



Beacon 2013

A Conference for Student Scholars at Two-Year Colleges

June 7, 2013

Northampton Community College

Bethlehem, Pennsylvania

Proceedings



Contents

Table of Contents

Introduction: The Beacon Conference	4
Beacon 2013 Conference Program	6
Outstanding Papers By Panel.....	26
<u>Philosophy</u>	
Battling with Competition: Utopias' Inevitable Self-Elimination	
Rachel B. Lee (Reading Area Community College)	27
<u>Literature I</u>	
Behind the Glory: Wilfred Owen's "Dulce et Decorum Est"	
Bandaranayake Weerasinghe (Montgomery College)	36
<u>Gender Studies</u>	
Carol Danvers: Earth's Mightiest Hero	
Caitlyn Aricelis Colon (Northampton Community College)	48
<u>Math and Computers</u>	
A Mathematical Model for the Falling Raindrop in a Non-Uniform Gravitational Field	
Ngan Le (Montgomery College)	67
<u>History</u>	
Motivations for Murder: "Ordinary" Germans and the Holocaust	
Laura Calix (Bergen Community College)	88
<u>Social Science</u>	
Structural View Of The Myth Of Psyche And Cupid	
Loide D. Polli (SUNY Westchester Community College)	106
<u>Allied Health and Nursing</u>	
The Real Enemy: Counterfeit and Substandard Antimalarial Drugs in sub-Saharan Africa and Southeast Asia	
Kristen Emelio (Montgomery College)	119
<u>Communication and Popular Culture</u>	
Put Me In, Coach: A Look Into Discrimination Against Female Sports Journalists	
Jacqueline Parsons (SUNY Orange County Community College)	142

[Interdisciplinary Studies](#)

Forced to Flee: Acknowledging Climate Refugees
Siobhan Summers (Montgomery College) 162

[Social Justice](#)

Uneven Playing Field: Outsourcing Clinical Trials
Jennifer Yeboah (Montgomery College) 183

[Psychology](#)

The Nature, Cause and Prevention of Elementary School Bullying
Erin Hazen (Bergen Community College) 205

[Natural Science 1](#)

Rogue Species Unleashed: Examining Non-Native Invasive Species, A Biological Problem With Socioeconomic Consequences
Caitlyn Maczka (Montgomery College) 217

[Arts](#)

The Old Musician (1862) Edouard Manet
Lynn Bonde (Montgomery College) 239

[Natural Science 2](#)

Testing the Antibacterial Qualities of Common Essential Oils
Michele Andrews (Lehigh Carbon Community College) 269

[Literature 2](#)

The Veil of Fiction: An Analysis and Comparison of the Characters and Events In Upton Sinclair’s The Moneychangers with the Events and Major Figures of the 1907 Banking Panic
Gillian K. Fitzgerald (Bergen Community College) 290

[International Studies](#)

Syria on the Brink
Victoria Winch (Montgomery College) 301

[Multicultural Studies](#)

A Nation Without Immigration: Why Is Japan Still Resisting?
Rachel Czarniak (Montgomery College) 319

[Business and Economics](#)

Toxic Charity and Microfinance: Charity’s Blindspots and Microfinance’s Potential for Global Poverty Alleviation
Catherine Hoover (Montgomery College) 339

Introduction: 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 18–20 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>.

Acknowledgements

We gratefully acknowledge the support of The President and Board of Trustees of Northampton Community College. We also gratefully acknowledge the inspiration and legacy of the founders of the Beacon Conference and previous Beacon conference hosts. We thank the countless staff members and campus offices that helped with Beacon 2013. We would like to further acknowledge the support of W.W. Norton and Pearson publishers and contributing consortium of colleges that supports the Beacon Conference.

Sincerely,
Nancy Trautmann and Randy Boone and Shauna Gobble
Beacon 2013 Co-Directors

Steering Committee Members 2013

Bergen Community College (NJ) Dr. Dorothy Altman, Dr. Anne Maganzini, Dr. Sarah Shurts, Dr. Kathleen Williams, Dr. Geoffrey Sadock, Dr. Maria Makowiecka, Dr. Jessica Datema, Prof. Jennifer Lyden

Brookdale Community College (NJ) Dr. Elaine Olaoye

CUNY – Borough of Manhattan (NY) Prof. Jerrold Schoenblum, Dr. Carol Wasserman

SUNY Dutchess Community College (NY) Prof. Kevin Cavanaugh

SUNY Erie Community College (NY) Dr. Rene Rojas, Prof. Lisa Matthies-Wiza

Lehigh Carbon Community College (PA) Dr. Christine Bowditch, Prof. Jonathan Spensler

Montgomery College (MD) Dr. Lucy Laufe, Prof. Effie Siegel

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Northern Virginia Community College (VA) Dr. Joyce Brotton

SUNY Orange County Community College (NY) Dr. Michele Iannuzzi-Sucich, Prof. Melissa Browne

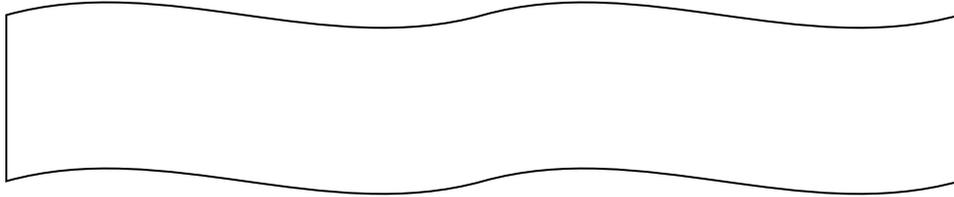
Reading Area Community College (PA) Dr. Donna Singleton

SUNY Rockland Community College (NY) Dr. Kristopher Baker, Dr. Thomas Butler, Prof. Robert Fuentes

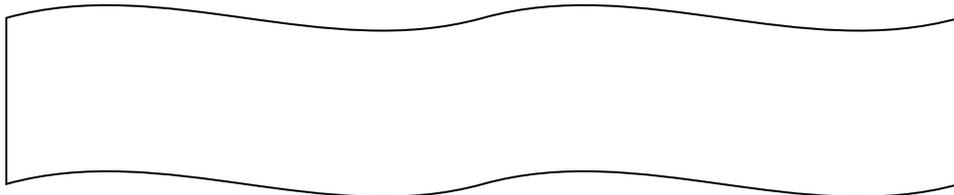
SUNY Sullivan County Community College (NY) Dr. Cindy Linden

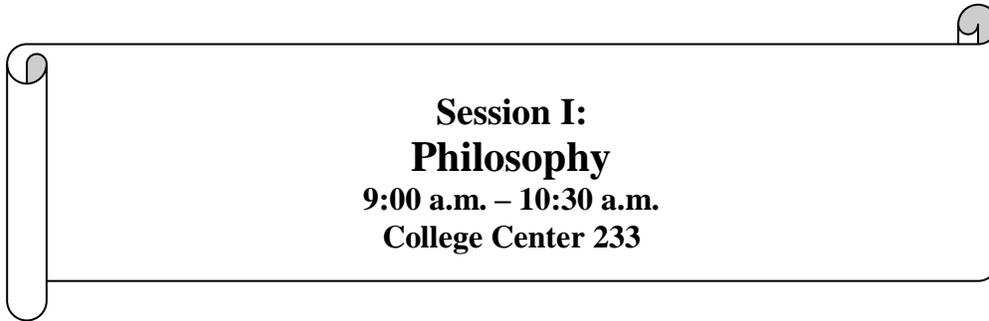
SUNY Ulster County Community College (NY) Dr. Miho Iwazaki, Prof. Tom Impola, Prof. Bob Pucci

SUNY Westchester Community College (NY) Dr. Lori Maida, Dr. Mira Sakrajda



Beacon 2013 Conference Program





Presenters:

Joanna Dykeman

- **Philosophical Ideals in Star Wars**
(SUNY Orange County Community College)
Mentor - Professor Elaine Torda

Michael Forrest

- **On Happiness**
(SUNY Rockland Community College)
Mentor - Professor Ian Newhem

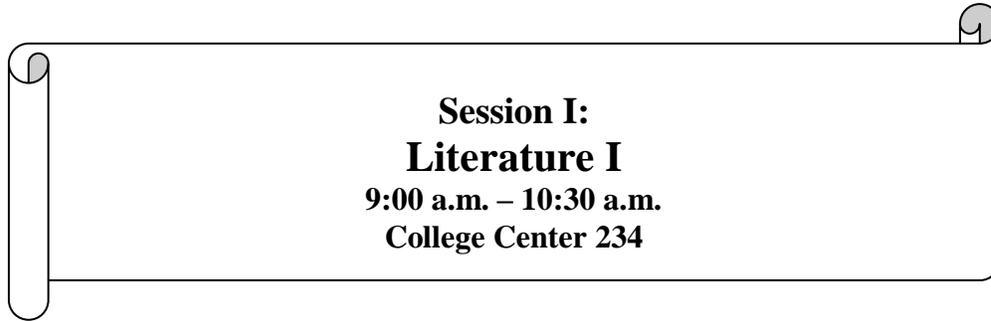
Rachel B. Lee

- **Battling with Competition: Utopias' Inevitable Self-Elimination**
(Reading Area Community College)
Mentor - Dr. Donna Singleton

Judge: Dr. Joshua Schulz, DeSales University

Moderator: Dr. Harold Weiss, Northampton Community College

Readers: Dr. Edward Grippe, Norwalk Community College
Creed Hyatt, Lehigh Carbon Community College
Karen Sieben, Brookdale Community College



Presenters:

Emily March

- **Two American Poets, One American Dream**
(Northampton Community College)
Mentor – Professor Jennifer Tabor

Kala Wali

- **Feminism Through the Ages**
(Montgomery College)
Mentor – Professor Shweta Sen

Bandaranayake Weerasinghe

- **Behind the Glory: Wilfred Owen’s “Dulce et Decorum Est”**
(Montgomery College)
Mentor - Professor Jamie Miker

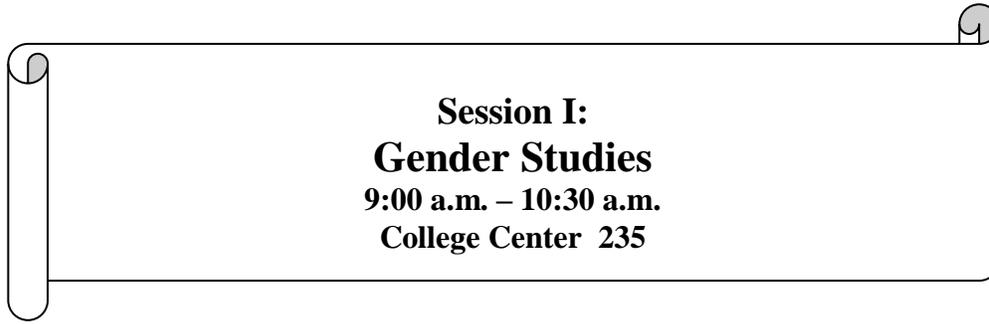
Judge: Professor Stephen Myers, DeSales University

Moderator: Professor Eileen Finelli, Northampton Community College

Readers: Rene Rojas, SUNY Erie Community College
Christopher Costello, Reading Area community College
Mark Altschuler, Bergen Community College

This panel is sponsored by W.W. Norton, publishers.

Session I Literature I



I.

Presenters:

Caitlin E. Brown

- **The Effects of Religious and Family Socialization on Gender Ideology**
(Lehigh Carbon Community College)
Mentor – Dr. Christine Bowditch

Caitlyn Aricelis Colon

- **Carol Danvers: Earth's Mightiest Hero**
(Northampton Community College)
Mentor - Professor Margret Borene

Shanna Saravia

- **Tolerance Through Superiority**
(SUNY Orange County Community College)
Mentors - Professor Elaine Torda and Professor Geoffrey Platt

Judge: Dr. Nicola Tannenbaum, Lehigh University

Moderator: Professor Belinda Anderson

Readers: Christine Eubank, Bergen Community College
Michael Hall, SUNY Dutchess Community College
Elaine Olaoye, Brookdale Community College

Session I Gender Studies

Session I:
Math and Computers
9:00 a.m. – 10:30 a.m.
College Center 290

Presenters:

Bradley Scott Clark

- **Design and Optimization of a “3-Voter Count Circuit”**
(Montgomery College)
Mentor - Dr. Kam F. Yee

Ngan Le

- **A Mathematical Model for the Falling Raindrop in a Non-Uniform Gravitational Field**
(Montgomery College)
Mentor - Dr. Eugene Li

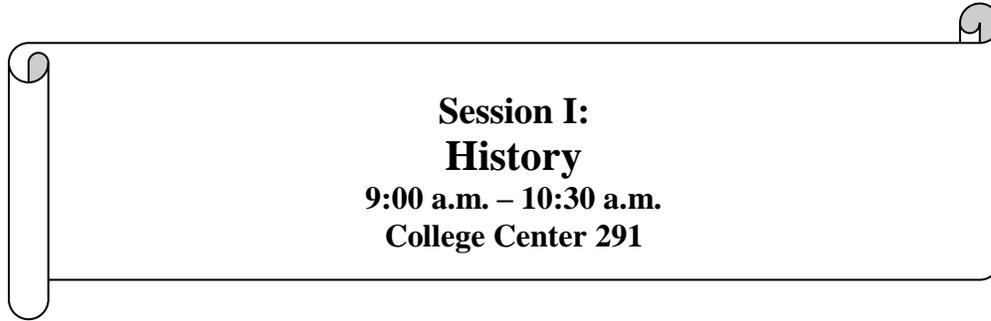
Tin Lok Wong

- **Additive Manufacturing: The Future Is Here**
(Montgomery College)
Mentor - Dr. Aram Hessami

Judge: Dr. Perry Lee, Kutztown University

Moderator: Dr. Robert Smith, Northampton Community College

Readers: Nelda Latham, Bergen Community College
Greg Liano, Brookdale Community College
Ned Schllow, Lehigh Carbon Community College



Presenters:

Laura Calix

- **Motivations for Murder: “Ordinary” Germans and the Holocaust**
(Bergen Community College)
Mentor - Dr. Sarah Shurts

Ana Cassandra De Jesus

- **Creating the Female 007**
(Bergen Community College)
Mentor - Dr. Sarah Shurts

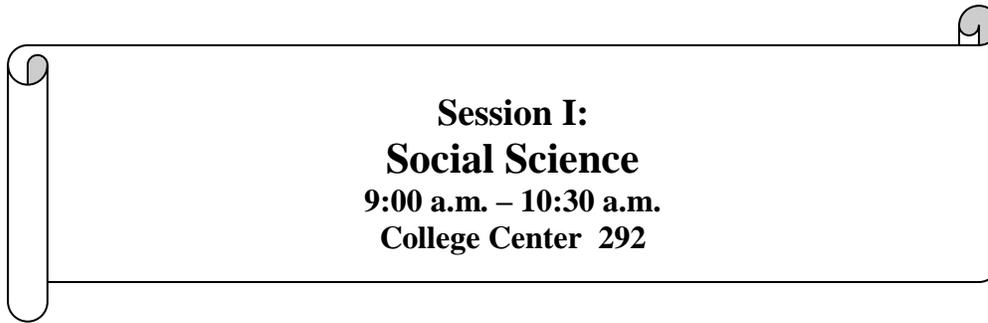
Tristan Philip Zukowski

- **Female Agency of Violence in the Middle Ages**
(Dutchess Community College)
Mentor - Professor Todd Wilmot

