not increased” (5).

In many ways, the power for-profits possess can make them more effective in delivering philanthropy than their nonprofit counterparts. Large corporations and profit-based companies have a broader economic scope and larger available funds than nonprofits and charities, making it easier for them to reach a greater demographic by channeling their increased visibility towards societal issues that need addressing.

For example, Google uses its popularity to increase support of leaders in the Disability Rights Movement and encourage involvement in local marches to honor veterans through its charitable adjunct Google.org. In these particular cases, Google is not strictly using money as a means of support, but is rather giving its resources and time to organizations and groups that lack the assets. In addition to giving its services, Google.org has also pledged that it will match every donation made towards supporting a disabilities teacher. Each year, Google.org donates 80,000 hours and over one billion dollars in products for the programs they head and the partners they support (Delamothe 986). And, while these actions may not cause any fiscal strain on Google’s budget, the

company is still using profits and resources that could otherwise be used for fundraising and innovation that would benefit the corporation. Furthermore, with offices in 40 countries, Google is able to interact and publicize these projects globally to procure an international consciousness and support that many nonprofits are unable to obtain.

ExxonMobil, the profit-driven energy company and lesser known advocate of corporate philanthropy has steadily provided roughly \$100 million annually to three major programs (Philanthropy 5). The most notable of ExxonMobil's core projects are malaria prevention, math and science education, and women's economic opportunities. Philanthropy Roundtable notes that with "operations in nearly 200 countries and territories, [the] interests are immensely broad" and expansive, catering to the needs of particular regions (5). Projects are implemented globally, from tiger habitat reconstruction in Asia to training 28,000 science teachers in 23 of the United States (Philanthropy 6).

For-profit companies like the ones listed above are motivated to act charitably by three major objectives. Some scholars argue that corporate philanthropy is an "example of managerial graft", and that by spending money on their pet charities, businesses are not required to return investments to stakeholders (Henderson 572). Supporters of this argument posit that corporate philanthropy is a way for businesses to retain control of their money in an act of self-preservation. By donating the money to the charities that they influence, firms are able to regulate how the money is used. Others, like Michael Porter, professor at the Institute for Strategy and Competitiveness at the Harvard Business School, argue that these acts of charity are a ploy to "buy goodwill from consumers and employees" (Henderson 572). By presenting themselves in a socially-oriented, compassionate manner, businesses gain support, recognition, and popularity for their good deeds. The third and most optimistic argument, made by Henderson and Malani, is that these influential conglomerates are taking a productive, transcendent step

towards social recovery and growth (572). While it is possible that many businesses are acting charitable with the hopes of benefiting, it does not underscore the constructive impact of corporate philanthropy, nor reflect all of the organizations that have contributed. Regardless of their intentions, progress is undeniably being made.

The examples above represent the ability current business models have to incorporate new characteristics and flexibility into their preexisting structure. The adaptability of these companies parallels their need to survive and be constructive. Similarly, the desire to be productive and competitive will be the motivation nonprofits need to make related changes. While for-profits fight the firm dual business model approach, nonprofits will additionally have to combat the rigid perceptual boundaries that suppress development and change. Conversion from nonprofit to for-profit status and management styles is growing in popularity, because there is little knowledge and powerful fear of the hybrid realm. Many businesses are forced to choose between the two business extremes and completely alter operations to meet qualifications of the opposite side of the business model spectrum.

A more promising model for nonprofit success is that of the hybrid business. The hybrid business model integrates both the altruistic agenda of a nonprofit and the competitive, financially independent nature of a for-profit. Wolfgang Grassl, professor of Business Administration at St. Norbert College, has observed that the major characteristic of the hybrid business model is “an emphasis on cross-overs between ‘private’ and ‘public’ enterprise under the assumption of a dichotomous model” (115). This crossover creates a third sector between private and publicly owned businesses that is competitive but not chiefly interested in the market. The main concern of hybrid businesses is their altruistic agenda. According to Julie Battilana, Matthew Lee, John Walker, and Cheryl Dorsey of the Stanford Social Innovation Review, the hybrid business would “use product sales to fund its social mission, reducing dependency on donations,

grants, and subsidies” (2). Instead of relying on fluctuating donations and uncertain grants, the social-mission-gearred business would rely on its own production and sale of goods and services to ensure substantial and adequate resources to fund projects. Not only would the business have more of an opportunity to succeed with exponentially larger funds, but it would have complete control over the use and distribution of money throughout the company. Employees and executives alike could make a larger annual salary to ensure a comfortable, stable lifestyle while still maintaining sufficient funds for functionality. The organizations will have more economic and political influence as their competitiveness increases, so projects can be planned and executed swiftly and efficiently. Hybrid organizations can be developed in a few different, equally effective ways. A company can choose to legally identify as a for-profit business, but use all funds for implementing their social mission. Additionally, a company may choose to identify as either a nonprofit or a for-profit with a subsidiary of the opposite party. For example, a nonprofit can have a for-profit subsidiary that serves to “fulfill a basic need for the other and vice versa” (Lapowsky 1). Organizations that have already utilized variations of this model have proven the overall success of the hybrid business model.

In the case of the nonprofit Mozilla Foundation, a for-profit subsidiary was formed to generate revenue for the nonprofit. The foundation still received about \$222,000 in donations, while the subsidiary generated \$104 million in revenue sharing expenditures with its partners, Google and Yahoo (Lapowsky 3). In a hybrid organization such as this, each entity approaches taxes differently. The nonprofit foundation is exempt from taxes as it adheres to the 501(c)(3) criteria, while the for-profit subsidiary is taxed comparably to other for-profit businesses that are not working with a nonprofit source. This hybrid framework that has an interdependent infrastructure of both nonprofit and for-profit business models, is the most complex form of hybridization, yet is the best option for nonprofits “whose legal status is threatened by business income” and for-profits seeking help with managing philanthropic programs (Lapowsky 4). As opposed to transitioning

into this slightly more complicated entity, many organizations are built as hybridized companies from their conception.

TOMs is a widely recognized, successful, philanthropic business that is also a prime example of a hybrid organization. The company was inspired by a trip to Argentina in 2006, where CEO and founder Blake Mycoskie was met by children who lacked basic necessities. His creation of the One for One model with the goal to provide these children with shoes used a “for-profit business that was sustainable and not reliant on donations” (TOMs) with the hopes that his methodology would prove successful and efficient. For every pair of shoes purchased, the money is used to produce and deliver shoes to a child in need. This process is simple yet effective; the money spent on philanthropy is constantly being replenished by consumers purchasing TOMs. With over 35 million pairs of shoes given to children since 2006, Mycoskie expanded his business and incorporated another facet into the model. The next One for One program was a system that functioned much the same as the shoes, where for every pair of eyewear purchased, basic sight-recovery surgery is funded for someone who could not afford the procedure. Mycoskie has since added safe drinking water and infant delivery training to his One for One system (TOMs). Even though his business is a for-profit, the organization itself is geared towards specific social missions. The profits made are used to provide for others, resulting in the expenditure of money being equivalent to the revenue.

Another hybrid business, The Hot Bread Kitchen, utilizes the model in a slightly different, but equally effective, approach compared to TOMs. Instead of exporting profits for a charitable cause, The Hot Bread Kitchen uses its funds to directly impact its employees. The bakery is a “workforce development program that supports low-income, minority, and immigrant women” by providing them with jobs and training to establish a career (Bakers). Profits are used to give the women essential instruction and a substantial salary that contributes to a more gratifying and productive future (Battilana).

The Hot Bread Kitchen incubation program also supplements the women's workforce training with professional development and English as a second language courses (Farmers 10). According to The Hot Bread Kitchen data, women leaving the business earn 70% more on average than they did before entering the program (Bakers). Instead of relying on donations, the business and women benefit from selling products that represent their employees and their purpose. As a result, this business model provides consumers with ethnically diverse baked goods, and the transactions fund the social mission to provide the employees with job security and increase their economic opportunities.

Global Giving is another hybrid organization that functions as a third party that connects nonprofits with donors, volunteers, and employees. Global Giving's social mission is to "catalyze a global market for ideas, information, and money that democratizes aid and philanthropy" (Global). For 15% of each donation, Global Giving advertises projects and nonprofits while providing the organizations with "resources, tools, training, support, and access to [...] new potential supporters" (Global). Global Giving is a registered 501(c)(3) nonprofit but deducts 15% of each contribution to keep the organization operating efficiently. The foundation is transparent in how they intend to use the deducted 15% of each donation, explaining that the money will go towards the services they provide to nonprofits, credit card transaction fees, and administrative costs, but will eventually result in a financial return for each charity (Global). Global Giving also provides donors with feedback "about how their contributions have been put to work" to keep the mission of the company clear and to establish trust (Global). The website serves as a resource for gaining visibility for nonprofits that are not able to gain support with their limited resources. These organizations are called the "underdogs" by Global Giving, and they are devoted to keeping these inefficient nonprofits functioning (Global). This example of the hybrid business model is more of the conventional third party or intermediary role, but was designed and operates as a hybrid and works towards

a social mission with no intention of profiting for individual gain.

It does not go without notice that this paper compares a nonprofit organization as large as the American Red Cross to two, much smaller hybrid businesses. While this may seem to be an irrelevant comparison, it proves necessary as the process of hybridization must start at the local level in order for integration be successful. Thrusting the hybrid model into an organization as large as the Red Cross would be creating a foundation for failure because businesses and organizations have to adjust, learn, and grow with the model first in order for it to take root and adapt to larger businesses entities. As smaller businesses conform and react to hybridization, a greater understanding can be established to make future integration successful and swift.

Even with established, successful hybrid business models, there is uncertainty about which of the multiple approaches will prove to be the most straightforward in development and most efficient in nature. Michael D. Gottesman of the Yale Law and Policy Review summarizes three major proposals concerning hybrid generation: creating new corporate forms, changing tax laws, and working within current laws. In regards to new corporate forms, Gottesman reports that multiple state legislatures have begun designing new models that will foster businesses existing in the hybrid realm. Minnesota and Hawaii have introduced the idea of developing “Socially Responsible Corporations” (SRCs) that function to both “maximize profit [and] pursue public benefit”, which would include a board of directors representing both public and employee interests (345). Unlike the subsidiary approach, SRCs would allow for the “commitment to both profit and social mission simultaneously” as opposed to the operation of one form under the legal status of another (Gottesman 345). SRC designation would create a straightforward, transparent legal status displaying the intent of the corporation. An equally unambiguous corporate form is the Low-Profit Limited Liability Companies (L3Cs) legislation of North Carolina. An L3C designation would allow for profit generation, called philanthropic

capital, used strictly for altruistic business pursuits (Gottesman 353). Like the SRCs, profit would support the social mission of the company.

Gottesman also acknowledges how the process of changing tax laws could reduce the asymmetrical benefits that promote nonprofit activities and discourage the supporting of altruistic enterprises that utilize a profit-based approach (354). The current tax laws also create an environment that can be manipulated for personal income purposes, namely when “donors deduct donations from their income taxes” (354). Therefore, the current structure gives an advantage to “inefficient producers in the nonprofit sector” that impedes adoption of a more efficient, yet atypical strategy (Gottesman 354). If both nonprofits and for-profits were given tax deductions for charitable ventures, it would be less expensive for for-profits to assume a philanthropic identity, and would no longer be advantageous for nonprofits exclusively, making business model fluidity possible.

The last of the three major proposals, working within current laws, is described as Gottesman as being the most promising in terms of immediate gratification, because it accomplishes basically the same goals as the previous two proposals without using as much time, money, and resources. For-Benefit Corporations, like Google.org and the Mozilla Foundation, are incorporated as for-profits legally, but are unmistakable in their “social commitments in their corporate governing documents” (Gottesman 355). Thus they act inside current laws and follow the for-profit model faithfully under their particular parent company and without overstepping legal boundaries, making this approach the least complicated method of developing a or transitioning to a dual missioned company. But although it may be the easiest approach thus far does not mean it is unparalleled. Research does not confirm that one strategy is superior to the others; each has benefits that lend themselves to different organizations, based on current legal status, available resources, and overall goal of the hybrid transformation. TOMs, The Hot

Bread Kitchen, and Global Giving all operate according to different hybrid approaches, but all of which conform to current business models and legality.

Despite the obvious benefits of all the options listed above, the only current available approach is acting within current laws. None of the legislations explored have been enacted due to the powerful concerns of critics. For example, although hybrid businesses can utilize strategies and methods of both nonprofit organizations and for-profit corporations, they can still only legally identify as one of the recognized models unless they wish to incorporate a subsidiary (Battilana). Hybrids can still reap benefits from employing both models, but will have to rely more dominantly on either a nonprofit or for-profit status. Organizations that are predominantly socially oriented would benefit most from legally identifying as a non-profit to receive tax exemptions. Hybrids can also still make a profit as a legal non-profit as long as all revenue is used for developing and executing the agenda, or if they create “two separate legal entities” that comprise one organization, like the Mozilla Foundation subsidiary mentioned above (Battilana).

Further drawbacks of hybridization are noted by James R. Hines, Jill R. Horwitz, and Austin Nichols of the Michigan Law Review, who critique the idea of hybrid organizations because they believe that hybridization is not necessary for improving the charitable sector. Technically, nonprofits can obtain a revenue of sorts, a fact that Hines, Horwitz, and Nichols use to justify the complete dismissal of the hybrid business. Money accumulated in nonprofit organizations are used for “related charitable purposes or new charitable enterprises” (1207). And, while this sounds like the nonprofits are retaining money, they actually wield little control over the funds. For example, this money cannot be used to increase the organization’s competitiveness or fundraising activities because that reflects the profit maximization strategy used in the for-profit business model. Thus, if profit is made, it must be spent according to regulations in order for revenue to equal expenditure, keeping finances strictly within the charitable realm. This epitomizes the

lack of influence and inefficient state of current nonprofit operations.

Additionally, critics worry that the introduction of profit and competition in the nonprofit realm will lead to mission drift, usually from “focusing on profits to the detriment of the social good, but sometimes vice versa” (Nobel). Hybrids can become so consumed with generating profit and maximizing revenue that they can stray from their original mission. Conversely, hybrids can devote too much energy to their mission that the corporate entity can be neglected and they will no longer turn a profit. Both will result in the inability to achieve a smooth functionality. Carmen Nobel, senior editor of the Harvard Business School’s “Working Knowledge” platform and Associate Professor of Business Administration suggests that the best way to avoid mission drift is for managers to hire people “with essentially no work experience at all”, because “they [are] not hampered by their preexisting work logics” (Nobel). This hiring process would create a nurturing environment for innovation and growth, without being limited by the socialization of employees in either a nonprofit or for-profit enterprise.

Kate Cooney of the International Journal of Voluntary and Nonprofit Organizations also prescribes a preventative legal measure to prevent any potential mission drift. Cooney suggests that in a subsidiary or dual legality technique, a successful hybrid business approach is “multi-divisional but largely unintegrated”, with the two entities working together but with responsibilities clearly separated (Cooney 153). This results in each sector working towards clear, measurable goals that build foundational support for the overall company’s itinerary. The business-oriented bracket will be chiefly concerned with funding while the socially-oriented bracket will be responsible for philanthropy, providing free-flowing functionality for the accomplishment of the agenda but enough structure to keep each group’s mission from deviating. And, although this preventative technique works best for organizations with two separate entities, it can be utilized in any hybrid approach. By keeping responsibilities and goals divided and

distributed among focus groups and boards of directors, activities will be straightforward and productive.

Apprehension towards the hybrid business model is also rooted in the belief that one of the universal goals of nonprofits is to fight the dominant capitalist economy that permeates all other facets of the global economic realm. Critics of the hybrid model posit that nonprofits defy the realist belief that humans are motivated by self interest, hence they must act outside of the capitalist domain. If philanthropic organizations operated in the same sphere as profit-oriented businesses, critics suggest that this would underscore the essence of social-mission-gearred organizations and would support the idea that altruistic work would not be executed without incentive. But to adhere to this belief is to postulate that the current market principles do not apply to everyone and every business alike (Lampland 2). It cannot be ignored that capitalism is the dominant system in which all businesses exist, thus there is a strategy used by any business, nonprofit or for-profit, that reflects the influences of commercial culture. By being aware and conscious of the influences of capitalism, any business can make adjustments and prioritize their actions accordingly. Having the label nonprofit or for-profit does not change the presence of capitalism nor the power of consumerism.

Elaborating on this point, Jessica Jackley, co founder of the hybrid business Kiva, describes the legal status of a business as “a tax code, not a religion” to note the flexibility that is present within the boundaries of a tax code as opposed to the rigidity and strict policy that is expected (Coates). The legal status does not determine the mission of the corporation, but rather decides how funds will be generated. Nonprofits and for-profits are equally influenced by capitalism as they both operate amidst the consumerist arena, yet the labels themselves tend to carry more weight about how the public perceives the functions of various companies as opposed to the explicit actions. Jackley admits that, as of now, the legal status tends to determine the general public’s

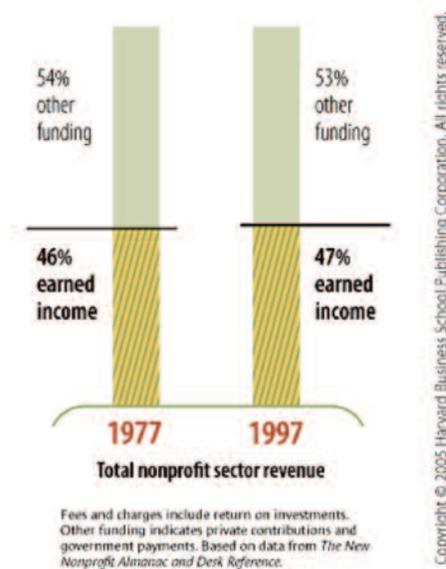
feelings towards an organization. In 2006, Kiva founders considered changing their legal status to a for-profit, so they would not longer be required to rely on a “huge melange of grants in small, unpredictable pieces”, yet a survey showed that despite no change in the overall mission of the company, “50 percent of Kiva users would not lend on the site if it adopted a for-profit model” (Coates 31). This certainly speaks to the idea that a for-profit status equates to self interest and a weakening in philanthropic mission.

This example calls for a change in the power the legal status holds in determining the motives of an organization. If legal status was seen strictly as the method of obtaining funds and not as defining the incentive or moral code of a business, these legal statuses could be used interchangeably depending on what system makes each unique company function most efficiently. With this perceptual change will come the willingness to accept a hybrid business with unconventional legal statuses or techniques as just as principled as their more orthodox counterparts.

It is important that these changes occur if the public and organizations alike are truly passionate about addressing societal issues with potential resolutions. It is an enormous change, not only in the business realm but in the lives of everyone: employees, clients, donors, shareholders, and consumers as society adjusts to embracing the exploration of relatively uncharted territory.

As illustrated by the graph below, earned revenue by nonprofits increased only 1% in the twenty years between 1977 and 1997, displaying the absence of innovation and willingness to make changes and adjustments. Other business enterprises change and adjust rapidly, and if nonprofits are granted the same flexibility and adopt these profit-maximization strategies through the hybrid business model, charitable pursuits will be more efficient and productive. There is restlessness in the nonprofit realm, as managers and executives wish to be seen as “active entrepreneurs rather than passive bureaucrats” through self-sustainability (Foster 2). Hybridization will provide the changes in

infrastructure and management protocol necessary for inspiration and inventiveness.



If the approach is adopted slowly and cautiously, and executives, management, and boards of directors consider the future potential of making the transformation, the introduction of the hybrid business as a universally accepted model is possible. Just introducing the idea for deliberation and reflection moves the broken charitable methodology towards recovery and progress.

The process of hybridization has presented the nonprofit world with a new means of effectuating social change and bringing philanthropy to the same competitive level as profit-based businesses. Clinging to practices that are familiar and comfortable provide a sense of security and consistency to business executives and nonprofit owners alike, but as the once distinguishable entities begin to amalgamate, the understanding and application of business models must be reshaped to support, reflect, and grow with these perceptual changes. Apprehension towards initiating a new, unfamiliar approach that is unconventional in both its legality and in its execution of activities is understandable, but should not be powerful enough to prevent socially oriented organizations from entering the hybridized business realm that will result in success, resilience, and positive social change.

The Hot Bread Kitchen, TOMs, Global Giving, and other trailblazers of the hybrid movement have shown that the change is possible and the outcomes are rewarding both financially and ethically. There are limitations and risks to embracing the hybrid business model, just as there are with any of the other recognized frameworks, but the process of overcoming potential obstacles and resolving issues will serve to catalyze the maturation and development of the approach. As hybrid organizations are integrated into the business atmosphere, the name nonprofit reflecting stagnation and a hindrance to progress will no longer be necessary.

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Education

Sana Azizah Khan, The Consequences of Homelessness on the Emotional, Social and Academic Development of Adolescents

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Abstract

The U.S. Department of Justice estimates that every year 1.7 million adolescents experience homelessness (Fernandes-Alcantara, 2013). These teens, who are too young to apply for social services yet too old for foster care, end up on the streets. In exchange for food, clothing, money, and shelter, homeless youths often engage in ‘survival sex’, putting them at an increased risk for sexually transmitted diseases. Homeless youths are likely to self-medicate with alcohol and abuse substances to cope with significant mental health problems including addiction, depression, post-traumatic stress disorder, and suicidal thoughts. Not having a stable place to live takes a significant toll on their education, where the vast majority fail, drop out, or stop attending school altogether. In addition, public policy on resources concerning homelessness has failed by its move to exclusively fund programs serving chronically homeless adults. This misinformed decision poses tremendous financial and societal costs in the long-term (Ringwalt et al., 1998). Failure to come up with measures to help homeless adolescents will undoubtedly add to the growing number of homeless adults. Homelessness in unaccompanied adolescents impedes their chances of becoming independent where dependency is common in the form of dependency on controlled substances, unsafe sexual practices, mental health problems, and criminal activity (Whitbeck & Hoyt, 2000). It is hypothesized that homeless adolescents suffer socially, emotionally, and academically; ultimately affecting their chances at a normal and healthy adulthood. The following literature review on current research studies findings will attempt to validate and support this hypothesis. II

Mental Health Problems

Living on the streets, exposure to violence, and insufficient healthcare takes a psychological toll that puts homeless adolescents in greater need of mental healthcare services when compared to their counterparts who live in a more stable environment. Mental health problems in adolescents come in many forms, including depression, severe anxiety, and low self-esteem. In addition, homeless adolescents who run away from their homes have higher rates of depression, post-traumatic stress syndrome, and conduct disorder when compared to the general adolescent population (Post, 1999).

Despite the prevalence of mental health problems among the homeless youth, a very small number have access to mental health services. The rate of mental depression assessing health services is at a mere 9% according to research by the National Coalition for the Homeless. The government needs to step up its efforts to ensure that homeless adolescents receive adequate mental healthcare. The persistence of stress due to homelessness contribute to the intensification of mental health symptoms and risks (Post, 1999). Access to mental healthcare is reserved for those on Medicaid or chronically homeless adults, leaving teens to fall through the cracks.

Self-Mutilation and Suicide

Unfortunately, deliberate self-harming behavior is a common occurrence among homeless adolescents with mental health issues. These self-mutilating activities include self-tattooing, cutting, burning, stabbing, and scratching (Smith & Saradjian, 1998). Sexual and physical abuse at the hand of a parent or guardian is highest among [III](#) homeless teens. These adolescents are at an elevated risk of re-victimization while living on the streets, thus increasing the likelihood to self-medicate through self-mutilation. Other reasons homeless adolescents participate in self-harm include frustration, feelings of emptiness, tension relief, anger release, anxiety, and self-punishment. Some use self-

harm practices with a ‘therapeutic purpose’, allowing the person to use physical pain to overcome mental anguish (Zila & Kiselica, 2001).

Self-harm is a common precursor to suicide which is the leading cause of death of adolescents living on the streets. The multiple transitions of moving back and forth between shelters, group care, and the streets have a direct correlation to self-harm with suicidal ideation. Along with daily stressors of survival, constant migration allow dangerous behavior changes in homeless adolescents to go unnoticed, where they are less likely to receive any type of help or mental counseling (Whitbeck & Hoyt, 2000).

Drug and Substance Abuse

Unstable living arrangements lead homeless adolescents to engage in substance abuse to cope with the desperation and stress commonly intensified by suicidal thoughts and self-harm. Compared to the general population, homeless adolescents have a higher likelihood to use crack cocaine and marijuana. Drugs and alcohol are used to self-medicate emotional and mental instability, and is especially dangerous to unaccompanied youth as it causes impaired judgement and poor decision making (Whitbeck & Hoyt, 2000).

The distressing reality is that the number of homeless youth that seek treatment for drug addiction is very low. For a homeless adolescent, finding food and shelter takes [IV](#) precedence over drug and alcohol counseling. Without any support, homeless adolescents are unlikely to break their addictions in an environment where controlled substances are heavily prevalent (Fisher & Roget, 2009). Unfortunately, homeless adolescents are often ineligible for charity-based mental healthcare if they are abusing substances; in turn, many programs for homeless substance abusers do not treat those with a mental illness. Despite the direct correlation between mental illness and addiction, the system designed to help homeless adolescents lack the ability to treat the

mental illness or addiction problems.

Crime and Victimization

Homeless adolescents frequently resort to crime and illegal activity in order to survive. Some break into abandoned buildings in search of shelter; others attempt to generate income through drug dealing and prostitution. Impaired judgement and poor decision making are amplified by substance abuse and other effects arising from homelessness. As a result, many homeless teens have admitted to stealing, forced entry, and gang activity (Gaetz, 2004).

Despite the fact that most homeless adolescents are involved in criminal activities, they are more prone to becoming victims of crime as opposed to becoming perpetrators. Research has showed that it is more effective to view homeless adolescents as unfortunate young people who are in need of assistance even if they are seen as criminals. The cost of placing homeless adolescents who are involved in criminal activities under the criminal justice system is not only a huge burden to the American taxpayer, but is ten times more costly than getting them off the streets and into permanent housing (Gaetz, 2004).

Prostitution and Pregnancy

Homeless adolescents often turn to prostitution as means of survival. 'Survival sex' is rampant with the majority of homeless adolescents being reported to be sexually active as early as 13 years old. Research has found that over one-third of adolescents exchange sex for food, shelter, and drugs (Beech B.M et al., 2003). A majority of those involved in survival sex, or prostitution, do it for money. Of those involved in survival sex, nearly half trade sex for temporary shelter.

Pregnancy rates are alarming among homeless adolescents. When comparisons are made between homeless adolescents and adolescents living in a stable environment,

the results report that nearly 50% of homeless adolescents have had a pregnancy experience while the results for household adolescents is only 33%. Even more frustrating is the fact that homeless teens rarely have proper access to sex education and reproductive services. The profound lack of knowledge regarding safe sexual practices heavily contributes to the spread of sexually transmitted diseases (Greene & Ringwalt, 1998).

Risk of HIV

HIV prevalence is higher among homeless adolescents when compared to household adolescents, substantiating the dangers of allowing homeless youths to go without being educated on sexual health and safety education. Most HIV programs are VI centered on school-based adolescents, meaning that the majority of homeless adolescents who are not able to attend school miss out on such important programs. According to the United States Center for Disease Control, homeless adolescents make up one of the two groups that are identified as having the highest prevalence of HIV in the United States. Because homeless teens tend to avoid healthcare for fear of arrest, being taken into foster care, or returned to a legal guardian, HIV occurrence among this group may actually be as much as ten times higher than any other group of adolescents in the nation (Unger et al.,1998).

Sexual Abuse

It is estimated that approximately 17% of all homeless adolescents have at one time or another been sexually abused or exploited (Slavin, 2001). While sexual abuse is not limited to teens that are homeless, cases are not as high as those who live on the streets. As a result of being homeless, many adolescents are isolated, a factor that often leads to inappropriate relationships with adults. Situations where adults engage inappropriately with these homeless teens often result in sexual dysfunction and

disturbance. Victims of childhood sexual abuse that are later abused as a homeless adolescent often experience re-victimization; examples include rape, sexual assault, and battering. Female victims of sexual assault are more likely to be involved in criminal activities than adolescent females that were not sexually abused. They also tend to be more inclined to engage in risky sexual encounters and exhibit poor academic performance if they're still attending school. VII

Those who have undergone extreme and chronic cases of sexual assault as per behavioral and developmental research, also suffer in their mental health development (Whitbeck & Hoyt 2000). These adolescents often end up having stressful emotional problems. Doctors connect these emotional problems to psychological issues in the brain. To further compound the issue to sexual abuse among homeless teens is the fact that such adolescents have limited access to resources and insufficient access to counselors (Whitbeck & Hoyt 2000).

Physical abuse

The National Resource Center on Homelessness and Mental Illness states that homeless adolescents are often physically abused up to three times the national rate. 11.6% of these homeless adolescents under seventeen years old were found by a research study to be abused either physically or sexually (Weinreb et al., 1999). Physical abuse leads to long-term effects that can be divided into two categories; internal and external. Internal effects include depression, anxiety and posttraumatic stress disorder (PTSD) while external effects include delinquent behavior and aggression. Regardless of internal or external effects of physical abuse, all have some type of long-term effect.

It is highly recommended by mental health physicians that counseling be administered, if possible. Physical abuse affects mental health, and is further intensified by emotional instability. Physical abuse commonly manifests into substance abuse as the

victim attempts to be self-medicate their external or internal behavior. During adolescence and emerging adulthood, those who have been abused frequently exhibit VIII negative impulse control, self-destructive behavior, poor social relationships, depression, runaway tendencies, low self-esteem, anxiety, and hopelessness. All of the aforementioned destructive behavioral consequences regularly lead to self-harm, suicide attempts, mental illness, and substance abuse (Kidd & Carroll 2007).

Educational Barriers

Insufficient ways of obtaining timely credit accrual, the lack of transportation, the inability to follow strict school attendance policies, state and county residency requirements, and guardianship requirements keep many homeless adolescents away from completing their high school degree (U.S. Department of Education, 2004). Educational barriers block the process of normal interaction that is developed during adolescence. An adolescent lacking education and the chance to socialize with peers can lead to the inability to live independently in adulthood. Independence in adulthood includes the ability to support oneself financially and emotionally, and it is an important step when integrating into society. Lack of a proper education makes it extremely difficult to gain the employment needed to make one self-sufficient; homelessness among adolescents in the United States is the leading cause of unemployment. Society constantly feels the enormous weight of uneducated and unemployed homeless adolescents lacking a basic high school education.

The Department of Education estimates that there are about 930,200 American children who become homeless adolescents every year. Advocacy institutions such as the National Center on Family Homelessness and the National Coalition for the Homeless argue that the number of homeless teens is actually up to 1.35 million per IX year. Despite that number, children that are homeless are often exposed to various risks that might have adverse effects on their future. For example, there is physical and sexual

abuse, plus out of home placement. These are all risk factors when it comes to homeless adolescents, and they might lead to a lack of proper development of the young adults. A considerable amount of research that has been associated with negative psychiatric effects when they are adults has been done. Studies that seek to discover the problems that homeless adolescents face and how this affects their education has led to the increase in governmental costs linked with their growing need (Bao, et al, 2000).

Educational Disabilities

Statistically, homeless adolescents do not perform well in school; adolescents who were homeless from their childhood may have suffered a delay in speech, cognition, motor development, language and social development. The named effects might be due to lack of stimulating exercises when they were younger. These children tend to develop much more slowly than those who have access to the multitude of resources associated with financial stability. Many end up being diagnosed with learning disabilities. Homeless adolescents do not have access to many of the educational and social benefits schools offer as they are often too poor to get properly prepared for school. Those that are fortunate enough to obtain some form of schooling are always preoccupied with other things due to the many problems experienced out on the streets. Therefore, they do not have a lot of focus on learning the material and end up trailing in studies. X

Public Policy Regarding Housing

The Department of Housing and Urban Development relies on the same studies used for analyzing the causes of homeless adolescents to suffer academically to adequately cater to the needs of homeless housing and funding. As per the Notice of Funding Availability (NOFA), the process that is implemented in awarding funds is often based on those that are extremely homeless or chronically homeless. (U.S. Department of Housing and Urban Development, 2015). To be chronically homeless the Department

of Housing and Urban Development stipulates that, apart from an individual being unaccompanied for more than a year on the streets or up to about four times in three consecutive years, he/she must possess some disabling condition that might either be substance abuse or mental illness.

As much as the government wants to care for the homeless, especially those deemed chronically homeless, we must acknowledge that this endeavor is very costly. To this regard, other departments such as those concerned with domestic violence and family homelessness have experienced considerably high budget cuts. Shifting of homeless children will inevitably lead to even higher financial costs in the future. Consequently, there is a great need for significant shifts in public policy regarding homelessness within adolescents and emerging adults to avoid this danger. There are some great risks that homeless adolescents are exposed to regularly; according to the U.S. Coalition for Homelessness (Post, 1999) about 16% of families that are homeless live in shelters, and 14% utilize other types of community-based resources. Another 3% live on the cold streets, and 6% depend on the few soup kitchens available to them. [XI](#)

There are various locations in which homeless adolescents are found, but each of them comes with its own set of risks. Studies suggest that approximately 21% of those who are 17 years and below have been sexually abused compared to about 9% of those who live in low income earning families (Bucker et al., 1999).

Behavioral and Emotional Difficulties

Despite the homeless adolescents who are not physically and sexually abused, the mere fact that they are homeless in itself can be a factor that causes psychological problems. Shelters are usually overcrowded and can have psychologically destructive effects. These shelters are usually based in oppressed areas and are in deteriorated buildings. There is also increased personal stress and pressure due to the overcrowding

and chaos that these teens are often in. Sometimes this disorder leads to fighting between family members, friends, and peers.

Homeless adolescents who may or may not reside in shelters suffer a mental and psychological desolation that is linked to academic failure, unstable relationships, and loss of control. Thus, they end up having serious emotional problems such as constant fear, low self-esteem, isolation, anger, depression, and anxiety. Owing to this, it is not surprising that homeless adolescents are three times more likely than those who have homes to have behavioral and emotional problems.

A survey done on 83 families that were homeless showed that 66% of parents could notice some extreme behavioral changes in their children since the time they started being homeless. Some of the drastic changes observed were restlessness, withdrawal, destructiveness, fear, moodiness, disobedience, and constant fighting. [XII](#)

Researchers from the Better Homes Fund discovered that a fifth of homeless adolescents had far-reaching emotional problems that required professional help. Some would even be diagnosed as having clinical depression (Schweitzer, et al., 1994).

Stress Related to Constant Migration and Inadequate Housing

Homeless adolescents experience a life that is particularly stressful due to constant attempts to seek safety and avoid law enforcement. Such a life can cause enormous fear and anxiety in an adolescent who is not yet fully equipped to handle the instability of homelessness (Haber & Toro 2004). Studies show that children who were from environments that imposed extreme stress increased their risk of developing behavioral problems and correlated with lower IQ scores. A study was also conducted on parents who lacked adequate housing and how it affected the health of their children. (Obradovi , 2010). Many of these stated that it put an enormous amount of mental and emotional strain on their kids. Thus, it can be confirmed or concluded that adolescents

that suffer from insufficient housing need plenty of guidance as the emotional toll is often too much to bear.

Conclusion

Homeless adolescents experience a life that is particularly stressful due to constant migration in seeking to meet their most basic needs; clothing, food, and shelter. Safety is a constant concern as the streets, shelters, group homes, and other community based resources are both overcrowded and dangerous. Homeless teens tend to suffer physical, verbal, and sexual abuse that compounds their stress and often results in behavioral and emotional problems. These psychological issues, as well as XIII the inability to be properly prepared for school, allows homeless adolescents to suffer academically. The nature of the environments homeless teens frequent puts them at risk for assault, and with the lack of proper sexual and safety education, many contract STD's, HIV, and experience unplanned pregnancies. The resulting trauma can manifest as desperation that turns these victims into criminals; the incarceration of homeless adolescents is more costly than placing them into permanent housing. The government is to blame for its poor decisions that have resulted in unnecessary loss of revenue with actually no benefit to these affected adolescents. The emotional toll of homelessness causes feelings of lack of control, desolation, and depression. Consequently, rates of suicide and self-harm are high within homeless teens. Inadequate solutions to this issue perpetuate the cycle of homelessness, proving that the effects of being a homeless adolescent will last well past emerging adulthood. If we are to permanently resolve the problems concerning homelessness, total reform of public policy is needed to amply support the welfare of our future generation. XIV

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History/International

Daneris Santiago, Vilifying Columbus or Redefining Genocidal Intent?

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Vilifying Columbus or Redefining Genocidal Intent?

All across the United States, on the second Monday of October, there is a man who is celebrated as the “Man who discovered America”. In school we are taught that Christopher Columbus sailed the ocean blue in fourteen hundred ninety-two. We are taught that he sailed on 3 ships called *La Niña*, *La Pinta*, and *La Santa María*. We are taught that when he finally found land, he greeted the Native people and was friendly to them. When we read the history books given to children in the United States, it all starts with heroic adventure- there is no bloodshed- when Columbus Day is celebrated. (Zinn pg 7)

Christopher Columbus never set foot in the Continental United States on any of his four voyages and although he made a major discovery that would change history forever, his intentions were not as innocent as we are taught in school. There are many books written that portray Columbus as a murderous and blood thirsty man, a man with erratic views and visions who did what he did all in the name of Christianity. Some historians claim that he may be responsible although unintentionally for almost completely wiping out a group of people, but the question that should perhaps be raised is whether Columbus was a perpetrator of genocide.

I will argue that according to evidence presented by historians, Christopher Columbus would be guilty of genocide if tried for it today, based on the definition given by the United Nations. However, the more important issue is whether we should consider those, like Columbus, who are guilty of unintentional genocide, as culpable for crimes

against humanity. There is a need for historians and possibly the United Nations itself to recognize cultural and unintended genocide rather than including “intent” to commit genocide as a foundation for its definitions. Expanding the definition of genocide to include unintended genocide would require revision of the UN Convention to include cultural genocide, redefinition of what the Convention means by “intent” and possibly a broadening of their definition of genocidal intent.

In 1948, the United Nations General Assembly adopted the UN Convention on the Prevention and Punishment of the Crime of Genocide. It came into effect in 1952. While historians agree that there is no established definition for the word genocide, the United Nations’ definition in Article 2 states that genocide means any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial, or religious group, as such: a. Killing members of the group; b. Causing seriously bodily or mental harm to members of the group; c. Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part; d. Imposing measures intended to prevent births within the group; e. Forcibly transferring children of the group to another group (UN Convention). The acts that are punishable according to Article 3 are: a. Genocide; b. Conspiracy to commit genocide; c. Direct and public incitement to commit genocide; d. Attempt to commit genocide; e. Complicity in genocide. (UN Convention)

In the case of Columbus and the Natives, it was a well established people who established their authority over a group of innocent harmless people who had no idea what was going on and had never seen European people. Even without contesting the current definitions of cultural genocide or advocating for recognition of unintentional genocide, Columbus and his men could be considered guilty under Article 2B and possibly under Article 3E.

Raphael Lemkin, who coined the term genocide, would also agree that there was

some form of genocide that occurred there. What Columbus did was not only destroy a culture, but also unintentionally a group of people. Not only was there a cultural genocide in the Caribbean, there was also an unintended physical genocide. According to Lemkin, physical killing was an important component in defining genocide, but only a part of it. In his definition, he states, “By “genocide” we mean the destruction of a nation or an ethnic group. . . . Generally speaking, genocide does not necessarily mean the immediate destruction of a nation, except when accomplished by mass killings of all members of a nation. It is intended rather to signify a coordinated plan of different actions aiming at the destruction of essential foundations of the life of national groups, with the aim of annihilating the groups themselves. The objectives of such a plan would be disintegration of the political and social institutions of culture, language, national feelings, religion, and the economic existence of national groups, and the destruction of the personal security, liberty, health, dignity, and even the lives of the individuals belonging to such groups. Genocide is directed against the national group as an entity, and the actions involved are directed against individuals, not in their individual capacity, but as members of the national group.” (Jones pg 10-11).

Lemkin initially described eight dimensions of genocide and cultural was one of them. We, however, usually just pay attention to one or two of the eight dimensions as being the general definition of genocide. Those two are physical genocide and biological genocide. Technically, those two can go hand in hand because biological genocide can gradually lead to physical genocide as a group of people starts dying off. The final draft that was passed of UN Convention prohibits this, but it makes no mention of cultural genocide (Nersessian).

In the past, Lemkin placed great emphasis on human groups as culture carriers, and on the destruction of cultural symbols as genocidal (Jones pg 30). Cultural genocide extends beyond attacks upon the physical and/or biological elements of a group and

seeks to eliminate its wider institutions. This is done in variety of ways and often includes the abolition of a group's language, restrictions upon its traditional practices and ways, the destruction of religious institutions and objects, the persecution of clergy members, and attacks on academics and intellectuals (Nersessian).

The debate over cultural genocide is probably one of the oldest debates in genocide studies and law. Lemkin also says that the destruction of cultural symbols is genocide because it implies the destruction of their function and thus menaces the existence of the social group which exists by virtue of its common culture (Jones pg 30). Although cultural genocide was excluded as a whole from the final draft of the UN Convention, they did allow for one aspect to be included in the document which is Article 2(e).

While the intentional and systematic eradication of culture is protected by some of the Human Rights laws that have been passed, cultural genocide is far more sinister than that. There are times when just attacking fundamental aspects of a group's culture with the intention of destroying that group, makes the member of that group just as much victims as that aspect of their culture. Lemkin originally states that attacking these unique aspects of a culture can be recognized as genocide. Although, a group can be kept intact physically and biologically, the soul of that group is destroyed and that's cultural genocide.

Another part that remains vague is the Convention's definition of intent. Often times, when looking at genocide or a contested genocide, like that of Christopher Columbus, you kind of have to ask yourself, were there really intent to commit genocide? If there was, to what extent? The UN Convention does not really give a clear answer to that in Articles 2 and 3. The Convention's use of the word "intent" appeals to a central concept of criminal culpability (Genocidal Intent).

Even today, more than sixty years later, a lot of people ask themselves, “What is genocide?” There isn’t really a definitive answer to that today and I think that the UN Convention doesn’t even begin to scratch the surface of vast definitions that there could possibly be. To what extent is someone held culpable for genocide? The Convention excludes being told by a superior to go and destroy a group. In the case of Columbus, he technically was under the orders of the King and Queen of Spain. Yet, they are not really held responsible for what happened in the Caribbean and, later on, Central and South America. I think that definition should also be changed to include superiors being just as responsible. Lemkin originally contemplated this when urging for the creation of the Convention, but it seems not to have been added in the final draft.

The Ad Hoc Committee seems to limit intent to specific intent. Alexander Greenawalt says that they try to justify this by appealing to criminal law’s traditional distinction between “intent” and “motive”. Although the distinction can be analytically blurry, intent-even specific intent- generally signifies the basic volition required to perform a deliberate action or seek a specific result. Motive, on the other hand, concerns the personal or internal reasons that guide one’s actions, and is frequently seen as irrelevant for establishing criminal guilt (Genocidal intent).

I believe Greenawalt is right when he states that, “In defined situations, culpability for genocide should extend to those who personally lack a specific genocidal purpose, but who commit genocidal acts while understanding the destructive consequences of their actions for the survival of the relevant victim group” (Genocidal Intent). Columbus didn’t really have a specific purpose. He just saw that he could exploit the Natives for the gold that they had, and seeing that they had no knowledge of a monotheistic religion, like the Europeans did, that he could possibly force them to abandon their beliefs and accept Christianity as their new religion. I believe that this is how Columbus is guilty of genocide even though his crimes of destruction of a culture and a people were

committed unintentionally.

Columbus' original expedition was to find an easier route to India so that merchants and explorers would not have to go around the southern tip of Africa where the waters were rough. He had gone to a few countries like Portugal, France, and England to ask their monarchs for some funding, but they denied him any funding. He had even gone back to Genoa, his birthplace, to see if he could convince them, but it did not work. He was finally able to go to Spain in 1485 and ask King Ferdinand of Aragon and Queen Isabella of Castile for funding to go on this expedition. By making a few promises, Columbus was able to get the approval of the King and Queen of Spain (Bergreen pg 74). During this time, the Spanish Inquisition and the Reconquista was going on in Spain where they were pushing the Moors and Jews out or forcing them to convert. In order to have a distraction, the monarchs said yes and signed a decree that stated the following: "We send Cristobal Colon with three caravels through the ocean sea to the Indies on some business that concerns the service of God and the expansion of the Catholic faith and our benefit and unity." (Bergreen pg 75). They also agreed because Queen Isabella felt that there was nothing to lose. She also thought that Spain would gain a lot from Columbus finding an easier route to India. Treasures, trade, and land (National Geographic).

Now that Columbus had the backing of the Spanish Monarchy, he needed to find people who would sail under him. There were people who did not want to do it out of fear that they might never return. He finally got eighty seven men to go with him. They were murderers, illiterates, and petty criminals who would rather not face the gallows. Some were also soldiers with nothing to do since Spain had just gotten rid of the Moors (National Geographic). They then set sail on August 3, 1492 (Christopher Columbus). After being out at seas for so long, the sailors were starting to doubt Columbus and threatened to mutiny if they didn't find any land soon. A few of the sailors spotted

branches and leaves in the water, signs that they were near land. Finally, on October 12, 1492, they had landed in what they called San Salvador in the Bahamas and Columbus claimed it for Spain.

Columbus thought that he had reached Asia, unaware that he had discovered a completely new region. When they landed they were greeted by Natives who wore hardly anything. These Natives were the Tainos who inhabited a majority of the islands in the Caribbean and Bahamas (Bergreen pg 13). When the Natives spotted Columbus' ships, they wondered what that was. When Columbus came ashore and the Natives saw him and his men with swords and speaking a different language, they brought them gifts. Columbus would write in his log: "They...brought us parrots and balls of cotton and spears and many other things which they exchanged for the glass beads and hawks' bells. They willingly traded everything they owned... They were well built, with good bodies and handsome features... They do not bear arms, and do not know them, for I showed them a sword and they took it by the edge and cut themselves out of ignorance. They have no iron. Their spears are made out of cane... They would make fine servants... With fifty men we could subjugate them all and make them do whatever we want." (Zinn pg 1). Little did they know that this act of kindness and hospitality would lead to their exploitation and demise.

The intent was there to enslave and exploit them. The Natives were also wearing gold jewelry. This caught Columbus' attention and he figured, if they were wearing gold, then the land must be filled with gold. The Spaniards started taking Natives as slaves and forcing them to show them where they can find gold. However, seeing as they couldn't find gold to take back to Spain, he thought that maybe if he brought back some of the Natives and had them converted, the Monarchs would be satisfied. He said: "They are a people very guileless and unwarlike...but they are very modest, and not very dark, less so than the Canary Islanders. I maintain, Most Serene Princes, that if they had access to

devout religious persons knowing the language, they would all turn Christian, and so I hope in Our Lord that Your Highnesses will...convert then as you have destroyed those who would not seek to confess the Father, Son, and Holy Ghost.” (Bergreen pg 27-28).

Columbus’ ambition to find gold is where the atrocities began. The King and Queen agreed that Columbus would have ten percent of anything that he found and brought back (Zinn pg 2). This would all come into play on his second voyage when he went to Hispaniola. Columbus forced every Native who was over the age of fourteen to wear a hawk’s bell and fill it with gold in six months. Failure to do so would result in their hands being cut off so they would bleed to death. Since they really couldn’t find anything, some of the Natives fled into the mountains. They were hunted down by dogs and were ripped to pieces and killed (Zinn pg 4). Las Casas even reported: “Others, and all those that they would cutoff both hands but leave them hanging by the skin, and they would say to them: “Go, and take these letters,” which was to say, carry the news to the people who have hidden themselves in the mountains and the wilderness.” (Tink Tinker).

All of this caused the population to decline drastically. The Natives were forced to go look for gold in mines and in the rivers. They were overworked and most of the time worked to death. Some were killed just for fun, just so the Spaniards could test the sharpness of their blades (Zinn pg 6). They felt so demoralized by this system that they simply gave up. They destroyed their stores of bread so that neither them nor the Spaniards would be able to eat it (Bergreen). They started committing suicide by the masses. A third of the Natives died just from working in the mines. Las Casas writes: “Thus husbands and wives were together only once every eight or ten months and when they met they were so exhausted and depressed on both sides...they ceased to procreate. As for the newly born, they died early because their mothers, overworked and famished, had no milk to nurse them, and for this reason, while I was in Cuba, 7000 children died in three months. Some mothers even drowned their babies from sheer

desperation...In this way, husbands died in the mines, wives died at work, and children died from lack of milk...and in a short time this land that was so great, so powerful and fertile...was depopulated...My eyes have seen these acts so foreign to human nature, and now I tremble as I write..." (Zinn pg 7).

Once gold started running out, the Spaniards established the encomiendas system. This meant that the Natives were to be taken as slaves and made to work on estates for Spanish settlers. This also caused the Natives to die by the thousands rapidly. Many of the Natives rebelled and tried to fight back, but they were overpowered by the Spaniards who had more advanced weapons and could easily take them out. By 1550, there were only five hundred Natives left in Hispaniola. By 1650, they, and their descendents, were all gone (Zinn pg 5).

While these atrocities went on in the Caribbean, and then later on expanded to Central and South America, back in Spain, the question was brought up whether it was fair to wage war and enslave the Natives. These debates became known as the Valladolid Debates. At the center of these Debates were Bartolome de las Casas, a Dominican friar, and Juan Gines de Sepulveda, who was a philosopher. These debates took place in 1550 in Valladolid, Spain. De las Casas argued that it was wrong for the Spanish Conquistadors to do this, while Sepulveda argued that there was some justification for their actions. The debates ended in a draw.

Before he became a friar who started fighting for the right of the Natives, Bartolome de las Casas was born in 1474 in Seville, Spain. He had originally gone to the New World as a settler and his father and uncle had sailed with Columbus on his second voyage (De las Casas). After an assignment to get Natives and settlers to live together failed, he decided to join the Dominican order. He describes the Natives as being obedient and humble and says that they are not able to endure the labor that is forced upon them due to them being so weak and not being able to handle any diseases. He says

that they are humans too and that they are willing to convert and learn the sacraments of the Catholic faith. The Spaniards' greed and ambition to find gold is what caused the decline of the Native population and the slaughtering of so many Natives and it is unjust. He also mentions that it was unjust to enslave the women and children (De las Casas).

Juan Gines de Sepulveda was a philosopher who had never stepped foot in the New World. He argues that the Spanish had a right to rule the Natives because they were inferior and barbarians. He says: "Furthermore these Indians were otherwise so cowardly and timid that they could barely endure the presence of our soldiers, and many times thousands upon thousands of them scattered in flight like women before Spaniards so few that they did not even number one hundred. . . ." (Sepulveda). He was basically saying that because of this, they are only half men and they deserve to be ruled over. He mentions that they are already slaves to their own chiefs, so it really wouldn't make any difference if the Spanish ruled over them or not. He calls them wicked and inhuman and "Therefore, if you wish to [subdue] them . . . to a servitude a little less harsh, it will not be difficult for them to change their masters, and instead of the ones they had, who were barbarous and impious [wicked] and inhuman, to accept the Christians, cultivators of human virtues and the true faith." (Sepulveda).

Christopher Columbus, in my opinion, did indeed commit cultural genocide, as shown in the horrible acts that were committed against the Caribbean Natives. There was intent to commit cultural genocide and it was proven in an entry in a log addressed to King Ferdinand and Queen Isabella on November 11, 1492 that states: "I see and know that these people have no religion whatsoever, nor are they idolaters... Your highnesses must resolve to make them Christians. I believe that if this effort commences, in short time a multitude of people will be converted to our Holy Faith." (Conquest of the New World). I also believe that there were physical and biological genocidal acts that came out of this, even if the original intent was not genocide of the native people. Even if his

intentions weren't physical and biological, they were cultural and would end up resulting in a cultural and unintentional physical and biological genocide. Christopher Columbus was such a devout Catholic, almost a fanatic that he even believed that he was sent by God to do what he did to the Natives.

Columbus paved the way for Cortes and Pizzaro, who would later invade and do the same to the Aztecs and Incas in Mexico and South America. The Spaniards nearly wiped out a culture in Latin America. Sadly, they did so completely in the Caribbean. Nothing is really known about the Tainos before Columbus sailed over. So a culture was wiped out. The only history we have left are some words that are of Taino origin, like cacique, hamaka, hurakan, tabacu, which mean chief, hammock, hurricane, and tobacco, and place nicknames today like Boriken, Quisqueya, and Guanahani, which are present day Puerto Rico, Hispaniola, and San Salvador, Bahamas.

To conclude, Christopher Columbus would be guilty of genocide if the United Nations were to revise the Convention to include cultural genocide and redefine their concept of intent.

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Political Science/Social Justice

Christian Y. Gbewordo, Ethical Assessment of HIV/AIDS Clinical Trials in South Africa

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Abstract

Critical ethical questions are raised when pharmaceutical corporations in Western Europe and the United States develop and fund clinical research trials in countries with low socio-economic development. Scholars have researched whether basic tenets of ethics are observed, how the trials are executed, how risks and benefits are balanced for the research subjects and whether the research subjects are given access to the final vaccine when it is licensed. This research paper sought to assess the history of HIV/AIDS vaccine trials in South Africa with those guiding questions.

This paper relied heavily on different scholarly, peer-reviewed journals and authoritative reports on HIV/AIDS, HIV/AIDS clinical trials in South Africa, and evaluated them based on four ethical philosophies - Teleology, Deontology, Relativism, and Justice. Principles from these preceding ethical philosophies are keystones to the three source documents on the ethics of international research - the Nuremberg Code, Declaration of Helsinki and International Ethical Guidelines for Biomedical Research Involving Human Subjects.

This paper establishes that the pharmaceutical corporations observed and violated some of these ethical philosophies and documents. The paper recommends that there should be a mutually-agreed-upon ethical package which includes informed consent, provision for drug accessibility, and affordability for trial subjects and the host country.

Introduction

Although there are international guidelines for ethical implementation of drug trials, in developing countries further oversight is needed to avoid exploitation of their citizens. This is evident in HIV/AIDS clinical trials in a developing country like South Africa which has no robust legal framework for ethical drug trials. South Africa therefore needs added protection so its citizens suffering from HIV/AIDS are not exploited for biomedical research. Their limited socio-economic development, inadequate human rights protection, limited awareness of the significance and procedures of clinical trials, inadequate healthcare and treatment alternatives, inadequate technical infrastructure and inability to make well-informed decisions on proposed scientific research, among others are the factors that would make them vulnerable to exploitation.

Considering that the world is in the fourth decade of the Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome - HIV/AIDS - pandemic, there is an urgent need to find a cure for HIV/AIDS because currently available treatment can neither cure nor prevent it.

Given ongoing HIV/AIDS clinical trials that are being financed and conducted in South Africa, it is of utmost importance that the rights, privileges and welfare of the host countries and its citizens, the research subjects, are taken into consideration by the researchers' adherence to established and accepted global standards governing ethical conduct of clinical trials.

The rate of infection of HIV and deaths related to AIDS have snowballed exponentially within the last three decades, to the point that HIV is currently the world's leading incurable infection (Guenter, Esparza and Macklin 37). HIV/AIDS-related infections and deaths in Africa have reached crises magnitudes. Guenter et al. posit that

AIDS is the leading cause of death in Africa, which is home to two-thirds of people living with HIV or full-blown AIDS (37). UNAIDS estimates that in 2013, there were 24.7 million people living with HIV in sub-Saharan Africa - 71% of the global total - of which 25% were living in South Africa. Of the estimated 1.5 million new infections in sub-Saharan Africa, South Africa had 23%, and out of the 1.1 million AIDS-related deaths in sub-Saharan Africa, South Africa had 17% in 2013 (26-31).

These statistics are evidence of how HIV/AIDS-related infections and deaths have snowballed to crisis magnitudes in South Africa. It therefore makes good logical, and sound scientific reasoning for researchers and multinational pharmaceuticals to cultivate a natural tendency to conduct clinical trials in South Africa. This ensures that the pharmaceutical companies would have access to, and examine this unique population with high incidence and prevalence of the HIV/AIDS strain, to enable them to produce potent and appropriate vaccines for this public health problem in South Africa.

In spite of the preceding noble reasons, a group of scholars argue that there are other nefarious reasons why these giant multinational pharmaceuticals are interested in conducting HIV/AIDS clinical trials in South Africa. “The pervasive poverty, endemic diseases, and inadequate health care systems make it much easier for Western researchers to conduct their trials” (Varmus and Satcher 1005). Bayer also argues that the lack of established ethical standards and medical protocols, the willingness of the population to cooperate and participate in any medical research, and the per capita cost expended on a research subject make South Africa an ideal location for Western researchers (568). These therefore mean that the urgency to develop new vaccines to prevent HIV, to reduce the epidemic or treat AIDS combined with South Africa’s dire health situation would and have caused these Western pharmaceuticals to circumvent established medical protocols and standards used in Western Europe and the United States, and then use South Africa’s dismal social and economic environment as an alibi to

rationalize unethical methods and procedures for planning, executing and following-up on HIV/AIDS clinical trials.

Ethical Philosophies

For evaluation of the actions and inactions of the pharmaceutical firms, four ethical philosophies - teleology, deontology, relativist, and justice - will be considered. First, teleological philosophy is the ethical philosophy which considers an action morally right or acceptable provided it produces a desired result (Ferrell, Fraedrich and Ferrell 155). Teleology evaluates the moral worth of an action by its outcome and consequences. Two critical philosophies under teleology are egoism and utilitarianism. Egoism measures an action as right or acceptable if it maximizes the self-interest of the individual taking the action. Utilitarianism is predominantly concerned with one's actions resulting in the greatest good for the greatest number of people. The second ethical philosophy is deontology. Deontological ethics refers to the intentions of a particular action and not necessarily its consequences or benefits to determine if an action is ethical or not (Ferrell, et al 156). The deontological theory argues that there are certain actions that should not be undertaken, even to maximize utility or benefit a greater number of people. This philosophy also upholds individual rights as something sacred. Central to this philosophical theory is equal respect for all persons, and some of the absolute rights it has carved out are freedom of conscience, freedom of consent, freedom of privacy, and freedom of speech (156). Third is relativist perspective ethical theory. This is defined as "ethical behavior derived subjectively from the experiences of individuals and groups" (160). The relativist ethical paradigm is very subjective, mutually-agreed upon morals, which relies heavily on the morals of the person committing the action or the group an action is being committed on to determine if an action is ethical or not. Descriptive relativism is one of the theories under the relativist perspective, and this relates to observing how different cultures display different values,

norms, customs and, then derive a factual description of a culture. The fourth ethical philosophy of interest is justice. Justice involves evaluations of fairness. It is “fair treatment and due reward in accordance with ethical or legal standards” (Ferrell et al. 163). Justice borders on an individual’s perception of entitlement based on rights, privileges, responsibilities and actions.

Principles from the preceding four ethical philosophies have served as keystones to the three source documents on the ethics of international biomedical research – the Nuremberg Code, the Declaration of Helsinki, and the International Ethical Guidelines for Biomedical Research Involving Human Subjects. Although these three ethical guidelines are voluntary, with no enforcement mechanisms, they have been very critical in guiding biomedical research across the world.

The Nuremberg Code espouses respect for research subjects during clinical trials, advocating for their protection from undue harm and risks. The World Medical Association’s Declaration of Helsinki sought to reduce unethical clinical trials in indigent and poverty-stricken communities and countries by advocating that all human beings everywhere are treated with care and caution during clinical trials, and those indigent communities are not treated less human. The Council for International Organizations of Medical Sciences’ International Ethical Guidelines for Biomedical Research Involving Human Subjects also sought to resolve ethical dilemma’s regarding clinical trials led by developed countries on subjects in less-developed countries, where the host country has not formulated any ethical codes.

The Key Ethical Issues

Non-availability and Inaccessibility of Final Vaccine

Guenter et al. in their article *Ethical considerations in international HIV vaccine trials* published in the *Journal of Medical Ethics* shared the disappointment of

health professionals on the historic practices of pharmaceutical companies testing products in African countries without ensuring that the test subjects and other citizens of the host country have access to the successful products that resulted from the research (41). Thabo Mbeki, President of South Africa decided not to allow HIV-infected pregnant women to participate in HIV vaccine trials because the final vaccine will not be accessible, affordable and available to the poor citizens of South Africa, even though the current trial treatment can significantly decrease the mother-to-infant, MTI transmissions (Cohen 942).

Even though one could argue as ethical, based on teleological ethics - egoism and utilitarianism - the situation where the Western pharmaceuticals conduct clinical trials on South Africans, when the final vaccine is primarily intended for HIV/AIDS patients in high income economies in Western Europe and the United States, this is not morally sound. You may not use a group of impoverished people as guinea pigs for research to benefit another group of human beings under the pretext that the research will serve the greatest number of people, so it is worth sacrificing those participants. Such thought patterns and actions by the researchers contravene Guideline 8 of the Declaration of Helsinki which set out principles for trials involving subjects in “underdeveloped countries” obliging researchers to ensure “persons in underdeveloped communities will not ordinarily be involved in research that could be carried out reasonably well in developed communities,” and that the trials are “responsive to the health needs and the priorities of the community in which it is to be carried out” (WMA 2).

Guideline 30 of the Declaration of Helsinki states that “at the conclusion of the study, every patient entered into the study should be assured of access to the best proven prophylactic, diagnostic and therapeutic methods identified by the study” (WMA 75). Test subjects in a clinical trial are to be given the final vaccine products when it is approved and licensed. Guideline 21 on Ethical obligation of external sponsors also

asserts that researchers are “ethically obliged to ensure the availability of: health-care services that are ... a necessary ... to make a beneficial intervention or product developed as a result of the research reasonably available to the population or community concerned” (71,72). If the economic cost and technical infrastructure such as health care, laboratory and transportation make providing “best proven therapy” not feasible in South Africa, then the ‘best attainable treatment’ option should be explored and implemented. This is necessary because without adequate infrastructure to monitor patients taking these complex HIV/AIDS medical regimens, there could be a significant risk of harmful effects as a result of treatment.

The ethical philosophy of justice obligates sharing of risk and reward in such a venture. It is only fair and equitable that citizens of South Africa who have decided to subject themselves to be part of these clinical trials are also beneficiaries of the final end product, as a token of appreciation. Research subjects in a clinical trial have a moral right to fully benefit from the results of the clinical trial as soon as the final vaccine becomes available. These should be part of the preliminary discussions even before the research starts, because the subjects are partnering with the researchers in developing a vaccine.

Lack of Informed Consent

Peter Lurie and Sidney Wolfe assert that the Centers for Disease Control and the National Institutes of Health funded clinical trials of HIV/AIDS vaccine for over 17,000 pregnant women across Africa including South Africa, and most of them had limited understanding about the nature of the trial, the risks and benefits involved (853). This was confirmed a couple of years later in a study by a Stanford Professor, David Katzenstein, who researched how HIV/AIDS clinical trials are done in Southern Africa. He observed that “researchers often treat potential volunteers like patients, which means deciding what is best for them and then ‘telling them they are going to give them a

medicine” (Nowak, R 1332). Benjamin Meier in his article *International Protection of Persons Undergoing Medical Experimentation: Protecting the Right of Informed Consent* quoted Howard French’s research accounts that gave a detailed explanation of the pseudo consent procedure used with Siata Ouattara, a subject in the study:

Minutes after Ms. Ouattara was informed for the first time that she carried the virus, the pregnant woman ... still visibly shaken by the news, was quickly walked through the details of the tests.... In less than five minutes, the session was over, and Ms. Ouattara, unemployed and illiterate, had agreed to take part in the tests. Asked what had persuaded her to do so, she responded, ‘the medical care that they are promising me.’ (French)

Other research subject accounts that French shared included a patient who said, “I don’t remember exactly what they told me,” “I am not sure that I understood all of this so well.” The most poignant of the accounts was a confession by one of the patients who said “At the time they explained this to me, I asked myself the simple question of whether I had any choice. As long as there was a possibility to save my daughter, I had to try” (French).

These are clear violations of deontological ethics, and the absolute rights it bestows on each human being - right to freedom of conscience, consent and privacy. Depriving research subjects of informed consent is not only illegal, but unethical and morally wrong. The Nuremberg Code in dealing with the issue of informed consent stipulates that any human being used as a subject in a clinical trial should be thoroughly briefed on the research and the risks inherent in it, and the participation of the subject should be voluntary and consensual. Providing research subjects with informed consent forms and securing their consent is one of the ways a researcher exhibits respect for the subject’s right to individual autonomy to make decisions and choices about things that affect her, the subject’s, life. The informed consent process gives the

research subject details about the clinical trial, and encourages active participation and partnership in the vaccine development, while augmenting the rationality of the clinical trial process. Obtaining the consent of research subjects also preserves the whole clinical trial process by encouraging the researcher to evaluate the worth of the proposed clinical trial and the sufficiency, appropriateness and suitability of the steps taken to protect the research subject. Securing informed consent also secures the consent of the whole community and makes them aware of the biomedical research.

On the contrary, one could also argue on behalf of the Western pharmaceutical companies that they have not engaged in informed consent procedure because it is not a custom in South Africa. It is not part of their culture to seek consent and decisions can be made and imposed on a lower or less-privileged person by an authority figure. In which case, the pharmaceuticals are honoring the tenets of relativist ethical philosophy, although disregarding deontological ethics and the ethical philosophy of justice.

Conclusion

This paper agrees with the International Ethical Guidelines for Biomedical Research recommendation that research on human subjects must be done in accordance with three basic ethical principles - respect for persons, beneficence and justice. The ethical obligation of respect for persons involves respecting the autonomy, choices and self-determination of research subjects; that of beneficence is to maximize benefits and to minimize harms; and the ethical obligation of justice is for researchers to treat research subjects in ways that are morally right and proper, giving research subjects their due - in terms of distributive justice, equitable distribution of both the burdens and the benefits of participation in research. These would be very essential, and would have significant impact on research on new diseases like zika and ebola, which are potential global threats.

An ethical treatment package should be designed and mutually-agreed-upon by South Africa and the researchers on ‘the best proven therapy’ and the total proven protocols and complications of the vaccine should be accessible to research participants. However, if because of economic, technical complexities, and infrastructural challenges ‘the best proven therapy’ cannot be achieved then the highest attainable alternative should be provided.

These researchers also have an ethical obligation to strengthen the South African government’s capacity for ethical and scientific review and epidemiological research. Through enhanced capacity to participate in ethical debate — to analyze and articulate the ethical issues most relevant in the local context — South Africa as a country with its local communities will be better equipped to ensure that the rights and welfare of human subjects are safeguarded. The South African government could leverage the support of the Western pharmaceutical firms to take adequate measures to protect its citizens from harm and exploitation, and develop the scientific capability and infrastructure for the vaccine development program which is responsive to the health needs and priorities of South Africa.

Western pharmaceutical companies should endeavor to secure the informed consents of prospective research subjects in South Africa. This process should start with the voluntary decision to become a subject when information is conveyed, both to the community and to the individual participant, prior to trial entry and should be evidenced by the consent form. It should continue throughout the trial in terms of ensuring adequate ongoing comprehension and voluntariness.

The government of South Africa should discuss, on behalf of its citizens, the nature, type and period of the access to the final vaccines, when efficacy has been determined. In order to ensure sustainability and continued access to the vaccines and benefits of the treatment, the South African government should negotiate with the

multinational researchers and encourage them to invest and develop South Africa's healthcare infrastructure. This would resolve some of the technical, logistical and economic hurdles that make these final vaccines inaccessible for the poor South Africans suffering from HIV/AIDS. It would also reduce the ethical concerns that surround the design and execution of clinical trials in South Africa. This mutually-beneficial exchange would also win the support of scholars who believe that the reason why the giant pharmaceutical corporations are interested in South Africa is because of the pervasive poverty, endemic diseases, and inadequate health care systems making it much easier for Western researchers to conduct their trials.

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Literature and Identity

Kathryn Colombo, I Know Who I Am and Who I May Be If I Choose: An Examination of Fact, Fantasy, and Don Quixote as an Iconoclast

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I Know Who I Am and Who I May Be If I Choose: An Examination of Fact, Fantasy, and Don Quixote as an Iconoclast

In Cervantes' novel, *Don Quixote*, the titular character is both an iconoclast and a parody of religious ideals, as demonstrated by his inability to distinguish between fantasy and reality. This is represented by Quixote's ability to impose himself upon his environment, the juxtaposition of the narrator and Quixote himself, and the mockery made both of the oppressive culture during the inquisition and the legends of a more religious bygone era.

A crucial component in understanding the meaning of the text is the period of its publication, which was 1605, at the height of the Spanish Inquisition. This was a time of religious persecution spanning centuries as the government attempted to quell any sense of religious or political criticism. According to one critic, "Writers had to avoid any suggestion of dissent. For Cervantes the solution was to develop a style rich in ambiguity and a pervasive and systematic irony" (Johnson). As a result, the novel utilizes layers of parody and symbolism as a method of conveying forbidden ideas—specifically, support for a more secular and free-thinking perception of the world. This is where the distinction between fantasy and reality fades for Don Quixote. After lying awake night after night, reading the heroic tales of chivalric valor of the knights-errant from roughly one hundred years prior, Quixote begins to imitate these heroes of legend and song. He believes that perhaps he could be one. These actions are of course ridiculous and insane, and the narrator never fails to acknowledge this. However, these tales of old are not the

only ideals being mocked; it is also the world view of the era that conceived them. This centuries-old idea of God as an all-encompassing figure—i.e. the omnipresent, nothing left unseen, all things are two-dimensional type of god—had died in popular opinion long before Cervantes began his novel, yet these were the very ideals that the religious government of his time perpetuated, and the opposition of this is where the novel begins, and the language of the novel is pregnant with references to this.

A legend-in-his-own-mind, Don Quixote of La Mancha demonstrates his inability to differentiate between fantasy and reality by bestowing names and titles upon himself and those he encounters as he creates the world of his imagination. His tired and decrepit nag becomes the noble Rocinante, and a milkmaid in the area—who as far as can be seen he never encounters—becomes the fair lady Dulcinea, farmers and muleteers become other knights-errant, and wind-mills become evil giants. As the narrator describes, “Having found a name for his horse that pleased his fancy, he then desired to do as much for himself, and this required another week, and by the end of that period he had made up his mind that he was henceforth to be known as Don Quixote” (Cervantes 2229). He painstakingly conjures names to describe the characters in his life as he adventures. Names are not intrinsic to the object they describe, they are not derived from the object itself—man arbitrarily chooses names to describe and catalog the objects to which they are applied; Quixote utilizes these changes in name to change the understanding of the people and things which he describes. This behavior of crafting names to fit his surroundings is similar to that of the biblical Adam as he names all of the animals, the difference of course being the intention. For Adam, the motivation is to catalog and explain God’s creatures in the world God created—an attempt to explain things as they are; for Quixote the intention is to rename everything and change it to accommodate the world he imagines. In this renaming, he symbolically gives birth to his own identity and his own narrative outside of his life in the real. These actions however are viewed as ridiculous, outlandish, and insane. As the narrator describes, “...which gave

him the weirdest, most laughable appearance that could be imagined” (Cervantes 2232). By pointing out the absurdity of the actions Quixote performs, which are the same actions as Adam, the narrator is by extension acknowledging Adam’s absurdity as well. Just as God creates the world with flora and fauna and his children catalog these wonders, Quixote carefully crafts his reality and distributes titles accordingly.

However, changing titles is not enough to renovate one’s perception of reality—maintenance is also required. Quixote makes exceptions to the rules of the altered perception he creates, in order to keep the dream alive in the real world. One example of this occurs as Quixote attempts to find lodging on his journey. He comes across a sordid inn with prostitutes waiting at the entrance. Quixote however views this quite differently, he sees, “a castle with its four turrets and its pinnacles of gleaming silver, not to speak of the drawbridge and moat and all the other things that are commonly supposed to go with a castle” (Cervantes 2231). He imagines the castle in place of the inn, yet still decides to stay there—by visualizing this luxurious building, Quixote makes the allowance for this lesser form of lodging in order to accommodate his knightly narrative. By forcing the inn to be an appropriate enough residence for him—albeit through a facade—he is convincing himself of the reality he’s crafted. Similar to this, upon approaching the inn Quixote “sat there waiting for a dwarf to appear upon the battlements and blow his trumpet by way of announcing the arrival of a knight. The dwarf, however, was slow in coming and....Don Quixote drew up to the door” (Cervantes 2231). Here, Quixote tailors his narrative once again to allow his imagined existence to continue. He acknowledges that typically, according to his books, there would be a dwarf but he assumes that because one does not appear, that the dwarf must have been delayed. Another example of this comes from his vigil as he attempted to earn his knighthood. According to the rules of knight-errantry as Quixote understands them, one must stand vigil over his armor in a church through the night. However, Quixote does not have a church available to him. In order to pursue the fiction he weaves for himself, Quixote agrees to hold his

vigil in “the courtyard of the castle” (Cervantes 2235) and places his armor in a trough. He makes these allowances to further the development of the reality he creates for himself. In doing so, Quixote is simultaneously mimicking the actions of the knights in stories from a more religious time and expurgating the rituals of the church to fit his needs, which conflicts with the nature of divine rituals. Of course, in his mimicry, Quixote is absurd and once again by extension so are the religiously affiliated figures he emulates.

A similar method by which Quixote’s blending of fact and fiction comes in the form of conflicting narrations. Quixote often narrates his own actions aloud throughout his adventure, which is a stark contrast from what the narrator explains. In fact, as Quixote ventures out into the world, clad in armor, riding atop Rocinante, he exclaims, “No sooner had this happened than the famous knight, Don Quixote de la Mancha, forsaking his own downy bed and mounting his famous steed Rocinante, fared forth and began riding over the ancient and famous Campo de Montiel” (Cervantes 2230). The narrator however offers commentary on his actions stating, “And so he went on, stringing together absurdities, all of a kind that his books had taught him” (Cervantes 2230). The juxtaposition between the two narrations of the same event paint Quixote as a ridiculous figure, and he is ridiculous, but he still he chooses his own path.

It is crucial to note that prior to the publication of *Don Quixote*, there was the style of the chivalric romance and the picaresque—in both, the destiny of the protagonist is divinely assigned and determined by his birth and social station. As for the picaresque, one example of birth defining one’s fate occurs in *Lazarillo de Tormes*, which is often regarded as the first picaresque. Lazaro is born to a poor family, as he describes, “One night when my mother, pregnant with me, was in the mill, she was seized with her labor pains and gave birth to me there. And so I can truly say I was born in the river” (*Lazarillo* 28). Here, Lazaro recounts the details of his birth, which occurs while both of

his parents are working in a mill and his mother goes into labor outdoors in a river, without the presence of a midwife. For Lazaro his lowly birth defines his entire life—much of his motivation is the search for food, his occupation always to serve a master. Similarly, in the chivalric romance, the station, and therefore destiny, of the protagonist is always determined by his birth, for example in the Legend of King Arthur. Arthur, although raised by Merlin far from his family, was indeed born of a royal bloodline and this was demonstrated upon his famous removal of the sword from the stone therefore allowing him to claim his title. Once again, the character's entire life is determined by his birth and station. For Quixote, however, his birth is of no consequence—he determines his life all on his own, he creates the fiction that he lives, adopts the title that he admires, and does so regardless of station and family and as if to acknowledge this, at the height of rebellion, Quixote proclaims, “I know who I am...and who I may be if I choose” (Cervantes 2244). In shrugging his life as a simple land-owner and claiming the knighthood for himself, Quixote disregards the deterministic ideology of the knights he mimics and this presents a conflict with their religious affiliation. Similarly, this shirking of the necessary birth requirements for knighthood makes light of the theology from which they are derived, granting it an air of frivolousness and absurdity. To put it simply: if the Don Quixote, a madman, could do it, anyone could and this adulterates the gravity of the title, as well as its religious affiliation.

The final method by which Don Quixote demonstrates his iconoclastic nature is through the reactions of others upon understanding his inability to distinguish between fact and fiction. After his first journey into a life of adventure, Don Quixote returns home to pick up a clean shirt. Along the way, he is injured in a conflict with a Biscayan and is brought back to his home by a kindly farmer. Upon his return, his family and friends become aware of the dangers of living in Quixote's fantasy and in an attempt to cure him of his affliction, his priest, his barber, his maid, and his niece decide to burn the books which inspired him, calling the works “heretical” and “damnable”. This idea of burning

offensive works of literature is a mirror of what occurred in the world outside of the novel, as book burning and censorship was a common practice of the Spanish Inquisition, which was certainly religiously motivated. However, within the novel, this censorship proved unsuccessful as burning the books does not cure Quixote of his madness, and by extension it paints the censorship of the historical Inquisition as unsuccessful and ineffectual. Similar to this is the mockery made of the religious character, the priest. As these people sort through the books on Quixote's shelves, determined to burn them for their evils, the priest decides that some of the books should be kept, as he says, "This book, gossip, is of authority for two reasons, first because it is very good...I say let this and 'Amadis of Gaul' be remitted the penalty of fire" (Cervantes 56). Here, the priest is pardoning some of the titles because he himself enjoys the stories or considers them well-written. This is nothing if not hypocritical of him, as only moments earlier he damns the books, threatening, "I would burn with them the father who begot me if he were going about in the guise of a knight-errant" (Cervantes 54). Simultaneously, the priest finds himself both offended by Quixote's behavior and forgiving of the works that inspire it, which creates the idea that the priest is both duplicitous and ineffectual, and this implies that the nature of the religious figures outside of the novel, who participate in the same behavior, are equally deceitful and incompetent.

In parodying the priest figure and the notion of religiously motivated censorship, the narrative blends the historical and cultural issues of the time with fictional conflicts within the story. This blend of the reality outside of the novel and the fiction within mirrors Quixote's blurred perception of the world and his imagination in the narrative. Cervantes goes one step further and adds another layer of reality between the audience and the narrative by allowing the narrator to become a character. It is crucial to note that the narrator and the writer are not one and the same—Cervantes is no more the narrator than he is Don Quixote, even though the story-arch for the narrator is writing the history

of Don Quixote. In fact, the narrator denies his authorship of the history and instead claims to have found Don Quixote's story in a market place, in a book written in Arabic by someone named Cid Hamete Benengeli, and goes on to say that he needed the book translated. As he describes the instance, "The Moor and I then betook ourselves to the cathedral cloister, where I requested him to translate for me into the Castilian tongue all of the books that had to do with Don Quixote, adding nothing and subtracting nothing... he translated the whole of the work just as you will find it set down here" (Cervantes 2255). This nameless narrator claims only to be an editor and collector of Quixote's history, rather than the creator, yet it is understood that the narrator does not exist outside of the novel. As a result of this, the narrator, being a character in his own right, has intentions of his own, which he makes clear in the prologue: to provide a "sincere and straightforward account of the famous Don Quixote de la Mancha" (Cervantes 2225). The narrator, however, demonstrates his iconoclastic nature in what he records and omits. The entirety of the prologue is—much in the style of the rest of the narrative—the tale of writing the prologue. In this tale the narrator discusses how difficult he finds it to write an appropriate prologue, and describes seeking council in a dear friend, who suggests that he simply fill the prologue with verses from Holy Scripture. The narrator however does not take this advice, and rather describes the story of receiving this advice; the narrator comments upon this, stating, "I have no desire to enlarge upon the service I am rendering you in bringing you the story of so notable and honored a gentleman" (Cervantes 2225). In omitting the verses suggested to him, the narrator implies that they do not belong in the novel and in dismissing them as mere ornaments or decoration to Quixote's story, rather than necessities, the narrator implies that these religious works are frivolous and hold no value in regards to the work which creates a natural opposition to the religious ideals which the scriptures present.

Through many layers of parody and funhouse mirrors, in Cervantes' novel *Don Quixote* one unifying element rings clear: Quixote both a parodies religious figures and

opposes religious ideals as demonstrated by his inability to distinguish between fantasy and reality. This is represented by Quixote's ability to impose himself upon his environment, the juxtaposition of the narrator and Quixote himself, and the mockery made both of the oppressive culture during the inquisition and the legends of a more religious bygone era. Ultimately, Quixote's behavior and the reactions that others have to this behavior demonstrates that the Christian morality which is so heavily parodied throughout the novel is unrealistic and incompatible with the world outside of the adventurous life of a knight-errant.

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Allied Health and Biomedical

Shannon Sander, Effects of Exercise on the Brain

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Effects of Exercise on the Brain

Abstract

Neuroplasticity is widely accepted as the brain's ability to adapt and change through the creation and reinforcement of neuropathways. It is widely accepted that aerobic activity will increase neuroplasticity. However, many students and professors do not consider aerobic exercise to be a study aid. Previous research shows a link between aerobic exercise and memory retention in school aged children and the elderly population. However, there is a lack of research on the impacts of cardiovascular activity for college age students and the impacts it has for learning.

Introduction

Flashcards, notes, computer Apps, and videos are common study aids for college students. Exercise is not considered a study aid; in fact, students often blame time restraints from school and work demands as reasons for not exercising. It is also one of the few ways to enhance short and long term memory. Research over the last decade has shown that there is a correlation between cardiovascular activity and neuroplasticity, wherein at least 30 minutes of light cardiovascular activity has demonstrated short and long term memory enhancement in people. According to Hötting and Röder (2013) neuroplasticity defined as how, “the human brain adapts to changing demands by altering its functional and structural properties,” (p. 2243). Promising research on rats has linked the increase in neuroplasticity to the brain-derived neurotrophic factor (BDNF) and the only factor that impacted neuroplasticity was cardiovascular exercise on a running wheel. Human studies have shown that 20 minutes of exercise have a positive impact on memory at a macro-neural level, increases creativity, and assists in combatting the effects of aging on the brain. College students who wish to be effective and efficient should incorporate cardiovascular activity into their study program. Regular participation in cardiovascular activity will increase the neuroplasticity of the brain and lead to higher grade point averages in students.