Judge: Dr. Mark Stein, DeSales University

Moderator: Dr. Christine Pense, Northampton Community College

Readers: Dr. Nichola Harris,
Alex d'Erizans, Borough of Manhattan Community College
Eric DeAngelo, Lehigh Carbon Community College



Presenters:

Amanda Iacobellis

- **Exploring Social Inequality through Myths, Folklore, Legends**
(SUNY Rockland Community College)
Mentor - Professor Nancy Pietroforte

Loide D. Polli

- **Structural View Of The Myth Of Psyche And Cupid**
(SUNY Westchester Community College)
Mentor - Professor B. Jo Stokes

Dalgia Reyes

- **Anthropological Views on Death Rites and Rituals**
(Northampton Community College)
Mentor - Professor Alison Diefenderfer

Judge: Dr. John Kraybill-Greggo, East Stroudsburg University

Moderator: Dr. Vasiliki Anastasakos, Northampton Community College

Readers: Professor Erin Reilly, Northampton Community College
Dr. Beverly Moore, SUNY Sullivan Community College
Betsy Swope, Lehigh Carbon Community College

**Session II:
Allied Health and Nursing
10:45 am - 12:15 pm
College Center 233**

Presenters:

Kristen Emelio

- **The Real Enemy: Counterfeit and Substandard Antimalarial Drugs in sub-Saharan Africa and Southeast Asia**
(Montgomery College)
Mentor - Prof. Efstathia Siegel

Kumsa Kenenisa

- **Physical Activity and its Effect on Brain Functioning**
(Montgomery College)
Mentor - Dr. Carole Wolin

Erica Watts

- **Healthcare Costs, Who is Responsible for the Bill?**
(Montgomery College)
Mentor - Professor Julie Wakeman-Linn

Judge: Dr. Laura Waters, East Stroudsburg University

Moderator: Mardi Mcguire-Closson

Readers: Marcia Gellin, SUNY Erie Community College
Stephanie Miller, Lehigh Carbon Community College
Kathleen Dolin, Northampton Community College

Session II:
Communication and Popular Culture
10:45 am - 12:15 pm
College Center 234

Presenters:

Courtney Karecki

- **The Need For a Hero: Understanding the Superhero, His Mythical Background, and His Function in Society**
(SUNY Orange County Community College)
Mentors - Professor Mary Warrenner
and Professor Elaine Torda

Jacqueline Parsons

- **Put Me In, Coach: A Look Into Discrimination Against Female Sports Journalists**
(SUNY Orange County Community College)
Mentor - Professor Alexandra Kay
and Professor Elaine Torda

Kendall Wilhelm-Glab

- **More Than Just a Medal: The Correlation between National identity and Olympic Champions**
(Montgomery College)
Mentor - Professor Efstathia Siegel

Judge: Dr. Anthony Bleach, Kutztown University

Moderator: Professor Jennifer Del Quadro

Readers: Scott Aquila, Lehigh Carbon Community College
Kathleen Williams, Bergen Community College
David Leight, Reading Area Community College

**Session II:
Interdisciplinary Studies
10:45 am - 12:15 pm
College Center 235**

Presenters:

Jillian Hyde

- **Prostitution in History: The Indiscretions of Our Ancestors**
(Reading Area Community College)
Mentor - Professor John M. Lawlor

Brendan D. King

- **Playing to Win**
(SUNY Rockland Community College)
Mentor - Professor Ian Newhem

Siobhan Summers

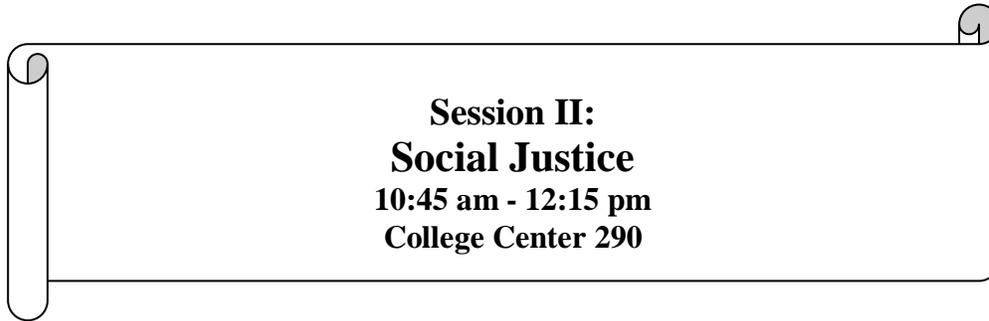
- **Forced to Flee: Acknowledging Climate Refugees**
(Montgomery College)
Mentor - Professor Efstathia Siegel

Judge: Dr. Judy Rance-Roney, DeSales University

Moderator: Professor Vertel Martin, Northampton Community College

Readers: Cecelia Connelly-Weida, Lehigh Carbon Community College
Matt Connell, Northampton Community College
Cindy Linden, SUNY Sullivan Community College

Session II Interdisciplinary Studies



Presenters:

Carlos Costoso

- **Money, Politics, and the Defense of the Commons**
(SUNY Rockland Community College)
Mentor - Professor Ian Newhem

Sarah Weissman

- **The Fallacy of the American Dream: A Social Psychological Perspective**
(SUNY Westchester Community College)
Mentor - Dr. Mira Sakrajda

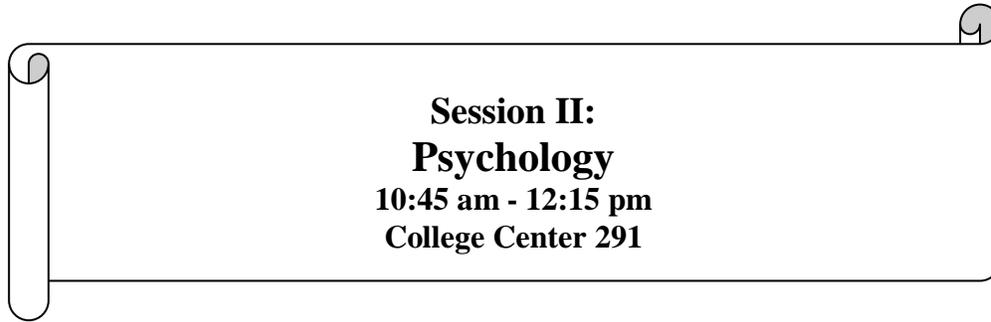
Jennifer Yeboah

- **Uneven Playing Field: Outsourcing Clinical Trials**
(Montgomery College)
Mentor - Professor Efstathia Siegel

Judge: Prof. Suzanne Weaver, Cedar Crest College

Moderator: Dr. Vasiliki Anastasakos, Northampton Community College

Readers: Ellen Feig, Bergen Community College
Dr. Christine Bowditch, Lehigh Carbon Community College
Sara Thompson Tweedy, SUNY Sullivan Community college



Presenters:

Ingrid Bilowich

- **The Psychosocial Impact of Gender Role Violations**
(Borough of Manhattan Community College)
Mentor - Professor Dan DePaulo

Jessica Bruehert

- **A Chronological Reflection on the Treatment of Mental Illness through a Technological Lens**
(SUNY Orange County Community College)
Mentor - Professor Elaine Torda

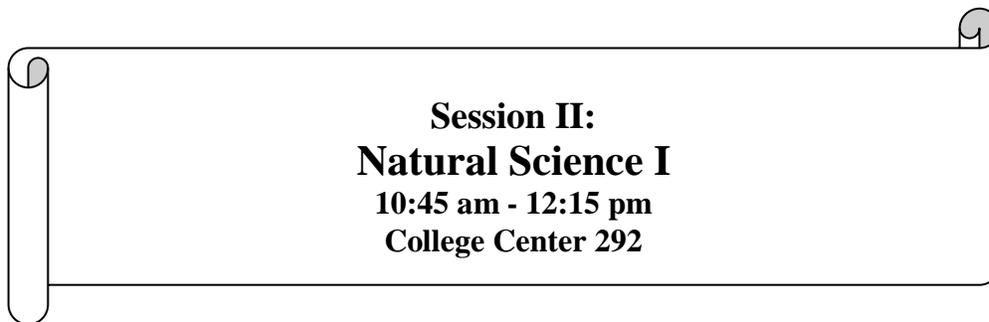
Erin Hazen

- **The Nature, Cause and Prevention of Elementary School Bullying**
(Bergen Community College)
Mentor - Dr. Anne Maganzini

Judge: Dr. Bonnie Green, East Stroudsburg University

Moderator: Dr. Christine Pense, Northampton Community College

Readers: Diana Glynn, Brookdale Community College
Dr. Azadeh Aalai, Montgomery College
Sara Barnett, Brookdale Community College



Presenters:

Caitlyn Maczka

- **Rogue Species Unleashed: Examining Non-Native Invasive Species, A Biological Problem With Socioeconomic Consequences**
(Montgomery College)
Mentor - Prof. Efstathia Siegel

Nathaniel May

- **Vanishing Habitat: The Battle for Madagascar's Remaining Forests**
(Montgomery College)
Mentor - Prof. Efstathia Siegel

Christian Ramos

- **From Fish to Philosophy**
(Northampton Community College)
Mentor – Dr. Charles Rinehimer

Judge: Dr. Michael Behe, Lehigh University

Moderator: Dr. Sharon Lee-Bond, Northampton Community College

Readers: Dr. Catherine Folio, Brookdale Community College
Holly Morris, Lehigh Carbon Community College
Robert Blum, Lehigh Carbon Community College

Session II Natural Science I



Presenters:

Lynn Bonde

- **The Old Musician (1862) Edouard Manet**
(Montgomery College)
Mentor - Dr. Claudia Rousseau

Suzanne Peguero

- **Last Supper: The Best Artistic Portrayal of the Event**
(SUNY Rockland Community College)
Mentor - Dr. Nancy Hazelton

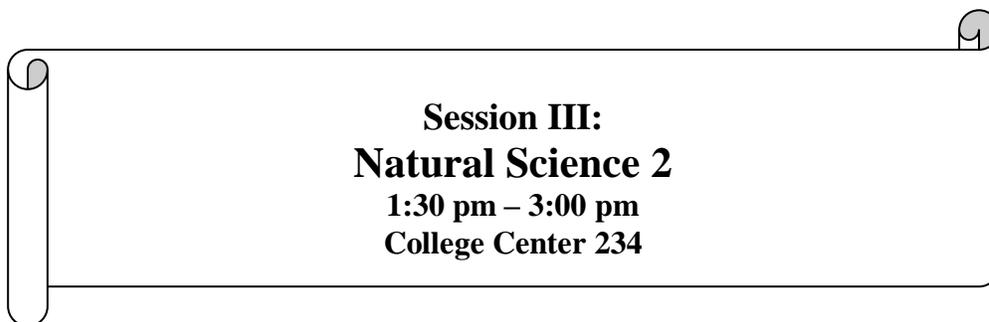
Marina Watts

- **Observation through Impressionism and Post-Impressionism**
(SUNY Rockland Community College)
Mentor - Dr. Nancy Hazelton

Judge: Dr. Amy O'Brien, Kutztown University

Moderator: Professor Donna Acerra, Northampton Community College

Readers: Beth Kolp, SUNY Dutchess Community College
Vanda Bozicevic, Bergen Community College
Denise Budd, Bergen Community College



Presenters:

Michele Andrews

- **Testing the Antibacterial Qualities of Common Essential Oils**
(Lehigh Carbon Community College)
Mentor - Professor Eric DeAngelo

Andrew Boodhan

- **The Use of Nanotechnology to Develop a Tattoo to Test Blood Sugar**
(Borough of Manhattan Community College)
Mentor - Dr. Bramadeo Dewprashad

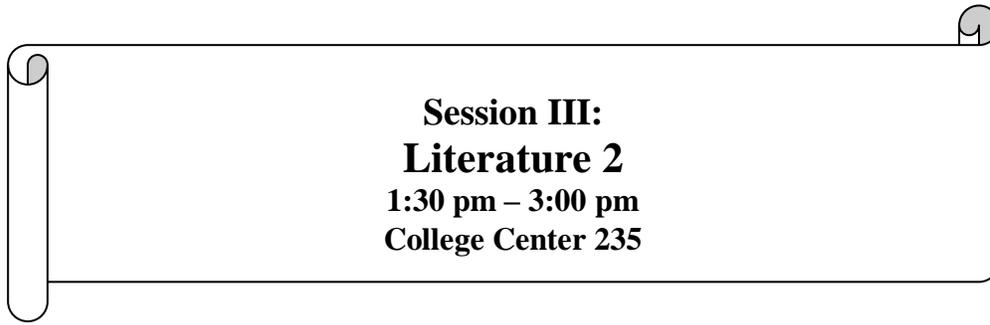
Ariel Kotch

- **Canine vs. Human Antiseptic Microbial Response**
(SUNY Rockland Community College)
Mentor - Dr. Tom Butler

Judge: Dr. Brian Berger, Lehigh University

Moderator: Dr. Charles Rinehimer

Readers: Michele Iannuzzi Sucich, SUNY Orange Community College
Dr Charles Rinehimer, Northampton Community College
Gregorio Segal, Bergen Community College



Presenters:

Gillian K. Fitzgerald

- **The Veil of Fiction: An Analysis and Comparison of the Characters and Events In Upton Sinclair's The Moneychangers with the Events and Major Figures of the 1907 Banking Panic**
(Bergen Community College)
Mentor - Dr. Geoffrey J. Sadock

Tamar MacCallan-Finkelman

- **What Can We Learn From Shakespeare's Measure for Measure?**
(SUNY Rockland Community College)
Mentor - Dr. Nancy J Hazelton

Alexandra Marks

- **The Heroes and Monsters of Beowulf**
(SUNY Rockland Community College)
Mentor - Dr. Katherine Lynch

Judge: Dr. Suzanne Edwards, Lehigh University

Moderator: Dr. Precie Schroyer

Readers: Joan Naake, Montgomery College
Melissa Browne, SUNY Orange Community College
Rita Kranidis, Montgomery College

This panel is sponsored by Pearson Publishers.