Literature Review

Brain Metabolism

It is vital to understand brain metabolism and how exercise impacts brain metabolism to increase neuroplasticity. The human body synthesizes and utilizes adenosine triphosphate (ATP) as the cellular energy carrier within the human body, including the brain (Kenny, Wilmore, & Costill, 2012, p. 53). Glucose, glycogen, and free fatty acids are the substrates for the metabolism of ATP. It is synthesized by three

systems: ATP-PCr, glycolysis, and oxidative phosphorylation. The ATP-PCr system phosphocreatine donates one phosphate group to adenosine diphosphate to synthesize ATP. The glycolysis system consists of anaerobic, without oxygen, and aerobic, with oxygen, breakdown of carbohydrates to synthesize ATP. The oxidative phosphorylation system is the breakdown of fat into free fatty acids to synthesize ATP (Kenny, Wilmore, & Costill, 2012, p.55-58). The brain requires ATP to be synthesized for brain process, including neurogenesis and neuroplasticity.

The brain prefers to use glucose and lactate for synthesizing ATP. Felipe Barros and Joachim Deitmer (2009) research states that the brain cannot directly use glycogen, specifically astrocytic glycogen, because the brain has a lack of glucose-6-phosphatase, which does not allow the glycogen in the brain to be converted to glucose for use in metabolism of ATP (p. 150). Astrocytes are the primary location of glycogen in the adult brain. They are also the location of the cellular enzymes needed to metabolize astrocytic glycogen into lactate (Brown & Ransom, 2007, p. 1263-1264). This is why astrocytic glycogen has the potential to be, “the largest energy pool in the brain,” (Barros & Deitmer, 2009, p. 150). Not accessing that pool of energy would put the human brain at a major disadvantage for energy use and memory retention. This is why the brain created a system that works around the inability to metabolize astrocytic glycogen into glucose. Instead of directly becoming glucose and then ATP, the astrocytic glycogen is converted to lactate and then transferred to and metabolized by the neurons through a theorized system known as the lactate shuttle model (Barros & Deitmer, 2009, p. 150). The lactate shuttle model turns the waste product, lactate, into an energy source for the brain.

Lactate is a byproduct of anaerobic metabolism. It is the result of pyruvate binding to two hydrogen ions (Kenney, Wilmore & Costill, 2012, p. 132). Lactate can metabolize into ATP, carbon dioxide, and water through the Krebs cycle within the neurons (Kenny, Wilmore, & Costill, 2012, p. 58). The metabolism of lactate through the

Krebs cycle would allow the brain access to the large energy pool within the astrocyte and thus increase brain activity. In order for the Krebs cycle to occur an uptake in oxygen consumption is needed, as it is an aerobic metabolism. The study by Saab, Tzvetanova, and Nave (2013) supports the lactate shuttle theory and believes that it “is also important to memory formation,” (p. 1067). Thus providing a correlation between lactate metabolism and neuroplasticity. The metabolism of lactate requires oxygen. Therefore the body must increase the amount of oxygen available for the brain in order to meet the energy demands of neurogenesis and neuroplasticity. According to research by Kirsten Hötting and Brigitte Röder (2013), aerobic exercise causes changes in blood flow and vascularization that then increase the oxygen supplied to the brain (p. 2249). This increase in oxygen to the brain caused by aerobic exercise will allow for the brain to metabolize lactate into usable ATP for neurogenesis, neuroplasticity, and other brain activity.

Brain Structures

The hippocampus, the myelin sheath that surrounds the neurons, and the grey and white matter are the main structures in the brain involved in neurogenesis and neuroplasticity. According to neuroscientist Sandrine Thuret (2015), the hippocampus is one of the few structures in the adult brain where neurogenesis occurs, which is the generation of new neurons (01:14). She estimates that adults generate 700 neurons each day (Thuret, 2015, 01:14). The generation of new neurons by the hippocampus requires a large amount of energy to be metabolized. The hippocampus and the neurons are very important to learning and memory (Thuret, 2015, 02:54). Thus, it is important to optimize the generation of new neurons by providing the brain with the proper amount of oxygen to metabolism the lactate received from the lactate shuttle.

The myelin sheath surrounds and insulates neurons. According to a Aiman Saab, Iva Tzvetanova, and Klaus-Armin Nave (2013), “myelination has enabled the execution of

fast and complex neural functions, (p. 1065). This includes metabolism within the brain. The theorized lactate shuttle model coincides with the acceptance that, “the main site of ATP synthesis is the neuron,” (Barros & Deitmer, 2009, p. 151). ATP is synthesized within the cellular organelle mitochondria and neurons are contained in a protective myelin sheath. According to the study by Saab, Tzvetanova, and Nave (2013), “the highest energy requirements occur along the internode underneath the myelin sheath...the majority of axonal mitochondria are located here,” (p. 1066). This supports the acceptance of neurons being the primary location for ATP synthesis within the brain, as the neurons are also the area that utilizes the majority of the ATP within the brain. The myelin sheath enables the fast signaling for oxygen when lactate is present, and the diffusion of oxygen past the blood-brain barrier to the neurons. Once neurons have the necessary energy they are able to change the brain and make new connections and adaptations, which is known as neuroplasticity.

The grey matter and white matter, within the brain, are both effected by neuroplasticity. It is believed that the grey matter is where the brain process thought (Zhang, 2013). The vision-motor skill study by Joenna Dreimeyer, Janina Boyke, Christian Gaser, Christian Büchel, and Arne May (2008) found that with repeated juggling, a task the participants did not know how to complete prior to the study, the visual cortex grey matter did increase after repeated activity. Thus, grey matter can change and is subject to neuroplasticity. White matter is believed to be the area of the brain that transmits thoughts, due to all of the myelin that cover the axons within the white matter (Zhang, 2013). Researcher Arne May (2011) found that learning will increase the amount of white matter in the human brain (p. 475). Neuroplasticity is possible for both grey and white matter, through the connection of new neurons in these regions and availability of ATP for cell growth.

BDNF Processing

The brain-derived neurotrophic factor is the portion of DNA that signals building within the brain. There are two types of BDNF found in the brain, proBDNF and its mature counterpart mBDNF. An experiment on rats conducted by Qinxue Ding, Zhe Ying, and Fernando Gómez-Pinilla (2011) at UCLA revealed that, “7 days of voluntary exercise increased both pro and mature BDNF in the rat hippocampus,” (p. 773). This was a controlled laboratory study that consisted of four groups. The groups consisted of the following: “Twenty-eight adult male Sprague-Dawley rats...were randomly assigned into four groups...sedentary control (SC), exercise/vehicle control (EC), sedentary/tPA-STOP (ST, and exercise/tPA-STOP (ET),” (Ding et al., 2011, p. 774). This allowed the researchers to simultaneously study the effects of exercise on BDNF processing and the effects of tissue-type plasminogen activator (tPA) on BDNF processing.

While proBDNF will mature into mBDNF through enzyme activity, its purpose is the opposite of mBDNF. ProBDNF serves to stop and/or decrease both neuroplasticity and the number of synapses (Ding et al., 2011, p. 778). Rather than improving memory, proBDNF hinders memory. An increase in mBDNF cannot occur unless there is proBDNF present. The mBDNF will improve memory and neuroplasticity. The researchers found, “a positive correlation was observed between mature BDNF and running distance,” (Ding et al., 2011, p. 776). This shows that in rats exercise does improve neuroplasticity by increasing the amount of mBDNF available, however, this is not the case for the rats that exercised and were given tPA-STOP. The ET group of rats reveal that blocking tPA caused proBDNF to not mature into mBDNF and thus there no neuroplasticity occurred and the positive effects of exercise were overridden by the abundance of proBDNF (Ding et al., 2011, p. 778). Exercise is a powerful way to increase mBDNF, but it cannot overcome an overabundance of tPA-STOP.

Oxygen Utilization

The consumption and utilization of oxygen plays a significant role in brain metabolism. This is due to oxygen being a required component in metabolizing lactate into ATP. In a 2012 study by Kirsten Hötting and Brigitte Röder (2013) on middle-aged adults had their oxygen consumption and utilization (VO₂max) and episodic memory measured (p. 2246). Episodic memory is the ability to remember and recall autobiographical events (Hötting & Röder, 2013, p. 2246). Her findings align with oxygen's role in brain metabolism and thus an increase in oxygen consumption and utilization lead to an increase in episodic memory. She found that the groups whom cycled or participated in a stretching and/or coordination program increased their VO₂max and demonstrated an improvement in memory (Hötting & Röder, 2013, p. 2246). This correlates with the findings in a separate 2012 study by Holzsneider. In this study participants that underwent cardiovascular training and spatial cognitive training also saw an improvement of their VO₂max and cognitive memory, unlike the sedentary participants whom saw no change (Hötting & Röder, 2013, p. 2251). These findings support the hypothesis that an increase in neuroplasticity is largely due to the availability and utilization of oxygen.

There is another hypothesis as to why VO₂max is beneficial to overall memory. This hypothesis states that, "aerobic exercise might induce beneficial effects on brain functions by changes in blood flow and vascularization which would lead to an overall better oxygen and nutrition supply," (Hötting & Röder, 2013, p. 2249). Cardiovascular activity increases blood flow, which carries oxygen and nutrients to the brain. Thus, an increase in the number of blood vessels, known as vascularization, within the brain would be generated when chronic aerobic exercise occurs to handle the amount of blood flow to the brain. This then has the possibility to allow for an increase in neuroplasticity due to the availability of oxygen to diffuse from the blood to the brain for use in lactate metabolism.

MRI Visible Changes

An increase in neuroplasticity is visibly seen in magnetic resonance imaging (MRI). The Holzsneider study included MRIs that found a visible increase in the prefrontal and parietal areas of the brain and a decrease in the anterior cingulate cortex, which is made up of grey and white matter, in those who participated in cardiovascular exercise (Hötting & Röder, 2013, p. 2250). This demonstrates neuroplasticity of the grey and white matter in the task related area of the brain, and thus an increase in cognition and memory. Furthermore, the reduction in the anterior cingulate cortex activity “was interpreted as better conflict monitoring and thus, enhanced executive functions in the aerobic group after the training,” (Hötting & Röder, 2013, p. 2250). This means that a reduction in the anterior cingulate cortex activity is a positive effect of aerobic exercise on cognition and memory, and thus anterior cingulate cortex activity is an inhibitor of cognition. A study by Ruscheweyh et al. also found, “changes in the self-reported overall level of the participants’ physical activity correlated positively with both improvements in episodic memory and with changes in the gray matter volume of the prefrontal and cingulate cortex,” (Hötting & Röder, 2013, p. 2247). Revealing that changes in neuroplasticity were not only visible in MRI changes in grey and white matter within regions of the brain, but also demonstrated by a positive increase in cognitive and memory functions.

In correlation to Holzsneider’s study, Lin Li et al also found that aerobic activity decreases the inhibition of cognition and memory by brain processes. Lin Li et al performed another aerobic exercise study that includes MRIs in 2014. This study, with only female participants, showed, “increased brain activation in the right middle prefrontal gyrus, the right lingual gyrus, and the left fusiform gyrus as well as deactivations in the anterior cingulate cortexes, the left inferior frontal gyrus, and the right paracentral lobule,” (Li et al., 2014). This study focused only on changes during

acute bouts of exercise and not the effects of chronic exercise on neuroplasticity, unlike the previous study that consisted of a six-month change in neuroplasticity. Proving the hypothesis that even acute exercise will begin to change neuroplasticity in previously sedentary individuals.

Observed Cognition, Memory, and Emotional Changes

Magnetic resonance imaging (MRI) visibly shows changes in neuroplasticity, other studies demonstrate neuroplasticity through cognition, memory, and emotional testing in subjects whom undergo aerobic fitness changes. A 2013 study by Candice L. Hogan, Jutta Mata, and Laura L. Carstensen revealed that, “exercise is associated with increased levels of high-arousal positive affect (HAP) and decreased levels of low-arousal positive affect (LAP) relative to control condition,” (p. 587). Both HAP and LAP are scaled based on the participants’ emotional state and they can reflect cognition. The test consisted of asking participants about words associated with emotion that are applied to the HAP and LAP scales (Hogan, Mata, & Carstensen, 2013, p. 590). Thus this study demonstrated that exercise has a positive impact on emotional state, which in turn can have a positive impact on cognition and memory. This may be due to a better emotional state reducing stress and its effects, including inhibition to cognition.

A long-term study by Larson et al. (2006) compared two groups of aging adults whom were either active or sedentary over the course of 6.2 years through a series of self-reporting surveys. This study found that exercising at least three times per week decreased the risk of dementia by over one third (p. 73). Larson et al. did not ask participants the duration of each exercise period. He only asked how many exercise periods occurred throughout each week. This study demonstrates that exercise can possibly assist in the reduction of dementia.

Exercise Applied to Classroom Learning

Most application models focus on either elementary age students or aging adults, as is the case in the Larson et al. study. Physical Active School Systems (PASS) is focused on application of exercise in schools as it applies to cognitive function. They believe that the minimum amount of physical activity should be, “150 minutes per week for elementary students and 225 minutes per week for middle and high school students,” (Ciotto & Fede, 2014, p. 17). This minimum amount is a baseline that needs to be met in order to improve the cognition of students. However, it is not the sole responsibility of the physical education teacher. This is because Ciotto and Fede (2014) have found that, “sitting for extended periods of time (20+ minutes) affects neurological development, interferes with students’ health, and slows learning,” (p. 16). It is imperative that children are able to engage in physical activity throughout the day and not just during recess and P.E. class. When the findings of the Larson et al. study are combined with the findings of Ciotto and Fede they show that aerobic exercise benefits people across their lifespan. This is why it is vitally important for individuals of all ages, especially college students, to engage in some type of aerobic activity and for schools to be proactive about providing an opportunity for physical activity during the school day.

Conclusion and Future Research

College students are typically short on time. Aerobic activity is one area that they need to schedule time for each day. Research shows that it will improve their ability to remember the information they are learning. The two studies presented further show the importance of aerobic activity to the brain. Aerobic activity is quite possibly the one study aid that all college students need to utilize. It will benefit them as they age and make them more efficient students, with possibly less stress.

Future research should include data comparisons for college campuses during

periods in which physical education classes were required and when physical education classes were not required. This will give a statistical analysis of the benefits of physical fitness on G.P.A. for college students. Self-reporting surveys are another means of gathering data on the college aged population in regards to G.P.A. and the amount cardiovascular activities that the participants regularly participate in. The field of exercise neuroscience also warrants further research. Scientists are only beginning to really understand the relationship between the body and the brain. The effects of aerobic activity on the brain and the body could have implications in the fields of epigenetics, psychiatry, and gerontology. The brain is an amazing computer that the world is only beginning to understand.

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Literary Revisions

Egnatia Vaso, The Uniqueness of Marvell as a Neo-Catullan Poet

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The Uniqueness of Marvell as a Neo-Catullan Poet

The focus on the theme of love and the erotic is a pillar of the literary culture in the 17th century, which Renaissance poets inherited from Classical literature. Their profound admiration for the renowned ancient writers highly influenced them and became source of great inspiration. More specifically, the interaction and emotional relationships between women and men and the courtship that is a fundamental component and aspect of these relationships have always been a fascinating topic that inspired lovers and writers in the Renaissance, forging a direct link between ancient Rome and the 17th century. Another recurring and enduring theme that closely associates these two traditions is the theme of time. Time is like an enemy running inexorably against us as a foe that we can never defeat; it is a reality that humans have to face and that leads to the harsh acknowledgment that soon enough all the sand in our hourglass will have escaped, and we will inevitably have to confront the unknown of death. These two themes are present and connected, even though in different ways and perspectives, in the poem “To His Coy Mistress” by Andrew Marvell and the “Carmen V” by Catullus. In these two poems the authors recognize, albeit using different tones, the fleetingness of human existence and how the celebration of lust and the passion of love, far from irrelevant social conventions, are the apotheosis of life on earth and the only deed that can overcome the emptiness and unknown of death.

The thematic similarities of these poems should not be surprising to us, but should serve as a reminder of the debt that Marvell and other 17th century poets owed to the classical tradition. Marvell wasn't in fact the only one who used Catullus as a

model. The emblematic Roman poet, distinguished by his characteristic witty verses and scandalous sexual references, was long studied, interpreted and font of inspiration for many poets. The Catullan legacy is evident in the poems of English Renaissance poet Ben Jonson; according to Bruce Boehrer the revision and adaptation of Catullan themes enters Jonson in a circle of authors that long analyzed, studied, perceived and that found motivation by the Roman poet (64-65). Boehrer describes this “Neo-Catullan” impulse as an adaptive process:

[A neo-Catullan] poem can itself put considerably interpretative pressure upon the precursor-materials from which it is drawn; it becomes, in effect, a literary historical exercise that reconstructs the past in terms of the present. ... [Neo-Catullan poets] all respond to and celebrate Catullus, but it is also clear that they are all, in a sense, responding to and celebrating a different poet. (65)

Thus 17th centuries poets made use of the classical tradition by merging it with their beliefs and purposes, and making every interpretation sui generis. One might say that Marvell clearly learned from Catullus how the stakes of seduction could be heightened by juxtaposing them with both morality and mortality. Despite the fact that Marvell is not adapting a specific poem of Catullus, the astonishing congruency of the themes shown in Marvell’s “To His Coy Mistress” and “Carmen V,” allow us to call him a “neo-Catullan poet.”

“To His Coy Mistress” is directed to a young girl who is reluctant to have sexual intercourse with her suitor. The speaker is trying to convince her of the fact that if the amount of time in their lives were not limited, he would spend centuries and more to court such a noble lady in the best of ways. Unfortunately no human has that privilege, and it would be foolish to spend time in pointless courtship, limiting the joy and pleasure that both would experience in sexual relationships. They should in fact put time at its best use and “tear our pleasures with rough strife” (Marvell 43). The theme of

time as inexorable force, leaving humans powerless to its effects, with only the solution of using every single moment to its fullest potential, is a Classical theme known as “carpe diem.” While no critic has yet studied Marvell’s use of Catullus specifically, many critics have commented upon the poem’s use of the precepts of Latin and Greek rhetoric. According to Elizabeth Story Donno, Marvell uses the hedonistic interpretation of the carpe diem theme to “[blend] together a blazon, reduced to a bare arithmetical recital of the lady’s beauties, with echoes of a Greek epigram in proffering his invitation, which is stated in terms of a direct inversion of the equally ancient theme tempus edax” (Donno 13). It is crucial to highlight that many critics have noted the syllogism that distinguished Marvell’s “To His Coy Mistress” has been proven to be wrong. Barry Targan calls it “a formal fallacy”, stating that the syllogism doesn’t work and that Marvell has committed a formal error (465). In a more sophisticated approach, B. J. Sokol states that Marvell’s poem “has long been recognized as fitting a logical pattern, often incorrectly identified as that of a syllogism,” when in reality the poem “closely imitates the form of a logical argument by the rule of inference known as ‘indirect proof’ or reduction ad absurdum”(246). What is clear to both Targan and Sokol is that Marvell, educated at seventeenth century Cambridge, would have surely been aware of a possible logical fallacy. As a matter of fact Sokol adds “‘To his Coy Mistress’ certainly profits from its use of logic, for only logic allows there to be fallacy. By falsely proving that ‘love must be expressed by instant lust’ Marvell opens to question, more intelligently and maturely than any carpe diem poet, the nature of seduction” (252). It becomes clear that reducing this poem to a carpe diem treatise intended to seduce a lady would mean to interpret a complex and artfully created poem in a too superficial and simplistic manner.

In “Carmen V”, which is far more concise than the other poem, the speaker Catullus incites his lover Lesbia to ignore the comments of other people about their relationship and just love each other until time forces them to part. Marvell’s poem is not

necessarily addressing a specific girl. Jules Brody, in fact, points out that:

The poem qua argument is addressed by a literary lover to a literary lady, in a verbal and conceptual environment that bristles with literary devices and allusions; more pointedly still, the poem qua argument presupposes interception by a reader whose job it is to situate Marvell's words within their real operational context: the various traditions and genres with which the poem as love lyric is historically and intertextually connected. As verbal chain and literary composition, "To His Coy Mistress" presupposes at the other hand not a Lady ... but a reader who is assumed to be at least familiar with major anthology pieces of Catullus, Horace and Ovid... (Brody 64)

The speaker's main purpose is to convince the fictional character of the lady to simply abandon herself to the carnal pleasure of love, instead of protecting a virginity that once dead will be useless and which "worms shall try" (Marvell, 36). After a thorough analysis, Brody describes the novelty of Marvell's approach:

At its conclusion Marvell's "To His Coy Mistress must be read as a poem of rejection and rebirth, as the parodic deconstruction of a cluster of inherited literary forms –the lover's complaint, the blazon, the carpe diem exercise– which it purports to rehearse and belabor only the better to transcend their limits and limitations. By universal agreement, critics see in this one feature the basis for the poem's generic uniqueness: a radically new, outspoken, and vigorous evocation of sexual intimacy. Marvell's repudiation of the tired, poetically defunct practices of his predecessors finds its epitomic expression in that final wild drive through "the iron gates of life," through the double barrier of conventional mortality and literary convention, and issues in a worldly celebration of lust. (Brody 74)

Brody's refined analysis and consideration of Marvell's poem as a detachment from the tradition of love poetry is very sharp, but considering the poem as unique in its kind and message is probably an overstatement. Unlike Marvell, Catullus is talking to a specific woman, Lesbia, whose real name was Clodia, and with whom Catullus had fallen in love. In this poem Catullus incites her to live ("vivamus") and love ("amemus") each other, and indulge physical expressions of their love ("Dà mi bàsia mille, dèinde cèntum,/dèin mille àltera, dèin secùnda cèntum,/ dèinde usque àltera mille, dèinde centum) before they have to sleep an eternal night (1). However, Catullus' erotic and explicit theme, celebrated as apotheosis of human life, can directly be related to Marvell. The celebration of life through carnal pleasures, not to be mistaken for a frivolous carpe diem mindset purely driven by the feather of death, is very unique and characteristic of these two authors.

Each one of these poems describes death as a dark entity brought by time, with no real conception of after-death. In Marvell's poem time is rendered poetically as riding a "wingèd chariot hurrying near" (22) and death as "Deserts of vast eternity" (24). Catullus refers to death as "nox est perpetua una dormienda" (6) an eternal night that they will have to sleep. In each poem this grievous view of death is an acknowledgment of the fact that time passes by and can't be stopped, and our final destination is mysterious and unknown. From becoming conscious of these facts we grow more attached to life and to what it can offer us. In contrast to the vision of death, both authors draw on the greatness of love as of a triumph of life and joy that wins over and subordinates the unknown and emptiness of death. The celebration of passionate love is not a simple response to the fear of death, but it becomes the only measure that can overcome the power of death itself. The adaptation of this theme from Marvell is quite surprising; the neglect of any form of afterlife is highly subversive for his cultural context. For rhetorical purposes, instead of holding to the traditional Christian doctrine of life after death, Marvell's finds the Catullan "nox perpetua" to be more useful to the

purpose of convincing his mistress to give in to his advances and therefore the celebration of lust as power that overcomes death.

Marvell is also Neo-Catullan in his playing of sexuality against the traditional social mores of the time. In "Carmen V," for instance, one very meaningful theme of the poem is the triumph of love over the scandals that the others, driven by the jealousy of such a marvelous love between Lesbia and Catullus, will oppose against the couple. He uses the Latin word "rumores" (Catullus 2) to describe the gossiping of envious people, and in the last lines of the poem he exhorts Lesbia to mix all their kisses together in a jubilation of love so that no one will know this ludicrous number, not being able to make a spell on them: "aut nequus malus invidere possit" (Catullus 12). This theme, even though not presented as explicitly, plays a role of equal importance in Marvell's "To His Coy Mistress." Marvell makes specific allusions to the virginity of the courted lady in these verses:

Then worms shall try
That long-preserved virginity,
And your quaint honour turn to dust,
And into ashes all my lust (Marvell 27-30)

In these lines, the speaker makes a grotesque reference to the fact that is the girl's virginity and honor that she much cares about, will not only be completely useless once she is dead, but that worms will be the first being to enter her body. It is important to highlight the use of words that Marvell knowingly makes use of in these verses. The word "quaint" used by the poet, means modest, humble, but in the vernacular of the time it also had the meaning of female external sex organ. According to Marvell, similarly as Catullus, "honor" takes its substance explicitly from the opinions of others, and when telling the lady that her virginity will be absolutely meaningless once she is dead, he is directly challenging the value of social opinion.

“To His Coy Mistress,” one of Marvell’s most famous poems, has long been analyzed, interpreted and discussed by many scholars and other poets. Reading the poem as a mere form of courtship to convince a lady to engage in sexual intercourse would be extremely simplistic. The poem’s approach to the tradition of love poems is very distinctive. The themes present in the poem create a direct connection between Marvell and the classical tradition, as is typical of English poets during Renaissance. Even though Marvell clearly finds inspiration in the classical tradition, he responds to it in a very singular way that separates and allows him to transcend the traditional conceptions of love poetry. His glorification of lust and carnal love as overcoming death as unknown and a possible exclusion from an afterlife, along with his acknowledgment and challenging of the concept of honor as a reflection of social norms, are the key points of this cleverly structured poem. The similarity of these motives is staggering when compared to Catullus’s poem “Carmen V.” The unique similarities of their bold approaches and the obvious thematic link between the two poets allow us to call Marvell a Neo-Catullan poet.

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Philosophy and Religion

Amie Fye, An Exploration of Religious Fanaticism in the Work of Salman Rushdie

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An Exploration of Religious Fanaticism in the work of Salman Rushdie

In our world today, it has become commonplace and even expected that every day when one turns on the news, gory images of mass violence, murder and despair are seen in vivid detail. Many people today live in constant fear at the reality that their city, their town, or even their home may be the next target of violence and thus another headline for others to mull over. One particular source of violence that has taken center stage in the world today comes from religious extremists and the harm that they inflict on targeted populations throughout the world. Political pundits, authors, and people from all walks of life have spoken and written extensively about religious extremist and one such author is Salman Rushdie. Rushdie, a British Indian novelist and essayist, has created an impressive body of work addressing extremism within the Muslim faith, and two such works are short stories entitled *The Prophet's Hair* and *The Duniyazát*. In both stories Rushdie explores the dangers that arise when individuals and entire nations disregard rational and critical thinking in favor of rigid and unyielding interpretations of religious texts.

In *The Prophet's Hair*, Rushdie tells the story of an avaricious moneylender named Hashim who upon discovering a vial containing the hair of the beloved Prophet Muhammad, transforms into an extremely pious man who terrorizes his family and debtors in the name of religion. Prior to discovering the hair, Hashim identified as Muslim, but adhered to few if any of the core tenants of the faith. Once he discovers the vial of hair, he immediately begins to pray the five daily prayers and force his family to do the same, and he also constructs a great fire and burns all the books in the house and

“the only volume left untouched was the Quran, which Hashim wrapped in a silken cloth and placed on a table in the hall” (Rushdie 654). Rushdie explains that Hashim then orders each member of his family to read passages from the holy book for at least 2 hours of the day, and when his wife, out of fear of the new man he had become tries to talk some sense into him, he strikes her violently. When his daughter Huma objects to his demand that she wear a veil over her face for modesty, he disowns her and gives her one week to pack her bags and leave. His violent behavior also extends to his debtors and when one of them appeals to him for more time on a loan, Rushdie explains that Hashim “tried to cut off the fellow’s right hand with one of the thirty-eight kukri knives hanging on the study walls” (Rushdie 655). Burdened by their father’s tyrannical behavior, Hashim’s children Atta and Huma solicit the aid of an expert thief to steal the hair from their father in the dead of night. Unfortunately this plan goes awry and the story ends with the death of Hashim, his two children and the expert thief, whom Rushdie appropriately names Sheikh Sin.

In this story, much of the destructions that was brought upon Hashim’s family can be attributed to his sudden religious fanaticism. In Hashim’s mind, he truly believed that he was doing the right thing and that the only way to worship, was to look at the words in the Qur’an as commands that could not be interpreted in any way other than what the actual words read. In this story, the vial of hair can be said to represent the Qur’an and how the way it is understood largely depends on the person who is reading it. Basically, this means that if one approaches the Qur’an with an impure heart, the chances are what is gained from it will be equally impure, and if one reads the Qur’an with an open heart and a rational mind, messages of peace, balance and tolerance can be found. It is clear from the descriptions of Hashim brought forth by Rushdie that he is by no means a man with a good heart or good motives. Through Rushdie’s words, we learn that before discovering the vial, Hashim’s business practices were extremely predatory and he charged his debtors, who were mostly extremely poor, “an interest rate of 71 per cent,

partly, as he told his khichri-spooning wife, ‘to teach these people the value of money’” (Rushdie 652). So, naturally, we see how his greed for the wealth of this world clouded his perception of what the vial represented and twisted his interpretations of what being a Muslim meant. It is also clear that his encounter with the vial of hair was largely tainted by his personality and the greedy motives that were his trademark. Hashim’s interpretation of the vial is not novel and can be easily identified in today’s world among individuals and groups who utilize the Qur’an as a means to achieving impure political or societal gains. These people, like Hashim, often lose sight of the core messages of harmony and balance mentioned in the Qur’an and instead obsess over finding passages to support or legitimize their impure motives. Like Hashim, they make no room for debate about what messages the Qur’an, or the vial in Hashim’s case, aims to teach and believe that there can only exist a single means of interpretation and any dissent calls for severe punishment.

In Rushdie’s other short story *The Duniyazát*, similar themes of religious fundamentalism are explored. This story is centered on a philosopher, physician and judge by the name of Ibn Rushd, who is exiled from his esteemed position as the personal physician of the Caliph because of his liberal ideas regarding the Qur’an. Ibn Rushd is banished to the small village of Lucena, a place Rushdie describes as “a village full of Jews who could no longer say they were Jews because they had been forced to convert to Islam” (Rushdie, *The New Yorker*). While in exile, he meets a 16 year old girl named Dunia who unbeknownst to him is a great princess from a jinn (supernatural beings) tribe who disguises herself as a human and is described as being on “an earthly adventure, pursuing her fascination with human men in general and brilliant ones in particular” (Rushdie, *The New Yorker*). Ibn Rushd takes Dunia in as his lover and housekeeper and together they produce hundreds of children whom Rushd refuses to give his last name in hopes that they do not inherit his philosophical mind and be persecuted in the way that he has. Throughout their affair, Rushd never discovers that

Dunia is a jinn but he does observe that she has an insatiable sexual appetite which he cannot satisfy at his old age. He learns that he can placate her by telling her secret stories centered on his beliefs in “reason, logic and science”, the very ideas that led to his exile in the first place (Rushdie, *The Duniázát*). After a few years together, Rushd receives word that the political climate in his old kingdom has shifted and his exile is over. Upon hearing this, he abandons Dunia and their many children and returns to a position of fame and power while Dunia, heartbroken returns to the spirit world. Their children, known as the Duniázát spread all across the globe with “some of them becoming manically devout while others were contemptuously disbelieving” (Rushdie, *The New Yorker*).

In this story, the opponents of Ibn Rushd are religious fundamentalist like Hashim, who banish and persecute Ibn Rushd for his fusion of reason and logic into his interpretation of Qur’anic verses and his unwillingness to submit to their rigid practices of the faith. In the very beginning of the story, the reader gets a glimpse into these ideologies as Rushdie introduces the town that Ibn Rushd is exiled to as the town were the Jews who could no longer say they were Jews lived. This description of the Jews and Ibn Rushd in exile hint at Rushdie’s own personal struggles regarding the fallout from his criticisms of religion, and upon closer inspection, the reader can draw similarities between Ibn Rushd, the converted Jews and Salman Rushdie. In 1988, Rushdie wrote a novel called the *Satanic Verses* which drew immense backlash from Muslims and death threats from extremists across the globe for the perceived blasphemy written against Islam. This novel caused mass protests from Muslims all over, many of whom believed that he was abusing his right to free speech to make libelous claims against Islam. This uproar eventually led to the decree of a fatwa (death sentence) by the supreme leader of Iran, Ayatollah Khomeini against Rushdie. With his life in immediate danger, Rushdie went into hiding for nine entire years with the protection of the police (*The New Yorker*). Based on his experience, the reader can gather that Rushdie may be representing his

own experiences through the eyes of the converted Jews and Ibn Rushd. Similar to them, he is targeted for his beliefs by people who reject pluralism in religious doctrine and practice and see him as an overt enemy.

In *The Duniázát*, one of Ibn Rushd's opponents is an ancient writer, Ghazali, who believed that there was no room for philosophical debate in religion and that believing in cause and effect was an insult to God who "could easily intervene to make causes ineffectual and alter effects if He so chose" (Rushdie, *The Duniázát*). Ghazali in essence believed that humans are in no position to think for themselves nor to make things happen, rather they are wholly and totally under the power of God and their actions have no effect except what God wills. In more ways than one, readers can draw connections between the philosophies of Hashim from *The Prophet's Hair* and the viewpoints of Ghazali. Like Ghazali, Hashim undoubtedly rejects the idea of *ijtihad*, "the independent or original interpretation of problems not precisely covered by the [Qur'an](#), [Hadith](#) (traditions concerning the Prophet's life and utterances), and *ijmā* (scholarly consensus) critical and independent thinking" (Encyclopedia Britannica). Both men disagree with many Muslims who believe that as practitioners of the faith, they are encouraged to use the mental capabilities granted to by God to look at the Qur'an holistically and employ logic and other relevant sources in order to determining what certain passages or verses mean and what lessons they are to learn. They both adopt an all or nothing approach and strongly believe that the only way to worship is to disregard all logic and simply adhere to the physical words of the holy book and their immediate and literal meanings. Ibn Rushd on the other hand like Salman Rushdie, fully embraces *ijtihad* and challenges the ideas of fundamentalists and in turn, both men are persecuted for this idea.

The significance of Rushdie's exploration of religious extremism in these two stories cannot be overlooked in today's world. The battle over the authenticity of

interpretations of religious texts across all faiths is being waged viciously and in some ways, it seems that the fundamentalist are winning. Take for instance what is presently occurring with terrorist organizations like Al Qaeda and the so called Islamic State (ISIS). These organizations, like Hashim and Ghazali have chosen to examine, or rather not examine the Qur'an beyond the physical words written on the pages. They have decided that there is only one right way to be a Muslim and that anyone who takes liberty with contemporizing the words of God, or worse anyone who does not believe in a higher power should be punished and in many cases, killed. In the name of these extreme beliefs, these organizations have branched out into the world using brutal and violent tactics to instill fear into the world and make it clear that anyone who does not adhere to their brand of faith is not deserving of life. In an article written for The Atlantic by renowned Canadian journalist Graeme Wood, ISIS is described as an organization that "rejects peace as a matter of principle", that "hungers for genocide" and whose religious perceptions make them "constitutionally incapable of certain types of change, even if that change might ensure its survival" and that ultimately they consider themselves as the major players in the imminent end of the world (Wood, The Atlantic). In essence, extremist groups like ISIS cherry pick certain parts of the Qur'an to enforce as a means of achieving their vision of establishing a world-wide caliphate. This approach has been widely criticized by many of the leading Islamic scholars, one of them being Ismail Ibn Musa Menk, a very popular Muslim cleric and current head of the Grand Mosque of Zimbabwe. In one of his sermons, Menk speaks of the Qur'anic verses pertaining to war and explains that these verses are "not instructions for me and you today, but are records of history that are mentioned in the Qur'an, whereby we can learn examples from" (Ismail Ibn Musa Menk, *Does the Qur'an Teach Terrorism?*). Menk provides one example of a Qur'anic verse commonly cited by extremist groups to validate their "war" against the non-Muslim world, that says "fight them where they are" (Holy Qur'an, Chapter 2, Verse 191). He explains that this verse was revealed after the Muslims, who

were very small in number, were oppressed for their beliefs and after being repeatedly told by the Prophet Muhammad to maintain peace and avoid war, were finally told by God that it was their right to go out and defend themselves. Menk makes the point that verses such as this must be contextualized and the time and situations where they were revealed must also be taken into account when deciphering their meanings. Essentially, he calls on Muslims in a similar way as Ibn Rushd and urges them to employ logic and context when it comes to the decoding and application of the holy book.

In addition to this inaccuracy of not contextualizing the Qur'an and using rational thought, another massive flaw made by Muslim extremists pertains to their complete disregard of the numerous other parts of the religious text that clearly and unilaterally urge Muslims to be kind to others, to never deny any human or animal their rights, and to compete with one another in performing as many good deeds as possible. One such verse from the Qur'an that evidently supports this point says, "God does not forbid you from being good to those who have not fought you in the religion or driven you from your homes, or from being just towards them. God loves those who are just" (Holy Quran, Chapter 60 Verse 8). In this verse it is clear that it is wrong to harm others and justice within humans is a very favorable trait in the eyes of God. Another Qur'anic verses very clearly violated by extremist who claim to use the Qur'an as their guide says "There is no compulsion where the religion is concerned" (Holy Quran Chapter 2, Verse 256). This verse makes it clear that it is forbidden for anyone to forcibly convert others to their faith or to make it compulsory that all people adhere to one faith, something extremist have made their mission. This is seen in *The Duniyat* concerning the Jews who were forcibly converted and Rushdie makes a subtle point that this very action by the extremist who exile Rushd is a clear violation of the Qur'an. The Qur'an makes it clear that guidance is in the hands of God that that as Muslims, the duty is to spread the message of the faith and do the best to serve their communities and the world.

Salman Rushdie's messages in his short stories, *The Prophet's Hair* and *The Duniázát* challenges all people, not just Muslims, to use logic and reasoning in determining their identities as a member of any particular faith or organization. He expertly illustrates the repercussions of forgoing analytical thought for fundamentalist reasoning through the story of Hashim and his family and Ibn Rushd and his exiled state. From these stories, we learn the dangers that arise when creativity is stifled, when the world is viewed through a singular lens and when elements of positive humanity and tolerance are cast out. From *The Prophet's Hair*, we discover how families are broken up by extremism evident in the world today as many young people, lost and restless fall into the arms of violence extremists who promise glory and heaven in exchange for barbaric acts of violence against fellow humans. And from *The Duniázát*, we learn that the threat we face from extremists is nothing new and that while there is ample evidence of the existence of a God for those seeking to find it, a balance must be maintained between faith and logic and above all love and tolerance must reign true in our hearts and minds.

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Interdisciplinary History

Nada Babaa, Remembrance as Resistance: The Preservation of Palestinian Identity in the Diaspora

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Here or there, our blood will plant olive trees.

– Mahmoud Darwish (*Unfortunately, It Was...*)

Communities of people are scattered all around the world. In our globalized world, diaspora is a phenomenon that most populations have experienced. In “The Role of Diasporas in Conflict” by Amanda Roth, the author gives several definitions of diaspora. She explains that diaspora “Is used to encompass immigrants, displaced communities, expatriates, refugees, and others” (Roth 290). Roth also provides another definition, “A people with a common origin who reside, more or less on a permanent basis, outside the borders of their ethnic or religious homeland” (Roth 290). People who are a part of a diaspora share a common history and come from the same land. Diaspora is interesting because those who have never set foot on their ancestral homeland may still maintain a strong connection to it – to their ancestry and to their cultural heritage. The diasporas of various groups of people have highlighted how a person’s sense of identity is affected by migration.

In *Cultural Anthropology* by Conrad Phillip Kottak, the author discusses what life is like for people in a diaspora. Kottak explains, “Most migrants maintain their ties with their native land...In a sense, they live multilocally – in different places at once” (Kottak 362). It is because of the unique experience of transnational peoples that the phenomenon of diaspora has become an integral part of anthropological studies. Diaspora expands the definition of a “home” – home is not just a physical place but also a place that is carried through memory. It is important to realize that every diaspora is

very unique in its own way.

In *Global Diasporas* by Robin Cohen, the author explains how diaspora is different for every group of people. Cohen states, “For Jews, Africans, Palestinians and Armenians the expression acquired a more sinister and brutal meaning” (Cohen ix). Cohen further explains that for those specific populations, “Diaspora signified a collective trauma, a banishment, where one dreamed of home but lived in exile” (Cohen ix). It is thus simplistic to make generalized statements about diaspora, because each diaspora has distinct characteristics. Some of the different factors that can cause a diaspora include war, forced migration, expansion through trade, and imperialism. All groups of people have different histories and cultures that shape their diaspora.

Diaspora is especially interesting when looking at a group of people who do not have an established state to call their home. They are stateless – their homeland has no passport stamp. However, this lack of sovereignty does not necessarily hinder the strong connection between the people in the diaspora and their native land.

Our land and we are one flesh and bone

We are its salt and water

We are its wound, but a wound that fights.

– Mahmoud Darwish, “A Diary of a Palestinian Wound” (Ahmed 100)

The Palestinians represent a nation without a sovereign state. Their diaspora exemplifies how people without a sovereign country can still preserve a connection to their ancestral homeland. In fact, those who are stateless have a greater need to cling onto their cultural identity. Without autonomy, their identity becomes most essential to their survival as a nation. Many of those in the Palestinian diaspora have a strong relationship to their heritage, even if they have never been to Palestine. Being a part of the Palestinian diaspora myself, I can attest to the idea that Palestinians have preserved

their identity over the generations even with the limitation of not having a state.

In order to understand the experiences of people in the Palestinian diaspora, it is essential to first look at their history. The diaspora as we know it today was largely affected by Palestine's history during the twentieth century. The most significant event that scattered the Palestinian population around the world was the establishment of the state of Israel in 1948. 1948 is thus an incredibly important year for all Palestinians. In their eyes, it is a brutal memory – one signifying the destruction of Palestinian livelihood and prosperity. In Arabic, the events surrounding 1948 are called *al-Nakba*, meaning, “The Catastrophe.”

The most effective way to understand how and why the Nakba happened is by examining the historical context, since the late nineteenth century. Zionism is an ideology that emerged in Europe during that time, and it became the drive behind establishing the state of Israel. In “Zionism, Judaism, and the State of the Jews” by Laura Wharton, the author goes into deep analysis of this ideology. Theodor Herzl is considered to be a main founder of Zionism. Wharton explains, “Zionism was essentially a secular movement” and “The Zionist movement developed together with other European national movements seeking statehood” (Wharton 75-76). Thus, we can conclude that Zionism was a secular nationalist movement, aiming to create a Jewish state. David Hirst covers the early years of the Zionist movement in *The Gun and the Olive Branch*. He states, “Herzl himself would have been ready to contemplate any territory” but Palestine was determined to be the best fit for this future state (Hirst 136). Herzl's founding of the Zionist movement sparked more and more Jewish Zionists to move to Palestine, long before Israel was actually established.

Herzl's diaries reveal the motives and goals behind the Zionist movement. He “Confided the beliefs that...military power was an essential component of his strategy and that, ideally, the Zionists should acquire the land of their choice by armed conquest”

(Hirst 138). Therefore, the ideological development of Zionism eventually led to the violent expulsion of hundreds of thousands of Palestinians in 1948. The United Nations proposed a partition plan of Palestine in 1947, but the Zionists ended up taking more land for Israel than was proposed. Figure 1 illustrates the partition plan, which allotted majority of the land to the Jewish state.



Figure 1: The UN Partition Plan of 1947 (“UN Partition Plan”)

Armies from various Arab countries entered Palestine after the partition plan, aiming to defeat the Zionist forces, but failed. The Arab-Israeli War resulted in the Zionist forces establishing the state of Israel. In order for this Jewish-majority state to be formed, many Palestinians had to be driven out of the land. The operations of the Zionist militias included massacres, rapes, and destruction of villages.

In *The Ethnic Cleansing of Palestine* by Ilan Pappé, the author gives detailed information about the Palestinian exodus of 1948. He explains that a Palestinian village, Bassa, had about three thousand inhabitants (Pappé 142). Many atrocities were committed in the cleansing of this village. Survivors passed down the stories of incidents such as this one. Nizar al-Hanna recalls what his grandmother witnessed:

“My maternal grandmother was a teenager when Israeli troops entered Bassa and ordered all the young men to be lined up and executed in front

of one of the churches. My grandmother watched as two of her brothers... were executed by the Hagana.” (Pappe 142)

There are plenty of other incidents that happened that are similar to this one. Evidently, the memories of the Nakba have been passed down through oral history. Even after the tragic events of 1948, Pappe explains that Palestinians continued to suffer in the year following. He states, “About 8,000 spent the whole of 1949 in prison camps, others suffered physical abuse in the towns” (Pappe 200). Palestinians’ hardships around this time became essential memories of the Nakba. These hardships proved to be long from over.

In 1967, yet another massive dispersal of the Palestinian population occurred because Israel occupied the West Bank and Gaza Strip. Edward Said, who was a famous Palestinian intellectual, goes into great depth about the experiences of Palestinians in *The Question of Palestine*. He explains that 1967 resulted in “Three types of Arab Palestinians: those inside pre-1967 Israel, plus those inside the Occupied Territories, plus those elsewhere outside former Palestine” (Said 46). Among those who were dispersed in 1967 were my parents’ families. My father is from a city in the West Bank called Tulkarm, and his family was forced out. His family went to Jordan. My mother is from a village near Bethlehem called al-Khader, which is also in the West Bank. Her family ended up living in Kuwait and then Jordan because of the Gulf War in the early 90s. Most Palestinians in the diaspora have stories like this – our parents and grandparents were kicked out of their homeland, leading to where we are today. My parents eventually moved to the United States, as Israel denies them the right of return.

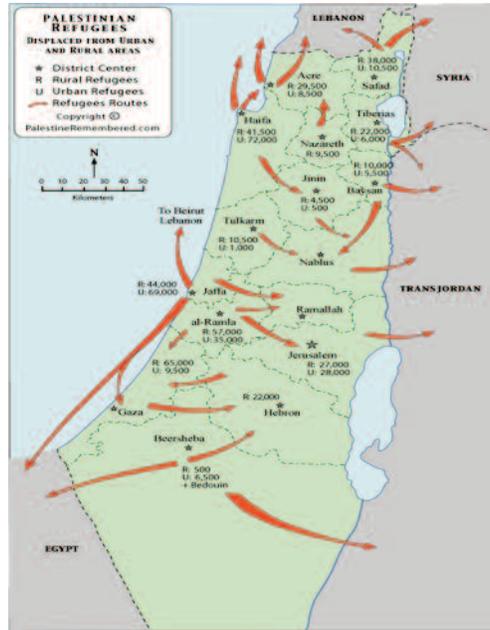


Figure 2: Palestinian Refugees Map (PalestineRemembered.com)

Cohen goes into further detail about the Palestinian diaspora, which he classifies as being a victim or refugee diaspora (Cohen 178). Cohen states, “They were violently displaced by the Israeli Zionists who asserted the right – narrowly recognized in a United Nations vote – to a Jewish state” (Cohen 181). About 780,000 Palestinians were expelled (Cohen 181). Evidently, the establishment of the Israeli state also came with the creation of an enormous refugee population.

Figure 2 shows how numerous Palestinians were forced out of the country, but there was also significant internal displacement. Some Palestinians were able to stay and live in Israel, and acquire Israeli citizenship. Thousands of Palestinians went to neighboring Arab countries such as Lebanon and Jordan. In addition, many other thousands from villages and cities in the newfound Israeli territory ended up in the West Bank and Gaza Strip.

This massive dispersal of the Palestinian population had long-lasting effects that are still very evident today. Palestinians are still dispersed all over the world, carrying implications for the survival of their nation. A statistic explains “That there were more

than 7 million Palestinian refugees and displaced persons at the beginning of 2003” (Pappe 179). Therefore, it is evident that the Nakba lives on today, and the Palestinian people continue to experience a sense of loss and disaster.

“(2) Everyone has the right to leave any country,
including his own, and to return to his country.”

– Article 13 of *The Universal Declaration of Human Rights*

The right of return is an incredibly important issue for Palestinians. The Universal Declaration of Human Rights, written by the UN in 1948, states that all human beings have the right of return to their native country. Edward Said explains, “The Palestinians have repeatedly insisted on their right of return, their desire for the exercise of self-determination” (Said 47). For Palestinians all over the world, the right of return is essential to their fight for justice. However, Israel has consistently denied them this right since the Nakba.

*Fifty years on?
I am trying to tell the story
of what was lost
before my birth
the story of what was there...
before my father clamped his teeth
hard
on the pit of exile*

– Lisa Suhair Majaj, “Fifty Years On / Stones in an Unfinished Wall” (Sa’di)

The concept of exile is very familiar to Palestinians who live in the diaspora. Those in the diaspora are raised with the memories and stories of Palestine, of the Nakba and of the ongoing struggles. In “Reflections on Exile,” Said speaks from his own

experience as a Palestinian living in exile, and offers emotional words on the experience:

“Exile...is the unhealable rift forced between a human being and a native place, between the self and its true home: its essential sadness can never be surmounted...The achievements of exile are permanently undermined by the loss of something left behind for ever.” (Said 137)

Exile is a significant component to the experience of Palestinians. All they can hold onto is their identity and memories, as outsiders in all the established states they reside in. Through their identity and resilience, they are able to survive as a nation. George Bisharat examines this idea of exile in “Origins of the Middle East crisis: Who caused the Palestinian Diaspora?” He explains that for Palestinians in 1948, “Exile involved more than material deprivation...they lost their human dignity.” (Bisharat). The Nakba is not only devastating for Palestinians because it signified the loss of their land – but it resulted in the rejection of their basic rights as human beings, and we continue to see this as the occupation continues.

Despite the harsh circumstances that the Palestinian people live under, those in the diaspora have made an important and significant presence in countries around the world. The individual experience of a Palestinian is unique, but collectively, their nation is united by a strong sense of devotion to where they come from. With most of the Palestinian population being outside of Palestine – thus scattered – their presence is visible in many regions. Making a home outside of home has been necessary for generations.

As explained earlier, many of the Palestinian refugees of 1948 went to neighboring Arab countries. When looking at Palestinians in the Middle East, an especially important country to study is Jordan. Palestinians make up a significant portion of the population. Since there are so many Palestinians living in Jordan, it may seem like they enjoy

freedom. However, they face many challenges.

In “Jordan is Palestinian” by Mudar Zahran, the author argues that the Hashemite Kingdom is very oppressive towards the Palestinian population. Zahran states, “Despite having held a comprehensive national census in 2004, the Jordanian government would not divulge the exact percentage of Palestinians in the kingdom.” Evidently, the Jordanian government deliberately hides the actual number of Palestinians living in the country, and many people believe that they actually make up the majority. Zahran explains that they must deal with ridiculously high taxes, and they lack political representation. The Jordanian Bedouins in the country, however, exercise much more power and freedom.

Palestinians face discrimination in other Arab countries as well. Even with the disadvantages in Jordan, however, many Palestinians have been able to make an enjoyable life for themselves. In “Stateless People, Violent States” by Bill Berkeley, the author states, “Palestinians in Jordan have been given the option of taking Jordanian citizenship, but elsewhere they have no such option” in the Middle East (Berkeley 7). Thus, Jordan could be considered the best location for Palestinians who live in the Middle East because the circumstances are better than in other Arab countries.

Oroub al-Abed also writes about the status of Palestinians in Jordan with her paper entitled “Palestinian Refugees in Jordan.” She explains, “In the early 1950s, the United Nations Relief and Works Agency...established four camps to shelter those dispossessed of home, homeland, and means of livelihood due to the 1948 war” (al-Abed). Jordan is home to many refugee camps, many of which have provided shelter to Palestinians since the Nakba. The map below displays the location of refugee camps in Jordan, also specifying when these camps were formed.

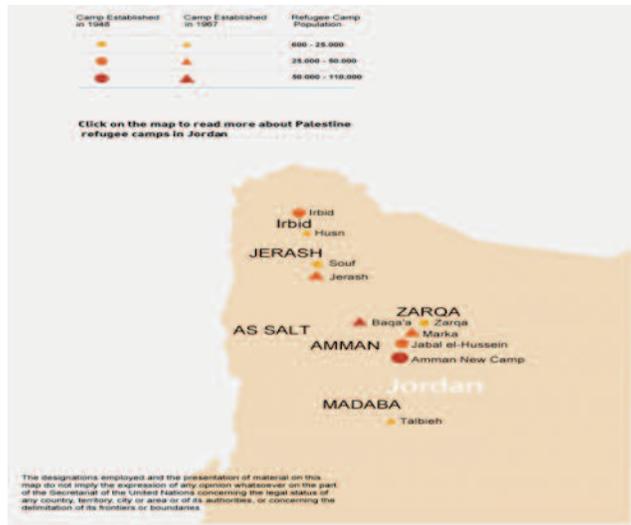


Figure 3: Palestinian Refugee Camps in Jordan (“Where We Work”)

UNRWA reports that there are over two million Palestinian refugees in Jordan (“Where We Work”). On their website, it states, “In the absence of a solution to the Palestine refugee problem, the General Assembly has repeatedly renewed UNRWA’s mandate” (“Who We Are”). Unfortunately, the problem of the massive Palestinian refugee population does not have a clear end. However, many of the refugees do not actually live in the camps. Al-Abed further explains, “Many refugees and displaced persons, especially those who held Jordanian nationality, relied on their social networks and were able to settle in urban centres” (al-Abed). Thus, the experiences of Palestinians living in the main cities, such as Amman, may be different than those who reside in the UNRWA camps.

Al-Abed reiterates that Palestinians still hold allegiance to their homeland despite some freedoms they may enjoy in Jordan. She states, “The fact that Palestinians carry Jordanian passports has not diluted their sense of belonging to Palestine” (al-Abed). Even while living in an Arab country directly next to their homeland, Palestine is still where they want to return. This is not only relevant to the diaspora community in Jordan – but it can be seen in Palestinian communities thousands of miles away as well. The Palestinians in Jordan face discrimination, yet they continue to be proud and outspoken

about their Palestinian identity.

Given the background of Palestinians' circumstances in Jordan, it is fascinating to examine how they have maintained their identity. Jordan is directly next to the land of Palestine, meaning the homeland is so close, yet so far. I have never set foot on Palestine, but I saw the land across from the Dead Sea while vacationing in Jordan. This experience in itself can shed light on the tragic situation that Palestinians in Jordan face – they are not allowed to return to live in their homeland, but it is right next to them.

A research study on 200 young Palestinian refugees in Jordan revealed, with statistical evidence, just how strong the preservation of their identity has been for generations. Giovanna Leone, Maya Siag, and Mauro Sarrica conducted this research in 2014 and wrote about their findings in a paper, “What Does It Mean To Be Muslim / Arab / Young / Palestinian / Palestinian Refugee?” Before revealing their findings with the participants, the researchers explained that this study was very much needed in order to understand the refugees in current times.

The researchers explain how complex the identities of their participants are. All of them were born outside of Palestine and never visited, and more than half of their parents were even born in other countries as well. The complexity is highlighted by the fact that the participants were “Born after the end of direct violence itself but still living its destructive long-term consequences” (Leone, Siag, and Sarrica 5). This statement exemplifies how the Nakba and the events after it live on today and are carried through the generations of Palestinians. The memories of the Nakba and past struggles bring on an emotional impact for Palestinians in the diaspora, however this impact has evolved over the generations. The participants in this study are adolescents – meaning they are at a crucial point in their lives where they are developing a greater sense of who they are.

Table 3 *Where are you from?*

I am from ...	Frequency
Palestine	69
Name of the exact Place of origin (city/village) in Palestine	93
Host Country (Jordan)	18
Name of the Refugee camp	16
Missing	4
Total	200

Figure 4: Study on Young Palestinian Refugees (Leone, Siag, and Sarrica 11)

As seen in Figure 4, the participants in the study hold a strong attachment to their identity as Palestinians. Even though they were all born outside of Palestine, when asked where they come from, most participants either said “Palestine” or even more specifically, the town in Palestine. The researchers state, “Taking the scores attributed both to positive and negative emotions together; this impact seems to be positive overall” (Leone, Siag, and Sarrica 18). By looking at these results, it is obvious that there is a much greater emotional connection to the land of Palestine than to Jordan.

Palestinians in Jordan have proved to maintain a strong connection to Palestine despite living in the diaspora. This may seem expected considering Jordan is close to Palestine and is an Arab country, but the preservation of Palestinian identity is even seen in countries thousands of miles away. Of course, the experiences of Palestinians in the diaspora are unique to where they live. Living as a Palestinian in the Middle East versus a Western country obviously comes with many differences in experiences – however, a trend of devotion to Palestinian identity is seen in the diaspora worldwide.

Chile is home to the largest Palestinian community outside of the Middle East. This is a very unique location to study when examining the diaspora community because the Palestinians had a history in Chile long before the Nakba. Most of the Palestinians in Chile are Christian, as explained in “Latin America’s Los Turcos: Geographic Aspects Of

Levantine And Maghreb Diasporas” by Aaron Moore and Kent Matthewson. The authors explain, “Christian Palestinians far outnumbered any other immigrants from the Middle East to Chile and account for around ninety-five percent of the total number” (Moore and Matthewson 13). In “Arabs In The Andes?” by Palash Ghosh, the author explains more of the history of the Palestinian-Chilean community. Ghosh states, “Numbering some 500,000 people, Palestinians have resided in Chile for more than 150 years” (Ghosh). The Palestinians make up half a million of the Chilean population – meaning they have an obvious presence in the country, especially because of their deep-rooted history.

The Palestinians started to arrive in Chile as early as the mid-nineteenth century. Ghosh says, “In the 1850s, during the fallout from the Crimean War, a handful of Palestinians found their way to Chile...to toil in agriculture or to work in small businesses” (Ghosh). Through their humble beginnings, the Palestinians grew a strong economic and social presence in Chile, many becoming part of the elite. A new wave of Palestinian immigration happened during World War I and after 1948.

In “Proud Palestinians of Chile” by Mark Holston, the author explores the presence of Palestinians in Chile. Holston says, “An old proverb in Chile goes that every small village in the country is sure to have three things – a priest, a policeman, and a Palestinian” (Holston 5). Evidently, the Palestinians are known to be a large ethnic group in the country. Holston explains that the Palestinian community has Middle Eastern restaurants and shops, and “Signs in Arabic are as common as signs in Spanish” (Holston 5). Their businesses are prevalent throughout the country, showcasing their financial success and also their preservation of Palestinian culture.

They are proud of their heritage and have even formed a famous soccer club called Palestino. This soccer club has the Palestinian flag colors adorned on the uniforms, showing the Palestinian people’s devotion to the Palestinian cause. On the Palestino website, it states, “Club Deportivo Palestino was born in the city of Osorno at

the south of Chile...being founded by the immigrant Palestinians in August 20 of 1920” (“History”). This soccer club is a representation of how well the Palestinian people are integrated into Chilean society. They are open to including themselves into the new society while also keeping elements of their own heritage alive.

It may seem strange that to this day, even descendants of Palestinians who moved to Chile in the nineteenth century still have a strong sense of their Palestinian identity. However, the Nakba is a significant factor into why the Palestinian-Chileans still identify so strongly with their ancestral homeland. In “Panel Looks at Diaspora Christians” by Basem Awad, the author explains that there was a panel on Palestinian-Chilean Christians in 2008, organized by the Holy Land Christian Ecumenical Foundation. Ambassador Kaileh spoke at the panel, saying, “Although most Palestinian-Chileans have assimilated comfortably in Chilean society...they still preserve their heritage, keep ties with their land of origin, and are committed to advocating for peace and justice there” (Awad). The Palestinian community in Chile embraces both their identities as Palestinians and as Chileans.



Figure 5: Palestinian-Chileans Protest for Gaza (“Thousands March...”)

The above photo displays how Palestinians in Chile have maintained a cultural but also political connection to Palestine. The article on Al Arabiya explains, “The march

took demonstrators to the Israeli embassy in Santiago” (“Thousands March...”). This march took place during the Israeli assault on the Gaza Strip in the summer of 2014, and there were about 5,000 protestors. The diaspora community feels devoted to fighting for Palestinian rights. After all, Palestinians are not allowed to return to live in Palestine – and even though they have been in Chile for generations, the right of return is still important to them. Political demonstrations in support of Palestine seem to show that the events going on back home have a large effect on the diaspora communities – strengthening their faithfulness to Palestinian identity.

Another large community of Palestinians resides in the United States. The trends of cultural and political connection seen in Jordan and Chile are also seen in the diaspora community in the U.S. I personally have a deeper understanding of this community, considering I am a Palestinian-American myself. Throughout my own life, my parents have shared stories of Palestine with me – about where they grew up, and about the struggles of our people. I find this to be a similar experience of diaspora Palestinians in other countries as well, because oral history is a significant component to maintaining our identity. In addition to my parent’s stories, I grew up seeing the Arabic news channels – as a child I saw images of the Second Intifada on my television screen at home. Undoubtedly, these experiences fostered my connection to my Palestinian heritage. I have been connected to my identity culturally, but also in a political sense – because the reason my family is even in this country is because of the Israeli occupation. My experiences are similar to many other Palestinian-Americans around the country as well.

*I'm a Palestinian-American
standing proudly
with one foot on democracy
and the other seeking autonomy
while the media tries to rewrite*

my people's history

– Remi Kanazi, “Palestinian Identity” (Kanazi 5)

In “The American Experience: Palestinians in the U.S.” by Kathleen Christion, the author explores the Palestinian-American community and their experiences. She writes, “With between 150,000 and 250,000 members, the Palestinian community in the United States accounts for only approximately 10 percent of the two million-strong Arab-American community” (Christion 2). The population of Palestinians in the U.S. is significantly less than it is in Jordan and Chile. However, the Palestinian people still have an important presence in this country. The author continues, “They remain, to an unusual degree among immigrant communities, highly conscious of and deeply involved in the politics of their native land...the American-born second generation of Palestinians also exhibits a high and growing degree of political consciousness and ethnic pride” (Christion 19). Evidently, despite some Palestinian families living in the U.S. for generations now, their political consciousness regarding Palestinian issues is very strong. The author explains the harsh reality of many Palestinian immigrants, “Large numbers of Palestinians tend to be here not by political choice but simply because there is nowhere else to go” (Christion 19). Palestinians do not have a sovereign country to call their own – Palestine is their homeland but it is not a living option for those in the diaspora. Norma Sayage, a Palestinian born in the U.S. to parents who fled during the Nakba, reflects on her life as a Palestinian-American:

“It means that your whole life is circled around this cause. It is circled around gaining an identity. It’s circled around becoming a person to everybody else.” (Christion 19)

The U.S. is a strong ally of Israel, meaning Palestinian-Americans live in a country that is aiding in the oppression of their people. Despite this, many Palestinian-Americans embrace both identities. This can sometimes be out of necessity, since American

citizenship gives them more rights than they would ever have if they were to live under Israeli occupation. For these reasons, every individual experience is unique, but there is a collective commitment to Palestine among the Palestinian-American community.

A way that Palestinian-Americans facilitate memory is through objects – from photographs to scarves. In “Material Objects as Facilitating Environments: The Palestinian Diaspora” by Zeynep Turan, the author explores how Palestinian-Americans hold emotional attachment to their personal possessions. She interviewed Samy Malik, a Palestinian-American born to parents who fled during the Nakba. Samy owns a scarf that he got in a Palestinian refugee camp in Lebanon. Turan explains, “To him the scarf represents Palestine, which has become more of an idea than an actual physical homeland” (Turan 49). This is relevant to Palestinians all over the diaspora. Objects remind them of their ancestral homeland – and the traditional scarf, known as *kuffiyeh*, is a symbol of Palestinian resistance. Many Palestinian-Americans proudly display their culture, and they are also politically active in standing up for the Palestinian cause.

In the summer of 2014, Palestinian-Americans held many protests around the U.S. in disagreement with Israel’s assault on Gaza. Heather Curtis reported about a protest in D.C. where thousands of people came out in support of Palestine. In her article “Protesters March in DC Calling For A Free Palestine,” she describes a sign that was held at the protest – “Stop using our money to kill innocent children” (Curtis). Evidently, Palestinian-Americans are angry at the U.S.’s support of Israel and want a change in this policy. They have even formed organizations, such as the U.S. Campaign to End the Israeli Occupation, to mobilize for the cause. Their connection to their ancestral homeland has not been hindered despite living in the U.S.

After observing communities of Palestinians in Jordan, Chile, and the U.S., I have found that their persistence of memory is essential to their survival as a people. Though their remembrance, they are able to resist Israeli oppression and the ongoing occupation.

A Palestinian who is outspoken about their identity and history is a threat to the state of Israel – by holding onto their identity they assert that they do indeed exist, and that they will continue to exist. In this way, Palestinians in the diaspora are an essential component to the future of Palestine.

It is time for the world to stop thinking purely in the ideas of a two-state solution or one-state solution – it is time for human compassion. The Palestinian problem is much bigger than just one, two, or however many states – it is about human beings who deserve the right to dignity and prosperity. The exodus of the Palestinian people was a result of the world ignoring them – Palestinians had no say in the Ottoman rule, British colonization, UN Partition Plan, and the creation of a new state on top of their homeland. They have consistently been ignored and oppressed throughout history. If the international community wants to solve the issue with Palestine and Israel, and with the massive refugee problem, Palestinian voices all over the world must be heard. The spirit of Palestine lives beyond the West Bank and the Gaza Strip. It is alive in Amman, Santiago, D.C., and countless other parts of the world. Those living in the diaspora have a significant role in shaping the future of their homeland. The persistence of memory and political consciousness that is widely seen in the Palestinian diaspora will continue to strengthen their nation and their resistance.

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Psychology

Connor Rhodes, Beneficial Addiction to Thrill-seeking Behavior Psychology

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Beneficial Addiction to Thrill-seeking Behavior

Introduction to a Neuron and selected Neurotransmitters

Neurons are the cells of sensation and are responsible for perception. They receive, mediate, and aid reaction to any and all stimuli. They are referred to as “the body’s wiring” for their electrical intercommunication and, with glial cells, they comprise the entirety of the nervous system (Nevid, 2012, p.48, 54). Every neuron is composed of four distinct parts that aid in their function: the soma, dendrites, axon, and terminal buttons (Nevid, 2012, p.47).

The soma (the main “cell body”) contains the nucleus and its numerous dendrites (Nevid, 2012, p.47). Dendrites are receptor sites for incoming messages sent by preceding neurons in the network. Protruding from the soma in the opposite direction of the dendrites is the axon; it conducts electricity through momentary depolarization of charged particles called ions (Nevid, 2012, p.49). This action potential is ferried down the axon to bulbous structures known as terminal buttons. Within these structures reside multitudes of chemical messengers whose unique qualities are essential in discussing human sensation, addiction, and the possibilities thereof.

Terminal buttons are responsible for releasing neurotransmitters (Nevid, 2012, p. 47). Once released, neurotransmitters flood into a tiny space between the terminal buttons of one neuron and the dendrites of another: the synapse. They contact that neurons receptor sites and produce an excitatory or inhibitory effect (Nevid, 2012, p.50). Excitatory neurotransmitters initiate action potentials (Nevid, 2012, p.50). This

culminates in chemical messages arriving in the brain for processing. Inversely, inhibitory neurotransmitters halt action potentials, blocking chemical messages from reaching the brain (Nevid, 2012, p.50).

Both excitatory and inhibitory neurotransmitters are beneficial in maintaining equilibrium. Neurotransmitters known as endorphins are largely inhibitory in nature; they “[fit] into receptor sites for chemicals that carry pain messages to the brain, thereby locking out pain messages” (Nevid, 2012, p.53). Endorphins are hypothesized as having a secondary function: producing sensations of pleasure in the brain that may cause “runner’s high” (Boecker et al., 2008 cited in Nevid, 2012, p.53). Neurotransmitters epinephrine and norepinephrine (the body’s main excitatory neurotransmitters), commonly referred to as adrenaline, further illustrate the benefits of excitation. The combination of the two is a powerful excitatory substance typically released in times of elevated stress (Nevid, 2012, p.78). It is also released by the endocrine adrenal glands (Nevid, 2012, p.77). It is secreted into the bloodstream directly and is thus classified a hormone. It effects body systems differently, namely by communicating with organ systems to produce an internal bodily environment conducive to increased exertion and stress management (Nevid, 2012, p.77).

The four individual parts of neurons discussed earlier, and the neurotransmitters within, comprise a whole neuron, but no single neuron conveys information to the human brain (which itself contains more than one hundred billion neurons). Instead, large volumes of neurons are bundled together forming nerves organized into an “information superhighway” connecting different parts of the nervous system; arguably the most important part is the brain: where reactions to neural messages are chosen, initiated, and maintained (Nevid, 2012, p.54-55).

The Nervous System and Bodily Reactions

Single neurons communicate outside stimuli to other neurons in their immediate vicinity. However, one must consider, not only the *communication* of, but the body's *collective reaction* to, these outside stimuli. The nervous system is the linchpin connecting those chemical cues and electrical impulses of individual neurons to reactionary human behaviors.

The nervous system of the human body is a complex network that is subdivided into several categories and subcategories. It is “divided into two major parts, the central nervous system, consisting of the brain and spinal cord, and the peripheral nervous system, which connects the central nervous system to other parts of the body” (Nevid, 2012, p.55). Additionally, the peripheral nervous system is subdivided into two sections: the somatic and autonomic nervous systems. Each branch is comprised of specific types of neurons. Three exist: sensory neurons, motor neurons, and interneurons. All three possess a soma, axon, dendrites, and terminal buttons—indicative of all neurons—but carry out individual processes necessary to sensation.

Sensory neurons belong to the somatic branch of the peripheral nervous system and are responsible for providing an entranceway for external stimuli into the body. These stimuli are conducted by nerves to the spinal cord and brain. They are found in any of the sensory organs such as the eyes, ears, nose, mouth, and skin. Each sensory organ has neurons that are specialized for its designated region. For example, the retina of the human eye is covered in a multitude of photosensitive sensory neurons called rod and cone cells; they allow an individual to convert raw light entering his/her eye into perceivable signals in the optic nerve. Another type, key in maintaining balance, are hypersensitive hair-like sensory neurons of the inner ear's cochlea. When fluids shift in this spiral-shaped sense organ, signals regarding body position are sent to the brain to be processed and are then transmitted to skeletal muscles via the next class of neuron:

motor neurons.

Motor neurons play a major role in an individual's observable behaviors. These neurons relay commands from the brain to the muscles and glands of the body. These neurons belong to both the somatic *and* autonomic nervous systems. The distinguishing factor between somatic and autonomic motor neurons is the final destination of their chemical message. These neurons instruct skeletal muscles (during *somatic* responses), smooth/cardiac muscles, and endocrine glands (during *autonomic* responses) (Nevid, 2012, p.57). During periods of stress, both somatic and autonomic motor neurons receive near instantaneous commands from the spinal cord and brain and reactionary behavior ensues. Sometimes this reaction is visible to an observer (skeletal muscle movements), but glandular reactions are impossible to observe with the naked eye. However, it is the interplay between the two—visible and invisible bodily reactions—that allows for the maintenance of homeostasis.

The mediators of this interplay are the interneurons: comprising the spinal cord and brain, who are responsible for producing, and responding to, all sensations. The problem with drugs is that they often exert control over these mediators, causing skewed perceptions and reactions. Nevid explains that “higher mental functions” are mediated by this class of neuron; all thinking and planning are a result of their function (Nevid, 2012, p.48). Drugs, behaviors, and experiences can be seen as producing stress on the brain; this stress influences perceptions.

Stress Sensations

Eustress, literally “good-stress”, is the set of all stressors that motivate and encourage individuals to do any number of things. Pivotal life events like marriage, childbirth, and applying to a college or university are typically classified as extreme eustressors. Most bodily *sensations* can also be classified as eustressors: thirst, hunger,

needing a restroom, or even sight. These internal stressors help an individual maintain homeostasis. Experts believe that eustress is a normal occurrence, and altogether necessary in fostering good mental and physical health (UCLA, 2015).

If eustress is the set of stressors that encourages an individual, then distress is the set of stressors that can oftentimes discourage or—in certain circumstances—impair a person. Pivotal life experiences such as traumatic events, accidents, loss of a loved one, or the loss of a job can be distressing and thus fall into the set of distressors. Likewise, something much less impactful could also be called a distressor. Illicit drug use, because it distorts perceptions and the body's internal responsiveness to stimuli, could also be called a distressor.

This simplification of terms, while helpful, brings to light an issue: both eustress and distress are subjective terms. Depending on circumstance and personality factors, an individual can classify any stressor as a eustressor or distressor. This makes stress classification an intensely personal issue and one, mediated in large, by personality.

Bodily Initiation and Regulation of Stress Sensations

Stress can result from any number of things; it is caused by unique combinations of chemical cues experienced by individuals (sensation), like excitement, sleepiness, hunger, fear. It can even be induced by drugs/alcohol or other substances/behaviors. Stress, like all other sensations, is something *felt* in the brain that incites a reaction; in order for the brain to feel anything, neurotransmittance must be involved.

Neurotransmitters have an initiatory/regulatory effect on an individual's perceptions of, and reactions to, stressors. Serotonin is responsible for sleep regulation, though by no means solely (Nevid, 2012, p.53). When serotonin increases in the brain, an individual feels tired. Neurotransmittance also regulates the sensations experienced when an alarm-clock sounds after sleep. However, an *excitatory* neurotransmitter may

be largely responsible (perhaps adrenaline) for an excitatory effect on the nervous system (arousal). During periods of elevated stress, the hormone/neurotransmitter adrenaline is released in large quantities from the adrenal medulla during a reaction commonly known as the “fight-or-flight” response. The sympathetic branch of the peripheral nervous system is responsible for this sensational response; it is caused by hormone secretions from the adrenal medulla that “speed up bodily processes and draw energy from stored reserves” (Nevid, 2012, p.58). Hormones are substances present in the blood that regulate reactionary behaviors of *internal* body systems to neural sensations. The “fight or flight” response is initiated during periods of intense excitation of the nervous system such as during “physical exertion, [as well as] when defensive action might [need be taken] to fend off a threat” (Nevid, 2012, p.58). An individual might be shocked by the alarm (threat), initiating this fight-or-flight response. Once the immediate stressor (the alarm) has been addressed, the excitement sensations taper off as determined by interneurons, and the individual becomes tired again. As these sensations of fatigue increase in intensity, the individual might find a need to employ some measure of coping.

Coping Mechanisms: An Overview

The Dual Diagnosis Program of UCLA (DDP) defines coping as the “behaviors, thoughts, and emotions [an individual may use] to adjust to the changes that occur in [their] life” (UCLA, 2015); Robert Feldman, a professor of psychological and brain sciences at the University of Massachusetts Amherst, and fellow to the American Psychological Association, defines coping mechanisms as “the efforts to control, reduce, or learn to tolerate the threats that lead to stress” (Feldman, 2015, p.481). Feldman emphasizes the *preemptive* nature of coping mechanisms in his definition; most sources agree that coping mechanisms are an individual’s set of responses to stressful situations. Coping can be designated into two basic categories: active and avoidant (UCLA, 2015).

Avoidant coping is the least beneficial coping style; it involves actively deferring stressors, sometimes in conjunction with the use of avoidant devices such as self-isolation, and alcohol/substance use (UCLA, 2015).

Active coping is more beneficial than avoidant coping and, according to Feldman, it is considered either *emotion-focused* or *problem-focused*. Emotion-focused coping is characterized by changes in an individual's perception of stressful situations. Emotion-focused coping occurs when he/she feels a stressor is "unchangeable": after the death of a loved one, when faced with a diagnosis of chronic illness (Feldman, 2015, p.482). Alternately, problem-focused coping occurs when a person recognizes the cause(s) of his/her stress and takes direct action to reduce its negative effects. So, when a person drinks coffee in the morning (a mechanism) to counteract tiredness (a stressor), he/she could be said to be employing *problem-focused* coping: an *active* coping mechanism.

Alcohol and illicit substance use are widely regarded as *avoidant* coping strategies when they are applied to counteract stressors.

Coping Mechanisms: Genetic Predisposition to Their Use

Stress classification is influenced by personality, and so too are coping mechanisms. Jeffery Nevid, professor of psychology at St. John's University in New York and director of its doctoral program in clinical psychology, cites Champagne & Mashoodh, 2009; Larsen et al., 2010; Yang et al., 2010 in stating that behavioral traits, which comprise a person's overall personality, have a genetic basis; that genetic backbone lays groundwork for individual's *predispositions* to behaviors. Genetics are not the sole determining factor in human behavior and expression of traits is mediated by environmental influences and learning (Nevid, 2012, p.79). However, some individuals are, genetically speaking, more "sensitive than others to harmful environmental influences, such as stressful life experiences or bad parenting": *distressors* (Nevid, 2012,

p.82). If sensitivity to stress is rooted in genetics, and so is personality, it seems reasonable to infer some individuals can be predisposed to coping.

Some individuals use certain coping mechanisms more than others; most people habitually use certain mechanisms. The decision to cope is largely unconscious, so one of the challenges facing any individual is choosing an *adaptive* (beneficial) coping mechanism when under stress instead of a *maladaptive* one (Feldman, 2015, p.482). This being said, *adaptive* and *maladaptive* are subjective terms whose definitions vary from person to person. However, sources like Feldman and the DDP agree that avoidant coping is, more often than not, *maladaptive*; in some cases, habitual maladaptive coping can lead to *disordered* or *addictive* behaviors. Exercise is accepted as an adaptive form of coping. Are habitual exercisers addicted to exercising?

Addiction: A Question of Terminology

The term “addiction” is controversial; depending on the context of conversation, the terminology can mean a variety of things: a habitual practice, an intense infatuation, a physical need, an illness or disorder, etcetera (Alavi et al, p.290-291). Popular usage is oftentimes too casual or negative; herein lies one of the problems in understanding the word: its denotation is substituted for its overly negative connotation. This makes a true definition of addiction nearly impossible to fully realize.

Right now, the best tools available to diagnosing and denote addiction are diagnostic checklists formed by physicians and psychiatrists. Changes made to the denotative terminology within these checklists are usually minimal; new terms are introduced slowly. Nevertheless, distinctions have been made, regardless of overlapping terms, between four different descriptors of addiction: physical, psychological, substance, and behavioral addiction. A discussion of *dependence* is necessary in viewing these terms and how they apply to individual addictions. For that, one must turn to

“psychiatry’s bible”: the *Diagnostic and Statistical Manual* (Holden, 2001, p.980).

DSM-III to DSM-V: Addiction and Dependence

The Diagnostic and Statistical Manual (DSM) is the reference book used by physicians and psychiatrists to diagnose medical and psychological conditions in their patients, including addictions (Feldman, 2015, p.510). The DSM has been disseminated in five different editions; it is currently in its fifth edition: *The Diagnostic and Statistical Manual – V* (DSM-V). Significant changes have been made to its definition and diagnostic criteria for addiction. Dr. Charles O’Brien, Vice-Chair of psychiatry at Penn University and founding director of the Center for Studies of Addiction in Philadelphia, PA, offers a history of the changes from DSM-III to DSM-V, especially regarding the idea of dependence, in his 2010 paper, *Addiction and Dependence in DSM-V*, published in the academic journal *Addiction*.

The DSM-III (third edition) was revised by a committee of physicians and psychiatrists to yield the DSM-III-R (Revised DSM-III). They sought to revise the “substance-related disorders” section of the DSM-III and agreed unanimously that substance-use disorders (addiction) should be defined primarily by compulsive *drug-seeking behavior* (O’Brien, 2010, p.867). Problems arose when the committee decided the DSM-III-R would call this behavior “*dependence*.” *Addiction* was deemed pejorative, though both words refer to the same entity. The combination of tolerance and withdrawal had been termed *dependence* before, but in a more physiological sense than a behavioral one. Because of these overlapping terms, physicians seeing *physiological dependence* often defined it as using the DSM-III-R definition. They feared fostering addiction despite no “compulsive drug-seeking” behavior being exhibited by these patients (O’Brien, 2010, p.867). Confusion continued throughout the publication of DSM-IV: little to no changes were made to the “substance-related disorders” section of that edition regarding dependence (O’Brien, 2010, p.867). It now means “compulsive drug-

seeking” (O’Brien, 2010, p.867).

Physical vs. Psychological Addiction

The distinction made between physical and psychological addiction is typically one of withdrawal symptoms, not etiology: root cause (Jaffe, 2010). Physical addiction—like that of opiate and alcohol use—is a diagnosis reserved for those who, upon cessation, exhibit “horrible withdrawal symptoms” (Jaffe, 2010). It has been observed in multiple instances that discontinued use of heroin and other opiates produces a “flu-like” withdrawal state (Jaffe, 2011). These withdrawals are the body’s reactionary behaviors “attempting to counteract the stoppage of drug ingestion” and stem from *physiological dependences* (Jaffe, 2010).

Nicotine is a physically addictive substance (Difranza, 2011, p.815) and produces such dependences and symptoms of withdrawal; they have labels that progress in intensity: “wanting”, “craving”, and “needing” (Difranza et al. 2010, 2011; cited in Difranza, 2011, p.816). Through a questionnaire study, Joseph Difranza, professor of Family Medicine and Community Health at the University of Massachusetts Medical School, sought to link nicotine’s physical dependences and its largely *psychological* withdrawal symptoms (Difranza, 2011, p.817). He categorized 422 participants based on number of cigarettes smoked), and questioned them about their withdrawal symptoms (Difranza, 2011, p.818). He used smoking behavior to indicate addiction stage because these behaviors increase when the body’s tolerance to nicotine increases. Difranza observed that increased behavior heightened the intensity of psychological withdrawal symptoms as defined by Difranza (Difranza, 2011, p.818); from this, two categories of withdrawal can be inferred: physical and psychological. Tolerance and physical dependence often precede the physical stresses related to cessation, termed “withdrawal”, but these are not the only types of significant withdrawal; withdrawal symptoms are not exclusive to substances, nor are they the sole motivating factor in

relapse behavior. In cigarette smokers, the tandem nature of *physical dependence* and *psychological withdrawal*, coupled with behavioral predispositions to smoking, encourage continued use. Addictions are a complex combination of physical/psychological behaviors and dependences.

Few people doubt the physically addictive nature of substances like nicotine but, as the Difranza (2011) study shows, more attention need be paid to how addictions are classified. Adi Jaffe, executive director of Alternatives Behavioral Health LLC and UCLA lecturer, believes that addiction is addiction; the terms psychological and physical are superficial. He states: “The only way to look at Addiction is as both a psychological addiction and a physical addiction that are inextricably linked through our psyche’s presence in the brain: a physical part of the body” (Jaffe, 2010). If all addictions are combinations of psychological/physical factors, then does any real distinction between individual addictions exist?