Session III Literature II



Presenters:

Gabriela Gomez

- **Rebooting Public Diplomacy: The Emergence of e-Diplomacy in a Networked Age**
(Montgomery College)
Mentor -- Professor Efstathia Siegel

Marguerite Stevenson

- **Political Agendas: Iran and Saudi Arabia's Reactions to Inflammatory Speech**
(Montgomery College)
Mentor -- Dr. Aram Hessami

Victoria Winch

- **Syria on the Brink**
(Montgomery College)
Mentor -- Dr. Aram Hessami

Judge: Dr. James West, Moravian College

Moderator: Dr. Vasiliki Anastasakos, Northampton Community College

Readers: Dr. Sarah Shurts, Bergen Community College
Denise Francois-Seeney, Northampton Community College
Bethany Zornek, Lehigh Carbon Community College

Session III International Studies



**Session III:
Multicultural Studies**
1:30 pm – 3:00 pm
College Center 291

Presenters:

Rachel Czarniak

- **A Nation Without Immigration: Why Is Japan Still Resisting?**
(Montgomery College)
Mentor - Prof. Efstathia Siegel

April S. McRae

- **The Color Of Acceptance: An Intellectual History of Racial Identity Among African Americans**
(Northampton Community College)
Mentor - Professor Sholomo Levy

Eleni Stamoulis

- **Wôpanâak: A Language Revived**
(Montgomery College)
Mentor - Professor Paul Lux

Judge: Dr. Elizabeth Fifer, Lehigh University

Moderator: Denise J. Francois-Seeney, Northampton Community College

Readers: Debra Condon, Lehigh Carbon Community College
Dr. Bob Pucci, SUNY Ulster Community College
Miho Iwazaki, SUNY Ulster Community College

**Session III:
Business and Economics
1:30 pm – 3:00 pm
College Center 292**

Presenters:

Fathin Achmad

- **The Collapse of the European Empires after World War I and Their Economic Struggles**
(Montgomery College)
Mentor - Professor Bette Petrides

Catherine Hoover

- **Toxic Charity and Microfinance: Charity's Blindspots and Microfinance's Potential for Global Poverty Alleviation**
(Montgomery College)
Mentor - Professor Efstathia Siegel

Patricia Riviello

- **Is Environmental Classism Real or Imagined?**
(SUNY Rockland Community College)
Mentor - Professor Martin Lecker

Judge: Prof. Bradley Barnhorst, DeSales University

Moderator: Mark Henry, Northampton Community College

Readers: Ann Bieber, Lehigh Carbon Community College
Rachel Plaksa, Lehigh Carbon Community College
Professor Jeanine Metzler, Northampton Community College

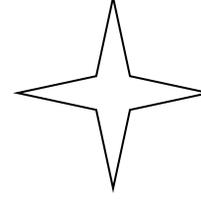
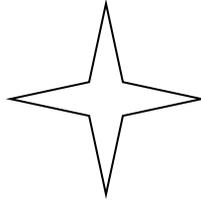
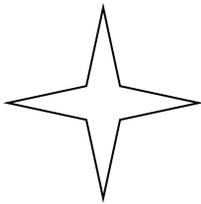
Conference Program for Beacon 2013

Poster Presentations

3:15 pm – 4:15 pm
College Center 220

- Gertrude Amoah** **Antioxidant Activity of Ginger (*Zingiber officinale*)**
(Borough of Manhattan Community College)
Mentor - Dr. Brahmadeo Dewprashad
- Lauren Connoly** **The Psychological Effects of Adoption and Divorce on American Adolescents A Psychological Analysis**
(SUNY Orange County Community College)
Mentor - Professor John Pernice and Professor Elaine Torda
- Susan Crawford** **Beowulf's Three Monsters as Body, Mind, and Spirit**
(Northampton Community College)
Mentor - Professor Cara McClintock-Walsh
- Mildred Gilyard** **The Underground Railroad In Berks County, Pennsylvania**
(Reading Area Community College)
Mentor - Professor John Lawlor
- Ramona Hierro** **Junot Diaz's Dominican/American Brew**
(Northampton Community College)
Mentor - Dr. Nancy Moreau
- Molly McNeely** **The War of the Words: How Times of Intense Political Turmoil Affected the Realms of Literature and Art, and in Turn Affects Modern Perceptions and Interpretations**
(SUNY Orange County Community College)
Mentors - Elaine Torda and Alex Jakubowski
- Maite Moncayo** **The Human Costs of Crops: Soy Agribusiness Expansion in Brazil** (Montgomery College)
Mentor - Professor Efstathia Siegel
- Chymae Pickell** **Sexism in the Gaming Culture**
(Northampton Community College)
Mentor - Professor Beth Wheeler
- Tien L. Quach** **A Study of Gasoline Prices in the United States: An Inquiry into the Supply Side Factors**
(Montgomery College)
Mentor - Dr. Satarupa Das
- Dalgia Reyes** **Anthropological Views on Death Rites and Rituals**
(Northampton Community College)
Mentor - Professor Alison Diefenderfer
- Alan Ridderhof** **Phasor Circuits**
(Borough of Manhattan Community College)
Mentor - Dr. Anthony Creaco
- Alexandra Riedel** **Multiplicity of Self and Frida Kahlo: A Unification of Perceptions**
(SUNY Orange County Community College)
Mentor - Professor Elaine Torda
- Joel Collin Sati** **M.A.D Game Theory: Prisoner's Dilemma, Perceptual Dilemma, and Cold War Armament Theory**
(Montgomery College)
Mentor - Professor Karl T. Smith
- Jeffrey Ta** **Medical Tourism: How far will you go?**
(Montgomery College)
Mentor - Professor Efstathia Siegel
- Eva Velez** **Food For Thought**
(Northampton Community College)
Mentor - Dr. Charles Rinehimer

Outstanding Papers By Panel



Disclaimer :

The paper for the outstanding presenter for each panel is reproduced in the proceedings as it was submitted to the 2013 Beacon Conference.

Battling with Competition: Utopias' Inevitable Self-Elimination

Rachel B. Lee (Reading Area Community College)

Mentor - Dr. Donna Singleton

Battling with Competition:

Utopias' Inevitable Self-Elimination

Yellow sunlight diffuses through a few lazy white clouds, painted on an azure sky. Warm whispers rustle, initiating mid-day greetings between tall, bending fields of pale-gold wheat and long stretches of bright green pastures. Flies lazily turn in loops, as time ceases to exist. In the village, men and women, elderly and young, work together at the same leisurely, placid pace. As one, they harvest the crops, cook meals, produce furniture, and heal the sick. No grunts of frustration or screams of anger puncture the air. In the midst of this harmonious dance stands a large, round building. Upon entering through the double-doors, which are engraved with every villager's name, an enormous room inhabited by a circular, welcoming table greets the members. Here is where everyone breaks bread together, as equals. Here is where the children learn and play in unity. Here is where, at the end of a day, everyone convenes to laugh, rest, and share in the joys of community. This place is the village's "soul." In this village, there are no doors marked "Do not enter!" In this village, there are no containers branded "Do not touch!" In this village, there is no "mine" and "yours." This is a place where money has no face and conflict has no name.

This place is utopia.

Lee -- Philosophy

The idea of utopia—a “perfect” society—has pervaded human philosophy since ancient times. While theorists have been unable to agree upon a singular theory of what earthly perfection explicitly entails, one fact remains irrefutable: perfection cannot include competition. Competition itself often leads to imperfect emotions, including anger, jealousy, and sadness. These emotions can further spur imperfect actions—such as fighting, lying and stealing—that disrupt the peace of life. Some theorists believe that perfection relies on harmony within a utopia (Kateb 267; Fogarty 2241). Harmony, according to one such prominent theorist George Kateb, further relies on peace and equality (267). Thus, competition’s negative emotions and resulting imperfect actions, as well as its unavoidable “winners” and “losers,” are not welcome in harmony. For these reasons, utopias strive to eliminate all forms of rivalry in order to obtain perfection. Ironically, the persistent attempt to control all competition results in the annihilation of every intended utopia.

Numerous utopian societies have been attempted throughout the history of the world, yet all eventually fail. The United States itself has one of the richest utopian histories. Since its discovery, North America has been inundated with dreamers, sociologists, urban planners, religious leaders, and political theorists who utilized America’s vast, uncharted land in order to promote and test their ideas of perfection. Historian and theorist Robert Fogarty has documented the extensive history of utopias in the United States from the early religiously-based utopias to the late 19th century’s secular and politically-driven utopias to the free-spirited hippie communes of the 1960’s (2243, 2246-49). Some of the most famous of these hundreds of American utopias include the Moravian settlements, the Shakers, the Oneida community of Vermont, Brook

Farm in Massachusetts, New Harmony in Indiana, the Women's Commonwealth of Texas, and the Ruskin Colony of Tennessee. Today, only a select few of these utopian endeavors—including the Mormons, Hutterites, and Amish communities—have survived to thrive in America. However the ever-lasting search for perfection on earth is still alive and well across the world. Despite this seemingly endless search for perfection, all utopias, past and present, eventually fail, having destroyed themselves in their efforts to control competition.

Competition naturally arises between a utopia and the rest of the world due to the fact that the outside world is constantly changing. As it does, cultural norms advance and technology develop. The potential lure of these innovations pits a utopian society against the rest of the world in the ultimate battle for member loyalty. As competition has no place in perfection, however, a utopia must attempt to eradicate the rivalry between itself and the rest of the world.

When a utopia is faced with this challenge of how to retain membership because mainstream culture and technology appear enticing, it has two options. Commune expert Rosabeth Moss Kanter explains, “[E]nvironments change, and people grow old....If the group [utopia] wishes to continue, however, it must somehow deal with changes in the external society, from choosing to ignore them to incorporating them” (142). In other words, a utopia can nullify competition with the rest of the world for members by either choosing to accept and integrate developments or by electing to reject the cultural advancements and instead to focus on methods that increase member loyalty. While both of these options decrease rivalry and seemingly increase the likelihood of survival, in the end, either will lead to a society's demise.

Lee -- Philosophy

The first way to abolish competition with the rest of the world requires acceptance of societal changes (Kanter 142). By incorporating these changes, a utopia eliminates the battle for membership with the outside world by offering the same desirable technology and advancements. However, in opting to accept change, a utopia must integrate these technological and cultural advancements its ideals, values, and theory of perfection.

Incorporation of ideas from the outside world endangers a utopia's existence as a perfect society. Values and beliefs are the backbone of any utopia. These agreed-upon standards of what actions will lead to perfection guide the community's laws and decisions. In accepting changes of any kind, however, a society simultaneously accepts the innovation's associated ideals. The developments of mainstream culture typically embody that society's values. Therefore, introduction of changes from the outside world "pollutes" a utopia's ideals and goals with those of the mainstream culture.

This "pollution of ideals" can threaten the direction of a utopia, and, therefore, its status of perfection. For example, the Oneida Community of Vermont incorporated the "outer-world's" ideals of education and business success into its value system in the 1870s (Kanter 160). The adoption of these new values redirected the community's focus and decisions. Kanter explains that, for the first time, "outsiders" were allowed to permeate the utopian society in order to advance Oneida's factory through the use of hired labor and business consultants. In addition, older children were sent into the "outside world" for higher education. Soon, the ideals of a close-knit community focused on religion were lost in the momentum of change (150-52, 160). Thus, in adopting the ideals and values of the imperfect world, Oneida forfeited the very essence that made it a utopia.

Lee -- Philosophy

One possible solution to such rapid deterioration of values is to slowly and selectively incorporate societal changes. By doing just that, researchers, such as Joseph Eaton, assert that the Hutterites have managed to survive for generations, in varying communities across the world. Eaton calls this acceptance of certain new technology and social customs and the rejection of others as “controlled acculturation” (510-11, 519). However, even with this method, principles are lost—and often at a faster-than-desirable rate. As Eaton observes, the Hutterites create rules as necessary in order to prevent the younger generation from polluting the utopian culture with mainstream values. However, the lawmakers often stop enforcing rules, or completely alter policies, when it appears that too many members are breaking a law (513, 519). Through this method of restriction and tolerance, mainstream values leak into the society in spurts. Consequently, a utopia’s death is only prolonged. As Eaton concludes, “The process of controlled acculturation cannot be continued indefinitely.... In time, the changes may accumulate to bring about a major shift in values, which could destroy the group’s existence...” (520). In this way, accepting the developments of mainstream culture seemingly “solve” the crisis of maintaining members by eliminating competition with the outside world. In reality however, a utopia ensures its own demise through the disintegration of the values and ideals that direct the society’s existence as a utopia.

On the other hand, if a utopia then chooses to reject cultural changes and advancements in order to preserve its values, competition with the outside world persists. Therefore, increasing loyalty to a utopia remains the only other option through which to curtail rivalry. Kanter observes that many successful communes exercise various “commitment mechanisms,” methods that make remaining part of a utopia more desirable

than leaving (65, 70, 75). Some of these methods include altering the requirements for membership to include full monetary investment, isolating from the rest of the world as much as possible, actively encouraging rejection of members' pasts and previous connections, and fostering a sense of equality among the members (Kanter 61-125).

"Commitment mechanisms," such as those Kanter outlines, work extremely well by taking advantage of what psychologist B.F. Skinner coined as "positive reinforcement." Positive reinforcement increases the probability that a preferred behavior will continue by "rewarding" actions that align with that given behavior (273). In the case of utopian "commitment mechanisms," the desired behavior is remaining in the utopia and the "rewards" for such is that individuals keep and grow their social connections and financial investments. If members were to leave the community, however, the deserters would lose all of their finances, family, friends, and means of sustenance. Skinner further validates the effectiveness of commitment mechanisms, conceding that the "threatened loss of a standard of living" could be a more compelling reason to conform than any rewards, including money (273).

Utopias, such as the Sunrise Hill Community in Massachusetts, that neglect to exploit this human tendency to avoid loss and procure gains will quickly fail. As one member of Sunrise Hill, Gordon Yaswen, recalls, members donated very little financially, and many had their own "safety cache" in case the society failed. In addition, he states that the commune had unlimited access to the outside world, individual enterprises were allowed, and after the first autumn, the members lived separately from each other, raising their children individually (460-66). In failing to connect a member's financial success, social relationships or identity to the community, members had no

barriers to leaving when the “going got tough.” Furthermore, as Yaswen describes, there was a “lack of unity and coordination among the members” from the commencement of the Sunrise Hill Community (459). For these reasons, the attempted utopia dissolved and, as Yaswen recollects, Sunrise Hill never even lasted a year (472). Utopias that overlook the power of commitment mechanisms while rejecting societal advancements end in a rapid loss of focus and community.

At the same time that the use of commitment mechanisms remains vital to retaining membership, utilizing such techniques will also lead to a utopia’s eventual demise. In trying to eliminate all competition through commitment mechanisms, a society makes itself undesirable; future generations and potential converts often shy away from rigorously controlled societies. For example, in the Hutterite community, one observer reports that the younger generation is absorbing American values as well as Hutterite ideals (Eaton 512). These American ideals, however, are often rejected by the Hutterite society as a whole. According to psychologist Torchia-Thompson, when desires are suppressed, people will eventually “want even more.” Kanter also concedes to this sentiment, warning that using too many commitment mechanisms can be counter-productive, creating a “stifling” and “oppressive” atmosphere (132). Therefore, a utopia that continues to reject mainstream advancements against the wishes of the younger generations may lose those members to the outside world. In this case, such a community will die out without committed converts.

Prospective converts may, however, be hesitant to join a utopia. In a rigorously controlled community that exercises commitment mechanisms, converts will not find opportunities to incorporate technology and their own ideals of perfection. Thus, many

individuals who are drawn to the idea of paradise may find that perfection does not have room for them. In this way, utopias that implement strong commitment mechanisms may also find themselves without a second generation of children or of converts. Therefore, as Kanter emphasizes, when the original members of a utopia became older and unable to support the community, perfection, and thus the community, will cease to exist (147).