Substance vs. Behavioral Addiction

Yes, but such a distinction is not based on the individual natures of withdrawal. “Evidence supporting a broader conceptualization of addiction is emerging” and “neurobiological research suggests that addictive disorders might not be independent: each outwardly unique addiction disorder might be a distinctive expression of the same underlying addiction syndrome” (Shaffer et al., 2004).

Holden (2001) reminds us: psychoactive substances can be addictive; “scientists have traditionally confined their use of the term [addiction] to substances—namely alcohol and other drugs—that clearly foster *physical dependence* in the user” (Holden, 2001, p.980). This conservative view of addiction is convenient, but it excludes non-substance-related sources as producing intense sensations that also lead to dependence. Amphetamines are agonistic drugs that increase dopamine neurotransmittance in the

brain, but so does falling in love (Nevid, 2012, p.52). Roy Wise, a member of the NIDA (National Institute on Drug Abuse), states that “drugs are far more powerful than any ‘natural’ pleasure when it comes to the amounts of [pleasure inducing] dopamine released” (Wise cited in. Holden, 2001, p.980). Behavioral science experts believe “any source which is capable of stimulating an individual, could become addictive”; what matters most to addiction is the tipping-point into “obligatory behavior” (Alavi et al., 2011, p.291). Illicit drugs show objective dependence patterns, but for behaviors have a more subjective tipping point.

The development of gambling disorder is mediated by the gambler and his/her personality. The DSM-V does not state that participation in gambling behaviors *will* lead to disordered gambling, just that gambling’s intoxicating “excitement” *can* produce disorders in some people. Plenty of people indulge in healthy amounts of gambling activity. The extent of their gambling does not cause enough distress to be diagnosed as a disordered behavior by the DSM-V.

DSM-V: A Current Criteria for Addictive Disorders

Changes have been proposed to DSM’s addiction related sections, namely, a change in label to “Addiction and Related Disorders” (O’Brien, 2010, p.106); the current diagnostic criteria for addiction in DSM-V is similar to DSM-III. However, the “abuse” and “legal difficulties” criteria were eliminated (O’Brien, 2010, p.867). The abuse category was eliminated because of insufficient evidence showing a definitive intermediate stage between first-time drug use and addiction; the legal difficulties criterion was eliminated too, because not all addictions involve any legal ramification. A criterion for “craving” was proposed because it is characteristic of addictive disorders; current views extend into non-substance and behavioral addiction to which this criterion definitely applies (O’Brien, 2010, p.867). One diagnostic sub-category present in DSM-V is “Other (or Unknown) Substance Use Disorder”. As it stands, its criteria are:

- A. A problematic pattern of use of an intoxicating substance not able to be classified within the alcohol; hypnotic, or anxiolytic; stimulant; or tobacco categories and leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:
1. The substance is often taken in larger amounts or over a longer period than was intended.
 2. There is a persistent desire or unsuccessful efforts to cut down or control use of the substance.
 3. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects.
 4. Craving, or a strong desire or urge to use the substance.
 5. Recurrent use of the substance resulting in a failure to fulfill major role obligations at work, school, or home.
 6. Continued use of the substance despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of its use.
 7. Important social, occupational, or recreational activities are given up or reduced because of the substance.
 8. Recurrent use of the substance in situations in which it is physically hazardous.
 9. Use of the substance is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.
 10. Tolerance, as defined by either of the following:

- a. A need for markedly increased amounts of the substance to achieve intoxication or desired effect.
- b. A markedly diminished effect with continued use of the same amount of the substance.

11. Withdrawal, as manifested by either of the following:

- a. The characteristic withdrawal syndrome for other (or unknown) substance (refer to Criteria A and B of the criteria sets for other [or unknown] substance withdrawal, p. 583).
- b. The substance (or a closely related substance) is taken to relieve or avoid withdrawal symptoms.

(APA, 2013, p.577)

It seems this diagnostic criteria could apply to *behaviors* as well as *substances*; one can imagine how gambling might, in disordered cases, fulfill several of these.

Gambling has been added to DSM-V's "Non-Substance-Related Disorders" category, making it a diagnosable non-substance-related behavioral addiction (DSM-V, 2013; O'Brien, 2010, p.867). It has its own diagnostic criteria that define when gambling behavior becomes disordered and, thus, distressing to an individual. Its diagnostic criteria are as follows:

- A. Persistent and recurrent problematic gambling behavior leading to clinically significant impairment or distress, as indicated by the individual exhibiting four (or more) of the following in a 12 month period:
 - 1. Needs to gamble with increasing amounts of money in order to achieve the desired excitement.

2. Is restless or irritable when attempting to cut down or stop gambling.
3. Has made repeated unsuccessful efforts to control, cut back, or stop gambling.
4. Is often preoccupied with gambling (e.g., having persistent thoughts of reliving past gambling experiences, handicapping or planning next venture, thinking of ways of getting money with which to gamble).
5. Often gambles when feeling distressed (e.g., helpless, guilty, anxious, depressed).
6. After losing money gambling, often returns another day to get even (“chasing” one’s losses).
7. Lies to conceal the extent of involvement with gambling.
8. Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling.

B. The gambling behavior is not better explained by a manic episode.

(APA, 2013, p.585)

The criteria for disordered gambling are similar to the “Other (or Unknown) Substance-Related Disorders”, but they have been localized to gambling. The DSM-V notes, at this time, only gambling disorder has been studied enough to be classified this way (DSM-V, 2010, p.586). However, it is common for subsequent editions of DSM to include newly accepted disorders, like gambling in this case.

Accepting a behavioral addiction (gambling) could lend credence to others; compulsive internet-use is one behavior recommended for further study (O’Brien, 2010, p.867). Its admittance could refute some early 2000’s claims that question whether

internet-use (as well as other behaviors) can be considered potentially addictive. Critics tout internet usage as not addictive itself, but rather a secondary means for participating in primarily addictive behaviors such as gambling or shopping (Holden, 2001, p.982). However, increases in internet usage, as evidenced by social media, lead some to believe that the internet itself is an addictive entity deserving admittance to DSM's confirmed behavioral disorders.

Could other, less studied, behaviors fit DSM-V's "Other (or Unknown) Substance-Related Disorders" criteria strongly enough to warrant diagnostic criteria? It seems logical to believe, since gambling *has*, internet-use and other behaviors (i.e thrill-seeking, shopping, exercise, sex, etc.) may be worthy candidates for criteria.

Thrill-seeking Behavior: A Possible Candidate for DSM

Thrill-seeking behavior produces floods of excitement sensations; thrill-seeking is a subordinate of sensation-seeking behavior: the parent category to which gambling and alcohol/substance-use are included. Sensation-seeking uses the body's pre-existing mechanisms of neurotransmittance and perception to produce "varied, novel, and complex sensations and experiences" (Zuckerman cited in Roberti, 2004, p.256). Like any other potentially addictive substance/behavior, participation in thrill-seeking alone *does not* determine the development of addiction. Thrill-seeking is a personal process and subjective in its outcomes; it is important to consider how an individual *perceives* excitement sensations that it often produces. For one individual, riding a rollercoaster (mild thrill-seeking activity) produces intense thrill sensations in the brain's reward circuit; in another, these excitement sensations could trigger little to no dopamine release, causing an excitatory response devoid of pleasure. Conversely, a BASE-jumper might not find the rollercoaster intense enough; they might behave more calmly. BASE jumping, however, produces excitement responses that are ideal; the jumper, like a compulsive gambler, feels a satisfying "rush" of sensation, defined as *thrill* (Segal et al.,

2016). Backing Shaffer et al. (2004)'s claims, the subjectivity of thrill-seeking allows varying degrees of expression, i.e. different thrill-seeking individuals: the rollercoaster-lover, the anti-rollercoaster person, the BASE-jumper.

BASE Jumping:

BASE jumping (intense thrill-seeking activity) is the act of leaping from tall structures (bridges, arches, spans, earthly formations, etc.) with the assistance of a specially designed parachute that allows skilled jumpers to land safely; aside from the parachute, nothing keeps him/her from serious injury. Severe injury/death is always a possibility with BASE-jumping; while some have *gone BASE-jumping*, most do not call themselves *BASE-jumpers*. Only “about 1000-1500 active” *BASE-jumpers* are reported (Griffiths, 2014).

To outside observers, the act of BASE-jumping may seem mostly irrational and self-defeating; “there exists a widespread belief that BASE-jumpers are in some way unusual” (Monasterio et al., 2012, p.391). A study conducted by Erik Monasterio, Roger Mulder, Christopher Frampton (University of Otago), and Omar Mei-Dan (University of Colorado) in 2011 explored personalities of BASE-jumpers. It illustrated that personality traits of “low harm avoidance”, “high self-directedness”, and “high novelty seeking” are observed in most base jumpers; 40% of the sample scored “extremely low” for the trait of harm avoidance but, aside from this category, most scored within normal ranges for other temperament and character dimensions tested: reward dependence, persistence, cooperativeness, self-transcendence (Monasterio et al., 2012, p.392-393). This indicates BASE jumpers are not innately different—in most regards—in terms of personality; aside from low harm avoidance, it seems they are quite ordinary.

This observation is important; it is “not surprising or counterintuitive,” as these individuals are “carefree, relaxed, daring, courageous, composed, and optimistic even in

situations that worry most people (Monasterio et al, 2012, p.395). They exhibit “confidence in the face of danger and uncertainty”; this prompts “optimistic and energetic efforts with little or no *distress*” (Monasterio et al., 2012, p.395).

Thrill-seekers also exhibit “high [self-directedness]” and “[emphases] on *discipline* and *skill acquisition*” that “[help] explain why BASE jumpers engage in risk taking behaviors by normative rather than impulsive/disorganized antisocial means (such as drug use and criminal behavior)” (Monasterio et al., 2012, p.397). It seems, for BASE-jumpers, BASE-jumping involves more eustress motivators than distress ones. Their thrill-seeking behaviors do not usually result in “deterioration of the person’s engagement with the rest of his or her life, which increases the person’s dependence on the addictive object or involvement” (Peele, 2001). Therefore, most BASE-jumpers probably do not meet the DSM-V’s “Other (or Unknown) Substance Use Disorder” criteria strongly enough for their behavior to even be described as problematic.

Conclusions

This goal of this paper was to put behavioral addiction to thrill-seeking into a beneficial context in hopes that the resulting addictive behavior could be viewed as an adaptive coping mechanism. However, research has led to modification of the original viewpoint. While addictions to thrill-seeking seem possible, addiction is, by definition, a set of behaviors (drug-related or otherwise) becoming disadvantageous to the point of self-destructiveness; this fundamentally contradicts definitions of adaptive coping, thus nullifying the argument. However, adaptive and maladaptive descriptors of coping are subjective; thrill-seeking could be used as a coping mechanism, although its adaptive nature cannot be proven here; if this is the case, the terms “addiction” and “disorder” would not apply to such behavior. That being said, should individual thrill-seeking behavior fall short of classification as addiction, there may be numerous benefits associated with it: confidence, optimism, relaxation

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Chemistry

Kateryna Zhdanova, Bioremoval of 2-Chlorophenol by using solid wastes as an alternative for wastewater treatment

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Bioremoval of 2-Chlorophenol by using solid wastes as an alternative for wastewater treatment.

Abstract

The presence of phenolic compounds is often underestimated in environmental protection. However, the combination of their prevalence in industrial runoffs and negative impact in human health and ecology is a top-priority concern. Chamomile (CM), green tea (GT) and peppermint (PM) spent tea leaves were used as potential adsorbents of 2-chlorophenol (2-CP) from aqueous solutions in batch conditions at room temperature. Equilibrium parameters such as pH and adsorbent dose were studied to maximize the uptake of 2-CP. Moreover, the effect of interfering inorganic and organic substances on the adsorption was studied. Results indicate that the adsorption of 2-CP is strongly affected by the pH, showing its lowest and highest values at pH 6 (21%) and pH 9 (90%) for CM. Adsorption of 2-CP followed the trend: CM (80%) > PM (58%) > GT (47%) and was slightly affected by the presence of Cu(II) and Pb(II) metal ions and polyethyleneglycol as ionic and covalent interfering substances, respectively. According to the results, solid wastes such as spent tea leaves have not only proven to be potential 2-CP adsorbents, but also inexpensive and biodegradable materials.

Keywords: 2-chlorophenol; Adsorption; Bioremediation; Tea Leaf Wastes

Introduction

Over the past few decades, water bodies have been exposed to synthetic chemicals,

such as plasticizers, insecticides, herbicides, and fungicides. The discharge of these substances into the environment (through industrial, agricultural, medical and domestic activities) has produced significant eco-toxicological problems with serious consequences for all living organisms. One group of these toxic molecules is chlorophenols, which have been classified as major pollutants by the US Environmental Protection Agency (EPA). (US EPA, October 2002)

Chlorophenols (CPs) pose serious environmental hazard due to their prevalence in industrial activities (i.e. bactericides, insecticides, herbicides and fungicides). They are found in wastewater, industrial runoffs, and underground water. Other sources of contamination by chlorophenols are hazardous waste disposal sites, storage tanks, and public landfills. Pharmaceuticals also use chlorophenols as potent antiseptic, contributing to the pollution of water resources. Moreover, previous studies have demonstrated that chlorophenolic compounds are also formed during the combustion of organic matters. (US EPA, *Section 313*, October 2002)

Chlorophenols is the name of a big family of compounds, including mono-, di-, tri-, tetra-, and penta-chlorinated phenols. The 2-chlorophenol (2-CP), 2,4-dichlorophenol (2,4-DCP) and 2,4,6-trichlorophenol (2,4,6-TCP) are commonly present as ingredients for standard procedures for manufacturing companies. A larger industry involves the application of CPs for the production of more potent pesticides. (Grigoriev. *Institute Institute for occupational health*. 1940) For example, chlorobenzenes and chlorinated cyclohexenes are synthesized from CPs. (US EPA, *Chlorophenols*, October 2002)

From the toxicological point of view, it has been proven that different classes of CPs can cause liver, kidney and DNA damage in the long term. (Canviro Consultant, *Pilot Monitoring study Vol. 1*, 1988) Likewise, the relationship between cancer and exposure to CPs and related chlorophenoxy acid herbicides has been examined in a number of epidemiologic studies. (Lewis, *Sax's dangerous properties of industrial materials*,

1999) One of them is the Hodgkin's lymphoma disease, where the body produces abnormal type of white blood cells. In addition to this disease, clinical studies indicate that exposure to CPs is also associated with tumors, sarcoma and lung cancer. (U.S. Department of Health and Human Services. 1999) Hence, CPs have been identified as hazardous substances.

Considering CPs are commonly present in pesticides, scientists have realized that our ecosystem has to be protected from these chemicals that contaminate potable. Unfortunately, soil is not acting as a protective filter. (Zuorro, *Spent tea leaves as potential low cost adsorbents for the removal of azo dyes from wastewaters*. 2013) Thus pesticides can reach water-bearing aquifers below the ground to crop fields, seepage of contaminated surface, accidental spills, leaks, and improper disposal. It takes decades for chemical effects to become apparent in the ground water, which makes it important to include a time lag between the application of pesticides and fertilizers. The land and shallow ground water will improve before the deep ground water does. This problem is also observed in the water recycling systems in industries that use CPs and any toxic organic compound. (USGS, *Science for changing world*. 2015)

Wastewater treatment techniques of CPs from industrial sources include processes such as biological degradation, oxidation, adsorption on activated carbon, membrane filtration, electro-dialysis and reverse osmosis, among others. (Klemetson, *Removal of phenolic compounds in coal gasification wastewaters using a dynamic membrane filtration process*. 1977) Although these methods are widely used and can be applied for large volumes CPs in contaminated water, nevertheless they decrease their removal efficiency at low pollutant concentrations in solution and they demand high cost of operation, energy and workforce. (Aksu, *A comparative adsorption*, 2001)

Moreover, many countries agree with the fact that water recycling is a top-priority research. Our natural water resources are depleting, partially due to the constant growth

of world population. (Lens, *Water recycling and resource recovery in industry*, 2002) As a result, water-recycling processes need more innovative techniques, which should be cost-effective and easily applicable.

Bioremediation, as a field of biotechnology, proposes alternative and eco-friendly solutions for the decontamination of toxic inorganic and organic pollutants from wastewaters. Different materials, such as marine algae, fruit peels, and polymeric hydrogels have been utilized for the elimination of heavy metals (Navarro, *Use of seaweeds for biosorption of cupric ions from aqueous solutions*. 2009), dyes (Navarro, *Adsorption kinetics of cobalt (II) ions onto alginate beads from aqueous solutions*, 2014) and antibiotics (Navarro, *Uptake of sulfa drugs from aqueous solutions by marine algae*, 2014) with positive results. The use of these biological materials is supported by the high affinity between natural polysaccharides and the pollutants by physical adsorption. Functional groups such as hydroxyl, carboxyl, amino and carbonyl contain lone pairs of electrons that serve as active sites for the formation of dipole, hydrogen bonding, ion-dipole and electrostatic interaction with these toxic substances. (Reyes, Navarro and Llanos, *Use of seaweeds for biosorption of cupric ions from aqueous solutions*, 2014) On the other hand, cellulose is the most abundant natural polysaccharide in the planet and cannot be used for human consumption due to its structure and because humans lack of an enzyme that is needed for its catabolism. Spent tea leaves are mainly composed of cellulose and have been studied as adsorbents for the removal of metals and organic compounds. (Kim, Musaev, Navarro. *Comparative adsorption of highly porous and raw adsorbents for the elimination of copper (II) ions from wastewaters*. 2013) As indicated in these studies, spent tea leaves are solid industrial wastes of tea-based factories such as Snapple, Nestea, and Arizona that produce large amounts of these wastes that need to be disposed of. Most likely, these tea leaves end up as landfill without any beneficial use. (Choi, Navarro. *Use of spent tea wastes-chitosan capsules for the removal of divalent copper ions*. 2015)

In this research, spent tea leaves of chamomile (CM), green tea (GT) and peppermint (PM) were used as a low-cost adsorbent for the removal of 2-CP from aqueous solutions. The potential of these biomaterials for the elimination of 2-CP was tested with different experimental conditions to determine the best adsorption parameters that maximize the uptake of 2-CP. A broader impact of this study also includes the establishment of a new ecological mindset that envisions the use of solid industrial wastes for the remediation of contaminated waters and a better understanding about the negative impact of CPs in the environment.

Materials and methods

Reagents and solutions

A stock solution of 1000 mg/L of 2-CP (ACS Grade, ACROS Organics) was prepared with deionized water. Solution was kept in a glass container and covered with aluminum foil to prevent photodegradation. For the adsorption experiments, 2-CP solutions were made by dilution of this stock solution with deionized water to reach the desired concentration. The stock solution was always maintained under refrigeration and its concentration was periodically determined to assure no degradation of the pollutant.

Preparation of the adsorbents

Spent tea leaves of chamomile (CM), green tea (GT) and peppermint (PM) were prepared by a methodology that has previously used. (Kim, Musaev, Navarro. *Comparative adsorption of highly porous and raw adsorbents for the elimination of copper (II) ions from wastewaters*. 2013) In brief, tea bags were purchased from a local market and treated in sequential rinses of boiling distilled water to remove color, taste and smell. Final rinses were conducted with deionized water to eliminate any salt and water-soluble impurities. Then, the spent tea bags were oven-dried overnight at a temperature not higher than 60 °C to prevent any chemical or thermal decomposition.

Finally, the dry tea bags were opened and stocked in plastic containers. No organic decomposition was observed in any of the adsorbents over the time. These adsorbents were stored at room temperature and use for the batch experiments.

Adsorption experiments

The uptake of 2-CP on spent tea leaves was studied in discontinuous experiments in triplicates using amber glass vials to prevent photo-degradation of the phenolic compound. Experiments were carried at room temperature under orbital agitation of 250 rpm (revolutions per minute) in an incubator shaker (New Brunswick Scientific, Model C24). Preliminary experiments indicated that less than 24 h are needed to reach the equilibrium. For the discontinuous experiments, a given mass ranging from 25 to 250 mg of adsorbent, were placed in contact with 30 mL of solutions of variable concentrations 2-CP (between 50 and 100 mg/L). Different equilibrium parameters were considered including initial pH (ranging from 2 to 10), mass of adsorbent (ranging from 25 to 250 mg), and the presence of heavy metal ions and surfactants as ionic and covalent competitors. Lead (II) and copper (II) ions were used as heavy metals ions in concentrations between 0 and 100 mg/L) and polyethylene glycol (PEG) as a surfactant in a concentration range between 0 and 10% m/v. Vials were sealed with parafilm to avoid leaks. Upon equilibrium, the adsorption of 2-CP on CM, GT and PM was determined by comparison of the initial and final 2-CP concentrations. These concentrations were determined by UV-vis spectrophotometry at wavelengths of 510 nm, following the methods of Gales and Booth. (Gales. *Automated 4-AAP Phenolic Method*. 1976) This method involves the reaction of 4-aminoantipyrine with potassium ferricyanide and phenolic compounds in a buffer at pH 8. These analyses were carried out using an automatized microplate reader (Synergy4, Biotek).

Data analysis

The amount of adsorbed 2-CP onto spent tea leaf samples was expressed as adsorption percentage and calculated as shown in Equation (1):

$$\%ADS = \frac{(C_i - C_{eq}) * 100}{C_i} \quad (1)$$

where C_i and C_{eq} are the initial and final concentrations of 2-CP in mg/L, respectively. Data analysis and plotting was conducted using the statistical software Origin v 8.0. All the experimental results shown in the graphs have errors $\leq 3.5\%$.

Results and discussion

pH effect

Industrial wastewaters are typically acidic; therefore finding the most appropriate adsorbents has always been a challenge. As shown in Figure 1, pH plays an important role in the adsorption of heavy metals (Navarro. *Adsorption kinetics of cobalt (II) ions onto alginate beads from aqueous solutions*. 2014) and organic pollutants (Kostadinova, Navarro. *Acid-base properties of the adsorption of synthetic dyes from solutions*. 2014) According to the results, pH has a very strong effect on adsorption, as it is high at low pH, then decreases at mildly acidic media and displays its highest value at high pH values. The role of pH resides on the ionization of functional groups that are present on the surface of adsorbents and on the deprotonation of 2-CP. The pKa value for 2-CP is 8.56, meaning that at solution pH values of 8.56 and higher, 2-CP becomes negatively charged as a phenoxide ion. On the other hand, acidic functional groups on the adsorbents (mainly carboxylic acids) have a pKa around 4 (Klein. *Organic Chemistry* 2012), involving that the surface of the adsorbent becomes negatively charged at pH higher than 4. These pKa values agree with the results observed in Figure 1 for the effect of pH on the adsorption of 2-CP. As expected, at low pH values, both adsorbent and 2-CP

are in their neutral form and therefore interaction forces like hydrogen bonding, dipole and dispersion are formed and a positive adsorption is observed, reaching values as high as 63% with GT. As the solution pH increases, it approaches the pKa of the adsorbent and the adsorption decreases to its lowest value. At this pH medium, the adsorbent is negatively charged whereas 2-CP remains neutral. Apparently, this adsorbent/adsorbate combination does not produce a favorable adsorption. As the pH increases towards the pKa value of 2-CP, the adsorption percentage spikes up to 90% with GT at pH 9, and finally slightly decreases at a pH value of 10. This behavior could be explained by the fact that 2-CP becomes negatively charged and is able to form more stable hydrogen bonds with the hydroxyl groups of the surface of the adsorbents. Then, adsorption slightly decreases at pH 10 for all the adsorbents. A plausible explanation for this decrease could be the increase of hydroxide ions in solutions that compete with phenoxide ions for active sites on the adsorbent. Higher pH values were not studied because wastewaters, in general, are not very basic. Finally, the pH effect experiment indicates that the adsorption percentage follows the trend: GT>CM>PM, with values of 90%, 75% and 43%, respectively.

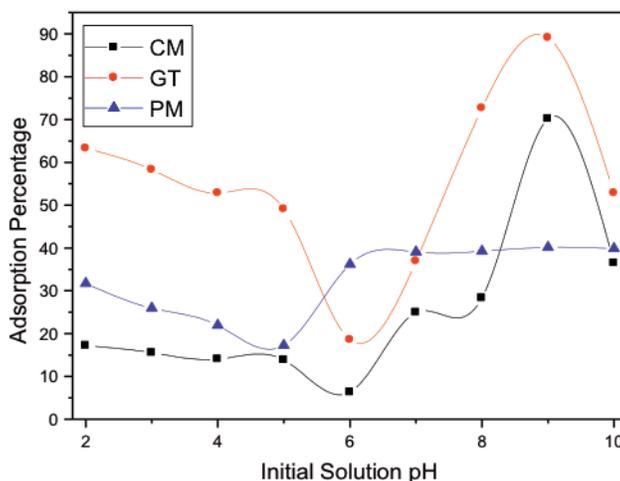


Figure1: Effect of the solution initial pH on the adsorption of 2-CP onto tea leaf samples.

Effect of the adsorbent mass

An optimum and sustainable bioremediation process involves the use of minimum

biomass to achieve the highest elimination of 2-CP. This will not only reduce transportation and operational costs, but also contribute to prepare scaled-up processes in continuous-flow experiments (i.e. column adsorption). As shown in Figure 2, nearly 80% of 2-CP was adsorbed with a mass of 150 mg of CM. Conversely, GT and PM display a decrease in the adsorption at increasing adsorbent doses. This behavior has already been observed in previous adsorption studies. (Reyes, Navarro, Llanos. Use of seaweeds for biosorption of cupric ions from aqueous solutions. 2009) According to these reports, the decrease in adsorption is associated with the formation of adsorbent aggregates in solution that reduce the specific surface area and the number of available active sites. From the results, CM does not aggregate in solution, and therefore higher adsorbent masses provide more active sites for the adsorption of 2-CP. This conclusion was experimentally corroborated during the adsorption test, where CM was well-dispersed in the glass vials. This adsorbent aggregation could be produced by the decrease in polarity of the solution with 2-CP. CM has a lower density, when compared with GT and PM, and therefore is able to disperse in the solution even at higher adsorbent doses.

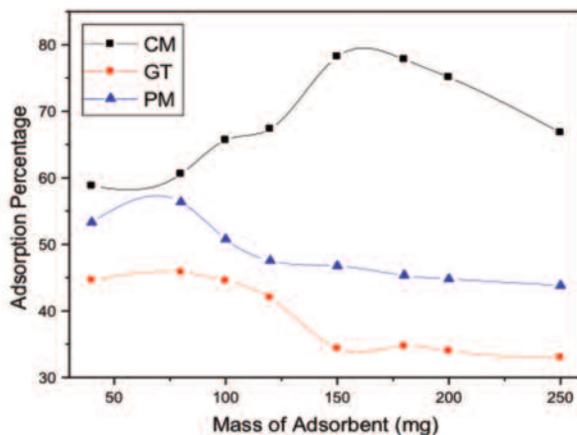


Figure 2: Effect of the mass of the adsorbent on the adsorption of 2-CP

Effect of the presence of surfactant

One of the most important challenges in wastewater bioremediation is the complexity of solutions, which are not only composed of the pollutants, but also of other substances

that prevent an efficient adsorption. For example, soluble salts and detergents are innocuous or have low impact in ecology; however they are able to bind to the adsorbents, occupying active sites that are meant to be used in the elimination of pollutants. In this experiment, 2-CP solution were also mixed with PEG at different concentrations. PEG is a water-soluble polymer that consists of long chains of polyethers. Preliminary tests have demonstrated that PEG does not interact with 2-CP, and does not get adsorbed onto the tea leaf samples. The purpose of PEG in solution is to mimic soluble covalent substances in solution to prevent the adsorption of 2-CP. According to the results in Figure 3, the adsorption percentage increases at low PEG concentrations for all the adsorbents. However, at higher PEG concentrations, 2-CP is severely affected. This phenomena could be explained by the increase in solubility of 2-CP in PEG. This surfactant creates a more hydrophobic environment that promotes the total dissolution of 2-CP (perhaps by stabilizing the phenoxide ions that has a non-polar aromatic ring). Conversely, higher PEG concentrations cause the opposite effect. PEG does increase the dissolution of 2-CP in solution, but at these PEG doses, the surfactant blocks the access of 2-CP to the active sites and decreases the adsorption of the pollutants. This blocking effect is not observed at low PEG levels, due to the predominance of 2-CP in solution.

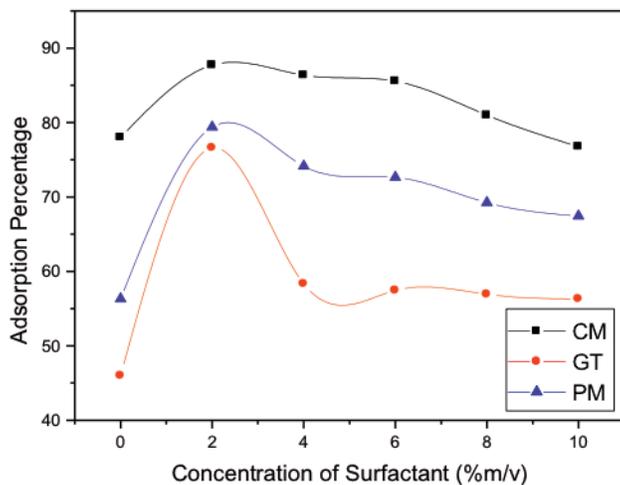


Figure 3: Effect of the presence of PEG on the adsorption of 2-CP onto spent tea leaf samples.

Effect of the presence of heavy metal ions

Heavy metal ions of Cu(II) and Pb(II) were used as inorganic interfering substances for the adsorption of 2-CP. These metals are species that are commonly found in wastewaters and pose high toxicity to humans and ecology. Previous reports have demonstrated that biological materials have a high affinity towards heavy metal ions (Kim, Navarro. *Comparative adsorption of highly porous and raw adsorbents for the elimination of copper (II) ions from wastewaters*. 2013), therefore it is important to consider the presence of these ions on the adsorption of 2-CP. Experimental data is shown in Figures 4 and 5 for copper and lead divalent ions, respectively. From the results, a higher adsorption is observed at low Cu(II) ion concentrations, whereas higher levels of copper ions seem to decrease the adsorption. However, up to 100 mg/L of Cu(II) in solution does not affect the adsorption of 2-CP. These results agree with the conclusions that 2-CP and Cu(II) ions do not compete for the same adsorption sites.

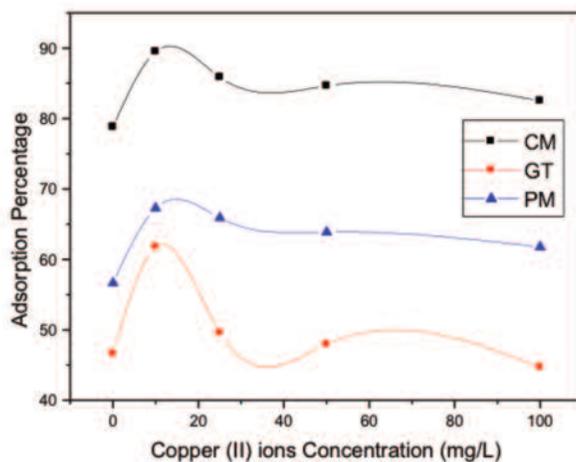


Figure 4: Effect of the presence of Cu(II) ions on the adsorption of 2-CP.

A similar study was conducted with Pb(II) ions. From the results, as observed in Figure 5, Pb(II) ions have a positive effect on the adsorption of 2-CP. For this metal ion, the graph indicates that Pb(II) metal ions and 2-CP do not compete for the same adsorption sites. A plausible explanation for the small increases on the adsorption with

both metal ions could be the binding of the metal ions on the adsorbent that can potentially form complexes with 2-CP (mostly with the negatively charged phenoxides). More studies are needed to demonstrate the enhancement of the adsorption in the presence of these heavy metals. However, it is important to highlight that the results indicate that 2-CP can be efficiently adsorbent onto the spent tea leaf samples, even in the presence of Cu(II) and Pb(II) metal ions in solutions.

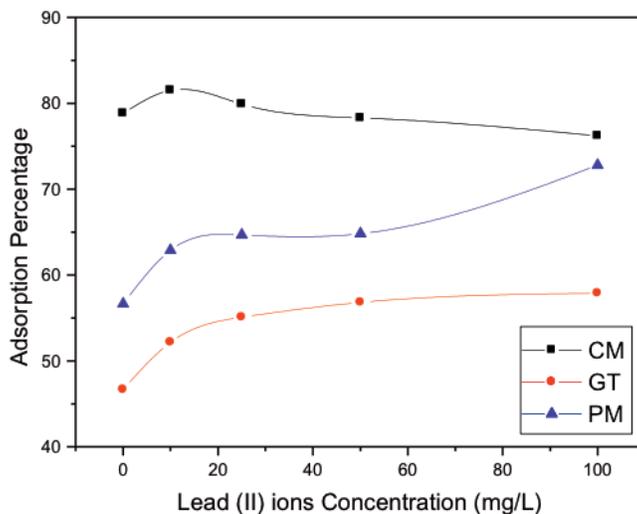


Figure 5: Effect of the presence of Pb(II) ions on the adsorption of 2-CP.

Conclusions

Chlorophenolic compounds are prevalent pollutants in pesticides and adhesives industries. Therefore, the development of eco-friendly and sustainable adsorbents is can be potentially applied for water remediation. This study proposes the use of spent tea leaves of chamomile (CM), green tea (GT) and peppermint (PM) as adsorbents for the elimination of 2-chlorophenol (2-CP) from aqueous solutions. Experimental data indicate that these solid wastes can be potentially used to adsorb 2-CP. Adsorption tests demonstrated a strong pH effect on the adsorption, reporting adsorption capacities of 80%, 58% and 47% for CM, PM and GT, respectively. The presence of interfering inorganic and organic substances was also studied. Results indicate that Cu(II) and Pb(II) metal ions do not compete for the same active sites with 2-CP. On the other hand, a covalent

surfactant PEG, does prevent an efficient adsorption, but improves the dissolution of 2-CP in solution. The pH-dependence and pKa analyses indicate that the adsorption is mainly driven by hydrogen bonding between the phenoxide ions of 2-CP and the hydroxyl groups of the spent tea leaves. This research proposes tea leaf wastes as potential, low-cost and eco-friendly alternative for the remediation of 2-CP. These biomaterials are not only able to remove 2-CP from contaminated waters, but also represent a better use of solid industrial wastes.

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Sociology

Taylor Natiello, Disclosure and Closeness of Relationship Partners: The Role of Technology, Disclosure Type, and Nonverbal Communication Methods

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Communication Privacy Management Theory and Social Penetration Theory work together to create a compounding scenario in which as an individual discloses more information with a relationship partner, that person is more likely to trust the relationship partner with his or her own personal information. An article written by Andrew M. Ledbetter and his colleagues explains how their theoretical model of communication behavior works, and how their results showed “the interaction effect between self-disclosure and social connection directly predicting Facebook communication and indirectly predicting relational closeness. For both dependent variables, online social connection was a positive predictor at low and moderate levels of online self-disclosure” (Sage Journals, 2015). This illustrates how the closeness between relationship partners is affected by how much self-disclosure is exchanged between them. Disclosure can positively affect the closeness between relationship partners through the use of technology, type of disclosure, and the nonverbal communication accompanying the disclosure.

People disclose private information to certain individuals versus others because of where they are in the stages of their relationships via various communication methods, including technology, verbal, and nonverbal methods. Technology grants social media users the ability to set boundaries of disclosure. As they set their boundaries, they can choose what information will be shared with whom. Because of certain privacy

settings on a great number of social media sites, people have control over this aspect of sharing their information and can even change it as they deem necessary due to the ease and quick accessibility of social media on multiple devices. On Twitter and Instagram, account users have the ability to change their privacy settings to grant only certain individuals inside or outside their circles access to their profiles if it is requested. This privacy management even extends outside of the basic account privacy settings and includes how social media users decide to share information in private chat rooms or statuses. According to the Pew Research Center, “Among teen Facebook users, most choose private settings that allow only approved friends to view the content that they post,” (Pew Research Center, 2015). This exemplifies that individuals choose specific people with whom to share their information. This data point provided by the Pew Research Center illustrates the involvement of social media in communication and its association with Communication Privacy Management Theory as the teens used the settings on Facebook to choose which personal information is shared with whom. They have the ability to choose those with whom they wish to get close. Verbal communication affects the phenomenon through the feeling of being close to others in a group, thus, they can act accordingly. Regarding verbal communication and its relation to closeness and disclosure, Robinson expresses, “The concept of solidarity refers to the feeling that individuals are either close or remote, part of an ‘in-group,’ or identifying with an ‘out-group” (Brown). As people begin to choose those with whom they get closer, they also choose how deep in the social penetration process they want to go. It is up to people to make those choices as they begin or continue their relationships with other individuals. Additionally, self-disclosure can be beneficial to that closeness within relationships. The more self-disclosure, the closer people can become during the stages of the social penetration process. In contrast, the lack of closeness of individuals contributes to fewer feelings of closeness, which can change the outcome of a relationship as people go through the various stages of the social penetration process. As

self-disclosure increases, so does solidarity. As solidarity decreases, self-disclosure does as well. Proof of this connection remains within the work of Wheelless. In a 1976 study, Wheelless found that self-disclosure was highest in relationships with high solidarity. Low solidarity, on the other hand, appeared to suppress self-disclosure ‘despite the disclosive tendencies of the individual,’” (qtd. in Robinson, 2015). The information that Wheelless gained during this study demonstrates the connection between self-disclosure and closeness, which essentially translates into a further explanation of the connection between the Communication Privacy Management Theory and Social Penetration Theory. Nonverbal communication coupled with disclosure also affects closeness as both are common ways of becoming closer with others. Through the five senses, people are given further information about what is around them that provides them with the ability to determine exactly how they want to perceive the world in which they live. As they create those perspectives of those with which they interact, they process that information and combine it with the verbal context that is given. During a conversation, nonverbal communication also sends messages between the two communicators that provides a deeper meaning to what is being said and whether or not more information will be shared in the future with either communication partner. According to Andersen and colleagues, “When social interaction takes place in close proximity, the frequency and duration of touch can be used as an indication of liking or interpersonal closeness,” (qtd. in Gorham et al., 2007). During an interaction, someone may lean in toward their communication partner in order to disclose extremely private information, or that person may choose to whisper the information instead. In this particular case, one of the essential aspects to the way that nonverbal communication contributes to the interaction is the way it supports closeness between communication partners. A hand on the arm as someone confides in a co-worker or a playful elbow nudge between best friends could change the way that the information is both given and received. This type of touch is beneficial to the closeness in the relationship, whether romantic or non-romantic, as it

accompanies the self-disclosure. This paves the way for further interactive opportunities as closeness builds and the communication partners open up to one another. Touch provides another way of supporting a message by nonverbal communicative means in order to bring people closer in their relationships.

The contexts covered in this research include interpersonal and small group. This includes person-to-person communication and the dynamics of communication within groups of people, and communication through media to particular individuals. The focus is on the relationships between teens or adults that are friends, co-workers, or family from any culture. The aspects of research about media pertain to social media and technology, and its effects on those relationships during the times when CPM Theory and Social Penetration Theory apply. In today's age of technology, people have the ability to quickly edit posted information that can shape people's opinions of each other. With that quick and easy system for changing information and privacy settings, people can better control their boundaries of information sharing. Stephen Cory Robinson gives insight into this concept, "Impression management is indeed a central concern in online socializing. For better or worse, impression management has now become a critical consideration in online privacy and communication of all kinds, illustrating how early explorations of the psychology of person-to-person self-disclosure can serve as a strong starting point for the analysis of online relationships," (Robinson, 2013). People control how they want to be viewed, by whom they want to be viewed, and on what social media platforms they would like to be viewed according to why they chose those social media platforms. The interpersonal relationship growth of individuals is quite often determined by how others perceive them, and people control how people perceive them by what they share across the various platforms available to them through technology.

In the interpersonal context, disclosure is necessary for interpersonal relationships, which fosters closeness. John Cragan and his colleagues explain, "One of

the fundamental rules for building interpersonal relationships is ‘disclose when disclosed to,’” (Cragan et al., p. 50). In the small group context, the progression of the members through the social penetration process will coincide with the rate at which they disclose to one another and grow as a group. Cragan and his colleagues go on to say, “If each [group] member engages in mutual and moderate disclosure, each will contribute to the growth of the group’s overall maturity. A group needs to know the personal strengths of its individual members to maximize productivity,” (Cragan et al., 2009).