Paradoxically, the honest attempt to eradicate competition from society leads to every utopia's demise. When a utopia faces the unavoidable battle with the outside world for membership, it has two ways through which to extinguish the competition. A utopia can choose to either endanger its values—its backbone—by accepting new cultural changes and their associated ideals, or a utopia can reject the advancements and preserve its values. In opting to reject the values of mainstream culture, a utopia must increase commitment mechanisms, which then frighten away future generations. Either way, a perfect society cannot survive. In the attempt to eliminate all competition, a utopia eliminates itself.

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Behind the Glory: Wilfred Owen's "Dulce et Decorum Est"

Bandaranayake Weerasinghe (Montgomery College)

Mentor - Professor Jamie Miker

When it is presented beautifully, one would not know the real taste of bitter food until it is tasted. The true form of any ugly thing can be hidden when presented under an attractive disguise. Similarly, when the truth is hidden, war can be presented as a national glory to the youngsters who do not have second thoughts about being part of the glorified team. No one would have trouble in recognizing a soldier from an old woman or a beggar because soldiers are dressed in neat, smart uniforms, stand up straight, walk head held up high, do not fear, and protect others. But Wilfred Owen in his poem "Dulce et Decorum Est" exposes an image of a soldier that is totally different from the stereotypical image in the public's mind and directs the readers' perception about the war into a new direction showing the reality of it. Even though this poem is written about World War One, the soldiers' inner suffering still remains the same in today's wars despite many things being added to make their lives physically comfortable over the course of many years. The speaker of "Dulce et Decorum Est", who is suffering from endless fear about frightful encounters, guilt for not helping the fellow helpless dying comrade, and anger for not knowing the reality of the war and towards the responsible adults' failure to expose the truth, is on a mission to expose the truth to the world. The poem shows the speaker's fear, anger, confusion and sense of betrayal through sharp sensory immediacy using sound, imagery, irony, tense shifting, and the speaker's placement changing as required. In this poem, Owen has successfully guided the reader towards wisdom by glorifying the suffering and not the war. He uses the soldiers' dehumanized states, gas attack, dying

Weerasinghe -- Literature I

comrade, and the dream to show that the real battle happens in the hearts and minds of the soldiers in the war front, which is true even today.

People tend to overlook the fact that the human being under the smart uniform and stern face has a limited capacity to absorb shock and trauma much like the general public. Loved ones of the service members expect to receive the same person that they knew before, with added honor and pride on that person's return. National honor and glory is strong enough to hide the untold stories they bring back home. The young, brave, cheerful soul that set off to war could have been buried in the war field, and the one who received the warm welcome could be a fearful, confused soul filled with anger and guilt. From the past to this date, glorification of war has been a tradition, and this glory is bright enough to make people blind to the underbelly of this glory. Today the focus has been dedicated to invent new avenues to make bigger destruction with less time and effort in a war, but very minimal focus has been given to recognize what harm that destruction does to the survivors. Today, many more servicemen than in the past experience disrupted family life upon return from the war field due to the inability to handle inner conflicts within their souls. In a period when this topic was not largely discussed, Owen went against the norm by violating many of the literary conventions of war literature by exposing the real truth behind the glory in his poem, and this is confirmed by Lutz in her article "Overview of 'Dulce et Decorum Est'" when she discusses how Owen captured modern warfare, claiming that, "In trying to capture the feeling of modern warfare, however, Owen not only violated the literary conventions of poets like Horace and Tennyson, but of the popular poetry of his own time" (Lutz). Owen, who experienced many hardships in the warfront, has opened up his hidden

Weerasinghe -- Literature I

sorrows caused by war, and the real physical suffering covered under the glorification in the past has been brought out very effectively. Lutz also agrees with this point as she states that, “The poem "Dulce et Decorum Est” wants the reader to admire the sufferings, not only those of the gassed soldiers, but also Owen the poet's” (Lutz). Owen as a poet and a soldier has done his duty in exposing the bitterness of the war very successfully in this poem.

With the advancement of technology, new weapons are invented, new medical procedures are invented and these inventions help a lot of soldiers return home unlike previous wars. These new technological advances help develop many sophisticated techniques and equipment to use in wars, but none of these have been able to ease the inner suffering of the soldiers who experience fearful encounters in the battle field. The inner battles of these soldiers come out in different forms, and sometimes their loved ones become the indirect victims of the war. Since those indirect victims have not fought with the enemies at war, their fight behind closed doors to defeat inner battles go unattended, ignored, and unheard. Some of the victimized soldiers and their loved ones are lucky and intelligent enough to identify the seriousness of the situation to seek help, but most of the others struggle through their whole life, and also make more lives miserable until death. Shell Shock, Post Traumatic Stress Disorder, sleeping disorders and anxiety are some of the culprits of the misery of war survivors.

Owen has successfully given the reader a very realistic picture using figurative language to describe the soldiers’ reduced state to highlight their suffering. The lines, “Bent double, like old beggars under sacks, Knock-kneed, coughing like hags, we cursed through sludge,” is powerful enough to create an image of the new soldier metaphor in

Weerasinghe -- Literature I

the reader's mind, and the lengthy line indicates the suffering has been continuing for a long period of time (Owen 1-2). The words "beggars" and "hags" seem to create an image that is well known to the reader, and Stuart Sellers also indicates that these words had been used to give the reader something they can comprehend (Sillars). Irony plays a major role here in replacing the stereotypical soldier's image, which is comprised of young and strong, with a new image as old, sick, and weak. At this point the speaker is talking about the whole company as he is one of them and takes the reader on a walk on the sludge with him to feel the difficulty in taking each step forward.

With vivid details of soldiers' physical and mental exhaustion, haunting fear, and helplessness, Owen skillfully leads the reader into the past to make the reader understand the soldiers' lengthy suffering, which extends back in time. This idea is strengthened by the image of soldiers with lost boots and blood-shod feet. The speaker changes his position as he starts "Men marched asleep. Many had lost their boots But limped on, blood-shod. All went lame; all blind; Drunk with fatigue; deaf even to the hoots," and the speaker becomes a distant observer to hint to the reader that he is a helpless observer in the coming event (Owen 5-7). Sillars's agreement with this idea can be seen in the statement, "but the first person plural soon shifts to a more distanced observation in 'men marched asleep'. All these distances are verbal parallels to the exclusion of the speaker from the dying man at the poem's centre" (Sillars). The line, "towards our distant rest," indicates that although their rest is further away and all their senses are malfunctioning due to extreme exhaustion, they are trudging to the rest with hope of survival regardless of the dehumanized situation (Owen 4). At this point, Owen hints to the reader that some soldiers might reach their distant rest, which is death, in the coming events. "Till on the

Weerasinghe -- Literature I

haunting flares we turned our backs” shows the reader that what the speaker describes here is still haunting him even at present (Owen 3). Cyr agrees with the same idea in his article “This issue of haunting, of being- followed, may be linked with the detail that the poem's speaker is afflicted with nightmares about this event, what he calls "dreams"” (Cyr). The speaker goes back in time every night in his dream where he wants to take the readers with him to show the pain and to escape from the loneliness which he felt during the attack.

Any traumatic experience can become a haunting dream till someone’s death. These haunting experiences can make them the victims of Post Traumatic Stress Disorder or sleeping disorders. Owen shows how the slow march of the weary soldiers turns into a horrific dream following the gas shell attack. As the chaos starts with the shell attack, the speaker addresses the soldiers as “boys” making him separate from the rest, which shows the function as a unit has been disrupted due to fear and instinctive reaction to protect one’s self in this horrendous situation. The verbs with similar sound like fumbling, stumbling, flound'ring, and drowning used in this stanza, create a picture of clumsy, disoriented minds of the comrades that are being attacked. Moran confirms this idea with “ the verbs "fumbling," "stumbling," "flound'ring," and "drowning" are connected by the sounds of their endings as well as their depictions of the men made graceless and spasmodic” (Moran). The missing ‘e’ in flound'ring shows the speaker has safeguarded himself from the attack by putting his mask over. The shift of the tense from past to present from line nine represents the speaker’s inability to take the incident off his mind. Owen uses the figurative language, imagery, irony, and new metaphor very effectively in

Weerasinghe -- Literature I

this poem to show how the past memories of the fearful encounters haunted him in the present.

Unconventional ways of fighting have increased with terrorism, soldiers witness fellow soldiers or enemies blast into pieces with roadside bombs, landmines or suicide attacks. These methods, which were not used during past world wars, destroy the soldiers' bodies in very disgusting ways. Most of the time, anxiety, stress, and fear of being attacked in an unconventional way while on duty for a long period of time, can change the better side of one's soul, interaction toward sympathy, emotions and interpersonal relations. Feelings of alienation, loneliness, emotional numbness, and detachment from others are some of the symptoms most of the survivors feel upon their return and are some of the symptoms of Post Traumatic Stress Disorder. Apart from being traumatized by the events, most of the soldiers carry a guilt that shuts them from acting normally. Feeling alienated could lead them to isolating themselves from others due to guilt or self-blame of constant reminders of the past events.

The poem leaves a lot of hints for the reader to sense the speaker's isolation before it exposes the speaker's guilt for not helping the fellow soldier during the gas attack. The isolation of the speaker from the rest, while observing the fellow comrade's death, indicates the opening of the speaker's mind to the reader and his preparedness to move away from the gassed man to protect himself. Seeing the dying comrade through his mask, which is described in the poem as "Dim, through the misty panes and thick green light", indicates that the speaker is mentally distant from the fellow soldier who is being attacked and views the man's suffering like a dream (Owen 13). The speaker's dream, described using "As under a green sea, I saw him drowning. In all my dreams,

Weerasinghe -- Literature I

before my helpless sight, He plunges at me, guttering, choking, drowning,” indicates that the past memory is being transferred to a recurrent dream at present, and his being described as helpless, carries the guilt of not being able to help a fellow soldier and for surviving after the attack (Owen 14-16) . This idea is confirmed by Martin in the article “Therapeutic Measures” and it additionally states that, “the repetition of 'drowning,' at the expense of conventional rhyme emphasizes the persistence of the visual image within the poet's unconscious mind, which, like the unfinished 'sonnet,' has remained unresolved." (Martin). The battles of unresolved issues within one's mind could bring more pain and harm to one than the physical wounds. Physical wounds are visible and easily recognizable where as the unresolved mental wounds stay unnoticed, and sometimes become incurable. So, these unresolved issues can bring lifelong suffering to a person.

The speaker invites the reader to come and watch his dream with him to feel the pain he is going through over and over again every night. Hughes also agrees with the pain the speaker experiences because his article states, “Owen begins, indicating his profound inability to extricate himself from the unconscious repetitions of the scene that have infiltrated his psyche like an incubus, renewing their assault on him on a nightly basis” (Hughes). Moran also holds the same view but interprets it as “the dying man is a more powerful enemy than the Germans because the event recreated in speaker's dream threatens the speaker continuously” (Moran). Miller also contributed to the same idea by adding, “Owen angrily wishes that his reader could be haunted by dreams like his own, to feel drowned and smothered with guilt and horror as he does over the gassed soldier that had been under his command” (Miller). The gassed man's death is described as drowning in the green sea because both experiences are very painful and slow deaths. Irony has

Weerasinghe -- Literature I

been used in describing the man's death in land and not in water. Feeling guilt, as a commanding officer for sending young ones into the hands of death, or as a soldier for failing to assist a fellow comrade before he falls to death, or even killing a frightened enemy as he foresees his inevitable death, can lead to much mental instability. Owen has successfully showed the guilt through the dream, as the speaker helplessly watches the fellow comrade dying every night. After seeing the ugliness of the war, the young ones realize that the truth has been hidden with a lie, and that makes them angry for not knowing it before. Day by day, that anger can grow into a large fire ball and come out as a demon to victimize many innocent lives that have no responsibility to the glorified lie.

Finally, the speaker's anger towards covering the bitter truth with a glorified lie completes the mission, and it creates a different view point to the war in the reader's mind. The irony starts right at the beginning of Owen's poem because the Latin phrase "Dulce et decorum est", which means "Sweet and fitting it is", leading the reader to expect a poem with heroism, patriotism and sentimental notions about war, but instead it leads to an ironic and bitter end. Moran takes the same stand in a different way, "the title is held up as a "lie" that perpetuates the horrors depicted in the poem" (Moran). With the line, "Obscene as cancer, bitter as the cud Of vile, incurable sores on innocent tongues", the speaker lets out his anger at seeing the innocent soldiers suffering with burnt tongues, and emphasizes the innocent tongues suffering as opposed to the tongues that help keep the truth covered, and the suffering is described as cancer shows that there is no escape after being attacked (Owen). Miller's perception of this is, "It is as if Owen were wishing that the innocent tongues of his men would be left unharmed, while those who continue to participate in the lie of the war, feeling no risk themselves, would have their tongues

Weerasinghe -- Literature I

burned and blistered as soon as they tried to speak” (Miller). The use of the word “if”, when describing the suffering of the dying, gassed man, “If you could hear, at every jolt, the blood “, implies that people who he addresses have no knowledge about the soldiers’ suffering. Furthermore, “My friend, you would not tell with such high zest To children ardent for some desperate glory”, the speaker blames the people who keep on lying in order to send the young boys to war. Cyr completely agrees this point with the argument, “The "you's" lack of real knowledge is implied by the twice repeated "if" of the last stanza, and the "you" is accused of deliberate falsification in the poem's penultimate line” (Cyr). Owen’s anger shown towards responsible adults in the society is highly evident in the last four lines of the poem, and he concludes the poem declaring the title “Dulce et Decorum est Pro patria mori” as an old lie.

To win physical fights with enemies in a war is hard work, but entrapment of one’s own soul with confusion, betrayal, guilt and anger with no hope of escape is much harder compared to the physical war. Owen, who felt all that during his service before his death on the field, freed himself from the curse the war put upon him by unfolding the truth and breaking conventions. If one fails to conquer his or her own little world, it is worthless to conquer the whole wide world. Even today’s brilliant minds fail to recognize that the glory brought home by winning war veterans’ is of little value in comparison to the many lost lives and twisted minds. Owen’s message to the responsible adults in society is to open up the curtains that cover the illusion of war and to give wisdom to the young men who joined the war expecting to experience the glory that a winning sports team feels. Patriotism easily flees from one’s mind in the face of death even if one is determined to hold onto it. Today, people live in a world with an overwhelming

Weerasinghe -- Literature I

glorification of war, and unfortunately the wisdom of the truth is not seen by many.

People who glorify war need to be awakened with the wisdom of the truth to give them insight into the lives of the survivors to prevent the lies of war from continuing, bringing peace and hope to the souls stuck in the dark. The world's focus must turn to the most important war, not with other humans, but to overcome differences and unite with the people across the globe to survive in harmony with one another and nature.

Weerasinghe -- Literature I

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Weerasinghe -- Literature I

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Carol Danvers: Earth's Mightiest Hero

Caitlyn Aricelis Colon (Northampton Community College)

Mentor - Professor Margret Borene



There are a countless number of female superheroes found within the comic book industry but few of them have been as staunchly feminist as one Miss Carol Danvers. Carol Danvers has had many super heroic identities but is most commonly known as Ms. Marvel. Both as herself and as Ms. Marvel, Carol Danvers has overcome the limitations put on her because of the gender-roles in her society, she provides opportunities for the reader to examine the possibilities of an ideal society of gender-equality and in her quest to be the best she redefines what it means to be not just a woman in a male-dominated

Colon -- Gender Studies

society but a human being who uses the best of her abilities to make the world a better place.

Even before Carol Danvers gained her powers and became a superhero she was known as a strong and capable person. Carol was first introduced in 1968 in Issue #13 of the *Marvel Super-Heroes* comic. The *Marvel Super-Heroes* comic focused on a different superhero every arc and Carol was a guest star of an issue focusing on another hero, The Sentry. Her humble beginnings, however, are no indicator for the greatness she would later make of herself. Born in Boston, Massachusetts to Joseph and Marie Danvers, Carol grew up as the eldest child of three with two younger brothers. Joseph Danvers believed in hard work and had his children help build the house there were going to live in. Even at that young age, Carol insisted on working alongside her brothers in building the house. She loved to read and dreamed of becoming an astronaut and traveling to distant planets. As a teenager, she hitchhiked her way to Cape Canaveral to view a launch there. Her fascination of space evolved into a hope of one day taking flight as a pilot. But her dream was put on hold when her family had financial troubles. Only able to send one child to college, Joseph chose his eldest son Steve, despite the fact that Carol was the eldest child and had far superior grades. Carol graduated high school and when she turned 18, she joined the Air Force intending to be a pilot. She would get her college degree through the military, pursue her dream of flying, and explore her fascination with aircrafts. Due to her intellect, skills, and superb performance, she moved up the ranks and was eventually recruited by the C.I.A and N.A.S.A. respectively. Carol Danvers is immediately introduced as a "idealized career woman of the 70's...hip, liberated, and confident."¹ Far

¹ Madrid, Mike, *The Supergirls: Fashion, Feminism, Fantasy, and the History of Comic Book Heroines*. (Exterminating Angel Press, 2009. ebook), 136.

Colon -- Gender Studies

from the damsels in distress always stepping aside for their masculine betters to do the heavy lifting, Carol is take-charge. She is a character of strength who has big dreams and works hard to achieve her goals. The fact that her choice of career is one that is completely male-dominated does not once cause Carol to hesitate in following her goals. She wants to be a pilot so she becomes a pilot. It is as simple as that for her, gender roles be damned. Her post-N.A.S.A. career includes her becoming an editor of WOMAN magazine and writing a novel about her experience in the space industry. Her novel is a success and despite the tensions and objections she gets from her misogynist boss J. Jonah Jameson, Carol continues to include her feminist viewpoint as an editor at WOMAN magazine. The qualities that Carol possesses correspond with the type of woman who would be involved with the Women's Liberation Movement of the 1960's and 1970's. There is definitely an indication that her characterization is influenced by the "American feminism during this time."² The truth is Carol Danvers is a woman who actively participates in the conversation of her life. Carol had power long before she was ever super-powered. Her independence and strength is evident and she uses her abilities and skill to overcome the limitations put on her because of the gender-roles in her society.

It is during her time at N.A.S.A. that Carol meets Captain Mar-Vell, a superhero from the alien race known as Kree. Carol is sent to capture Mar-Vell but ends up becoming close friends with him and helping him avoid capture. It is their friendship that causes Captain Mar-Vell's mortal enemy to kidnap Carol in an attempt the lure Captain

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² Stuller, Jennifer. *Ink-Stained Amazons and Cinematic Warriors: Superwomen in Modern Mythology*. (I. B. Tauris , 2010. eBook.), 17.

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Colon -- Gender Studies

Mar-Vell into a trap. It is during this battle between the superhero and villain that Carol gets caught in an explosion of a Kree weapon and exposed to radioactive energy that causes Mar-Vell's genetic structure to meld to Carol's DNA. This event changes Carol's DNA and her life. She now has Mar-Vell's knowledge and training and a genetic structure that is the perfect blending of human and Kree giving her the powers of the Kree race; enhanced strength, durability, ability to shoot concussive energy blasts from her hands, and include the ability to fly- without her airplane. Carol Danvers is now more than just herself, she is Ms. Marvel.

It wasn't until 1977 that Carol starred in her own title, *Ms. Marvel*. The first issue of her comic announced on the cover that "This Female Fights Back!"³. There was deliberate intent to make Ms. Marvel a strong and formidable superhero. Carol Danver's superhero identity of Ms. Marvel was unique despite her origin as a female counterpart of a male superhero. Ms. Marvel has very little to do with Captain Mar-Vell. Besides name and powers, they share very little else in common and interact very rarely. It is often the case with many female superheroes that they are given powers that are "weaker than their male compatriots and positions of lesser importance" causing them the never "reach their potential"⁴. It is an interesting twist then that Ms. Marvel is considered to be equal in her power to Captain Mar-Vell and the more interesting character between the two. Carol is actually the single case in which the so-called 'female knock-off' has long-surpassed the original male hero in terms of longevity, exposure and popularity. Also unlike other female characters in superhero comics, her storyline does not ever center on a romantic

³ Conway, Carla. *Essential Ms. Marvel Vol. 1* (New York, NY Marvel Comics Group. 2007. Print)

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⁴ Madrid, Mike. *The Supergirls: Fashion, Feminism, Fantasy, and the History of Comic Book Heroines*. (Exterminating Angel Press, 2009. ebook), 11.

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Colon -- Gender Studies

interest. And despite the odd cover here or there, on panel she is never overtly sexualized. That doesn't mean Carol hasn't had her fair share of romances over the course of her storylines as any superhero does, it is just that the men in her life never take center stage or distract her from her heroics. It doesn't matter if she is being herself or being Ms. Marvel, she has never once been identified as so-and-so's girlfriend. In fact, even in the issues where romance is a major topic, Carol often breaks tradition and defies the gender role prescribed to her. For example, while on a date with Peter Parker also known as Spider-Man, she pays for dinner and when both superheroes are attacked, it is Ms. Marvel that saves Spider-Man. She carries him out of harm's way, picks him up and flies home. And Peter reacts as nothing more than grateful. It didn't matter that she was a woman; Ms. Marvel saved his life.⁵

In addition to standing on equal ground with the male superheroes she is surrounded by she seems to purposely seek out female companions. She has many female friends and influences. Carol partners up with Spider-Woman and She-Hulk as often as she does with Captain America and Spider-Man. She has strong close friendships with Jessica Jones and Wanda Maximoff as well as with Tony Stark and Peter Parker. Her friends aren't always super powered heroes but average-everyday heroes such as Tracy Burke who battles cancer as Carol battles Mystique, a complex strong female character on the other side of the moral tracks. It is obvious that much like Virginia Woolf, that Carol Danvers "thinks back through [her] mothers."⁶ Despite having little mention of her biological mother on panel, Carol Danvers surrounds herself with strong women. She

⁵ Reed, Brian. *Ms. Marvel Volume 2 #47* (New York, NY Marvel Comics Group. 2010. Print)
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⁶ Woolf, Virginia. *A Room of One's Own* (Oxford, Oxford University Press, 2008).
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Colon -- Gender Studies

talks and listens to them, fights alongside and against them, and mentors and is mentored by them. Carol Danvers is not a woman without cultural mothers. The most prominent being Helen Cobb, a fictional pilot from the Mercury Era and part of the Mercury 13, a real-life group of "25 women, narrowed down to 13, who participated in and passed the very same physical and psychological tests that determined the original astronauts" in 1962.⁷ Carol and Helen are shown to have a friendly relationship. Carol looks up to Helen and Helen offers advice. However there is some tension in their relationship. Helen was more than qualified to fly but was denied the chance due to being a woman while Carol was part of the first generation of female flyers. This small bit of tension however plays off as competitive and it cannot hide the abundant admiration the two women have for each other.

Carol Danvers lives in a society based in the assumption that maleness is superior to femaleness, a patriarchy. But if one focuses solely on her character, on her life, it could seem as if she is living in a society of gender-equality for the female characters she interacts with are no less complex, strong, or interesting as the males she interacts with. The female characters have amazing depth to them despite gender. Carol Danvers says it best, when Iron Man questions if Ms. Marvel or any woman should be 'super-heroing', she responds with this, "Some women prefer being protected, and some don't. Some men prefer being the protector, some don't. You have no right to impose a gender role on me than I have to impose on you. I've fought all my life for the freedom to choose the life I want to live. I won't have it any other way"⁸. Iron Man never questions Ms. Marvel's role

⁷ Hallonquist, Al. *Mercury 13- The Women of the Mercury Era* (1999-2012. web)

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⁸ Claremont, Chris. *Ms. Marvel #24* (New York, NY Marvel Comics Group. 1979. Print)

Colon -- Gender Studies

in the long line of super-powered heroes after that. Carol Danvers asserts in just one quote in one panel that she is, like Mrs. Mallard in the wake of her husband's death, in "possession of self-assertion" and she will not let anyone prescribe a role for her⁹. Carol Danvers develops independently of the patriarchy in which she resides. She is the picture of an autonomous human being.

The Carol Danvers I have presented thus far seems to be a flawless feminist storyline but unfortunately that is not true. During a run in the 80's, while Ms. Marvel is a member of the Avenger's team, she wakes up one morning to find herself pregnant. She is not pregnant three days before she gives birth to a full-term baby. However, the birthing turns out to be some kind of "no pain, no labor, no logic" kind of birth¹⁰. The plot, written by Jim Shooter, the then editor-in-chief of Marvel Comics, makes little to no sense. Wasp, a fellow female Avenger, even goes on to congratulate Ms. Marvel on her baby boy. Ms. Marvel responds that she has "been used" that the baby isn't hers that she doesn't "even know who the father is". Carol feels violated after the events. She has been raped by the villain, Marcus and rejects the child completely. But the other Avengers seem to treat Ms. Marvel as if she is a rape victim from biblical times. Wasp continues to urge her to "see [her] kid", insisting that Ms. Marvel fulfill the role of mother.¹¹ This writing is conveying a message here. Despite the fact that Marcus is a villain and this unnatural birth obviously is part of an evil plan, Ms. Marvel's duty as a

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⁹ Chopin, Kate. *The Story of an Hour*. (1894.Digital Print)

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¹⁰ Strickland, Carol A. *The Rape of Ms. Marvel*. (CarolAStrickland.com. 29 January 2008.)

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¹¹ Shooter, Jim. *Avengers #200*. (New York, NY Marvel Comics Group. 1980. Print)

11

Colon -- Gender Studies

mother “exists above Ms. Marvel’s duty to do what is right”.¹² So rather than destroy the evil villain, Marcus, she should go live with him and raise their child. Ms. Marvel, feeling the effects of a spell Marcus puts on her follows him into Limbo without any protest from her teammates. The story line is a like a horrid nightmare for any feminist. Ms. Marvel, written to be a feminist icon, is portrayed as a submissive, weak woman. The actions of her Avengers teammates are a prime example of the Cult of Domesticity. The Cult of Domesticity is an invention of the nineteenth century that defined that woman must remain in the home and care for the children. It states that a woman’s sole purpose is to create a sanctuary for her husband. By cajoling Ms. Marvel into following her rapist and caring for his child the Avengers are trying to force Ms. Marvel into the role of domestic woman, a housewife. She is forced into institutional motherhood. Ms. Marvel’s response to this is fear and anger. Here she portrays what Ruth Rosen called “cultural matriphobia.”¹³ She denies her parentage to the child until she is put under a spell. Fortunately, for Ms. Marvel after this horrifying issue, she is given a new writer, a very competent Chris Claremont who writes Ms. Marvel’s reaction to returning home to her team and discovering they did nothing to help her, “your concerns were for the baby, not for how it came to be—nor of the cost to me of that conception” she tells them. She goes on to admonish their actions further by telling them that, “that was your mistake and I paid the price....You screwed up Avengers. That’s human. What is also human is the

¹² Alien Alda. *Wasp and Ms. Marvel: Feminist Development Within Superheroine Characterization in Marvel Comics’ The Avengers*. (grade--a--fancy.blogspot.com 22 January 2011. Web)

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¹³ Ruth Rosen, *The World Split Wide Open: How the Modern Women’s Movement Changed America* (London/New York: Penguin Books, 2006, Revised Edition)

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Colon -- Gender Studies

ability to learn from those mistakes. To grow. To Mature.”¹⁴ Ms. Marvel reclaims her identity as human. In this statement, Carol is putting being human above the need to be feminine or masculine. She comes from the atrocity of Shooter’s run a winner and proving that women are human beings deserving of equal respect and dignity as men, the very definition of a feminist.

This return from Limbo and the confronting of the Avengers is not the end of Carol Danvers’ journey to defining herself. In a more recent run, she has been promoted and earned the title of Captain Marvel. Her promotion was met with many outcries of readers proclaiming to hate her new super heroic identity. One reader claimed that her new costume (one of the only female costumes that has more fabric than a swimsuit) makes him “want to vomit”, another claimed her new costume and haircut are both “HIDEOUS” (yes, in all caps). Both readers said that they were long time fans of the character who couldn’t stand to have her ruined and urged Marvel to demote her back to Ms. Marvel and return her to wearing the more revealing costume.¹⁵ The two furious readers however did not comment at all on the actual plot of the comic issue and that’s probably because they couldn’t have had much of an impression seeing as their reviews were made after only for the first issue. Other than some fanboy’s bad reaction to Carol’s new costume and shorter hair, Carol has earned many new fans, especially from female comic readers that were both surprised and happy to have a female lead in Marvel’s 2012 comic run. Kelly Sue DeConnick, the writer and creator of Carol Danvers as Captain Marvel, urges comic book readers to prove her wrong and show her that a “female-led

¹⁴ Claremont, Chris. *By Friends—BETRAYED! Essential Ms. Marvel: The Avengers Annual #10*. (New York, NY Marvel Comics. 1981. Print)

14

¹⁵ DeConnick, Kelly Sue *Captain Marvel #2* (New York, NY Marvel Comics Group. 2012. Print)

15

Colon -- Gender Studies

book about the power of the human spirit, about the many guises of heroism, a book wherein no one gets raped or puts her cervix on display, can break six issues, won't you?"¹⁶ The comment seems to be a response from the cancellation of two of Marvel's only female led superhero comic books, *X-23* and *Ghost Rider*, in November 2011. This superhero comic book curse, called "Women Don't Sell", was an odd pre-conceived notion that female-led superhero comic books cannot succeed financially. Carol Danvers' Captain Marvel is the first female lead title since the cancellations of *X-23* and *Ghost Rider*. Partnered with DeConnick, Danvers is at her best. Carol recognizes that she has the power and capabilities to be the best superhero the world has ever seen. She has fought as a member of almost every Marvel team including the Avengers, X-Men, and Fantastic Four and starred in her own solo titles and yet she finds herself not considered the best in the business. Captain America, Iron Man, Thor, The Hulk, Spider-Man all are considered greater heroes both on and off the panel. With her new promotion propelling her forward, Carol decided to break down the boundaries before her and journey on a quest to be the best she can be. Being the best she can be has been made into her motto. And in following her self-proclaimed motto, she is redefining what it means to be not just a woman in a male-dominated society but a human being who uses the best of her abilities to make the world a better place. She is pushing out margins and breaking boundaries. She is being herself and not letting the cultural gender construct define who she is for her. She is aware that the possibilities of what it means to be human exist outside of gender constructs and invites her fellow heroes to follow her example, on and off the panel. The overwhelming success of her run and her very interactive fanbase

¹⁶ Richards, Dave. *WC12: DECONNICK SOARS WITH CAPTAIN MARVEL* (comicbookresources.com 18 March 2012. Web)

Colon -- Gender Studies

encouraging Marvel writers via social networking sites, in my opinion, definitely contributed to the rise of female-leads this year. Marvel has introduced two new female-led ongoing titles; *Red She-Hulk* and *Journey into Mystery* (Starring Sif, a Norse Warrior). The ongoing series, *Uncanny X-Force*, usually a male-dominated superhero title has been revamped into a team with a 4-1 ratio in favor of the women and to top it all off, Marvel has also launched their first ongoing all-female team ever, *Fearless Defenders*.¹⁷

Carol Danvers is the ultimate hero. She knows it and she wants to make sure everybody else knows it too. She overcomes the limitations put on her because of the gender-roles in her society by succeeding in more than one male-dominated career. She provides opportunities for the readers to examine the possibilities of an ideal society of gender-equality through her failure to accept cultural construction of societal roles and in her interactions with other male and female characters. And it is in her quest to define herself as a human being when all the odds are stacked against her, that she redefines what it means to be human in a society that argues that being human is centered on being male. Carol Danvers does all this and tries to use the best of her abilities to make the world a better place. Carol Danvers' multitude of successes has inspired her fellow superheroes, her devoted readers, and motivated both male and female writers of Marvel Comic to create more superhero stories starring women; women who make difficult choices, women who have struggles and victories, women, who are not acted upon, but

¹⁷ Thompson, Kelly, *8 Great Female Led Comics You Should Be Reading!*

¹⁷(comicbookresources.com/she-has-no-head 18 February 2012. Web)

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Colon -- Gender Studies

who act. Women who try to be the best they can be and prove to be strong, capable, and powerful *human* beings. Women like Carol Danvers.