Regarding the theories themselves, Communication Privacy Management Theory and Social Penetration Theory combine to create a circumstance where the more someone discloses to someone else, the more likely that person is to reciprocate the disclosure and gain closeness. Technology usage is one way in which disclosure can positively affect the closeness between relationship partners. A journal written by Andrew M. Ledbetter and his colleagues elaborate, “Some 60% of teens ages 12-17 who use Facebook say they have their profile set to private, so that only their friends can see it. Another 25% have a partially private profile, set so that friends of their friends can see what they post. And 14% of teens say that their profile is completely public,” (Pew Research Center, 2015). For both dependent variables, online social connection was a positive predictor at low and moderate levels of online self-disclosure,” (Sage Journals, 2015). The people to whom each individual discloses information also affects the closeness after disclosure. In the case of the disclosure amongst family members, kids who disclosed information to their parents expressed feeling close to their families. Dennis R. Papini and his colleagues conducted a study about the age and pattern differences during adolescents’ disclosure to parents and friends. The researchers explain, “Results revealed that females exhibited greater emotional self-disclosure to parents and peers than males... Exploratory hierarchical regression analyses revealed that emotional self-disclosure to parents was most strongly associated with adolescent perceptions of the openness of the family communication, family cohesion, and

satisfaction with family relationships,” (Papini et al., 1990). Gender also impacts what type of disclosure will be given and to whom, thus, affecting the closeness of the relationship. Contributor to “Self-Disclosure: Theory, Research, and Therapy,” Valerian J. Derlaga writes, “The earliest research on self-disclosure found that men revealed less about themselves than women,” (Derlaga, 1987). Depending on the gender of the individual and the topic of disclosure, he or she can set up boundaries according to the gender of the person with whom they are talking.

Mehrabian illustrates, “People rarely transmit implicitly [nonverbally] the kinds of complex information that they can convey with words; rather, implicit communication deals primarily with the transmission of information about feelings and like-dislike or attitudes,” (Mehrabian, 1981, p. 3). This phenomenon is worth exploring because the research on the association of CPM Theory and Social Penetration Theory is connected with people’s daily lives, and what information they choose to give to whom or what they yield from their interactions throughout the day, such as closeness, are significant. Lack of closeness affects relationships, which shows the importance of how that closeness is built and how creating questions about how it can be improved will benefit people. William M. Bukowski, Andrew F. Newcomb, and Willard W. Hartup explain, “Closeness with parents and siblings decreased with age,” (Bukowski et. al., p. 198). There are inconsistencies in closeness in relationships such as that of the parents and siblings that can be mended with further research. The findings from this research of closeness and disclosure help provide a better understanding of the connection between Communication Privacy Management Theory and Social Penetration Theory, as well as the subcategories that are associated with them to those making use of these findings, such as individuals in institutions that are researching the theories. The research also benefits the general public, who can use it to better understand the theories, ask further questions about those areas of communication, and recognize a new line of research into which they can delve pertaining to the connection between the theories. Because the

research focuses on disclosure and the closeness that is developed throughout the relationship stages, people can also use it to examine the use of disclosure in their interactions with others and their overall lives.

The applied theories are Communication Privacy Management Theory and Social Penetration Theory. The Communication Privacy Management Theory hinges on the concept that people maintain the disclosure of their private information for various reasons while the Social Penetration Theory explains how people develop closeness as they disclose information about themselves. Petronio and Durham elaborate, “CPM, unlike previous work on self-disclosure, defines self-disclosure as a dialectical process in which a person constantly balances disclosing and concealing private information,” (Petronio & Durham, 2008). Communication Privacy Management Theory uses a rule-based system to illustrate the way individuals decide how to establish disclosure boundaries (Petronio, 2002). CPM is essentially the way people manage what and to whom they disclose information. Social Penetration Theory involves disclosure as well, yet it focuses on the process of the developing relationships with other individuals and moving closer toward intimacy. Relationships can range from the partners being strangers to being intimate. The closeness grows as the level of intimacy grows, and according to the SPT, the level of intimacy grows with more disclosure between the relationship partners. Altman and Taylor then explain SPT, “One approach, Social Penetration Theory, deals with the development of social relationships from strangership and casual acquaintanceship to the formation of more intimate bonds,” (Altman and Taylor, 1973). This information provided by Altman and Taylor demonstrates the process in which deeper relationships can be built. In the process, participants in the social penetration process undergo stages in which varying degrees of disclosure are considered. The deeper into the social penetration process the relationship partners go, the more intimate the relationship between the interacting individuals becomes.

Through the lens of the theory, people get close to certain people through disclosure during the stages of the social penetration process from Social Penetration Theory and choose what information to disclose and to whom, relating to Communication Privacy Management Theory. Closeness and self-disclosure are included in both theories, expressing even further the connection between the two theories. This shows that self-disclosure will allow people to become closer, moving through the various stages discussed in the Social Penetration Theory. More private information is often disclosed as people progress through the stages of the social penetration process, thus introducing the concept that various factors, such as those included in the criteria of the Communication Privacy Management Theory, play a role in determining who gets closer to whom.

Overall, research on the association of CPM Theory and Social Penetration Theory is currently very limited. These findings will help provide a better understanding of the connection between Communication Privacy Management Theory and Social Penetration Theory, as well as the related subcategories in contemporary research. Whether by independent researchers or researchers affiliated with higher education or other academic organizations, the cumulative findings can still be applied to the aforementioned theories unilaterally and almost unconditionally. Additionally, the research proves itself to ultimately be mutually beneficial for the academic world, in which the findings further researchers' understanding of the relationship between Communication Privacy Management Theory and Social Penetration Theory, and the general public, in which benefits may be applied across a broad spectrum of fields. The majority of fields of employment can require some degree of socialization, and any individual in any particular career can benefit from a deeper and more sophisticated understanding of the very principles that enable them to divulge personal information and connect despite an increasingly complex social environment. With more targeted research, individuals from nearly any academic background will be able to truly analyze

the findings and apply the results of those theories to their own unique circumstances, diving deeper into specific niches and ultimately drawing exciting new conclusions based on an unprecedented combination of personal experience. With increased accessibility comes increased awareness, which will ideally result in a series of diverse revelations and new veins of research that branch and divulge exponentially. On a more personal level, this increased amount of research on the personal aspects of the relationship between Communication Privacy Management Theory and Social Penetration Theory will likely give readers and researchers alike new potential avenues to pursue in their understanding of their own interactions. A better understanding of the particular facets of the compounding and revolving relationship between the two theories is a key component to improving on one's own interpersonal strategies, and improved research is the trailblazer to guide the way into vastly improved interactions throughout the course of the reader or researchers' respective lives. Experiments with as few as possible confounding factors would create a more complete picture. To remove the possibility of other causes disrupting the results, conducting experiments might remove some of those other factors.

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Biology and Genetics

Michael Schlag, *Veganism: Healthy, Sustainable, Ethical Change*

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Veganism: Healthy, Sustainable, Ethical Change

Introduction

Big change begins with small steps, which can sometimes be dietary choices. Humans eat for various reasons, but what people consume has immense consequences. Most cultures are comprised of omnivores, who consume both plant and animal matter, however vegans practice entirely plant-based diets. Vegans make three main arguments that impact society and the environment. In attempts to make big change, vegan abstention from animal products is superior to omnivorous diets for the health of the individual, environmental sustainability, and the ethical treatment of animals.

Benefits of Veganism to Human Health

As health is a key to happiness, most people prioritize the variables they can control, diet being a major component. Veganism appears superior to omnivorous diets in the prevention of chronic diseases. Despite the criticisms surrounding vegan diets, they can provide beneficial nutrition without the detriments of meat-based diets. While consideration of potential deficiencies is imperative, vegans can use supplementation and fortified foods to compensate for nutritional shortcomings.

One common health concern of vegan diets is a lack of essential fatty acids. However, a well-structured vegan diet can provide this nutrient. Admittedly, diets devoid of fish or eggs are typically deficient in omega-3 fatty acids, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), which are imperative for hear, brain, and eye health. However, plant sources of -linolenic acid (ALA) can be converted into EPA and DHA

(Burdge et al., 2003, p. 311-21). In addition, vegans may eat flaxseed, walnuts, canola oil, soy, or hemp, take a DHA microalgae supplement, or consume fortified foods (Messina et al., 2003, p. 771-5).

Iron deficient-anemia is another fear of those exploring veganism. Although absorption of heme iron from meat is significantly higher than non-heme iron from plant sources, hemoglobin concentrations and the rate of anemia are nearly identical for omnivores and vegans (Craig, 1994, p. 1233-7). Adequately-structured vegetarian diets have the same risk of anemia as omnivorous diets (Saunders, 2013, p. 11-16). As vegans typically intake foods rich in vitamin C, which enhances non-heme iron absorption, risk of iron deficiency leading to anemia is not of material concern (Wilson et al., 1999, p. 189-94).

Despite fear of vitamin D deficiency, veganism can provide adequate amounts of this nutrient. Vegans had the lowest mean vitamin D intake, about a quarter the average consumption of omnivores (Davey et. al, 2003, 259-69). However, all diet groups including omnivores should remain vigilant, as vitamin D concentration is determined by sun exposure and dietary intake. Citizens living in high latitudes receive less sun exposure for several months each year (Webb et al., 1988, p. 373-8). To combat this, vegans can obtain vitamin D through fortified foods and greater sun exposure (Messina et al., 2003, p. 771-5).

Nutrition is a key factor for decreasing osteoporosis, and plant-based diets have been shown to be more effective than those that include meat. Neither higher calcium nor greater milk consumption had any relationship to reduced fracture rate (Feskanich, et al., 2003, p. 992-7). Animal products may also decrease bone mineral density. Declines in extracellular pH may induce bone resorption—a process that breaks down bone cells (Teitelbaum, 2000, p. 1504-8) –as calcium is used to neutralize the body's pH (Arnett, 1996, p. 277-9). Acidic animal products increase urinary calcium excretion and bone

breakdown (Buclin et al., 2001, p. 493–9), a possible explanation for the high rates of osteoporosis in the U.S. To combat osteoporosis, vegans can consume fortified plant foods as well as natural plant sources, such as leafy green vegetables (Andon et al., 1996, 313–6). Calcium-fortified cereals and soy milks share similar calcium bioavailability to cow dairy (Zhao et al., 2005, p. 2379–82).

One legitimate concern of veganism is vitamin B12 deficiency. Vegans generally have higher rates of vitamin B12 deficiency and higher levels of plasma homocysteine, a risk factor for CVD and bone fracture (Majchrzak et al., 2006, p. 485–91). Thus they should consume fortified foods and nutritional yeast, or take a daily supplement (Messina et al., 2003, p. 771-5).

Perhaps the most common nutritional concern for those exploring veganism protein. Meat is a convenient source of protein, as one serving contains all essential amino acids (National Cattlemen’s Beef Association, 2009). As vegans only obtain amino acids from plants, many fear lack of protein by switching to this diet. St Jeor et al. (2001) found that plant foods are incomplete protein sources (St Jeor et al., 2001, p. 1869–74).

However, Willett and Skerrett (2010) declared that the source of amino acids is irrelevant. As protein is not consumed in isolation, the source of protein is key. Women should take in more beans, nuts, and seeds for protein and minimize fatty animal proteins (Skerrett and Willett, 2010, p. 492–501). Dr. McDougall also wrote that combining unprocessed starch with fruits and vegetables will provide all dietary protein and amino acids (McDougall, 2002, p. e197). Combining foods to make a complementary amino acid composition is also unnecessary (Irwin, 1971, p. 385–428).

Although veganism can be healthy and provide nutritional benefits, many continue to advocate animal products. However, the USDA and the FAO declared that meat is not a critical component of a healthy diet (FAO, 1992 and USDA, 1995). Red and processed

meats can be unhealthy and often lead to chronic diseases. Cross et al. (2007) examined the correlation between red meat and cancer. Those consuming the highest amounts of red meat had greater risks for cancer, ranging from 20% to 60% (Cross et al., 2007, p. 325). In addition, substituting red meat with any other protein sources lowers risk of chronic disease and death (Pan et al., 2012, p. 555-563). However, red meat is not the only concern.

Poultry consumption may also be detrimental to health. The Ad-36 virus from chicken may cause the deterioration of glycemic control, which can lead to diabetes (Lin et al., 2013, p. 701–7). Furthermore, Twito et al. (2011) found that chicken genes are associated with obesity and weight gain (Twito et al., 2011, p. 642–9).

Fish also has adverse health effects. The U.S. EPA wrote that “nearly all fish and shellfish” contain methylmercury from modern pollution (U.S. EPA, 2004). As these contaminants may impair cognitive abilities (Jacobson and Jacobson, 1996, p. 783-9), alter thyroid functioning (Crinnion, 2011, p. 5), and decrease immune response (Aoki, 2001, p. 2–11), fish and other marine products should be avoided.

Other animal products negatively impact health. Eggs have been correlated with an increased risk of pancreatic cancer (Chan et al., 2007, p. 1153–67) and dairy consumption during childhood has shown an increased risk of adult colorectal cancer (van der Pols et al., 2007, p. 1722–9). Consuming dairy whey raises insulin release and decreases blood glucose changes in type 2 diabetics (Anders et al., 2005, p. 69-75).

Many criticize veganism as unnatural, claiming that humans are obligate omnivores. Humanity has been consuming meat for 2.3 million years (Joyce, 2010), and evidence even indicates human taste buds evolved to seek the savory flavor of meat (Mayell, 2005). However, Roberts asserts that only herbivores are plagued with atherosclerosis. Carnivores consume saturated fat and cholesterol without arteriole

plaque development. Despite most humans eating as omnivores, humans have characteristics of herbivores, not carnivores (Roberts, 2000, p. 139–143).

Vegan diets include various health benefits, such as the prevention of heart disease by lowering cholesterol levels and body fat. Compared to omnivores, vegans generally have a lower body mass index, lower total and LDL cholesterol, and lower blood pressure (Toohey et al., 1998, p. 425–34). Total plasma and LDL cholesterol were determined to be 44% lower in vegans than in omnivores (Davey et al., 2003, 259–69).

De Biase et al. (2007) found remarkable differences between TC, LDL and TG levels among the samples. Omnivores had higher levels, while levels decreased for vegetarians, with vegans having the lowest levels. Vegetarians, especially vegans, had lower TG, TC, and LDL levels compared to omnivores (De Biase et al., 2007, p. 35-9).

Vegans are typically thinner than omnivores, and thus have lower blood lipids and may be shielded from CVD (Toohey et al., 1998, p. 425–34). As vegans eat significantly more fruit and vegetables, which are abundant in fiber, folic acid, antioxidants, and phytonutrients, they also have lower average blood cholesterol levels (Djoussé et al., 2004, 213–7). Likewise, vegans enjoy a lower death from stroke and ischemic heart disease (Fraser et al., 1999, p. 532S–8S). Thus, evidence suggests that veganism helps prevent CVD, the leading cause of death in the U.S.

Veganism also lowers the risk of cancer, the second leading cause of death in the U.S. Research demonstrated that vegans had a significantly lower risk of colorectal and prostate cancer than omnivores (Strohle et al., 2006, p. 580–93). Vegans generally have a lower mean BMI, and obesity is a well-known risk factor for cancer. Therefore, levels of body fat in vegans may lower their risk for cancer (Davey et al., 2003, p. 259-69).

Compared to omnivores, vegans consume greater quantities of foods– including legumes, fruit, allium vegetables, and fiber– rich in nutrients that protect against cancer

than to omnivores (Haddad et al., 1999, p. 586S–93S). Fruits and vegetables lower the risk of cancer of the lung, mouth, esophagus, and stomach, and high intake of legumes lowers risk of stomach and prostate cancer (World Cancer Research Fund, 2007).

Despite arguments to the contrary, veganism can improve individual health. Eating more fruits and vegetables, provides high amounts of fiber, vitamins, and minerals, which include numerous health benefits. With attention, vegans can get enough of all essential nutrients, through either diet or supplementation, and by avoiding animal products, they decrease risk for chronic diseases, leading to a longer, healthier life.

Benefits of Veganism to Global Sustainability

Veganism is healthier than omnivorous diets not just for the individual, but also for the planet as a whole. As the human population has increased to over 7 billion, scarcity of resources is a major concern. Despite claims that animal agriculture does not significantly affect the environment, it is tremendously harmful to global sustainability. Veganism, on the other hand, helps alleviate deforestation and loss of biodiversity, as well as aids in land and freshwater management, lowers carbon emissions, and helps in feeding the growing human population.

One major concern with animal agriculture is its role in deforestation, but evidence suggests that U.S. meat production may play an insignificant part in this dilemma. In 2001, approximately 95% of animal products consumed in the U.S. were domestically-produced (USDA, 2003). Although the U.S. annually consumes about 27 billion pounds of beef (USDA, 2010), the percentage of forested land has remained about 33% since 1907 (USDA, 2001).

However, much research displays that animal agriculture contributes to deforestation outside the U.S. In the past forty years, Central American forests were reduced by 40%, with simultaneous population explosions in pasture and cattle. Between

2004 and 2005, about 1.2 million hectares of rainforest were cleared due to soybean expansion for feed. Deforestation in Latin America has led to soil erosion and nutrient loss, water toxicity, decline in biodiversity, and an increase in carbon emissions (FAO, 2016).

Cattle ranching may even be the main source of deforestation in the Amazon, with nearly 80% of cleared land being used for pasture (Greenpeace, 2009). However, deforestation is the beginning of other major environmental issues.

Animal agriculture also contributes to loss of biodiversity. Livestock grazing contributed to the listing of 171 species under the Endangered Species Act (USDA, 2008). Around 30% of surface land used for livestock was once inhabited by wildlife. Approximately 37% of terrestrial ecoregions and 65% of global hotspots are adversely affected by animal agriculture. Thus, livestock is likely the primary threat to biodiversity (Steinfeld et al, 2006). Likewise, in 2008, 32% of marine stocks were overfished, depleted, or recuperating and 53% were completely exploited (FAO, 2010). If fishing continues at this rate, global fishery reserves will disappear by 2048 (Worm et al., 2006, p. 787-90).

Land erosion is another major concern of animal agriculture: however, some research indicates that vegan diets are not better for the environment. Approximately 92% of U.S. soybeans are grown using genetically modified soy, which is immune to herbicides (Council for Agricultural Science and Technology, 2009), which causes farmers to cover their fields with large amounts of herbicides, which are toxic to other plants and fish. In addition, this immunity may yield “super weeds” resistant to most herbicides (Union of Concerned Scientists, 2011).

While this research indicates that omnivorous diets are not detrimental to land erosion, many studies found that animal agriculture may produce greater land damage than soy. Research determined that American food production drains 50% of total land,

therefore a growing concern exists for soil sustainability. Every year, approximately 90% of U.S. cropland erodes 13 times faster than the sustainable rate of 1 ton/hectare/year (ton/ha/y), and U.S. pastures and rangelands erode at about 6 tons/ha/y. Accelerated soil erosion occurs in 60% of U.S. pastureland from overgrazing of livestock. Although commercial fertilizers recover some nutrient loss resulting from erosion, it takes massive amounts of fossil energy (Pimentel and Pimentel, 2003).

Moreover, livestock uses around 70% of tilled surface soil and 30% of the total surface. While no concrete data exists on livestock's contribution to global soil erosion, research indicates the figure in the U.S. may be as high as 50% (Steinfeld et al., 2006). About 85% of livestock grazed land is no longer healthy enough for agriculture, which damages the land, economy, and food supply (National Cattlemen's Beef Association, 2011). Loss of land is not the only consequence of livestock farming.

Another environmental concern of animal agriculture is its influence of aquatic resources. Farming in the U.S. may use more freshwater than any other practice. About 80% of freshwater is diverted to animal agriculture. In addition, farm irrigation uses 85% of the available fresh water consumed. Animal agriculture directly accounts for only 1.3% of the total agricultural water consumption.

However, when the water used for feed grain is included, water requirements for livestock production significantly rises. For instance, 1 kg of beef takes about 13 kg of grain and 30 kg of hay to produce, which uses around 100,000 L of water to produce the 100 kg of hay, and 5,400 L for the 4 kg of grain. On rangeland, over 200,000 L of water are needed to produce 1 kg of beef (Pimentel and Pimentel, 2003).

Plant foods require significantly less water than animal products. About 500 liters of water are used to produce 1 kg of potatoes and 2,000 liters are used to produce 1 kg of soy, while 3,500 liters of water are used to produce 1 kg of boiler chicken and 100,000

liters to produce 1 kg of beef (Pimentel, 1997). The production of 1 kg of vegetable protein uses around 100 times less water than the production of 1 kg of animal protein (Pimentel and Pimentel, 1996). One study estimated that the livestock sector is responsible for around 8% of human global water usage (Steinfeld et al, 2006).

Animal products not only use more water, but their production also leads to water pollution. Animal waste releases hydrogen sulfide and ammonia, toxic substances that cause air pollution and leach nitrates into water supplies. Livestock egest about 500 million tons of manure annually—triple the amount generated by humans (Pew Commission on Industrial Farm Animal Production, 2008). The livestock sector may even be the primary cause of water pollution, due to animal waste discharge, chemical use in the animal feed generation plantations, and the release of antibiotics (Steinfeld et al., 2006). Overall, meat-based diets use more water and cause more pollution than vegetarian diets.

An increase global motivation for veganism is its potential to decrease carbon emissions. Global warming from human carbon emissions threatens to negatively impact life on Earth, but the production of meat for consumption may not be a significant factor in carbon emissions. A 2010 report from the World Wildlife Fund (WWF) stated that soy proteins may emit more greenhouse gas than locally farmed meat (WWF, 2010). Furthermore, a peer-reviewed study from 2009 found that complete abstention from animal products would only yield a 7% decrease in greenhouse gas emissions (Risku-Norja et al., 2009).

However, much research demonstrates the tremendous impact of meat production on global warming. As animal agriculture may be responsible for 17% of U.S. fossil fuels, a growing concern for sustainability exists (Pimentel and Pimentel, 2003). Enteric fermentation, manure breakdown, and deforestation for livestock grazing generate greenhouse gases. The livestock sector may be responsible for about 18% of

Earth's greenhouse gas emissions - more than global transportation (Steinfeld et al., 2006).

In addition, manure dead zones contribute to air pollution. Citizens living near Concentrated Animal Feeding Operations (CAFOs) experience perpetual respiratory illnesses from hydrogen sulfide and ammonia. In Iowa, 19.7% of students living near a CAFO had asthma - almost triple the state average of 6.7% (Sigurdarson and Kline, 2006).

Another study examined dietary effects on greenhouse gas (GHG) emissions between vegans and omnivores, determining that GHG emissions for meat-eaters were about 2.5 higher than vegans also consuming a 2,000 kcal diet (Scarborough et al., 2014, p. 179-192). Similarly, Goodland argued that animal agriculture causes at least half of all human greenhouse gas (GHG), despite fossil fuel burning (coal, oil, and natural gas) being the traditional focus (Goodland and Anhang, 2009, p. 19).

Plant foods contribute far less to GHG emissions than animal products. One pound of hamburger meat emits comparable amounts greenhouse gas to driving a small car nearly 20 miles, and one pound of pork is equivalent to around 5 miles, while a pound of potatoes only uses 0.34 miles worth (Fiala, 2009, p. 72-5). Consumption of 1 kilogram of beef may also be worse for climate change than driving for three hours and leaving the lights on at home (Ogino et al., 2007, p. 424-32).

Even the United Nations Environment Program stated a “worldwide diet change away from animal products” is necessary to stop the worst effects of global climate change (United Nations Environment Program, 2010). Switching from an omnivorous diet to a vegetarian diet lowers the carbon footprint by 1.5 tons of CO₂ equivalents, which approximately equals the change from driving an SUV to a hybrid (Eshel and Martin, 2005, p. 1-17). As veganism has less of an impact on greenhouse gas emissions than omnivorous diets, it may lower humanity's carbon footprint.

A major global benefit of veganism is its potential to alleviate world hunger, but studies demonstrate that veganism does not decrease global starvation. The 925 million starving people are not hungry because wealthy first world people eat large quantities of meat (FAO, 2010). Economics and resource distribution may be to blame, as the Earth “currently produces enough food for everybody, but many people do not have access to it” (FAO, 2011).

However, much research states the opposite. Currently, America’s 7 billion livestock animals consume five times the amount of grain than the total human population (Pimentel, 1997). In addition, the U.S. population has doubled over the last six decades and is predicted to double again to the next 70 years (Pimentel and Pimentel, 2003).

Similar research found that the U.S. annually uses over 9 billion livestock for animal products, which is 5 times larger than the American population. The U.S. livestock population currently consumes over 7 times the amount of grain than is consumed directly by the entire American population, enough to feed about 840 million vegetarians (Pimentel and Pimentel, 2003).

Another estimate states that more than ten pounds of plant protein are used to generate one pound of beef (Fiala, 2009, p. 72-5). Moreover, around 1/3 to 1/2 of all vegetable food and about 90% of soy produced is allocated to livestock animals (Goodland, 1999). Therefore, a large quantity of plant protein goes to waste, as these grains never reach human mouths. If these grains were allocated to humans rather than livestock, they would feed an estimated 925 million people globally (FAO, 2010).

Recent studies indicate this figure may be greater. A report determined that lowering global meat consumption would provide about 400 million tons of cereal per year for human consumption, enough to meet annual caloric requirements for over 1

billion people (HSI, 2009).

Veganism can alleviate problems of global sustainability. Modern concerns over climate change, biodiversity, deforestation, land, water, and the social responsibility of feeding the growing population motivate many to choose veganism for reasons beyond individual health.

Veganism as an Ethical Decision

Veganism encompasses health and environmental impact, but it also touches on a philosophical discipline: ethics. Many vegans seek health and environment sustainability, but others also consider the death and suffering of billions of sentient beings in the name of human pleasure and convenience. While advocates of omnivorous diets cite various arguments against veganism, plant-based diets contribute to less suffering and death. To reduce global cruelty, vegans seek to abolish the numerous forms of animal exploitation. Unlike omnivorous diets, veganism is more ethical in its treatment of animals.

Vegans seek to avoid unethical practices by abstaining from animal products, but research indicates that vegans mistakenly value animals more than plants. Plants react electrochemically to stimuli and may experience fear, so vegans potentially participate in suffering with each meal (Jensen, 1997). However, a greater body of evidence supports animal sentience.

Although most humans traditionally used animals for food, they also experience pain. Animals with a central nervous system possess nociception, the recognition of tissue-damaging stimuli often followed by reflex responses. They also experience pain perception, a negative sensation linked to potential tissue damage (Broom, 2001, p. 17–21). Moreover, external behaviors, such as facial contortions and moaning as well as the avoidance of pain-inducing stimuli suggest that animals feel pain (Singer, 1990). Research indicates that mammals, birds, and fish possess nociception and can perceive pain.

Recent studies demonstrate that mammals feel anxiety and suffering in a similar manner to humans. Bermond (1997) found that only an animal with a developed prefrontal cortex and right neocortex can experience pain. With the exception of humans, higher apes, and dolphins, many mammals may be in a “gray area” in their ability to feel pain (Bermond, 1997, p. 125-143). However, Grandin and Deesing (2002) analyzed the perception of pain in “gray area” mammals. As mammals pain-guard after an injury, they likely experience pain (Grandin and Deesing, 2002).

Research indicates that birds are sentient. Gentle et al. (1990) found that de-beaked chickens pain-guard, lower food consumption, and hesitate to use their beaks (Gentle et al., 1990, p. 149-157). Decerebrated chickens will also pain-guard their legs injected with pain-inducing substances (Gentle et al., 1997, p. 493-498).

Fish also possess nociceptors and likely feel pain. When their lips were injected with acetic acid, fish rubbed against the gravel more than the saline-injected controls. The experimental group also took much longer to begin eating and pain-guarded, behaviors which go beyond reflex responses (Sneddon et al., 2003, p. 1115-21).

Although evidence demonstrates animal sentience, U.S. agribusinesses annually slaughter 35 million cows, 115 million pigs, and 9 billion birds (Kolbert, 2009). According to USDA reports, almost 10.2 billion terrestrial animals were raised and slaughtered for human consumption in 2010, a 1.7% increase compared to prior year. As the U.S. exports live animals and processed meat, the 10.2 billion animals raised for consumption does not reflect the number killed. An estimated 200 million land animals were killed in experimentation, hunting, “pest” control, and in pounds (USDA, 2011).

The quantity of fish killed for sport and consumption is perhaps more alarming. Overfishing may destroy many species of wild fish, as about 29% of all commercial species of fish have experienced population endangerment, which also threatens to

eradicate all wild fish species by 2048 (Worm et al., 2006, p. 787-90). In addition, the FAO estimated that over 70% of the world's fish are completely exploited or depleted (FAO, 2014).

Parts of society condone animal agriculture, citing that laws exist to minimize livestock suffering. With the recent U.S. movement for “cruelty free” products, animals used for organically-raised meat receive access to the outdoors, clean air, and fresh water. They also receive no growth hormones or antibiotics and must receive organic feed without animal byproducts (National Sustainable Agriculture Information Service, 2010). In 2007, about 3% of total U.S. meat production was comprised of organic meat (Roberts et al., 2007). Similarly, by the end of 2012, “natural and organic” beef made up about 4% of the nation's total beef sales (Cattlemen's Beef Board & National Cattlemen's Beef Association, 2013). However, the remaining 96-97% of cattle do not receive treatment.

Although laws exist to minimize animal suffering, muckraking reveals the often despicable treatment of livestock from birth until slaughter. The Humane Methods of Slaughter Act (HMSA) calls for all animals to be stunned unconscious before death to reduce pain (Welty, 2007). Nonetheless, numerous American slaughterhouses fail to enforce this for all livestock (Warrick, 2001). The U.S. Government Accountability Organization (GAO) revealed in a 2010 report that the USDA was not “taking consistent actions to enforce the HMSA” (United States GAO, 2010).

Poultry often die cruel deaths, despite promises of a painless end. While less than 1% of farmers promise “cage-free” and “free-range” chicken (NCC, 2012) an estimated 50% of American meat is produced in confined animal feeding operations (CAFOs), where livestock endure disease-ridden dwellings (Gurian-Sherman, 2008). Farmers cut pigs' tails off, debeak chickens, and saw off cows' horns and cut their tails off, all without anaesthetics (Pew Commission on Industrial Farm Animal Production, 2008). Pregnant

pigs are confined to cramped gestation crates (Humane Society of the United States, 2011). Young cows used for veal are restrained in small stalls for the duration of their short lives (Farm Sanctuary, 2011). Despite the treatment of some, livestock are slaughtered cruelly.

While the treatment of animals encompasses legal and biological realms, it also delves into philosophy. Great thinkers such as Pythagoras promoted the abstention from meat (Stroup, 2002), and Plato affirmed that vegetarian diets were “divinely ordained” (Parr, 1996). Historical figures, such as Leonardo da Vinci, George Bernard Shaw, Leo Tolstoy, Mohandas Gandhi, and Franz Kafka, also advocated a plant-based diet (Hurwitz, 2002). Myriad influential figures deem meat consumption as a form of speciesism unworthy of a virtuous lifestyle.

A major irony of animal exploitation is the hierarchy of speciesism humans create. This view that humanity is more valuable than other lifeforms is a form of discrimination. Singer compares speciesism to racism. If a being suffers, no moral reason to overlook its pain exists. Regardless of the being, equality demands that all suffering is equally wrong. Racists believe their group is superior and their suffering matters more than that of other races, and therefore ignore the principle of equality. Likewise, human speciesists violate universal equality by believing the suffering and death of animals matters less than human pain.

To obtain affordable meat, humans confine animals in cramped, deplorable conditions for their entire lives. Animals are treated as tools of flesh, and any practice that yields a higher ‘conversion ratio’ is adopted. Chickens, veal, and pork are forced into smaller cages, and eggs come from hens in cages too small for them to even scratch their wings. Even free-range livestock that are treated “humanely” are slaughtered. Aside from their lives, animals are robbed of many other rights for human pleasure and convenience. Castration, the separation of mother and child, confinement, the segregation of herds,

branding, transporting, and the last moments before slaughter- all yield tremendous suffering that is immoral (Singer, 1993).

Regan also delves into animal ethics. The animal rights movement seeks the termination of animal exploitation in science, the end of commercial agriculture, and abolition hunting and trapping for sport. Those who view animals as resources fail to consider their isolation, suffering, and death. Ending injustice does not simply mean “humane” treatment of farm animals, but rather the complete abolition of factory farming. All beings have equal inherent value and an equal right to be treated with respect.

Although animals lack higher the mental functioning, many humans lack such capabilities as well. Mentally-disabled children do not have less inherent value than the average person, and neither do animals. Billions of exploited animals have inherent value and should be respected. This theory undermines institutions for human exploitation of animals, seeking equality for all Earthlings (Regan, 1983).

Biologically, much evidence points toward animal sentience. Legally, certain nations created laws to protect animal rights, yet many remain unenforced. Philosophically, various ancient and modern thinkers believed it was wrong to kill or harm animals. Although animal consumption is ingrained in numerous cultures, killing and harming animals that experience pain and emotion is unnecessary, and even unhealthy for individuals and the planet. Human exploitation of sentient beings for pleasure and convenience is an act of speciesism. As humanity gravitates away from racism and sexism by granting equal rights to all races and sexes, so too should it abstain from speciesism by liberating animals from slavery and holocaust.

Conclusion

Veganism is a plant-based diet that abstains from animal consumption. As medical

literature confirms that animal products can cause chronic diseases, consumption of animal products is unhealthy. Many choose vegan diets for the numerous health benefits. Others seek it to help the planet and growing population. Still others adopt this diet for ethical reasons to reduce the suffering and death of sentient animals.

Each benefit of veganism is supported by logic. Conforming to traditional animal consumption increases chronic disease risk and is unhealthy. Adopting a diet that contributes to habitat destruction and world hunger is unsustainable. The assumption that humans can exploit animals is unethical. Instead, people should consider a lifestyle that promotes health, global sustainability, and compassion for all sentient beings. By decreasing or eliminating animal products, humanity can enhance individual health, environmental sustainability, and animal ethics. The age of logic and compassion begins with a small step made by the individual who is willing to make a lifestyle change. That individual is the vegan.

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Visual and Performing Arts

Alberto Chamorro, *Simulated Truth: A Study of Simulacra in Modern Photography*

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Simulated Truth: A Study of Simulacra in Modern Photography

While the most common reference to current experience of digital media on multiple platforms addresses the overwhelming plethora of images, the most salient issue is not to the extent we experience of stimulation, but of simulation. Issues of material “truth” have increasingly been taken up in contemporary photography. Visual art has employed simulacra, an insubstantial form or semblance of something, since the early 1980’s in photographs by New York artists such as Sherrie Levine, Richard Prince and Cindy Sherman that replicate and play with preexisting pictures. Today, when an artist such as Brooklyn-based Lucas Blalock places small circular photographs of actual strawberries atop photographs of candies in wrappers photographically printed with the seeded red image of strawberries and their green stems, signs indicative of strawberries, he is toying with identities regarding “truth” and “simulacra.” The textual affinities that separate the real strawberries from the wrappers are further accentuated against the nubby surface of small-gauge bubble wrap (Fig. 1)



Figure 1: Lucas Blalock, *Strawberries (forever fresh)*, 2015, Pigmented inkjet print.

Blalock exemplifies artists' adoption of new methods of photographic manipulation to present simulacra and examine issues of authenticity. Many may argue that the use of post-exposure manipulation renders images inauthentic. However, objective photographic "truth" is an ideal held only by those who have never confronted the number of options possible between camera settings and environmental settings when making a photograph. These artists aim not for objective transparency but a questioning of its very possibility. Furthermore, their manner of incorporating simulation emphasizes the phenomenon as a frequent factor of current experience while displaying personality, insight and originality.

In contemplating distinctions between reality and imitation, the two are often so entwined that it may be difficult to differentiate them. Consider the short story "On Exactitude in Science," by Jorge Luis Borges. The narrative tells of a group of cartographers who set out to create a map "whose size was that of the Empire, and which coincided point for point with it."¹ The result was a map that charted the Empire on an exact 1:1 scale. Succeeding generations, however, believed that the map was of no use and allowed for it to be destroyed "by forces of nature." Borges concluded his story by describing a destroyed map without evidence of the original geography. One could interpret this as an analogy for the very simulations that are observed in everyday life with the belief that the map is not the territory that it imitates. However, the French philosopher Jean Baudrillard presents an alternative analysis in his 1981 book *Simulacra and Simulation*. In reading Borges' map, Baudrillard states, "The territory no longer precedes the map, nor does it survive it. It is nevertheless the map that precedes the territory—*precession of simulacra*—that engenders the territory."² The anteriority of simulacra, argues Baudrillard, is what gives our reality meaning.

¹ Jorge Luis Borges, *Collected Fictions* (New York City: Penguin Group, 1998), 325.

² Jean Baudrillard, *Simulacra and Simulation* (Ann Arbor: The University of Michigan Press: 1994), 1.

Consider a McDonald's billboard that features a photo of a cheeseburger, arranged by a food stylist. Is the advertisement a picture of an actual extant burger, or is it more of a constructed idealization of a fantasy cheeseburger to come? Actually, the product that is served within millions of McDonald's daily is made to represent the image in the billboard. The idea of precession of simulacra states that reality, much like the cheeseburger in the McDonald's kitchen, is framed to represent a pre-existing imitation of something. What is the distinction, then, between the simulation presented in the advertisement and the simulation presented in the actual cheeseburger?

One analysis of Baudrillard's philosophy classifies simulacra into four distinct levels of relation to an object's respective original: A simulation (1) is the reflection of basic reality, (2) masks and perverts a basic reality, (3) masks the absence of a basic reality, or (4) bears no relation to any reality whatsoever.³

The concept of simulation and simulacra is not an esoteric aspect of a single discipline; it can be observed across a multitude of fields. Albeit not by name, Virginia Woolf describes the phenomenon of simulation in her critical essay *Modern Fiction*. In this essay, Woolf asserts that "Whether we call it life or spirit, truth or reality, this, the essential thing, has moved off, or on, and refuses to be contained any longer in such illfitting vestments as we provide. Nevertheless, we go on perseveringly, conscientiously, constructing our two and thirty chapters after a design which more and more ceases to resemble the vision in our minds,"⁴ outlining the idea that fiction is less an imitation of reality and more so a model for an idea of reality that is born from the author's mind. Furthermore, Woolf goes on to criticize novelists of the time period on the basis that they tend to add comedy, tragedy and love interest to their writing in an effort to fulfill a perceived rubric for how novels must be, which Woolf perceives as untrue to real life.

³ Jonathan Stuart Boulter, "Partial Glimpses of the Infinite: Borges and the 'Simulacrum'" *Hispanic Review* 69, no. 3: 355-77, doi: 10.2307/3247067

⁴ Virginia Woolf, "Modern Fiction," in *The Norton Anthology of English Literature*, ed. M.H. Abrams, (New York City: W.W. Norton and Company Inc., 2006), 2087.

Woolf writes, “Look within and life, it seems, is very far from being ‘like [novels].”⁵ Henceforth, Woolf has determined that the novels of her time are but a simulation of true reality, dressed much like a cheeseburger in an advertisement, to present an accessibly marketable version of its original.

Outside of the arts, the concept of simulacra can be applied to aspects of social science, including the field of communication. A “Positive Face” is defined as “the desire to be viewed positively by others, to be thought of favorably.”⁶ This desire might guide a person to act in a way that is unlike his or her natural state; one textbook uses the term “positive politeness” to describe the method in which people use formal register and appropriate expressions of politeness to convey a likeable persona.⁷

Modern photography that composes itself from the pieces of an image-based culture is inevitably exercising what in the 1980’s art world was termed “appropriation,” or the intentional borrowing, copying, and re-contextualization of existing images and objects from diverse sources. Since the early 1980’s, work by artists such as Levine, Prince and Sherman has featured simulacra, an insubstantial form or semblance of something. The act of appropriation does more than make use of old photographs—the



Figure 2: Cindy Sherman, *Untitled Film Still #35*, 1979.

⁵ Woolf, “Modern Fiction,” 2089.

⁶ Joseph A. Devito, *Essentials of Human Communication* (New York City: HarperCollins College Publishers, 1996) 44.

⁷ Devito, *Essentials of Human Communication*, 44.

artist severs whatever image he or she is appropriating from its original context, allowing it to assume a new meaning and engender different emotions from its original. In her series of “Untitled Film Stills,” Sherman appropriated filmic tropes of the 50’s and 60’s “B” movies by placing herself into stereotypical roles of women in such films (Fig. 2). In doing so, Sherman presented a visual model for the artificial roles that people are drawn to imitate.

Levine, a photographer whose work was “less concerned with the obvious ironies of simple appropriation than with the transmittal of knowledge of the original work through its replication.”⁸ Her style of appropriation, which consisted of re-photographing copies of already well-known images by different artists, spoke to the dwindling room for originality in a society that is saturated with images. However, Levine does not make this statement to discount the photographic medium as art. Instead, her work underscores the most critical property of photography as a representation and defines the original work of art that she re-photographs as yet another product subject to consumption. Current practices emphasizing simulation develop out of those of a few decades ago, fueled by modern technology and an ever-growing bank of material for appropriation.

A recent photography exhibition at the Museum of Modern Art aptly titled “Ocean of Images” showcased the works of artists who make use of digital manipulation as a means to execute appropriation in their photographs. Blalock, a Brooklyn-based photographer, makes use of the stamp tool in Photoshop to create a simulated landscape out of the texture of wood. A 2013 image, entitled *Picture for Mark II*, features a repetition of circular stamps of wood in the shape of a brown landscape. Towards the top of the image, Blalock artificially colors the wooden-texture stamp with a green hue, as if to resemble trees (Fig 3).

⁸ Paul Marincola, *Image Scavengers: Photography* (Philadelphia: University of Pennsylvania Press: 1982), 24



Figure 3: Lucas Blalock, *Picture for Mark II*, 2013, Pigmented inkjet print.

Overall, the photo conveys a concept of defective artifice, as the shape of the stamp and the clearly defined texture of the wood discredit any possibility that this could be an actual photo of a landscape. Although the photo is meant to resemble nature, it is born out of a digital world with the help of a small representation of nature—the original piece of wood that Blalock used to create the stamp. Therefore, with Baudrillard’s stages of simulation in mind, it could be said that this photo masks the absence of basic reality. While the original wood that was used to create the stamp used by Blalock is in itself a part of nature, it has been used to create a landscape of dirt and greenery. Although closely related, they are different in the sense that the wood is not dirt, nor is it leaves. As a piece of artistic appropriation, Blalock has successfully disconnected the original piece of wood from its original context and given it new way of representing nature.

Also featured at the exhibition was the Berlin-based photographer Natalie Czech, who makes clever use of other’s words and images in her appropriation. Her 2013 image *A Poem by Repetition* by Aram Saroyan features the poem “A Poem by Repetition” by concrete poet Aram Saroyan over the iconic single artwork to Pink Floyd’s song “Money” from their 1973 album *The Dark Side of the Moon* (Fig 4). The poem, which reads “Ney Mo Money,” is written with the font of the song’s artwork.

Different interpretations of the poem can allude to different sentiments regarding



Figure 4: Natalie Czech, *A Poem by Repetition by Adam Saroyan*, 2013, Chromogenic color prints.

the importance of money—one might read the text as “Need More Money” while another may read it as “Hey, My Money!” Juxtaposed against this is the loaded meaning of Pink Floyd’s “Money;” an anti-capitalist sentiment that needs no explanation. Effectively, Czech is removing the iconic single artwork from its crystal-clear meaning and opening it up to interpretation via its poetic counterpart.

The previously mentioned artist, Blalock, presents a higher level of simulation in his 2013 work, titled *Shoe*. The photo is a pigmented ink jet print created with the use of a digital editing program. The photo itself consists of a mass-produced canvas bag in the center, sitting over a spread-out newspaper and plastic soda yokes. The digital editing program is used to create crudely drawn lines across the side of the canvas bag that are meant to resemble shoe treads. However, it is evident in the photo that Blalock does nothing to disguise the fact that the shoe treads are not real. Instead, they are drawn as unevenly as possible, with one even escaping the supposed realm of the “shoe.” The purpose of this deliberate clumsiness is said to be to illustrate the constructed nature of photographs—the inaccuracies of the photo might imply that Blalock is pointing out what he perceives to be obvious simulation in modern photography. Given the four stages of simulacra outlined in *Simulacra and Simulation*, this photograph could be interpreted as a simulation that bears little or no relation to any reality—the canvas bag

looks enough like a shoe tread so that it can be recognized as such, but the materials themselves hold no semblance to an actual shoe.

Baudrillard describes the terms “dissimulation” and “simulation” as contrasting points: dissimulation is “to pretend not to have what one has” whereas simulation is “to feign to have what one doesn’t have”⁹. Furthermore, he draws upon the analogy of a person who feigns illness; the person will, in simulation, exhibit symptoms that cannot be sourced by any doctor because of the fact that no source actually exists. Much like the source of the illness, then, the sources of the realities represented in Shoe. One cannot find a shoe in Blalock’s studio. In order to understand this work as a piece of appropriation, one should reexamine the meaning of the term “dissimulation.” If dissimulation is to pretend not to have what one has, then is it not the same as appropriation in the sense that the artist is negating the original meaning of his/her resources? Blalock is pretending not to have a canvas bag or a set of uncouthly drawn lines in order to dissimulate those objects and reassign their meaning as a simulation of a shoe. In the act of dissimulation, he is appropriating the canvas bag and the lines by stripping them of their meaning.

The works of Blalock and Czech are similar in that none of them represent the objective truth. Through digital editing and reconstruction of “reality,” they present a set of signs that are, at best, only imply the thing that they refer to. Furthermore, the artists make use of appropriation when they reassign the values of different images by placing them into a new situation. Essentially, these artists are working off of precedents that had been set by artists of the 1960’s, 70’s and 80’s. Much like simulation, appropriation can be observed in a number of fields from architectural design to fashion. In photography, artists such as Sherman, Levine and Prince have laid groundwork for the concept of borrowing and image permutations that artists such as Blalock and Czech

⁹ Baudrillard, *Simulacra and Simulation*, 3

apply to their art.

Consider the work of Levine, a photographer whose work was “less concerned with the obvious ironies of simple appropriation than with the transmittal of knowledge of the original work through its replication.”¹⁰ Her style of appropriation, which consisted of re-photographing copies of already well-known images by different artists, spoke to the dwindling room for originality in a society that is saturated with images. Is this not similar to Czech’s use of Pink Floyd’s iconic album cover in her piece *A Poem by Repetition* by Aram Saroyan to reintroduce the band’s anti-capitalist sentiments? In a sense, both Levine and Czech are borrowing for the sole purpose of restating what the original works have stated, albeit in a slightly altered context. Alternatively, Prince’s work highlights the unrealistic nature of advertisements by manipulating images multiple times by re-photographing, collaging and enlarging images until they were many levels of simulation away from their origin. Essentially, Prince’s goal was to emphasize the “sense of estrangement or unreality which is already implicit in mass media imagery.”¹¹ This estrangement can be felt in one of the previously described photographs from MOMA’s “Ocean of Images” exhibition. Much like Prince’s work, Blalock’s *Shoe* is a piece of manipulation—there is a large gap between what Blalock aims to represent and what he is actually representing in the image.

Inevitably, the question is raised as to whether or not the use of appropriation through simulation can nevertheless render a work of art original. To try and answer this question, one should examine the issues of authenticity in photography. As far back as 1974, New York photographer Duane Michals showed that it is possible for the theme of inauthenticity to be authentic subject matter (Fig 5).

In *This Photograph is My Proof*, Michals questioning of the very notion of the

¹⁰ Marincola, *Image Scavengers: Photography*, 24.

¹¹ Marincola, *Image Scavengers: Photography*, 22.



Figure 5: Duane Michals, *This Photograph is My Proof*, 1974.

authenticity of photographic documentary “proof” becomes authentic subject matter. The black-and-white photo, which features a clothed man and a woman embracing, smiling and facing the camera, while seated on a neatly made bed in a rather plain room, is accompanied by the following text handwritten as part of the print: “This photograph is my proof. There was that afternoon, when things were still good between us, and she embraced me, and we were so happy. It did happen, she did love me. Look see for yourself!” While one could assume that Michals is simply presenting evidence of a relationship that once was, the meaning of this photo delves deeper into trustworthiness of photographs. With the issue of increasingly radical experimentation in photographic procedures and processes, the issue of a photograph serving as documentary “proof” was being prominently questioned. If the purpose of the photo is to raise a question of authenticity, is it inauthentic as a piece of proof? In her essay titled “The Image World,” literary critic and essayist Susan Sontag discusses how the photograph can often create a substitute world, ultimately stating that photographic images are “material realities in their own right, richly informative deposits left in the wake of whatever emitted them, potent means for turning the tables on reality.” Even if a photograph’s reality is based on our reality, it possesses the power to cultivate an authentic reality of its own, possibly in contrast of our reality.¹²

¹² Susan Sontag, *On Photography* (New York City: Dell Publishing, 1977), 180.

The literary critic and essayist Roland Barthes contends that “Photography cannot signify (aim at a generality) except by assuming a mask...Society, it seems, mistrusts pure meaning: It wants meaning, but at the same time it wants this meaning to be surrounded by a noise (as is said in cybernetics) which will make it less acute.”¹³

Barthes further states how photographs with meanings that are too direct are often consumed aesthetically as opposed to politically. The ambiguity in the images created by Blaloch and Czech is a byproduct of the simulacra that is exhibited. This diversion from the direct message, as affirmed by Barthes, allows the photos to be consumed politically, not just aesthetically. Moreover, the idea of simulation in photography is not a new concept by any measure—it simply has taken a new direction through digital imaging. As pointed out by Sontag, “The further back we go in history, as E. H. Gombrich has observed, the less sharp is the distinction between images and real things; in primitive societies, the thing and its image were simply two different, that is, physically distinct, manifestations of the same energy or spirit.”¹⁴ Contemporary art is reiterating that sense of confluence between the actual and the imagined.

Ultimately, the art historian Geoffrey Batchen affirms the notion that photography, even with the use of digital manipulation, is still a product of its creator. Batchen’s belief is that “While both concepts and relationships continue to endure, so surely will a photographic culture of one sort or another. Even if a computer does replace the traditional camera, the computer will continue to depend on the thinking and worldview of the humans who program, control, and direct it, just as photography now does.”¹⁵ Photography has always been at the hands of editing, from the early days of postexposure manipulation of negatives up to the present-day use of digital editing.

In a time where simulation governs our perception, the identity of reality is

¹³ Roland Barthes, *Camera Lucida: Reflections on Photography* (New York City: Hill and Wang, 1981), 35-36.

¹⁴ Sontag, *On Photography*, 155.

¹⁵ Geoffrey Batchen, “Ectoplasm: Photography in the Digital Age” in *Overexposed: Essays on Contemporary Photography* ed. Carol Squires, (New York City: New Press, 1999), 19.

doomed to be suspect. Coupled with the concept of appropriation in art, these simulations can apply themselves to a new meaning in order to create a new, authentic reality. Ultimately, however, these photographs still retain an essence of their original source. A person with a positive face does not cease to be him or herself entirely; the positive face is a mere variation on the likeness of said person. Yet through editing, a variation on the image is created—a simulation, no doubt, but one which either reflects or temporarily masks the essence of the original. The theories of simulation outlined by Baudrillard find their application in all corners of life, from museum galleries to newspaper advertisements and from literature to the world of business and networking. The recent photographic works of Blalock and Czech echo the appropriative concepts of past photographers who aimed to redefine images of advertising, movies and prior art into a different context. In doing so, they prove to be prime examples of the different levels of simulacra, ranging from reflections of reality to a state of simulation that represents something that is no longer real. Most importantly, however, they convey their message of verisimilitude—or falsehood—in a way that nevertheless possesses provocative layers of meaning. The use of digital editing and post-exposure manipulation are variations on a tradition of post-exposure image alteration that have existed in the field of photography since its inception; it does not discredit the photographs. Instead, these procedures convey the artists' personalities while addressing shared concerns of our digitally dominated era.

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Women's and Gender Studies/LGBTQ

Olivia S. Mata, Tattoo Culture Amongst Women

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Tattoo Culture Amongst Women

Introduction

The process by which a culture continues to define its values, roles and rules throughout generations creates a recognizable and lasting stigma on tattooed women in American society by prescribing a model of what women represent within their economic class, declaring her social status, her perceived intelligence as well as her sexual availability (Swami & Furnham, 2007, p. 345). The resulting stigma has left tattooed women with little voice in this enculturation process. To address this lack of attention, a small sample of women, aged 22 to 45 were interviewed for this study to provide a much needed insight into how the modern tattooed American woman has oriented herself to this stigma and how it has affected her self-esteem and identity. There are variable interpretations of tattoos on women and the reception for American women is in stark contrast to her non-American or non-western counterpart, whose tattoos, while they may represent class, status and sexual availability, do not carry with them a stigma within her culture. Overall, the goal of this research is to evaluate and provide a better understanding of the changing views and roles of tattoos on women not only within American culture, but also within the tattooed woman herself.

A Brief History of Women and Tattoos

In 1993, archaeologist Natalia Polosmak lead a team into the Siberian



Figure 1. Arm Tattoo on the Ukok Princess (Polosmak, 2014)

Stepes and excavated a 2,500 year-old Pazyryk mummy, now known as the Ukok Princess (Polosmak, 2014, p.1). While not as extensive and elaborate as the tattoos found on her contemporary male counterparts found in the region, she bore tattoos on her left arm (Fig. 1) A reflection on the nomadic Pazyryk's relationship to the horse, tattoos on mummies such as this provide historical evidence of this visual artistic tool that has been inclusive of women long before its arrival in western and American culture. While the Pazyryk woman's tattoos lie outside the norm for her sex in her culture, and not all women in her community may have received tattoos or burials as she had, the reverence she was given in burial, including her silk dress, carved headdress and incense (usually reserved in the burial of kings) is indicative of her significance and high status, as well as her tattoos (Polosmak, 2014, p.10).

However, tattoos on women have not been simply to include her as part of the male aspect of her culture, symbolically or otherwise. Nor do they simply mark her as an elite member of society. Historically, the women of southern Mozambique have used *tinhlanga* (a method of skin manipulation where the skin is scarred to create an image) to “both to reflect on agrarian social change and to assert the importance of female affiliations [in a male-dominated world]” (Gegenbach, 2003, p. 106). Overtime,



Figure 2. *Tinhlanga* on Thonga woman (A. M. Duggan-Cronin, 1935, as cited in Gegenbach, n.d)

the function of *tinhlanga* (Fig. 2) changed, moving from a social and economic signifier between women in the community to a form of colonial resistance and deliberate cultural preservation during the Portuguese colonization of the region in the 19th century when colonial officials tried to stop the practice (Gegenbach, 2003, p. 110). Still engaging in *tinhlanga* over a century

later, modern women of Mozambique comment on the utility of *tinhlanga* in their relationships with men, where they describe "...male pleasure as an ancillary effect of *tinhlanga*..." (Gengenbach, 2003, p. 116) and not the primary function or representation of their attractiveness or sexual availability. A cousin to the tattoo, scarification as a practice among these women display, as they have for centuries a personal and highly female communal form of identification within the culture, not in direct relation to men and the male aspect of their culture.

The historical function of tattooing for women can also be understood as a rite of passage. For example, among the Maisin of Papua New Guinea, "tattooing marks the transition from childhood to adolescence for women" (Barker & Tietjen, 1990, p. 221) and has been long before Europeans took notice of the practice. When puberty begins, a Maisin girl begins her tattooing (of the face, called *buwaa*), with female kin acting as the tattooist. Like the women of Mozambique, this practice is specialized for the female community and is a female driven practice. While it establishes the female as a sexually active, mature member of her culture available to men as a sexual or marriage partner, the tattooing process itself has little to do with men. Fathers and other male relatives shy away from being part of the ritual (Barker & Tietjen, 1990, p. 223), creating a separate and exclusive space for women. The application process of the *buwaa* takes place over a period of weeks, and girls live in close quarters with one another and with their female tattooist (Barker & Tietjen, 1990, p. 223). As a result, bonds left largely untouched by men are formed between women in the community through a ritual practice.

Without the involvement of men in either the physical application or their cultural influence, the tattoo on women has been able to function as something unique and personal. But how does a ritual absent of men and specifically designed for women take on negative social meaning as it has for western women? Unlike the reactionary

use of the *tinhlanga* in the presence of colonialization, western women participating in their own mainstream culture had no justification for getting a tattoo. The tattooed woman in European culture becomes shunned as a result of the perceived affiliation with colonization of areas where tattooing was a common cultural practice. Western women, already restricted and stigmatized because of their gender, took on even more labeling once colonization became wide-spread. The attitude that colonized societies remained primitive in comparison to European culture translated into criminality back in the west, with tattoos being the most visual symbol of this (Braunberger, 2000, p. 10). Europeans who encountered tattooing cultures in the 17th century brought the practice back home and the xenophobic language associated with it has remained throughout history, growing to represent an entire subculture that has only until recently become mainstream, even as it remains controversial for women.

The Enculturation of Stigma

Western women have borne the brunt of the negative ideological diffusion; the tattoo, adopted from “savage” society, grew to function as a social marking for men (whether they be relatively positive or negative in terms of status), but for women they became a marking for deviance throughout the 20th century and into the 21st and were excluded from the positive male association with tattoo. The stigma presented in the 21st century; that “women with tattoos [are] considered less physically attractive, more sexually promiscuous and heavier drinkers...” (Swami & Furnham, 2007, p. 349) has developed from the 20th century role of the tattooed woman as a fringe member of society. Christine Braunberger (2001) describes the social ramifications, past and present, for the tattoo on women as such:

Women’s tattooed bodies have presented a dilemma for a culture bent on women’s silence; their bodies have been read as criminal trespasses into the masculine line, their inky digressions a secret language stolen from men.

Censured by neglect, women have been erased from the history of Western tattooing, which remains almost exclusively about male bodies, growing out of the homosociality of sailing and military communities (p. 4)

The result of this neglect from the onset of western tattooing has been the stigmatization of the tattooed woman. By excluding western women from a practice that had been from a non-western cultural perspective, a very female-inclusive activity, continued the marginalization and rigid social orientation of the female in western culture. Those who found themselves acting outside normative gender roles as the tattooed woman faced stigmatization. Since western women have continued getting tattoos since their introduction, despite cultural opinion, the stigma has persisted.

While just one tattoo could label a woman, multiple tattoos amplified her stigmatization. Women with multiple tattoos have received and continue to receive the greatest negative response in western culture. Swami and Furnham's study concluded that the more tattoos a woman had, the less attractive and more promiscuous she was perceived to be by others (2007). This element of stigma grows out from the function of the Victorian era "painted ladies", both the extensively tattooed woman who performed in sideshow and circus acts and by extension, the heavily made up prostitute. These women defied their societal and gender roles by using their bodies as a means of gaining economic independence and expressing physical mobility (Braunberger, 2001, p. 10), traits both uncommon and frowned upon for the Victorian woman. Women who were tattooed and not working as sideshow freaks were then associated with the lifestyle and its assumed consequences. Western culture has not seemed to shake this image and what it has historically represented.

Reaction to Stigma

Historically, the voices of tattooed women are largely silenced in comparison to

the larger cultural value of tattoos on women and the perception of the tattooed women herself. The simplest contrast in reactions are when a culture has deemed the tattooed woman as deviant while conversely, she sees herself as “fierce” and “independent” (Braunberger, 2001, p. 12). The defiance of normative orientation can best be seen on the individual woman herself, who even as she considers the orientation and standing values of the culture at large, continues to receive tattoos.

Tattooing saw a major reemergence in the United States in the late 20th century (Wolhrab, 2009, p. 202) and has taken the American woman on an interesting journey: While tattoo application increased, women continued to find themselves struggling to maneuver socially acceptable ways to get tattooed. Even as the popularity of tattooing increased for both men and women, its placement on the female body was deliberate, so as to be hidden. For example, a popular tattoo placed on the lumbar region of the lower back in the early 21st century was quickly termed “the tramp stamp” and the implications of the name are quite clear: those who get the tramp stamp receive the social status of being sexually promiscuous. Its visibility is consistent with many of the less easily digested pop-culture trends of the early portion of the decade: ultra low-rise jeans, tube tops; clothing that became associated with promiscuity because of the amount of skin being revealed, much like the earlier Victorian conception of women of low quality. A woman interviewed for this paper, Catherine, age 35, received her first tattoo in this area



Figure 3. Tattoo on Catherine

in the late 1990s (Fig. 3). She recalls getting the tramp stamp and how she continues to be teased about it- albeit mostly by close friends (personal communication, August 11, 2015). She describes how her family has commented that at least she can hide her tattoo, but pointed out that most questions and comments took place in her early 20s, when tattooing as a

mainstream phenomena was just picking up in the United States. The meaning or emotional significance of the tattoo to her individual self is for the most part, disregarded in contrast to the placement on her body. Now 35 and established in a career, Catherine is more comfortable with her tattoo and considering getting a second, despite living where the stigma of any tattoo on the female body still exists.

Tattoos as a Class and Status Signifier

Tattoos found on Maisin girls or the women of Mozambique represent their social status, either as members of a community or their sexual maturity. These signifiers have largely been independent and free of stigmatization within those cultures, even with the introduction of Euro-centric values. For western women, who have existed under prescribed gender roles for centuries, tattoos when indicative of class or social status come with stigma, with the indicator always of low economic class and questionable social status.

The western tattooed woman experienced a brief reprieve (in the context of class) in the late 19th and early 20th centuries, when aristocratic women bore tattoos out of novelty, to participate in “the transgressions of the working class” and the “colonialist chic” of the era (Braunberger, 2001, p. 6). Still, tattooing remained a form of expression designated for the working class men, and one to be considered “barbaric” in women of lower class. Anthropologist Margo DeMello studied extensively the use of the tattoo as a class marker, identifying the difference between the function of tattoos between working class and middle class women, stating “...it is not accidental that working class women have worn tattoos for much longer than middle class women... Working class women are less likely to accept the idea of the quiet, pale, and bounded female body...” (as cited in Braunberger, 2001, p. 5-6).

While both men and women in niche subcultures may continue to use tattooing as

a form of social marking, the current American woman not affiliated with a military, criminal or other grouped subculture operates in reaction to the former role of tattoos as such. In a second interview conducted for this paper, Mary, a 28-year old artist from Brooklyn stated, “I decided to start getting multiple tattoos when I stopped caring about looking rich.” (personal communication, August 22, 2015). This reflects on the lasting image of a woman of wealth is one with little to no tattoos, and that the antithesis of becoming upper-class would be the application of multiple tattoos, even for the tattooed woman. The dilemma then becomes how a modern tattooed woman finds economic success in a culture that has placed it outside her reach? She need only look to the Barnum tattooed women of the Victorian Era for a solution, that her tattoos may come to represent less what is defined by the culture at large and a means to develop herself and her individual status. While the reactions to their tattoos from older “WASPY-types” (as Lydia describes them) are reminiscent of the Victorian stigma that has permeated into the present day, artists like Mary and the last interviewee for this paper, Lydia, age 40, find that their tattoos give them an edge in their social status as artists and within the New York City art scene (personal communication, August 11, 2015).

Additional Functions of the Tattoo, Inside and Outside Stigma

The American tattoo, while not as niche or relevant as in non-western cultures to signify status or class, continues to find function. Mary got a tattoo marking her sobriety date: Less than a year after she got the tattoo, she relapsed. Now sober again, she plans on getting the date not removed, but tattooed with a strike-through, and her new date tattooed underneath the original (Fig. 4).

Catherine’s idea for her second tattoo would have function as a “to-do list”,



Figure 4. Mary’s tattoo marking her first sobriety date

where on her wrist she commonly writes out reminders to herself, the tattoo would also be a permanent reminder to practice her passion.

Looking at the tattoo as a visual tool for communicating information from one person to another has been its function historically, but the tattoo has evolved for many women to communicate information to *themselves*, whether it may be a piece of flash (pre made art work commonly found on the walls or in catalogue of tattoo parlors) that they found interesting, or to remember a time in their lives that held significance. Relating their experience to the outside world is, like the *tinhlanga* bearing women of Mozambique describe, an ancillary effect of their tattoos. For example, Lydia describes getting her second tattoo as an experience shared with another woman who taught her something she did not know or consider. This communication between women through their tattoos is something that, as stated previously, has been used by women in different cultures throughout history and without judgement.

Conclusion

While the stigma of the tattoo has remained pervasive and almost exclusive to women in terms of body image, social and gender normative roles, it is changing. In their interviews, Lydia and Catherine mentioned the stigmas as internalized events they faced as women getting tattoos before and during its growing popularity in the late 20th century/early 21st century. Younger women like Mary have found that the lessening of the stigma both outside and within themselves represent the fading of a lengthy process of enculturation of the tattooed woman as a barbaric, socially inept person. They have been able to return to their roots as a tattooed woman akin to their non-western counterparts: independent of the masculine cultural influence (Mifflin, as cited in Braunberger, 2001, p. 3) and creating “tattoo narratives” (DeMello, as cited in Haviland,

2014, p. 331). A 2015 study showed that, despite cultural stigma, there has been no difference between the mental health of a tattooed woman to her non-tattooed counterpart (Thompson, 2015, p. 215).

Europeans who encountered tattooing cultures in the 17th century brought the practice back home and the xenophobic language associated with it has remained throughout history, growing to represent an entire subculture that has only until recently become mainstream, even as it remains less controversial. The resulting stigma still remains for women, who despite their cultures normative orientation for their gender, continue to write their own stories with skin and ink.

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IT and Engineering Technology

Yechan Choi, The Unattainable Artificial Consciousness

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The Unattainable Artificial Consciousness

The twenty-first century thrives on new technological inventions. Artificial intelligence (AI) is burgeoning field of study, and former works of humans have attested to the possibility of AI. In modern society, computing machines mimic forms of human intelligence and provide convenience and amenities to our daily lives. Artificial intelligence machines compute mathematic equations faster and more accurately than a normal human being. Nonetheless, the theory of whether or not machines can be conscious remains debatable. It is significant to distinguish intelligence from consciousness. Artificial intelligence and artificial consciousness are relatable fields of study that are connected as a hierarchy, yet utterly differentiated. Intelligence itself derives from the rationality: an artificial principle that the humans have created to further our terrains of knowledge. The abundance of terrains of untouched knowledge that the humans will possibly conquer in the future will bring revolutions to the field of artificial intelligence. In the near future, an artificial intelligence will reach the functional intricacy to communicate with humans and it will definitely exceed certain human capacities in the scientific fields. However, the basis of digital computer's syntactic properties and its algorithms remain. On the other hand, consciousness and esthetic virtues will remain as unique human characteristics that cannot be replicated. Consciousness is human state of being that possess intentionality, which consist of rational virtues as well as esthetic stimuli. In order for machines to obtain true consciousness, "there is a need to develop more specifically human-like-minds – in particular minds that have reflective imaginations, inner speech and complex forms of

self-awareness” along with “inter-modal communication and reportability” (Clowes, Torrance, Chrisley 12). The functional complexity of a machine is irrelevant to the reflective inner process of a machine. The continuous evolution of machines may enhance the field of science; however, true artificial consciousness will never be attainable due to machine’s lack of esthetic stimuli.

Modern human reality can be broadly categorized into objective forms of reality, which focuses on logic and reasoning, and subjective forms of reality, which highlight esthetic human experience and emotions. The possibility of synthetic consciousness can be analyzed by examining the relationship and the chronological sequence of subjective form and objective form of reality. Ever since humans have inhabited the Earth, the subjective reality was inherently apparent. Esthetic virtues, the father of esthetic beauty and art of rhetoric, have always existed within human civilizations. However, pre-historic civilizations portray no signs of rationality and logic. The objective reality is artificially crafted to suffice the human’s natural desire for information and furthering our terrains of knowledge. Machines, also being the creation of humans, may inherit the artificial objective reality that the humans can manipulate, yet it cannot inherit the inceptive subjective reality that we humans ourselves do not even understand the origin of.

The quantization of computer sequence is analogous to the basis of the whole Western philosophy: logic and reasoning. According to *Electronic Musician* article, “Getting more than you quantized for: the how and why of dither”, the author, Gino Robair explains that the “computers store information as binary numbers, where something is represented in one of two states—one or zero; on or off.” Western philosophy thrives on “truths.” The pure purpose of Western rationality is to distinguish “truth” from “falsehood” and select a universal “truth” that all humans can agree upon. Rationality provides convenience and enhances the scientific method. Humans make decisions according to agreed-upon truths. Similarly, binary numbers enable computers

to make decisions between the dualistic choices: on and off. The correlation is not a coincidence. Humans have designed the computer sequence based on a previous artificial system: rationality. Consequently, computer programs can only inherit the functions of objective reality and it leaves out the functions of the subjective reality.

Subjective reality is the basis of the Eastern philosophy. Eastern philosophy thrives on virtues rather than the “truth” and discerns the “good” from the “bad.” Subjective reality cannot be embedded to machines and, therefore, they will never make decisions based on esthetic virtues. If the federal law legalized murder, machines will never hesitate to murder. Computer programs perform tasks based on what is “right” and “wrong.” It does not take the virtues of “good” and “bad” to consideration. In order for computers to have such deep understanding of their decision making, “a system needs perceptual grounding and an understanding of the physical and social world,” which machines lack due to hardship in reenacting and characterizing the “the kinds of a priori knowledge or structing principles humans have” (Walts 192). Ethics and morals are significant building blocks of consciousness.

The dualistic hierarchy of human reality can explain the complete form of consciousness. The subjective reality and esthetic virtues lay in the bottommost stratum. They are the basis of human consciousness. The objective reality and rationality exist as a reflective of subjective reality in the hierarchy. In other words, objective reality is derived from the subjective reality. Contrastingly, the dualistic hierarchy of the computer reality is designed differently. The objective reality is at the bottom of the hierarchy. Mathematics and rationality work is the basis of the computer reality. On top of the objective reality, there is a virtual reality of computer processing. This stratum includes program codes and algorithms of the computer. Esthetic virtues are the roots and trunks of consciousness. The roots and trunks are needed to propagate branches and leaves of consciousness: rationality of the objective reality. Computing machineries are an

incomplete form of a tree composed of only the branches and leaves. The virtual reality of computers is fundamentally alienated to the human consciousness and therefore computers will never reach the level of “understanding.”

Artificial consciousness must be capable of performing both the function of the human body as well as the human mind. The difficulty occurs in performing the human mind. Explaining human mind is beyond the bounds of human knowledge. A competent neurologist may be able to explain the neurophysiology and neuropsychology of human brain, yet he/she would never be able to explain how the human mind functions. The biology of human brains is irrelevant to consciousness. Scientists may explain the nerve system’s response to human process of thinking, but the causation of thinking itself cannot be identified. In fact, there is no valid method of substantiating that we humans ourselves possess consciousness. Other than ourselves, we cannot assume that other individuals experience emotion and esthetic virtues. If consciousness cannot be explained within the boundaries of science and logical thinking, then it is unlikely to be replicated utilizing science and logical strategies. Simply, humans are inadequate to implant consciousness to machines due to our own lack of understanding of a definition of consciousness itself.

Many scholars argue the possibility of strong AI. Alan Turing, the father of computer science, alleges the possibility of artificial consciousness and proposes the Turing’s test, also well known as the “imitation game,” as the solution to the controversy over the possibility of artificial consciousness in the essay, “Computing Machineries and Intelligence.” Alan Turing was fascinated with the question: “Can machines think?” In order to answer this question, he developed a hypothetical test. Turing suggested that a human inspector examine natural conversations between a human and a machine and if the inspector failed to distinguish the machine from the human, we could conclude that the machine is conscious. In order to prevent obvious factors such as voice to disturb the

result, “the answers should be written, or better still, typewritten.” (Turing 434) Still, there are two major flaws to the Turing’s test. Turing’s test is valid in testing whether if the machine can mimic consciousness or not; however, it fails to test the machine’s actual possession of consciousness. The test must be able to test the machine’s intentionality to prove that it is conscious. Humans can think intentionally and move intentionally; contrariwise, machines follow pre-informed orders and the syntax of mechanical instructions. If we imagine a human consciousness as a flower with the premise that the flower has consciousness, the Turing ‘s test suggests that an artificial flower will be identified as an actual flower if we cannot distinguish the fake flower from the actual flower. The artificial flower may consist of many characteristics of the real flower, yet its intentionality will never be tested, and therefore, the artificial flower’s originality will be inconclusive. The Turing’s test is language based and it tests only the apparent communication ability of machines. In agreement, Steve Woolgar states in his journal, “Why Not a Sociology of Machines?” that the mistake of Turing’s test is “illegitimately to confuse the metaphysical with the epistemological.” (Woolgar 562) The test may conclude that the machine is conscious; however, it may be just replicating consciousness. Consciousness is an aspect of human mind that exist internally and individually. The problem of building consciousness occurs even before constructing consciousness due to difficulty in explaining what consciousness may mean to an individual.

American philosopher John Searle proposes the Chinese Room Argument, one of the most credited refutations of the artificial intelligence, in the paper “Minds, Brains, and Programs,” which counters the validity of the Turing’s test once more. The argument is stated in the hypothetical premise that artificial intelligence has succeeded in developing a computer that can perfectly translate Chinese. The computer receives Chinese characters and after sorting through its data, it sends out a response. If we suppose that the computer has attained the proper level of functional complexity in

order to communicate, the computer communicates naturally enough to suggest that it is a living human being who speaks Chinese and therefore passes the Turing's test. With such advancement in the performances of AI and how "Turing Test is now too easy" similarly indexes a redefinition of what counts as intelligence." (Shurkin, quoted in Woolgar 73) Therefore, Turing Test may not validly indicate AI machines' ability to construct consciousness thus prove its so called "intelligence."

Searle asserts "even getting this close to the operation of the brain is still not sufficient to produce understanding" and the computer is simply simulating the understanding of Chinese by sorting through its mass data storage. Searle imagines himself being in the room performing the same task as the previous computer. He concludes that he will be able to communicate, but he would not be able to understand what the communication was about. Searle's argument implies that computers designed by data structure and elements cannot have an understanding and intentionality. The experiment well portrays machine's limitation. Computers cannot operate on semantic elements; they operate on syntactic elements of data. Computers manipulate data purely based on what the data "is" and does not consider what the data "means." As the experiment demonstrates, when a computer takes "你说? 国话?" as an input, it will sort through its data for an appropriate output. After sorting through its data, it may display the output "??????" . It seems as if the computer successfully "communicated," however it still does not understand the "meaning" of the characters. Contrastingly, when a bilingual human who speaks both Chinese and English performs this task, he/she takes "你说? 国话?" as an input and refers it back to its semantic value: "Do you speak Chinese?" Then he/she will generate an output based on its semantic properties and display the output: "??????" meaning "Yes, I do." This human process can be defined as critical thinking skill. Computer programs solely engender shallow thinking patterns: memorization based on input/output relationship. Mass data storage for the computer's shallow thinking patterns will never be sufficient to generate understanding

and intentionality.

Physicist Roger Penrose, similarly with John Searle, doubts the possibility of the “strong” AI thesis (artificial intelligence system that possess consciousness) in his book “The Emperor’s New Mind: Concerning Computers, Minds and The Laws of Physics.” The author claims that artificial consciousness is impossible within the domains of our computers. (Penrose) Penrose takes a mathematical approach to his argument. He states that the digital computers operate according to algorithms. In other words, the computers only perform sequential data processing. However, the field of mathematics is not restricted to algorithms. Humans often succeed in making insightful calculations that turns out to be “true” without any mathematical proof. Computers lack a sense of intuition and insight, which is a significant property of the human life.

René Descartes, a well-respected French Philosopher, introduces a thesis “mind-body dualism” in his series of books *Meditation*. Descartes concludes that human minds are consisting of fundamentally different substance from the human body and consequently, human minds can exist in solitude. Although critiques have been made of Descartes’ theory, asserting that abstract ideas do not have their own active existence and substance monism (one fundamental substance) is valid. Nonetheless, their refutations of Descartes include logical fallacies. Descartes prove that immaterial substance exists in human reality. The existence of a substance, whether physical or not, can be proven if the human reality functions abnormally with the absence of the substance. Many religion derives from this idea that “human soul does not perish with the body” because they are two different aspect of human (Descartes 1). One is “perishable” while other is not. An individual “mental properties that are not commensurate with physical properties, nevertheless the person is a unity of these and thus the person by reason of this unity can, as the embodiment of the non-material substrate, act in the world of bodies” (Hart 355). For example, justice is a non-physical

substance that consists of no conceivable physical attributes. However, if we imagine there is no justice in the world, there will be active consequences, both physical and non-physical. The society will overflow with crimes and our sense of morality will be diminished. Therefore justice, a non-physical substance, exists within human reality. Descartes is correct that there are two separate types of substance in reality: physical and non-physical. Humans are born with both physical and non-physical substances. Contrastingly, computers are assembled with physical substance and, furthermore, it is impossible to implant a non-physical substance to a physical type of substance.

Machines are not hesitant when it comes to decision-making. They are built to perform certain jobs and they carry purpose in their existence. For humans, decision makings “require perceptual process to extract factual information from external world that can be used to help develop an answer to a problem,” (Horn 2) and also heavily rely on internal preferences driven from individual’s life. People make different decisions depending on their environment and culture that machines cannot. Machines are universally compatible in a sense that they do not require adapting to different cultures or perceptions. Their built-in system is programmed to achieve certain job and regardless of their environment, the performances or the decision making of the machine will not change unless the changed manually by a programmer. Robots are not capable of understanding its internal preferences nor do they have experiences to reflect upon.

Computer technology is thriving at an exponential rate. Machines handle our mundane chores and bring development in scientific fields. In the near future, computers will indeed surpass human abilities in the most of fields of science and will bring new inventions and innovations to the technological reality. However, it is inaccurate to perceive these high performing computers as “intelligent” or “smart.” They ought to be characterized as fast and precise instruments of calculations designed by human beings and utilized to innovate the scientific method. Theoretically, human beings can execute

all the tasks that a high performing computer executes. The computers simply accomplish it all with an economy of time and effort superior to humans.

Humans appreciate the comfort and convenience that artificial intelligence delivers. However, as numerous Hollywood movies indicate, the constant angst towards artificial consciousness remains persistent. Not only the Hollywood but growing number of scholars and authors fear the similar concept. Nick Bostrom, a philosopher at the University of Oxford, writes his paper, "Superintelligence: Paths, Dangers, Strategies," based on this idea of "how even careful system design can fail to restrain extreme machine intelligence" (Ford). The apprehension is not just an intuitive rejection of future changes. Humans fear the elimination the subjective world by the rapidly growing objective world. The two antagonistic worlds do not collide; they remain entirely separate from one another. Human repulsion of technology is caused by our anxiety for losing esthetic values and pleasure in life. Some people argue that future artificial intelligence will override the human authority and eventually take over the human race, causing chaos and disorder in the social system. This argument is feasible if the artificial intelligence reaches the level of artificial consciousness. However, machines will never attain this stage of artificial science. Computers will always remain as a tool for science. Imagine artificial intelligence as a cooking knife. We can develop the cooking knife to be sharper, lighter, and cheaper to bring convenience in cooking, yet the cooking knife will never cook on its own. The theory remains consistent in artificial intelligence. Humans may develop a digital machine to be faster and more precise that exceeds human limitations, but the machines will be impractical to operation without human interpretation.

In addition, there are esthetic pleasures in the human life that cannot be fully replaced with mechanical substances. Since 2009, Google has worked on building a self-driving vehicle. Recently in December of 2014, Google finally released a new protocol of

the self-driving car: one of the most interesting artificial intelligence systems today. Although the system requires more research to be done, the new protocol vehicle has “self-driven over 2 million miles,” for past six years with minor accidents. In fact, it is plausible to say that a majority of cars will be self-driven in the future. Google is continuously working on removing the manual controls to build a car “designed to operate without a human driver.” Nonetheless, humans will still drive cars. Self-driving cars may provide convenience and safety if designed properly. However, there is an esthetic pleasure in driving that the humans enjoy and that sense of enjoyment of driving a car can never be duplicated in a computer program.

The phrase “artificial consciousness” itself is misleading. In fact, it is almost an oxymoron. Consciousness includes inherent features that cannot be substituted by artificial properties. Human consciousness includes forms of: emotions, intuition, inspiration, responsibility, pride, and many other non-physical substances that cannot be adequately described within mathematics and science. More generally, artificial substances do not perceive values other than the standardized set of rules and orders that humans have implanted. The field of artificial “consciousness” should not be studied within the domain of science; it ought to be analyzed in the field of philosophy and psychology. Definition and explanation of human mind, consciousness, and understanding need to be achieved in order to create a “strong AI” system. Unfortunately, scientific reality is ill prepared.

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Identity in American Literature

Elvia M. Asencio, Rewriting the Virgin of Guadalupe in Gloria Anzaldua's "Coatloapeuh, She Who Has Dominion Over Serpents" and Sandra Cisneros' "Guadalupe the Sex Goddess"

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Rewriting the Virgin of Guadalupe in Gloria Anzaldua's "Coatloapeuh, She Who Has Dominion over Serpents" and Sandra Cisneros' "Guadalupe the Sex Goddess"

Both Gloria Anzaldua and Sandra Cisneros debunk the prevailing myth of the Virgin of Guadalupe, a colonial construct of a passive female deity for Mexican women, and restore the lost Aztec myth of the goddess Coatloapeuh, who assured a full range of experience to women. Since the 1920's movement of *indigenismo*, the efforts to reinstate native beliefs and iconography, the Virgin of Guadalupe has been reinterpreted as a native female force. The name Coatloapeuh is an aspect of Tonatzin, the earlier fertility and Earth goddesses, whereas the name "Coatloapeuh," from the Nahuatl dialect, means a serpent, or she who wears a serpent skirt. Whereas the Catholic Church uses the Virgin of Guadalupe as a symbol to suppress women's sexuality, Anzaldua and Cisneros see her as a replica of Coatloapeuh, the sex goddess in charge of her own sexuality, an inspiring model to modern women. For many Latinas, the Virgin of Guadalupe represents female perfection, and young girls are taught to emulate her. In a culture where a female religious icon literally influences everyday life and it is capable to stir the absolute devotion of her followers, one might think that women are highly valued and occupy an important place in the society; however, Guadalupe actually reifies the idea of female submission. Gloria Anzaldua and Sandra Cisneros analyze the myth and its influence on Mexican and Chicana women, and debunk the Catholic doctrine. In their respective essays, "Coatloapeuh, She Who Has Dominion over Serpents" and

“Guadalupe the Sex Goddess,” Anzaldua and Cisneros reinvent the female goddess myth, and, arguably, create and reinforce the founding theme of the Chicana movement.