Colon -- Gender Studies

Annotated Bibliography

Alien Alda. Wasp and Ms. Marvel: Feminist Development Within Superheroine Characterization in Marvel Comics' The Avengers. (grade--a--fancy.blogspot.com 22 January 2011. Web).

This essay uses the characterizations of Wasp and Ms. Marvel to trace the “impact of feminism” of the 80’s. Alda argues that Wasp operates like an “unknowing propaganda machine for patriarchy” and Ms. Marvel represents the “eventual comfortable synthesis between masculine and feminine identities”. I used the essay to demonstrate Wasp’s encouragement of Ms. Marvel’s pregnancy as product of a patriarchy that puts the role of ‘mother’ above any other role a female will have.

Chopin, Kate. *The Story of an Hour*. (1894. Handout)

“The Story of an Hour” by Kate Chopin takes place within an hour in the main character, Mrs. Mallard’s, life. She is a young woman reacts to the passing of her husband with joy because she finally feels free. Mrs. Mallard had no choice, freedom, or identity of her own. At her husband’s death she has gained autonomy. At the end of the story she sees her husband walking through the door she drops dead. I used this short story to demonstrate a correlation between, Mrs. Mallard gaining her freedom after husband's death to Carol’s own autonomy.

Claremont, Chris. *By Friends—BETRAYED! Essential Ms. Marvel: The Avengers Annual #10*. (New York, NY Marvel Comics. 1981. Print)

Colon -- Gender Studies

This issue by Chris Claremont, is the return of Ms. Marvel from Limbo and her confrontation with the Avengers for their actions regarding the events in Avengers #200 where they left Ms. Marvel to be abducted by her rapist so that she could care for the child that was conceived during her rape. I used this issue to demonstrate Ms. Marvel humanising herself after her rape. In this issue she reclaims her identity and autonomy after it was stripped away and she comes out of it very much a winner.

Claremont, Chris. *Ms. Marvel #24* (New York, NY Marvel Comics. 1979. Print)

In this issue, Tony Stark (Iron Man) and Ms. Marvel team-up to defeat a villain. Iron Man makes a comment telling Carol that being a superhero is not a job for a woman. Carol confronts him and tells him to not define her place for her and makes sure he knows that she will not accept society's gender roles. I used this issue to demonstrate that Carol is autonomous and that she has developed independently from the patriarchy she lives in.

Conway, Carla. *Essential Ms. Marvel Vol. 1* (New York, NY Marvel Comics Group. 2007. Print)

Essential Ms. Marvel Vol. 1 is a collection of Ms. Marvel comics Issues #1-23 and Marvel Super-Heroes Magazine #10-11. I used this book when talking about Carol's introduction of her own title Ms. Marvel where the first issue announced that she was a female who "fights back". I used this quote to show that Ms. Marvel was a deliberate attempt by Marvel Comics to have a feminist superhero.

Colon -- Gender Studies

DeConnick, Kelly Sue *Captain Marvel #2* (New York, NY Marvel Comics Group. 2012. Print)

This issue had reviews for the first issue of Captain Marvel where Carol Danvers was introduced as Captain Marvel instead of Ms. Marvel. She had a costume change and a hair cut. Although the storyline received great reviews from female readers, a couple of male readers, who claimed to be fans of Ms. Marvel complained of her new makeover and declared she be renamed Ms. Marvel once again. I used this issue as an example of the comic book industry's current state of blatant misogyny and to show that Carol Danvers seems to defeat a patriarchy both in her world and ours.

Hallonquist, Al. *Mercury 13- The Women of the Mercury Era* (1999-2012. web)

This is a website that is dedicated to the 13 women who participated in and passed the very same physical and psychological tests that determined the original astronauts in 1962. Carol Danvers is shown having a mentor/friendship relationship with a woman named Helen Cobb who belonged to this group. This demonstrates the positive representations of women when written by women and how Carol seeks out female relationships and female mentors.

Madrid, Mike. *The Supergirls: Fashion, Feminism, Fantasy, and the History of Comic Book Heroines*. (Exterminating Angel Press, 2009. ebook), 136.

In Mike Madrid's *Supergirls*, each chapter starts with a plotline from the super heroine's comic book and then goes into their origins and correlated how their origins are affected by the decade in which they were introduced. Madrid makes the argument that societal

Colon -- Gender Studies

events influence the plotlines and shaped the characters. Carol Danvers was featured in the chapter on the 1970's titled, Sirens and Suffragettes. He states that Ms. Marvel started out as the 70's ultimate "Female Fury" only to end up as the "tragic Frances Farmer of comic books". He is referring of course to her rape/ mind-control storyline which I addressed in my essay. Mike does not explore her storyline after the 80's. I used two quotes from his book. The first to help back up my claims of Carol Danvers as the ultimate feminist of the 70's and the second from his introduction of the book of female superheroes never reaching their potential because they are designed to be weaker to their male counterparts.

Reed, Brian. *Ms. Marvel Volume 2 #47* (New York, NY Marvel Comics. 2010. Print)

An issue of Ms. Marvel written by Brian Reed where Carol Danvers and Peter Parker (Spider-man) go out on a date. The two end up getting attacked by a villain during dinner. Carol acts quickly saving herself and Peter. I used this issue to demonstrate how Carol Danvers defies gender roles not only at work or when saving the world but in all aspects of her life including her relationships with men. I picked this issue specifically because it shows when Peter Parker was saved by Carol he never expressed shame in being saved by a girl and instead is grateful. Both Carol and Peter defy the gender roles.

Richards, Dave. *WC12: DECONNICK SOARS WITH CAPTAIN MARVEL*

(comicbookresources.com 18 March 2012. Web)

Kelly Sue DeConnick, creator and writer of Carol Danvers as Captain Marvel, discusses with Dave Richards her inspirations and influences for writing the series and what she

Colon -- Gender Studies

hopes the series will accomplish. DeConnick urges her readers to pre-order the Captain Marvel title so that the only female-led of Marvel Comics 2012 run would not be cancelled early. I used this article as a segue into the growing females titles within the Marvel Comic book industry since the success of the Captain Marvel comic book.

Ruth Rosen, *The World Split Wide Open: How the Modern Women's Movement Changed America* (London/New York: Penguin Books, 2006, Revised Edition)

Ruth Rosen chronicles the history of the American women's movement from its beginnings in the 1960s to the present in her book *The World Split Open*. She documents accounts of the events and people involved in the social revolution that is still ongoing today. I used her terms from her book: The Cult of Domesticity and cultural matriphobia to analyse the events of Ms. Marvel's Rape and pregnancy and the reactions that it invoked from the other characters.

Shooter, Jim. *Avengers #200*. (New York, NY Marvel Comics Group. 1980. Print)

An issue of the Avengers in which Ms. Marvel suddenly becomes pregnant. She does not know how she got pregnant and her pregnancy only lasts three days yet it is a full-term pregnancy. Ms. Marvel gives birth and it is revealed that she was raped by the villain, Marcus. He puts Ms. Marvel under a thrall and takes Ms. Marvel to Limbo to raise their baby. The Avengers, rather than protest the kidnaping of their teammate, let her go. I used this horrendous and confusing plot line to demonstrate the Avenger's actions as that of the Cult of Domesticity and Ms. Marvel's cultural matriphobia.

Colon -- Gender Studies

Strickland, Carol A. *The Rape of Ms. Marvel*. (Carol A. Strickland.com. 29 January 2008.)

An article where Carol Strickland discusses Jim Shooter's storyline where Ms. Marvel is raped and abandoned by her teammates. She starts off discussing her reactions to reading the issue and her need to write about it. The article starts off discussing Ms. Marvel as a feminist character, her rape and the reactions of her Avenger's teammates but Strickland also goes into detail the inner working of Marvel Comics at the time and Jim Shooter's failures as a writer and editor-in-chief. I used this article as a way to describe the unorthodox conception and birth of Ms. Marvel's "child".

Stuller, Jennifer. *Ink-Stained Amazons and Cinematic Warriors: Superwomen in Modern Mythology*. (I. B. Tauris, 2010. eBook.) 17

Stuller's book discusses the female hero in modern mythologies and how she breaks tradition set barriers. She starts off with Wonder Woman and the Amazons and continues on to 21st century feminist heroes. In the following chapters she discusses the superheroines relationships to their fathers and mothers and their eventual mentoring of other superheroines. The last chapters, Stuller makes the claim that women are creating myths and asks of her reader what will be created next. I used a quote from the first chapter, *The Birth of Modern Mythology and the Mother of Female Superheroes* in which Stuller says that superheroines created during the 60's and 70's embodied American feminism at the time and possessed qualities of women involved with the Women's Liberation Movement.

Colon -- Gender Studies

Woolf, Virginia. *A Room of One's Own* (Oxford, Oxford University Press, 2008)

Virginia Woolf states in the essay on Women and Fiction that “all the great women of fiction were, until Jane Austen's day, not only seen by the other sex, but seen only in relation to the other sex.” Virginia Woolf is saying that women aren't accurately portrayed if they are solely portrayed by men, interacting with men, and talking to and about men. The characterizations of these women are impoverished. I didn't use the quote but I used the sentiment in my essay. Carol Danvers interacts with women and their discussions and actions revolved around things besides men. In this, her characterization and the characterizations of the women she interacts with are honest portrayals.

Thompson, Kelly, *8 Great Female Led Comics You Should Be Reading!*

(comicbookresources.com/she-has-no-head 18 February 2012. Web)

This is an article by Kelly Thompson that lists all the female led ongoing comics that he believes readers should check out. The comics she discusses come from multiple genres and companies but I used the article to illustrate the increase of female led comics in the superhero genre of Marvel Comics. I claimed that this increase in female led comics from Marvel is a reaction to the positive receptions and sales of the Captain Marvel comic starring Carol Danvers.

A Mathematical Model for the Falling Raindrop in a Non-Uniform Gravitational Field

Ngan Le (Montgomery College)

Mentor - Dr. Eugene Li

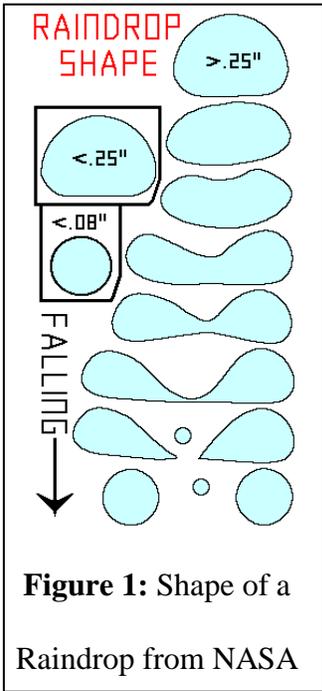
Abstract

This paper discusses a mechanics problem which involves a spherical raindrop gaining mass due to accretion as it falls through a stationary cloud of droplets in a non-uniform gravitational field. The investigated raindrops are typically very small droplets, whose diameters are less than 0.003 inches, and are falling at relatively slow speed, less than 0.188 meters per second. With these conditions, Stoke's Law for air resistance is applicable, since the raindrop is experiencing mostly laminar air flow without turbulent air flow and the Reynolds number is a very small number less than 1.

By applying different methods of solving second order differential equations, both analytical and numerical ones, we are able to predict the existence of terminal velocity of the falling raindrop, and in the case of accretion, the terminal acceleration. A comparison of the importance of accretion and its effects are analyzed. Also, this mathematical model of falling raindrops proposes a relationship to rocket ship problem which is considered a reversed process.

I. BACKGROUND INFORMATION & PHYSICAL MODELING

CONDITIONS



The dynamics of a raindrop falling through a cumulonimbus cloud serves as not only an important application of Newton's second law but also an interesting second order ordinary differential equation with variable coefficients. When the raindrop falls and its speed increases, it gradually loses its spherical shape and distorts like the top half of a hamburger bun. The main cause of this changing shape is the air pressure difference between the top and bottom surface.

The air flow on the bottom of the water drop is

greater than the airflow at the top, because at the top, small air circulation disturbances create less air pressure.

As a result, the bottom surface develops more air pressure and flattens out. Moreover, collisions between other falling raindrops significantly change its shape and mass. This growth in size has limitation. Once the size of a raindrop gets too large, it will eventually break apart into smaller drops and the process starts over again with individual small raindrops. However, focusing on a small raindrop with diameter $d \leq 0.003$ inches (7.6×10^{-5} m), its shape remains rounded since its surface tension overwhelms air pressure so much that pressures in all directions are equal and therefore creates a spherical shape. This paper focuses on tiny spherical droplets, those of diameter $d \leq$

Le -- Math and Computers

0.003 inches (7.6×10^{-5} m), which are falling at relatively slow speed less than $v_{max} = 0.188$ m/s. Under these conditions, the raindrops remain spherically-shaped.

As the raindrop falls, it actually accumulates mass from collecting tiny water vapor molecules in the cloud and colliding with other falling raindrops in the air. The rate of this gaining mass is called accretion. Under our specific physical conditions of size and velocity, the rate at which a raindrop gains mass is directly proportional to its cross sectional area:

$$\frac{dm}{dt} = KA = K\pi r^2 = Cm^{2/3} \quad (1)$$

where K , the accretion coefficient, has units of $\frac{\text{kg}}{\text{m}^2 \text{s}}$ and is related to constant C by

$$C = \left(\frac{9\pi}{16\rho_d^2} \right)^{1/3} K$$

The raindrop encounters many different forces that continuously cause it to change both velocity and acceleration. However, several forces are very small that can be ignored without decreasing the accuracy of our models. These negligible forces include the electrostatic forces between the drop and the air, the continually changing shape of the drop due to harmonic oscillations and evaporation and the change in the drag coefficient due to the convection of the fluid in the drop. The only two significantly external forces are gravitational force and aerodynamic drag.

Gravitational force is usually expressed as weight of an object. This is a force acting downwards, caused by the Earth's gravitational field. In most of previous raindrop problems, only the uniform gravitational force is taken into account since the raindrop is falling at relatively close position to the Earth. However, let's think about the theoretical modeling analysis and its relation to the rocket problem, as the raindrop gains mass as it

Le -- Math and Computers

falls while the rocket probe loses mass as it takes off from the ground. So alternatively, raindrop and rocket probe can be considered as an “inverse process” of each other. If the non-uniform gravitational force is accounted into the raindrop problem, we can be able to establish the relationship between raindrop and rocket probe in order to predict the motion of a rocket probe under specific conditions. Therefore, the force of gravity that will be used in this project is:

$$F_{g-z} = -G \frac{Mm}{(R+z)^2} \quad (2)$$

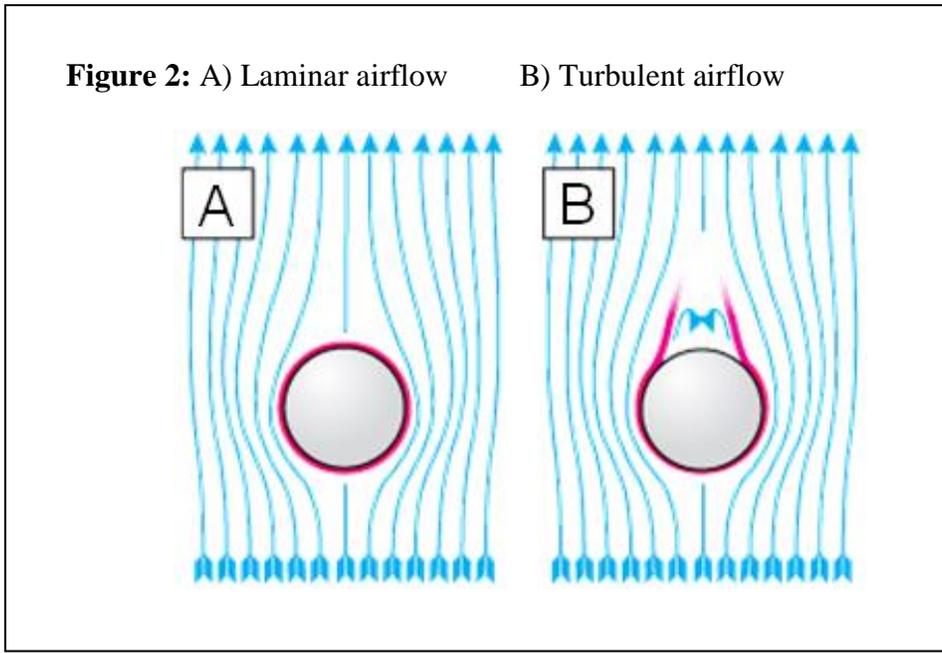
Where: G : gravitational constant, $G = 6.673 \times 10^{-11} \text{ m}^3\text{kg}^{-1}\text{s}^{-2}$

M : mass of the Earth, $M = 5.97219 \times 10^{24} \text{ kg}$

R : radius of the Earth, $R = 6.378 \times 10^6 \text{ m}$

z : altitude of the raindrop, $z(0) = 4900 \text{ m}$

Aerodynamic drag (or air resistance) is the force due to friction between the raindrop and atmosphere of the Earth. This force is acting in the opposite direction of the motion, slowing the raindrop down. There are two kinds of air flow causing air resistance: laminar and turbulent air flow.



Laminar flow consists of isolated layers of air with different velocities and occurs when the relative speed of an object moving in air is low. The lines of flow are parallel, smooth and the laminas are not interacting. Meanwhile, the lines of turbulent flow are disorganized, distributed in ever changing eddies. Air molecules of different speeds bump into one another and their speeds are constantly changing. This happens when an object is moving fast relative to the air. A parameter called Reynolds number, R_e , is often used to determine which type of flow an object is experiencing. In case of a sphere:

$$R_e = \frac{\rho d v}{\eta} \quad (3)$$

where R_e is the Reynolds number (dimensionless)

η : a property of the air called viscosity which depends mostly on the temperature. At 15.0 °C, the viscosity of air is 1.81×10^{-5} kg/(m·s)

ρ : density of the air $\rho = 1.28$ (kg/m³)

d : diameter of the spherical object, (m)

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The smooth and laminar regime generally occurs at a Reynolds number of one or below while the turbulent regime is in the Reynolds number range of 10^3 and above. The middle range is when both laminar and turbulent air flows occur.

Our model is of a raindrop with a small diameter $d \leq 0.003$ inches (7.6×10^{-5} m), falling at a relatively slow speed less than $v_{max} = 0.188$ m/s. Take the boundary point to evaluate value of the Reynolds number and identify whether this model of raindrop experience laminar or turbulent airflow:

$$R_e = \frac{\rho d v}{\eta} \leq \frac{1.28 \times 7.6 \times 10^{-5} \times 0.188}{1.81 \times 10^{-5}} \approx 0.994 < 1$$

This value of Reynolds number indicates that the raindrop experiences mostly laminar air flow without turbulent air flow, and hence Stoke's law for air resistance in laminar flow is valid:

$$F_{r-z} = -b v_z = -(6\pi\eta r) v_z \quad (4)$$

where b is the drag coefficient in units of kg/s.

There are some other properties of spherical raindrop used in this project, including mass density of water $\rho_d \approx 1 \text{ g/cm}^3$, air viscosity $\eta = 1.81 \times 10^{-5}$ kg/(m·s) at 15.0°C and mass of spherical drops:

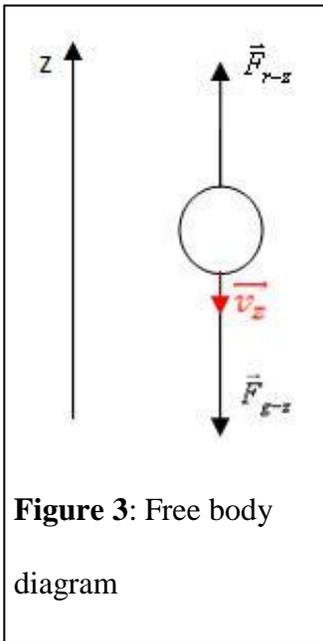
$$m = \frac{4}{3} \pi \rho r^3 \quad (5)$$

II. MODELING APPROACHES, MATHEMATICAL ANALYSIS, AND RESULTS

This project consists of two mathematical models of a falling raindrop by taking different forces into account and then analyzing how each individual force affects and changes the raindrop's motion through Newton's Second Law.

A. Case 1: Air Resistance without Accretion

In the first case, a raindrop is considered to fall in a non-uniform gravitational field without changing its radius and mass. There are two major forces acting on the raindrop including gravitational force pointing downwards, F_{g-z} , and air aerodynamic drag pointing upwards, F_{r-z}



Newton's Second Law for the raindrop yields:

$$\sum F_z = F_{g-z} + F_{r-z} = ma_z \quad (6)$$

Substituting force of gravity (2) and air resistance (3):

$$-\frac{GMm}{(R+z)^2} - bv_z = ma_z$$

$$-\frac{GMm}{R^2 \left(1 + \frac{z}{R}\right)^2} - bv_z = ma_z$$

$$-\frac{GMm}{R^2} \left(1 + \frac{z}{R}\right)^{-2} - bv_z = ma_z \quad (7)$$

Since first derivative of position is velocity and second derivative of position is acceleration: $v_z = z'$ and $a_z = z''$, the equation (7) becomes:

$$-\frac{GMm}{R^2} \left(1 + \frac{z}{R}\right)^{-2} - bz' = mz''$$

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$$-\frac{GMm}{R^2} \left(1 + \frac{z}{R}\right)^{-2} - bz' - mz'' = 0 \quad (8)$$

This is a second order differential equation in which t is independent variable and z is dependent variable. However, the order “-2” in the first term, makes this equation non-linear. Therefore, the binomial series expansion is applied to solve this equation. The general binomial series for $|x| < 1$ is

$$(1 + x)^n = 1 + nx + \frac{n(n-1)}{2!}x^2 + \frac{n(n-1)(n-2)}{3!}x^3 + \dots$$

Since the raindrop falls relatively close to the surface of the Earth, its position z is very small compared to the radius of the Earth: $z \ll R$ or $\frac{z}{R} \ll 1$. Therefore, the first order binomial approximation is applicable:

$$\left(1 + \frac{z}{R}\right)^{-2} \approx 1 - \frac{2z}{R} \quad (9)$$

Substituting (9) into the equation (8):

$$\begin{aligned} -\frac{GMm}{R^2} \left(1 - \frac{2z}{R}\right) - bz' - mz'' &= 0 \\ \frac{2GMm}{R^3} \left(z - \frac{R}{2}\right) - bz' - mz'' &= 0 \end{aligned} \quad (10)$$

This is now a solvable linear second order differential equation. After changing the dependent variable z by assigning $y = z - \frac{R}{2} \Rightarrow y' = z'$ and $y'' = z''$, the equation (10) becomes:

$$\frac{2GMm}{R^3} y - by' - my'' = 0 \quad (11)$$

Dividing both sides by $-m$ and rearranging to obtain the standard form of second order differential equation:

$$y'' + \frac{b}{m}y' - \frac{2GM}{R^3}y = 0 \quad (12)$$

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This linear second order homogenous equation can be solved by a change of variable.

Assuming $y = e^{st}$ (s is a constant) is a solution, then $y' = se^{st}$ and $y'' = s^2 e^{st}$ then substituting into the equation (12), we have:

$$s^2 e^{st} + \frac{b}{m} s e^{st} - \frac{2GM}{R^3} e^{st} = 0$$

Simplifying the equation by dividing both sides by e^{st} , we obtain the characteristic equation:

$$s^2 + \frac{b}{m} s - \frac{2GM}{R^3} = 0 \quad (13)$$

This quadratic equation has $\Delta = \left(\frac{b}{m}\right)^2 + \frac{8GM}{R^3}$ is a positive number. Therefore, the solution

is:
$$s = \frac{-\frac{b}{m} + \sqrt{\Delta}}{2} \text{ or } s = \frac{-\frac{b}{m} - \sqrt{\Delta}}{2}$$

According to integrating factor technique, general solution is:

$$y = A e^{\frac{-\frac{b}{m} + \sqrt{\Delta}}{2} t} + B e^{\frac{-\frac{b}{m} - \sqrt{\Delta}}{2} t}$$

Hence,
$$z = y + \frac{R}{2} = A e^{\frac{-\frac{b}{m} + \sqrt{\Delta}}{2} t} + B e^{\frac{-\frac{b}{m} - \sqrt{\Delta}}{2} t} + \frac{R}{2} \quad (14)$$

$$\Rightarrow v_z = z' = \frac{-\frac{b}{m} + \sqrt{\Delta}}{2} A e^{\frac{-\frac{b}{m} + \sqrt{\Delta}}{2} t} + \frac{-\frac{b}{m} - \sqrt{\Delta}}{2} B e^{\frac{-\frac{b}{m} - \sqrt{\Delta}}{2} t} \quad (15)$$

A and B can be found based on initial conditions: $z(0) = H$ (initial height of a falling raindrop) and $v_z(0) = 0$ (the raindrop starts from rest).

$$z(0) = H \Rightarrow z(0) = H = A + B + \frac{R}{2} \rightarrow A = H - B - \frac{R}{2} \quad (16)$$

$$v_z(0) = 0 \Rightarrow z'(0) = 0 = \frac{-\frac{b}{m} + \sqrt{\Delta}}{2} A + \frac{-\frac{b}{m} - \sqrt{\Delta}}{2} B \Rightarrow B = \frac{\left(\frac{-\frac{b}{m} + \sqrt{\Delta}}{2}\right) A}{\left(\frac{-\frac{b}{m} - \sqrt{\Delta}}{2}\right)} \quad (17)$$

Substitute (17) into (16):

$$A = H - \frac{\left(\frac{-\frac{b}{m} + \sqrt{\Delta}}{2}\right) A}{\left(\frac{-\frac{b}{m} - \sqrt{\Delta}}{2}\right)} - \frac{R}{2} \Rightarrow \left(1 + \frac{\left(\frac{-\frac{b}{m} + \sqrt{\Delta}}{2}\right)}{\left(\frac{-\frac{b}{m} - \sqrt{\Delta}}{2}\right)}\right) A = H - \frac{R}{2} \Rightarrow \left(\frac{2\sqrt{\Delta}}{\left(\frac{-\frac{b}{m} - \sqrt{\Delta}}{2}\right)}\right) A = H - \frac{R}{2}$$

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$$\Rightarrow A = \left(\frac{b+\sqrt{\Delta}}{2\sqrt{\Delta}}\right)\left(H - \frac{R}{2}\right) \text{ and } B = \left(\frac{-b+\sqrt{\Delta}}{2\sqrt{\Delta}}\right)\left(H - \frac{R}{2}\right)$$

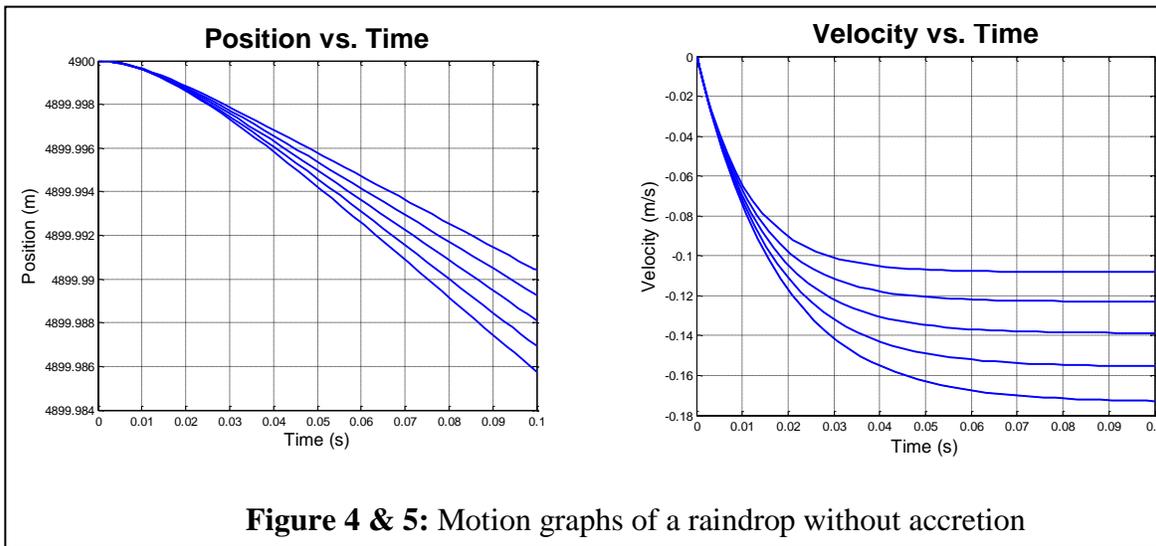
Substitute these values of A and B into equation (14) and (15) to get

$$z = \frac{\left(\frac{b+\sqrt{\Delta}}{2\sqrt{\Delta}}\right)\left(H - \frac{R}{2}\right)}{e^{\frac{-b+\sqrt{\Delta}}{2}t}} + \frac{\left(\frac{-b+\sqrt{\Delta}}{2\sqrt{\Delta}}\right)\left(H - \frac{R}{2}\right)}{e^{\frac{b+\sqrt{\Delta}}{2}t}} + \frac{R}{2} \quad (18)$$

$$v_z = z' = \frac{2GM}{R^3\sqrt{\Delta}}\left(H - \frac{R}{2}\right)e^{\frac{-b+\sqrt{\Delta}}{2}t} - \frac{2GM}{R^3\sqrt{\Delta}}\left(H - \frac{R}{2}\right)e^{\frac{b+\sqrt{\Delta}}{2}t} \quad (19)$$

where $\Delta = \left(\frac{b}{m}\right)^2 + \frac{8GM}{R^3}$

In order to interpret clearly these results, the following graphs are drawn by using MATLAB software (See APPENDIX A for the code):



According to above graphs, when the raindrop has a constant mass during its motion and experiences only two significant forces including non-uniform gravitational force and aerodynamic drag, the raindrop accelerates significantly for only about the first 0.1s and eventually reaches a terminal velocity. Bigger constant radius takes longer time to reach terminal velocity. This result is very interesting and reasonable. A falling water droplet is commonly known to accelerate at a constant rate $g = 9.81 \text{ m/s}^2$; however, under the effect of air resistance and non-uniform gravitational field, the raindrop reaches its

terminal velocity. At this instance, its acceleration is zero and the net force is zero. This means that magnitude of air resistance has to be big enough to cancel out the force of gravity. Thus, larger the raindrop leads to bigger the gravitational force, and hence it takes more time for air resistance to increase and cancel out gravitational force.