Anzaldua and Cisneros write their revisionist texts in the 1980s, while Chicana literature surfaces with the appearance of a larger group of influential women writers, including Cherrie Moraga, Chela Sandoval, Norma Alarcon and Ana Castillo, all represent and interpret the reality of the lives of Latinas, including the influence of religion. The revisions of the Virgin of Guadalupe appear in the art of the period as well, including the vivid “Portrait of the Artist as the Virgin of Guadalupe” by Yolanda López’ (1978), in which the new Virgin of Guadalupe literally jumps off the pedestal the old Guadalupe was permanently attached to. Both Anzaldua and Cisneros use their personal experiences to write about this subject. Chicanas are Mexican-American women who typically occupy an inferior position in society, not only in the American culture, but also in the Chicano and Latin cultures where they are often stereotyped and vilified due to poverty, racism, and sexism. The topic seems to still resonate strongly in our society today. Anzaldua and Cisneros have been the voice for this minority group who has been invisible for such a long time. “The Chicana writer ... is the keeper of the culture, keeper of the memories, the rituals, the stories, the superstitions, the language, the imagery of her Mexican heritage. She is also the one who changes the culture the one who breeds a new language and a new lifestyle... a new legacy for those who have still to squeeze into legitimacy as human being and American citizens” (Rivera 7). The work of Chicana writers has become exceptionally important in part because it reappropriates the somewhat negative associations with the Chicana and reinvents this identity as empowering. Anzaldua and Cisneros bring a sense of pride to Chicanas everywhere, encouraging them to embrace their culture and language. Chicana writers have been accused of being against family and culture because their writings have encouraged women to reject the traditionally prescribed roles they occupy in their families: “Chicana women’s identities are defined on the basis of their role as mothers and wives, that is,

women are expected to exist solely within the family structure. As the foundation of the family unit, a Chicana must prioritize the needs of family members above her own. Good Chicanas are expected to be completely devoted to their families, warm, and nurturing. They are expected to emulate the virtues of the revered cultural symbol, the Virgen de Guadalupe” (Garcia 8). Chicana writings encourage women to question their role in their families and find a more accurate role model, one who has a dark, rebellious, and sexual side as Coatloapeuh.

The myth of the Virgin of Guadalupe originated on the hill of Tepeyac, Mexico, on December 9, 1531, when Juan Diego, a humble Aztec Indian, who had recently converted to the Catholic faith, reported having a vision of the the Virgin of Guadalupe. She asked him to go to the Bishop and tell him to build a church where she would offer all her love, compassion, help, and protection to Mexican people. Juan Diego did as she asked, but the Bishop requested a proof that this message was really from the Virgin. On December 12, 1531, she appeared to Juan Diego again and showed him the most beautiful roses. It was a miracle that the roses were there and in bloom, since they appeared to grow in infertile soil, where only cactus and thistles grew.

Juan Diego put the roses on his *tilma* or poncho and showed them to the bishop and, right before their eyes, the image of the Virgin of Guadalupe began to form on the cloth. The Bishop fell to his knees and asked the people to build a church for her. The Catholic Church conveniently accepted the veneration of the Virgin of Guadalupe. Bishop Juan de Zumarraga ordered the construction of the church in the hill of Tepeyac and encouraged the veneration of the Virgin of Guadalupe. Pope Benedict XIV approved her veneration and



authorized her feast and mass for December 12, and Pope Pius X declared her patroness of Latin America. Castillo asserts that “Myths are the stories that explain a people’s beliefs about their purpose for living and their reason for dying” and explains how Catholic myths forcibly replaced some of the Mexican indigenous beliefs, and the fact those efforts met with an unwillingness of the Native people to abandon their own gods and traditions for the Spaniards’ religion. The myth of the Virgin of Guadalupe certainly worked in favor of the Catholic Church because, not accidentally, the Virgin of Guadalupe appeared ten years after the Spaniards conquered Mexico and, during a period of six years, about nine million indigenous people were converted to Catholicism.

When the Spaniards came to Mexico at the beginning of the 16th century, Mexicans worshiped such goddesses such as Mayahuel, the goddess of agave, Mictecacihuatl, the goddess of the underworld, and Coatlicue, the goddess of fertility. Those goddesses had much importance and many temples and other places of their worship were built for them. To diminish the importance of the local gods, the Spaniards destroyed many of those sacred places and replaced them with Catholic churches. The hill of Tepeyac, for example, was the sacred place where the goddess Tonantzin, “Mother Earth,” was worshiped. It is assumed that the Spaniards knew that the hill of Tepeyac and the goddess who was worshiped there were very important for the Native people – it was indeed a perfect place to replace the old goddess as well. “When Catholic Spanish missionaries arrived after the indigenous peoples of Mexico were conquered, they often erected churches on sites that were already sacred to the population for worshipping indigenous gods and goddesses. Church officials encouraged worship of the Virgin Mary, since that made for an easier transition for people with a tradition of mother-goddess worship” (Cook). Spaniards used the myth of the Virgin of Guadalupe to convert the Native people to Catholicism and submit them to the colonial power. Effectively, the Native people were robbed of their land, enslaved, and mistreated, but now they had the Virgin Guadalupe, who was their mother, protector, and comforter. Guadalupe was

created by the Catholic Church to be the comfort of the poor, the guard of the weak, and the support of the oppressed. In other words, the myth of the Virgin of Guadalupe was created to alleviate the suffering and oppression that the Spaniards and the Catholic Church in particular, inflicted on the Native people.

For many Mexicans and Chicanos, the Virgin of Guadalupe is everything. She is not just a Mexican symbol, she is Mexico. As Anzaldua affirms, "Today la virgin de Guadalupe is the single most potent religious, political, and cultural image of the Chicano/ *Mexicano*. She, like my race, is a synthesis of the old world and the new" (52). She embellishes churches, houses, restaurants, taxis, and buses, etc. The Virgin of Guadalupe is praised in poetry and songs and her shrine is visited by millions of pilgrims every year. The Virgin of Guadalupe has always had a very important role in Mexican national ethos. Miguel Hidalgo, a Mexican Catholic priest and a leader of the Mexican War of Independence, advertised her as the guardian of the revolution against the Spanish in 1810. Emiliano Zapata's rebels also carried banners of the Virgin of Guadalupe when they entered Mexico City in 1914, and in 1926 during the Civil War in Mexico the rebels also carried banners with her image. In and out of Mexico, and in any protest or celebration, Mexicans have carried banners with her image. December 12 is the Virgin of Guadalupe's Day and many Mexicans gather at the Basilica of Our Lady in Tepeyac, Mexico, to honor her. An endless parade of pilgrims from all over the country bring her flowers, songs, chants and prayers. Across the United States, the Day of the Virgin of Guadalupe is also celebrated by many Latinos. One of the largest processions takes place in Chicago, where thousands of people gather at the shrine in Des Plaines, Ill. In Los Angeles, the oldest procession has been celebrated since 1931, in the Roman Catholic Archdiocese and in New York, there is a procession from Central Park to St. Patrick's Cathedral. "La Virgen de Guadalupe's Indian name is Coatlicauhe. She is the central deity connecting us to our Indian ancestry" (49). The virgin of Guadalupe evokes so much devotion among Mexicans because they can relate even more deeply to their

indigenous heritage. She represents the voiceless, marginalized Natives and she is one of them.

In order to understand Chicana literature and culture, one must also understand why the Virgin of Guadalupe is vital for Mexicans and Chicanos: the Virgin of Guadalupe is the core of Mexican culture as she represents the gods of all five main Mexican civilizations: The Olmec, Maya, Teotihuacan, Toltec, and Aztec. After Mexicans had been conquered, a new language, religion, and traditions were forced upon them and the Virgin of Guadalupe, however contrived,



is the last link to their ancient culture, which in part explains the devotion given to her. In “Coatlolopeuh, She Who Has Dominion over Serpents,” Anzaldua analyzes the origins of the Virgin of Guadalupe: “Coatlolopeuh is descended from, or is an aspect of, earlier Mesoamerican fertility and Earth goddesses. The earliest is Coatlicue, or “Serpent Skirt.” She had a human skull or a serpent for a head, a necklace of human hearts, a skirt of twisted serpents and taloned feet. As a creator goddess she was the mother of the celestial deities...Another aspect of Coatlicue is Tonantzin” (49). The Virgin of Guadalupe is the Christian version of Tonantzin whose temple was on the hill of Tepeyac, where the Virgin of Guadalupe first appeared to Juan Diego Most Mexicans and Chicanos do not practice the traditional Roman Catholicism, as was introduced by the Spaniards, but a modified version mixed with the indigenous beliefs and traditions. Anzaldua tell us what happened to Tonantsi, “After the conquest, the Spaniards and their church continued to split Tonantsi/Guadalupe. They desexed Guadalupe, taking Coatlolopeuh, the serpent/sexuality, out of her ...Thus Tonantzin became Guadalupe, the chaste protective mother, the defender of the Mexican people” (49). It is important to understand how Anzaldua explains the origins of the Virgin of Guadalupe because is not

her who oppresses women, she is also a victim of the European religious doctrines that oppress and control women, especially women's sexuality.

Anzaldua criticizes her male-dominated community for pushing women to be subservient and for offering them limited choices: to become a nun, a prostitute, or a wife and mother" (Snodgrass). Anzaldua's writings about the Virgin of Guadalupe are significant in part because she explores a very sensitive topic within the Catholic dogma. She has a lot in common with Cisneros who too writes about the fact that many Latinas, Chicanas, and *Mexicanas* can identify themselves with the Virgin of Guadalupe, because they long for a connection with their ancient culture.

Interestingly, Anzaldua sees the Virgin of Guadalupe also as a god without gender or ethnicity, a god who loves and accepts everybody regardless their gender, ethnicity, or sexual preference. Anzaldua introduces a more enticing version of the Virgin of Guadalupe to a large group of Latin women who have been told for a long time that the Virgin of Guadalupe would reject them because of their sexual desires and preferences. Anzaldua argues that the church divided Coatlalopeuh into good and evil, sexual and asexual and decided to keep Guadalupe without any sexuality. "Anzaldúa has concluded that the powers of the Serpent are occluded rather than promoted by Maria Guadalupe, the domesticated version of Aztec/Toltec goddesses who had both positive and negative attributes that, she claims, were dualized by the church along the virgin/whore dichotomy" (Lioi). Chicanas and Mexican women have found a new way to worship the old spirit Coatlicue the serpent goddess through Guadalupe. "Coatlalopeuh, She Who Has Dominion over Serpents" is a section of Anzaldua's book *Borderland/La Frontera*, dedicated to Mexicans on both sides of the border, especially to those who live in the geographical area that is inclined to a mix that is neither entirely of Mexico nor entirely of the United States and cannot differentiate those invisible borders, who instead have learned to be part of both countries. All essays and poems in *La Frontera* illustrates the

experiences of Chicanas dealing with religion, culture, and femininity. Anzaldua stresses that culture is made by those in power and those in power are usually white male, making the fight against Chicanas' marginalization even harder.

For Chicana and feminist writers, the virgin of Guadalupe is a subject worthy of thorough exploration because it is such a big part of their culture. Sandra Cisneros deals with the Chicana identity and the challenges of being between Mexican and American cultures. In "Guadalupe the Sex Goddess." she questions the virgin of Guadalupe's role in the life of many Chicanas. Cisneros often writes about the guilt and shame that religion inflicts mainly in women. Chicanas do not have many choices and they are limited to two options: good or bad, virgin or whore. In Chicana culture, the value of a woman rest on her virginity and not her intellect, Chicanas are expected to be virginous, but they are not told how to keep their virginity because their mothers do not talk about sex with them. Culture and religion are responsible for the lack of information about Chicanas' sexuality, which creates a lack of confidence and security. According to Cisneros, the Virgin of Guadalupe is a very powerful icon who represents many negative aspects about women's sexuality.

Don't get pregnant! But no one tells you how not to. This is why I was angry for so many years every time I saw a la Virgen de Guadalupe, my culture's role model for brown women like me. She was damn dangerous, an ideal so lofty and unrealistic it was laughable. The Church ignored them and pointed us women toward our destiny marriage and motherhood. The other alternative was putahood. (Cisneros 48)

Cisneros exposes the danger of a culture that does not inform women about the advantages and disadvantages of being sexually active. In Chicana culture, sex is a taboo and Chicanas do not find sexual information at home, church or other young girls because they are taught not to talk about sex. It is difficult and confusing for Chicanas to

develop a healthy sexual identity because their culture encourages them to be feminine and sensual by wearing sexy outfits and learning to dance seductively. Young girls would get the talk from their mother about the importance of learning to use high heels because they make their legs look longer, elevate their buttocks, and they help to swing their hips better. Chicana culture encourages women to be sexy, but they cannot be actively sexual because sex is a sin and they have to be virgin until they get married.

Cisneros describes her high school years as being embarrassed with her body and even at the age of twenty-one, while she was in college, when it was still difficult for her to discuss sex or birth control even with her gynecologist. "I had never seen my mother nude. I had never taken a good look at myself either" (Cisneros 46). She blames her culture and the myth of the Virgin of Guadalupe for being an ideal highly unrealistic for Chicanas. Cisneros does not lessen or deny the powerful influence of the Virgin of Guadalupe in her culture, but she rewrites the myth of the Virgin of Guadalupe from a different perspective in order to get closer to her and present a more appealing version to her fellow Chicanas who do not fully understand this powerful myth. "My Virgen de Guadalupe is not the mother of God. She is God. She is a face for a god without a face, an *indigena* for a god without ethnicity, a female deity for a god who is genderless, but I also understand that for her to approach me, for me to finally open doors and accept her, she had to be a woman like me" (Cisneros 50). Cisneros sees the Virgin of Guadalupe as a mother and the protector of most Mexicans, who is full of love, compassion, and understanding for her people and she should not be used as a symbol to oppress women.

When I look at la Virgen de Guadalupe now, she is not the Lupe of my childhood, no longer the one in my grandparents' house in Tepeyac nor is she the one of the Roman Catholic Church, the one I bolted the door against in my teens and twenties. Like every woman who matters to me, I have had to search for her in the rubble of history. And I have found her. She is Guadalupe the sex goddess, a

goddess who makes me feel good about my sexual power, my sexual energy, who reminds me that I must, as Clarissa Pinkola Estés so aptly put it, “[speak] from the vulva ... speak the most basic, honest truth,” and write from my panocha. (Cisneros 51).

This is the new Guadalupe, the sex goddess that any Latina would be able to identify with. For many Latinas, it is very difficult to keep their culture and their feminist ideas that is why this new aspect of the virgin of Guadalupe is so refreshing, especially for Latinas who are tired of being isolated within the realm of Catholicism and the crushing silence regarding to their sexuality.

Cisneros does not separate her personal life from her writings; instead, she has found a way to include her experiences to have an intimate connection with Latin women: “She has discovered how to uncover the subtle and intricate web of connections that bind the personal with the cultural. Cisneros begins with personal experiences, feelings, and thoughts...” (Madson 28). She has been always advocating for Latin women because she knows that they go through a lot of victimization, but they are also very strong. For many years, Cisneros has been working with women and teenagers in the Latin community.

She frequently went to inner-city neighborhoods to talk to Latino/a teenagers, usually low income and educationally disadvantaged students, about the possibilities of obtaining a college degree. The fact that she was a bilingual Latina and came from the same barrio as many of these teenagers did, helped her to get through to the distrustful teens and parents who were usually not exposed to conversations about higher education. (Rivera 25)

She acknowledges that the historical and mythical figure of the Virgin of Guadalupe has influenced the perception of femininity in Latin women. Latinas have

been taught that piousness, submissiveness, domesticity and virginity are the characteristics of a good woman therefore the virgin of Guadalupe has been the perfect role model. In the final part of “Guadalupe the Sex Goddess,” Cisneros restates that Guadalupe is not a sexless goddess who demands virginity from women. The virgin Guadalupe is the Catholic version of Coatlicue who is not a virgin or submissive, but who is rebellious and authoritative, and she is a mother and a sex goddess at the same time.

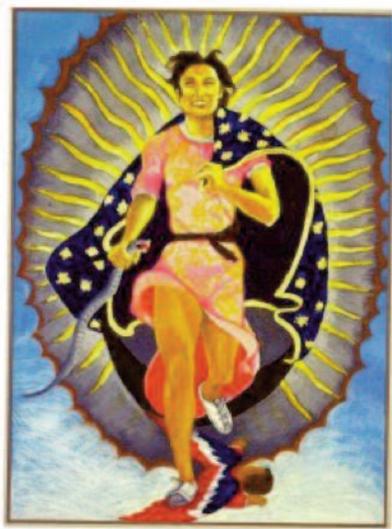
When I see la Virgen de Guadalupe I want to lift her dress as I did my dolls, and look to see if she comes with chones and does her panocha look like mine, and does she have dark nipples too? Yes, I am certain she does. She is not neuter like Barbie. She gave birth. She has a womb. Blessed art thou and blessed is the fruit of thy womb.... Blessed art thou, Lupe, and, therefore, blessed am I. (Cisneros 51).

This is the Virgin of Guadalupe Cisneros can identify with. A Guadalupe who has dark nipples, a vagina, and a womb, who looks like her, and she is blessed not because she is a virgin, but simply because she is a woman. She allows her to understand how she was blessed in her womanhood, her sex, and her sexuality. Cisneros declares that she is blessed because the Virgin of Guadalupe is blessed, and Guadalupe and she share the same qualities, therefore she and her fellow women should occupy a distinguished place in Chicana community precisely like the Virgin of Guadalupe does. Chicanas should be able to find love, compassion, and protection in the Virgin of Guadalupe and religion should not use her or demand submission and virginity from women.

Sandra Cisneros constantly refer to The Virgin of Guadalupe in her writings, especially to the influence on women sexuality. In “Guadalupe the Sex Goddess” Cisneros describe her own experience living in a crowded house with no privacy to explore her own body and a family that would not talk about sex with her. Cisneros

describes an experience with a man that led her to have sex without contraceptive because she felt ashamed to talk about it with him. She also says that discovering sex was something powerful for her. In *The House on Mango Street*, two girls discuss the types of snow one girl thinks that there are only two types of snow, the clean one and the dirty one. In this text she is making allusion to the myth of the Virgin of Guadalupe which limit women to two options good or bad. “Little Miracles” In *Hollering Creek*, are the collection of letters placed at the shrine of the Virgin of Guadalupe. These stories catch the voices of the distressed, but faithful Mexicans living on the Mexican border. In *Caramelo*, a major theme is the influence of the Virgin of Guadalupe in Chicana culture, a culture that denies a sexual education to its women.

The famous portrait of Yolanda Lopez as the Virgin of Guadalupe visualizes the challenges to the static Guadalupe. Lopez suggests a more realistic type of role model for Chicanas. In the portraits of her grandmother, her mother, and herself as the Virgin of Guadalupe she emphasizes the strength, wisdom, power, and uniqueness of each woman at a different age. In Lopez’s portrait, she appears strong, powerful, and free. Her legs are



Yolanda López
Portrait of the Artist as the Virgin of
Guadalupe
1978
Oil Pastel on Paper

muscular, she is running free from subjugation and social stigmas and in her hand she holds a snake by the neck as a sign that she is in charge of her own life and sexuality.

Religion is one of the strongest motivator of human behavior and throughout human history religion has been used to oppress and control women and hence the need to constantly reevaluate the myths and beliefs that provide guidance – it is critical to debunk the still prevailing myth of the catholic-born Guadalupe, and restore the missing, ancient quality of the goddess

Coatlalopeuh. Gloria Anzaldua's and Sandra Cisneros' rewriting of the myth of the Virgin of Guadalupe has enabled many Latinas to relate to Guadalupe the ancient goddess, Guadalupe the mother and the sex goddess, a complete deity and woman form before the time the Catholic Church split her and took her sexuality away, before she became a superficial replica of Coatlalopeuh. Anzaldua and Cisneros discredit the existing myth of Guadalupe as a colonial invention made for political reasons, and rewrite Coatlalopeuh as an empowering figure who, disguised as the Virgin of Guadalupe, encourages them to embrace their sexuality and the strength that women naturally possess, and encourage Chicanas to live their lives fully and feel free and proud of their culture and sexuality.

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Interdisciplinary and Multicultural Studies

Daniela Rebolledo Fuentes, *Language is Power: Improving the Cognitive Process through Bilingualism*

Mentor Dr. Nathan Zook, Montgomery College

Language is Power: Improving the Cognitive Process through Bilingualism

In today's interconnected world, languages have increasingly become a globalized aspect that affects everyone's lives by determining the way we communicate. Before explaining the importance of foreign language acquisition and how it connects to our brains, it is essential to understand what language is. Language is defined as a system of communication containing sounds and words (Cambridge Dictionary). Yet, language is much more complex than a simple combination of sounds and words. The ability to learn and comprehend language is unique to humans and is also a complicated process. In this paper, I describe several aspects of language, demonstrate its connection to the brain, and finally present the argument that learning a foreign language is incredibly beneficial for our cognitive process. The persuasive arguments presented are how bilinguals become better multitaskers, how their working memory is enhanced, and how their decision-making ability improves.

There is evidence that all organisms communicate one way or another. Nonetheless, language is a characteristic that differentiates humans from all other species. Animals are extremely intelligent, thus they have implemented language-like behavior in order to communicate. For example, elephants use their trunks to talk to other herds and horses kick other horses to establish dominance, but this is not quite language. They have learned the meaning of signs, symbols and sounds. So, what makes language unique to humans? The answer is its structure. Humans are able to employ a complex grammatical structure as well as written guide for memory (Living Languages

13). Human language is also open-ended indicating we can produce an infinite number of expressions from a finite set of elements. Due to the development of the human brain, we are able to travel mentally in time meaning we can talk about the past and future (Suddendorf 2009). For humans, language is acquired within the first few years of life, and under normal circumstances we are able to acquire language proficiently.

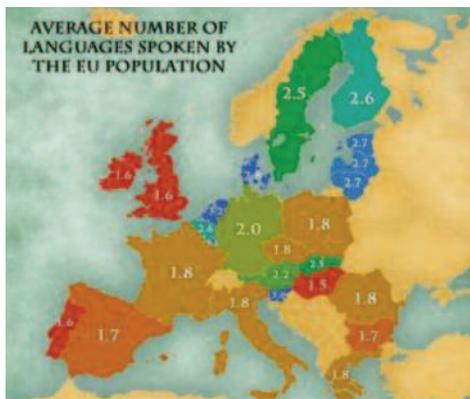
I. Multilingualism in the world

Humans began migrating from Africa around 60,000, and have not yet stop moving. As they moved to Europe, Asia, Australia, and later to the Americas, they eventually formed distinct groups, developing their own communication system (The Human Journey). With improvements in technology, greater accessibility to transportation, and faster communication, human migration has continued up until today. As a result, we have involuntarily created a strong sense of awareness because people are now more exposed than ever before to various cultures. Since languages are a key component of culture, they are now being carried around the world alongside people. Languages that once were isolated have spread to every corner of the world.

Because of today's close interconnectedness, there is a rising need of professionals who can speak, write and read in more than one language in government, business, media and international relations ((Living Languages 15). Most would agree that the current universal language is English mainly because Anglophones have relied on others to speak English in order to communicate. Nevertheless, it seems that the English linguistic hegemony is not enough anymore. Multilingualism is becoming a modern necessity in the increasingly globalized and interlinked world. Some experts believe there will no one single language of the future (Living Languages 15).

More than half of the world population is considered to be bilingual. Bilingualism is even more prevalent in Europe, where 54% of the people in the EU are fluently bilingual.

According to the report “Europeans and their Languages,” 25% of Europeans speak two extra languages in addition to their native language, and around 10% are able to hold a conversation in three additional languages (2012). Several countries recorded remarkably high rates for bilingual populations, such as Luxembourg at 98%, the Netherlands at 94%, and Sweden at 91%. It is important to note that the predominant ways these countries have taught foreign languages are through school lessons, followed by informally talking to a native speaker and taking private language lessons. (Eurobarometer 2012).



This image is illustrated based on the results of the Special Eurobarometer 2012. It demonstrates the high multilingualism rate in several countries of the European Union.

While other countries are multilingual in themselves, such as Chad and Indonesia, English is the only predominant language in the United States. According to the U.S. Census Bureau, twenty percent of the population (5 years and over) speaks a language other than English at home (2013). Of this, 62% speak Spanish, because of the increased immigration and higher birthrates of minority populations. Additionally, Asian and Pacific Island languages, and Indo-European languages, other than Spanish, are spoken by ten million people in the U.S. each (Census 2013). Although this language phenomenon is not new to the United States, a greater variety of languages has spread to the country. Thus, English might not be the facto language everywhere in the U.S, anymore.

II. Language Development

Although some languages differ radically from other languages, linguists

established that all infants go through similar learning stages in their first language acquisition. Karin Stromswold from Rutgers University in New Jersey explains that most children begin saying their first referential words at 9 to 15 months, and for the following 6 to 8 months, they acquire single words only (910). Later at around 18 to 24 months, infants combine words to form two-word utterances such as “look here” or “cook carrot.” Children gradually acquire more vocabulary, but for various months, their speech often lack determiners, auxiliary verbs, and verbal and nominal inflectional endings (Stromswold 910). Furthermore, she explains omissions steadily become rarer until children are three to four years old. Then, language simply evolves based on the person’s life circumstances, including family and education.

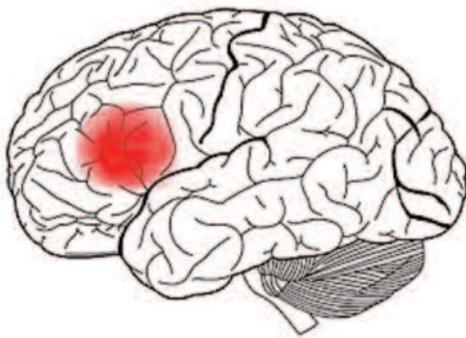
Although all humans have the same anatomical structures, we are not identical. Thus, every brain is distinct. Researchers have found that the way humans remember their first language in the brain is different from how additional languages are remembered later in life (Living Languages 123). A person’s native language “L1” and second language “L2” are presumably located in different areas of the brain since scientists have found greater brain activity for individuals speaking or listening to their second language. In the report “Anatomical Variability in the Cortical Representation of First and Second Language,” researchers found different areas of the brain were activated when subjects listened to L2. It states that while listening to L1, there was a constant activation in the same areas of the left hemisphere of the brain, with minimal and weaker activity in the right hemisphere (Dehaene 3811). The report concludes that when subjects listened to L2, there was a greater variability of activation. No activity was found in the temporal pole and left angular gyrus, which are areas of the brain that were highly activated when subjects listened to L1. Furthermore, some subjects showed right-hemispheric dominance for comprehension in L2 (Dehaene 3813). This report supports the idea that bilinguals use their brain differently when processing a second language. However, bilinguals from birth are an exception to this argument. When a person learns a

second language alongside a first one, the brain mechanisms are believed to be the same as a monolingual as both languages develop simultaneously in the brain (Living Languages 129).

III. Language in the Brain

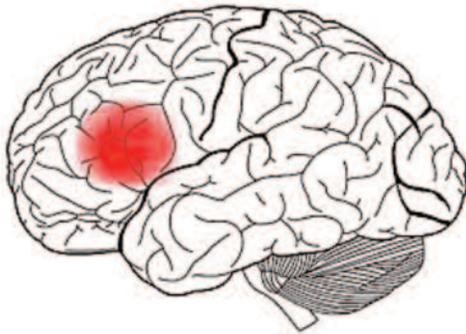
Language is considered to be one of the most elaborate cognitive behaviors, mental abilities and processes. Certain regions of the brain are responsible for certain functions. So how exactly is language found in the brain? Language is mostly located in the left hemisphere of the brain.

During the 1860s, the French neurologist, Pierre Paul Broca, inspected people with clinical disorders, specifically aphasic patients, who had lost the ability to produce or understand language (Wright). He examined brain lesions in order to indicate the region of the brain responsible for certain disorders. From 1861 to 1864, Broca examined several patients who were able to understand language but were unable to speak it. By performing postmortem studies, he noted that all his patients had an injury in the inferior prefrontal cortex of the left hemisphere, which was named Broca's area. Thus, it was concluded that in this area of the brain humans have a motor program that controls our mouth, tongue, and vocal cords. After an individual receives and processes a message, neural representations are transferred to this area in order to elaborate speech.



The red area in this image demonstrates Broca's area is located in the front of our brains but only in the left hemisphere.

Later in 1876, Carl Wernicke further developed the theory of the specialization of specific brain regions in language comprehension and production by examining another type of aphasia. Unlike Broca, Wernicke observed patients who were unable to comprehend language. The location of the lesion was at the intersection of the temporal, parietal and occipital lobes on the left hemisphere of the brain (Wright). As a result, Wernicke concluded that in this region of the brain humans have a sensory program that integrated auditory, visual and somatic sensations. In this part of the brain is where we associate words with meanings.



The red area in this image shows where Wernicke's area is located. Like Broca's area, this region is also localized in the left hemisphere of our brains.

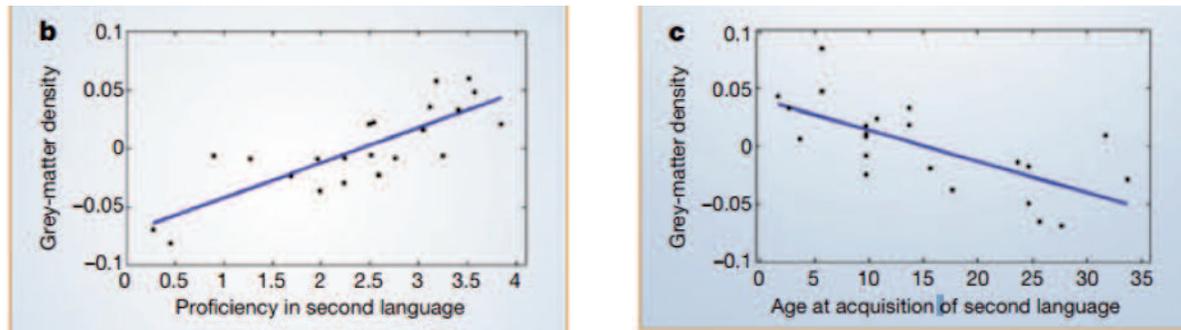
In addition to explaining how languages physically functions in the brain, I will also explain its importance in one's cognitive process. In order to understand this whole paper, it is extremely important to know what the cognitive process is. Cognition is defined as mind processes responsible for knowledge and awareness, which include the processing of experience, perception, memory, and verbal thinking (Oxford Dictionaries). Some of these processes include attention, memory and working memory, judgment and evaluation, reasoning, problem solving and decision making, comprehension and production of language. The executive control "refers to the ability to coordinate thought and action and direct it toward obtaining goals" (E K Miller). Unlike the two main brain areas previously explained, executive functions occur in a different area of the brain. The frontal lobe, located right behind one's forehead, is the part of the brain that controls cognitive skills. In this area of the brain, you make the decision of what language you should speak (Living Languages 120).

While a bilingual person is speaking, both languages are simultaneously active in the brain, regardless of the language he or she is speaking. The reason why bilinguals are able to speak fluently in one language is because the frontal lobe allows us to shut out one language and use another (Living Languages 120). Essentially, this part of the brain facilitates “the processes of selection, switching, and inhibition” (120).

With the help of technology, scientists have been able further explore the brain with higher accuracy. Studies have discovered that bilinguals have an increased amount of grey-matter in certain areas of the brain. Grey-matter is defined as the darker tissue found in the brain and the spinal cord, which consists primarily of nerve cell bodies, and serves to process information in the brain (Robertson). In the article “The Neural Basis of First and Second Language Processing,” Daniela Perani states in highly proficient bilinguals, there was a growth in grey-matter density in the inferior parietal cortex. Additionally, Andrea Mechelli’s article, “Structural Plasticity in the Bilingual Brain,” demonstrates that acquiring a second language augments the density of grey matter in the brain, and also clarifies that the degree of reorganization is determined by the proficiency of the speaker and the age of acquisition. In order to compare the density of grey-matter between monolinguals and bilinguals, Mechelli recruited 25 monolinguals who had minimal exposure to a second language, 25 early bilinguals who had a second language before the age of 5, and 33 late bilinguals who acquired a second language between the ages of 10 and 15 (Mechelli). The study revealed a substantial increase of grey-matter for bilinguals compared to monolinguals, especially in the left hemisphere of the brain. Even though, both early and late bilinguals had an increased grey-matter density, the result was greater in early bilinguals (Mechelli).

By using voxel-based morphometry “VBM”, which is a neuroimaging analysis technique, Mechelli was able to discover that second-language proficiency was positively correlated with the increase in grey-matter density in the left inferior parietal region of

the brain. Furthermore, the study found a negatively correlation between grey-matter density and the age of acquisition of the second language. The following graphs from Mechelli's study illustrate the correlations previously explained.



IV. Multi-tasking

Multitasking is the ability to perform multiple tasks at the same time. To be done correctly, a person needs to balance tasks, interruptions, and concentration issues. In order to effectively complete several activities, the individual needs to mentally go back and forth between two or more tasks rapidly. Many times, people take longer to complete these tasks and are more predisposed to error because the brain cannot fully focus when multitasking.

Many studies have focused on whether bilinguals are more efficient when multitasking since they are believed to make less errors. The reason behind this argument is that a bilingual person is able to focus while filtering out irrelevant information, as their suppression mechanisms are increasingly used, thus minimizing the risk of making mistakes. In addition, the effort and attention needed to switch between languages triggers more activity and potentially strengthens, the dorsolateral prefrontal cortex, which is the part of the brain that plays a large role in executive functions.

In the study “Is There a Relationship between Language Switching and Executive Functions in Bilingualism?” Finnish and Spanish university professors conducted the

number-letter task, which asked 38 neurologically healthy, right-handed Finnish-Swedish bilinguals between 30 and 75 years of age. In this test, “a number-letter combination appeared in one of two squares at the center of the screen” (Soveri 3). The task was to determine if the number was even or odd or if the letter was a vowel or a consonant. The squares served as cues for which task perform since each time the combination appeared in the upper box, the task was to determine the number, and each time it appeared in the lower box, the task was to determine the letter (Soveri 3). Researchers conducted a mixed-tasks block with switching trials and repetition trials, where the participants had to press a certain button based on the square the number-letter combination appeared. Results found a strong correlation between the bilingual language and the mixing cost (Soveri 6). Mixing cost is referred to the state of intensified surveillance sets more demands on sustained control processes as the individual needs to constantly keep different tasks-sets active. Researchers concluded that a task-decision process, such as the number-letter task, resembles the bilingual situation where a decision of which language to use has to be made in each conversation.

In the study “How Does Linguistic Competence Enhance Cognitive Functions in Children?” published by Cambridge University Press in 2012, several university professors from Italy and Germany confirmed that a higher degree of language proficiency was linked to higher alertness, which is one of the three major components of the attentional process. Thus, concluding that high linguistic competence levels in multilingual children significantly improved the children’s alerting network system. The experiment was conducted with a group of 118 multilingual children with distinct proficiency levels on four languages, Latin, German, Italian and English (Videsott 886). They conducted an assessment called the Attentional Network Test “ANT”, which measures a person’s three major parts of the attentional process: alerting, orienting, and executive control. The participants are asked to determine the direction of the central target arrow flanked by four other arrows (Videsott 887). This particular task measures

the reaction times “RT” of the children and their accuracy rate (Videsott 886). After dividing the participants into a high and low competence level groups, the researchers conducted the same tests on both groups. Their results confirmed that in terms of RTs, “multilinguals with high linguistic competence performed significantly faster than those with low linguistic competence” (Videsott 889). Out of the three attentional components previously mentioned, alerting and orienting effects were the ones to be more negatively correlated with the multilingual competence.

The following table titled the attention networks for low and high competent multilingual participants illustrates the results of the participants in the tests corresponding to the three components. Those children with the higher overall proficiency in all four languages reacted much faster, 5.64 milliseconds, than the children with lower proficiency, whose average reaction time was 28.97 milliseconds, which is 23.33 seconds longer (Videsott 891).

Table 5. The attention networks for low and high competent multilingual participants.

Effect	Mean	SD	Mean	SD
	High competent (n = 59)		Low competent (n = 56)	
Alerting	5.64	44.19	28.97	49.59
Orienting	35.48	59.36	47.50	48.98
Conflict	148.83	71.23	150.30	75.32

In other words, whatever the age a person learns a foreign language, bilinguals must learn how to continuously control their two language systems in order to successfully communicate. When speaking, a bilingual person has to avoid using words or certain grammatical rules from one language in order to communicate adequately in the other. In order to achieve this, bilinguals “better develop brain structures related to executive control” (Videsott 885).

V. Working Memory

Working memory “WM” is similar to short-term memory. WM is a theoretical framework that refers to structures and processes used for temporarily storing and manipulating information. It is the ability to remember something for just long enough to execute an associated action (Living Languages123). Although WM is a temporary storage system, it can be exercised and extended to last far longer than a few moments with practice.

Long-term memory is not enhanced in bilingual minds; however, working memory capacity is improved in the bilingual brain since these individuals need to maintain one language in the mind while quickly retrieving the second (Living Languages 124).

Speaking more than one language not only benefits one’s working memory, but it additionally allows the brain to cope with age-related diseases such as Alzheimer’s and dementia. In the study “Cognitive Control, Cognitive Reserve, and Memory in the Aging Bilingual Brain,” researchers, Angela Grant, N. Dennis, and P. Li, from the University of Houston observed at previous studies to explore the relationship between executive control and cognitive reserve of bilinguals. They analyzed the positive effects of bilingualism on aging by reviewing three studies that surveyed hospital records of patients. In the study “Bilingualism as a Protection against the Onset of Symptoms of Dementia,” Dr. Ellen Bialystok reviewed a sample of 184 patients who suffered from dementia. Of these patients, 93 were lifelong bilinguals and 91 were monolinguals. Bialystok discovered that the two groups differed considerably as “bilinguals showed an average delay of 4 years on the age of dementia onset compared with the monolinguals” (3). In order to discard other hypothetically confounding factors such as education, Bialystok’s group investigated the occupational status of all patients. Interestingly, they discovered that the monolinguals had more education than the bilinguals. In a second study “Delaying the onset of Alzheimer disease: bilingualism as a form of cognitive

reserve,” psychologist, Dr. Fergus I.M. Craik, reviewed the information from 211 patients who were diagnosed with Alzheimer’s disease. Craik noticed that the 102 patients who were lifelong bilinguals experienced symptoms of dementia more than five years later than those who were monolinguals, 109 patients. Like Bialystok’s study, all patients had equal cognitive abilities and the monolingual group had again more education than the monolingual group. Lastly, a third study cited in Grant’s research, found equivalent results for bilinguals and multilinguals over monolinguals regarding the age of onset of dementia. This study led by Alladi in 2013 discovered that the bilingual group showed symptoms of dementia 4.5 years later than monolinguals (3).

VI. Foreign Language Effect and Decision Making

The last major benefit explained in this research paper will describe how speaking more than one language improves a person’s ability to make better decisions.

Researchers have noticed that people who learn a foreign language, even in adulthood, exhibit less emotional bias and a more rational approach when confronting problems in a non-native language. The idea that a person responds in a more logical way when solving a problem in a foreign language rather than their native one is due to the Foreign Language Effect.

Nelson Mandela once said, “If you talk to a man in a language he understands, that goes to his head. If you talk to him in his language that goes to his heart” (Laka). This was a linguistic advice to negotiations. During his time imprisoned in the Apartheid, Mandela learned Afrikaans, which was the language spoken by almost all white South Africans during that time period. Mandela’s negotiation advice is closely connected with the Foreign Language Effect as Mandela himself unconsciously benefited from it. When we think how to solve a problem in a foreign language, we tend to use more logical reasoning. Thus, when he processed problems in Afrikaans, he tended to make more rational decisions.

Researchers have asked themselves whether people make the same decisions in a foreign language as they would in their native language. Their answer was no since people's deeply rooted and irrational aversion to loss disappears when a problem is presented in a foreign language; thus, people respond in a cooler and more rational way (Itziar).

In a series of four studies, Albert Acosta concluded that the decision making process is affected depending on the language in which a problem is presented. The reason behind this effect is "that the emotional resonance elicited by a foreign language seems to be lower than that elicited by a native language" (Costa). By using electrodermal monitoring, which measures electric variations in the skin, studies have revealed that skin electric variations are lessened when bilinguals process emotional words in their foreign language. (Costa).

VII. Conclusion

Language is really power. Humans are the only living beings that have the ability to learn more than one language. As mentioned previously, learning a second language has been proven to be beneficial. In addition to becoming better multitaskers, bilinguals have are believed to make more rational decisions because of the Foreign Language Effect.

However being bilingual alone does not provide you with all the benefits mentioned in this paper. First, every single brain is different, thus they may not react similarly when it comes to multi-tasking skills, memory or decision-making. There are two other crucial factors influencing whether an individual to actually enhance his or her cognitive process. The magnitude of bilingual management demands, meaning the complexity of L2 compared to one's native language, and the amount of experience managing those demands, which refers to the number of years the individuals has

spoken both languages (Macnamara).

It is never too late to learn an additional language or help someone you know acquire a foreign language. While bilingualism does not necessarily makes you smarter, it does make your brain more healthy, complex and actively engaged.

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