B. Case 2: Air Resistance with Accretion

In real life, raindrop actually *gains* mass as it falls through a cloud of droplets as well as its collision with other drops. Will this fact change the motion of raindrops? To answer this question, the accretion rate is included in our model to experience how accretion rate affects the raindrop’s velocity and acceleration. Since the raindrop is like a sphere, its mass can be calculated using equation (5):

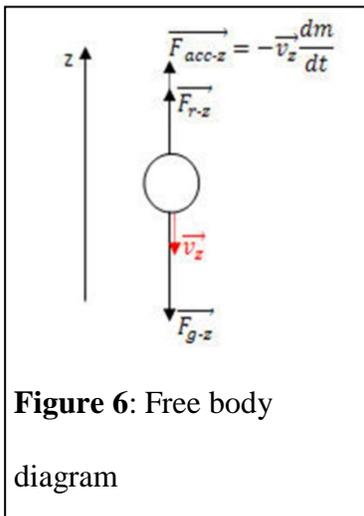
$$m = \rho V = \rho \frac{4\pi r^3}{3} \rightarrow \frac{dm}{dt} = 4\pi \rho r^2 \frac{dr}{dt} \tag{20}$$

Comparing equation (20) to (1) of the accretion rate:

$$\frac{dm}{dt} = 4\pi \rho r^2 \frac{dr}{dt} = K\pi r^2 \rightarrow \frac{dr}{dt} = \frac{K}{4\rho} \rightarrow r = \frac{K}{4\rho} t + r_0$$

Since the raindrop starts at rest with an extremely small initial radius $r_0 \approx 0$ and hence

$$r = \frac{K}{4\rho} t \tag{21}$$



As we can see from the Figure 6, the gaining mass process actually acts like a force pointing upwards and slowing down the raindrop. Nevertheless, it is not a “real force”, since it is an inertial effect. So, we apply the generalization of Newton’s Second Law for this variable mass system.

The analytical set up of the dynamical differential equation is as follows from Newton’s 2nd law which states the net external force

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is the time-rate change of momentum, yielding:

$$\begin{aligned}\Sigma F_z &= m \frac{dv_z}{dt} + v_z \frac{dm}{dt} \\ F_{g-z} + F_{r-z} &= ma_z + v_z(K\pi r^2) \\ -\frac{GMm}{(R+z)^2} - bv_z - (K\pi r^2)v_z &= ma_z\end{aligned}\quad (22)$$

Following the similar approach as in the Case 1 by substituting, $v_z = z'$, $a_z = z''$:

$$-\frac{GMm}{(R+z)^2} - (b + K\pi r^2)z' - mz'' = 0 \quad (23)$$

Changing variables $u = R + z$ so that $u' = z'$, $u'' = z''$ in equation (22) and then multiplying both sides by negative one to get rid of the negative sign:

$$\frac{GMm}{u^2} + (b + K\pi r^2)u' + mu'' = 0 \quad (24)$$

Substituting equation (4) for drag coefficient b and equation (5) for mass m :

$$\frac{GM4\rho\pi r^3}{3u^2} + (6\pi\eta r + K\pi r^2)u' + \frac{4}{3}\rho\pi r^3u'' = 0 \quad (25)$$

Simplifying the equation (25) by multiplying both sides by $3/\pi r$ and rearranging:

$$4\rho r^2 u'' + (18\eta + 3Kr)u' + 4GM\rho r^2 \frac{1}{u^2} = 0 \quad (26)$$

Substituting the value of r from equation (21) to (26):

$$\begin{aligned}4\rho \left(\frac{K}{4\rho}t\right)^2 u'' + \left(18\eta + 3K\frac{K}{4\rho}t\right)u' + 4GM\rho \left(\frac{K}{4\rho}t\right)^2 \frac{1}{u^2} &= 0 \\ \frac{K^2}{4\rho}t^2 u'' + \left(18\eta + \frac{3K^2}{4\rho}t\right)u' + \frac{GMK^2}{4\rho}t^2 \frac{1}{u^2} &= 0\end{aligned}\quad (27)$$

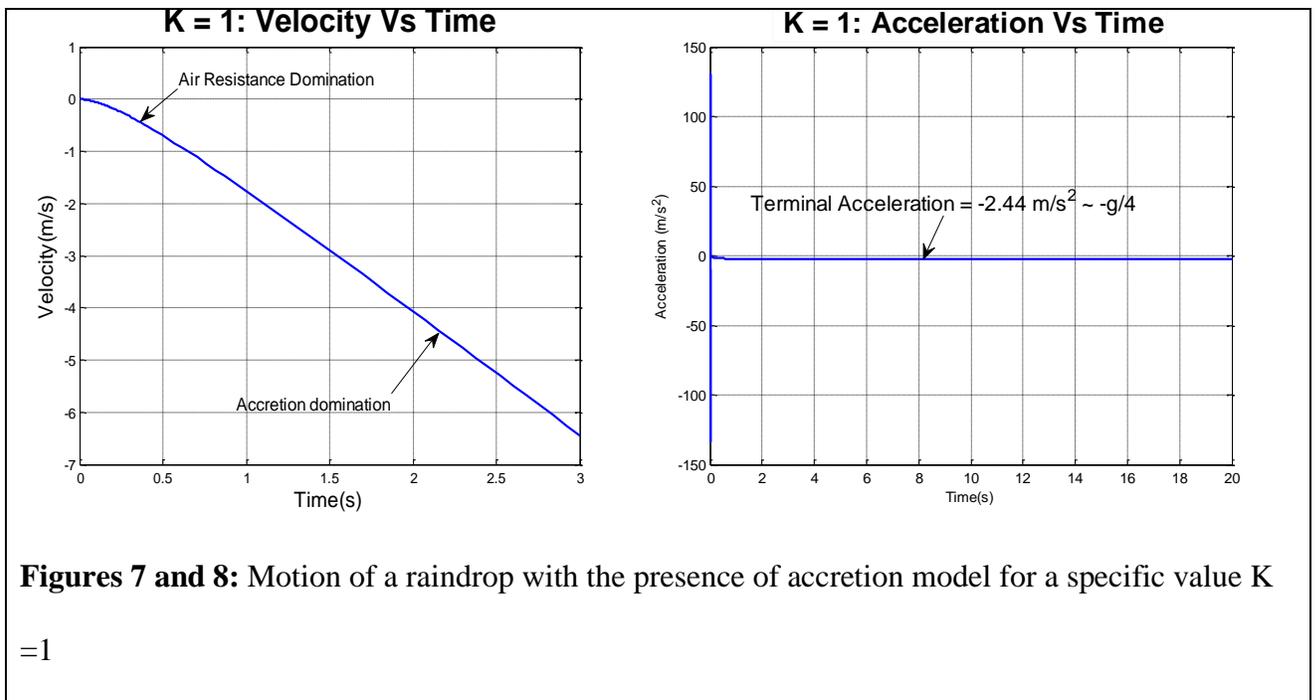
Finally, dividing both side by $\frac{K^2}{4\rho}t^2$ we have:

$$u'' + \left(\frac{72\eta\rho}{K^2 t^2} + \frac{3}{t}\right)u' + GM \frac{1}{u^2} = 0 \quad (28)$$

Equation (28) is a second order differential equation in the dependent variable u and independent variable t . Notice that the terms are u'' , u' , and $\frac{1}{u^2}$ respectively. This

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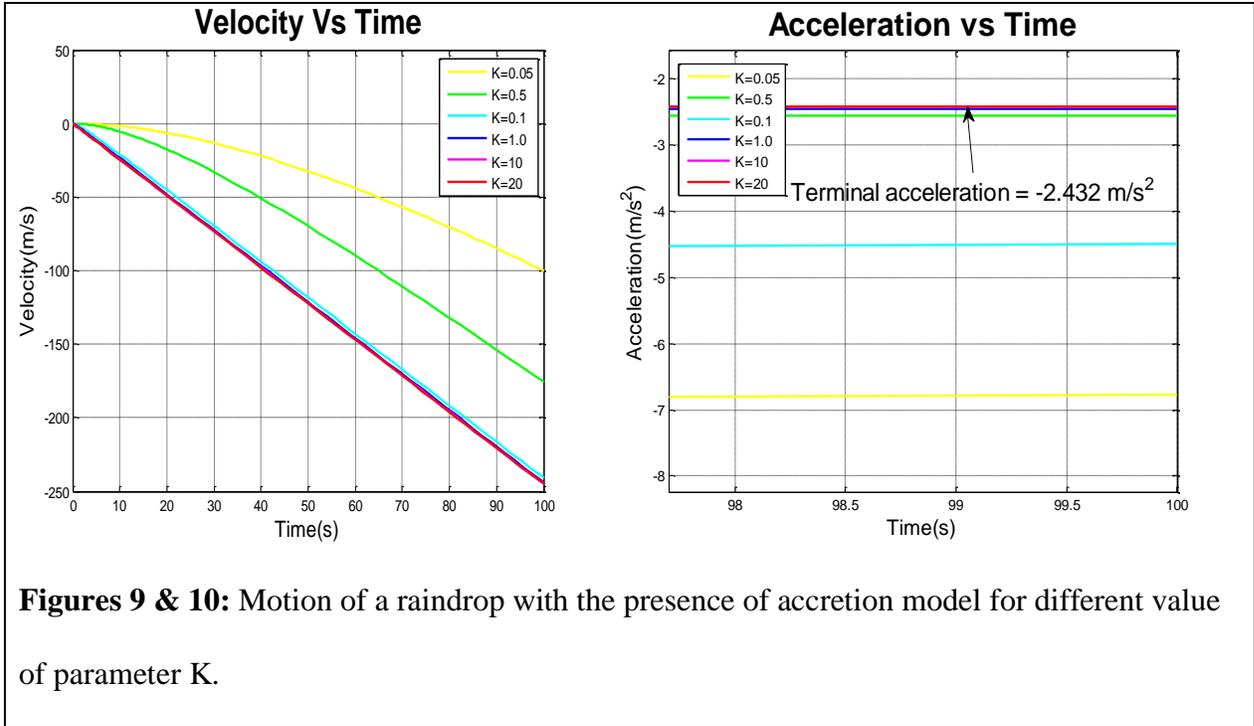
last term makes this equation become non-linear and thus, it cannot be solved analytically. Instead, numerical methods can help visualize the solution curves. In this project, MATLAB software is used to run the code “ode45”. The “ode45” function uses an algorithm developed by Dormand and Prince (1990), which simultaneously uses fourth- and fifth-order Runge-Kutta formulas to solve the ODE and automatically makes error estimates for step-size adjustment. Since this is a numerical approach, input of specific initial conditions is required. Assuming that the initial condition is $u_0 = 6382900$ m when $t_0 = 0.0001$ s and hence initial radius $r_0 = K/4\rho t_0$, where K is the model parameter for the accretion model $dm/dt = K\pi r^2$. Each value of K yields different graph. To see the general trend, let's assume $K = 1$. As the code is run through MATLAB (see APPENDIX B for code), two solutions curves are obtained:



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In the Case 1, when only the air resistance is considered, the falling raindrop will eventually reach terminal velocity (acceleration is zero). Fowles (Reference 4) shows that the accretion model alone results in an immediate and constant acceleration of $g/4$. Now this is the case when both air resistance and accretion are included. In Figure 7, velocity decreases throughout the whole motion; at the beginning, it is a slight curve and gradually becomes a straight line. Consequently, its acceleration is increasing from zero toward a constant magnitude which is well identified in the Figure 8 to be approximately $-2.444 \text{ m/s}^2 \sim -g/4$ (in case of $K=1$). In this limit, it agrees with Fowles result (Reference 4), as is expected, based upon physical arguments. Notice that at $t = 0$ second, there is a considerable and unexpected change in magnitude of acceleration (Figure 8). This off-result is due to limitations of the code “ode45” as well as our assumptions about initial conditions ($t_0 = 0.0001\text{s}$). However, the general trend of the solution still remains accurate to expectations in the “long time” limit, as it agrees with Fowles (Reference 4). After a certain time scale, the accretion model will dominate over air resistance model. The raindrop accelerates only for about the first 0.1s time scale and effectively reaches terminal acceleration of $g/4$. Bigger initial radius takes longer time to reach terminal acceleration.

In order to determine how a control parameter K affects the motion of raindrops, six different values of K are considered:



Figures 9 & 10: Motion of a raindrop with the presence of accretion model for different value of parameter K.

Under the initial conditions, $r_0 = 0$ and $v_0 = 0$, different model parameters, K , correspond with different time it takes the raindrop to reach the terminal acceleration of $g/4$. As we can see from Figure 9, when $K = 20$, the raindrop (red curve) quickly achieves terminal acceleration of $g/4$ in the time scale of 100 seconds. By contrast, when $K = 0.05$, the raindrop's acceleration (yellow curve) is about -6.8 m/s^2 and is decreasing slowly. In particular, larger model parameter K results a quicker the approach to terminal acceleration of $g/4$.

III. CONCLUSIONS AND FUTURE WORK

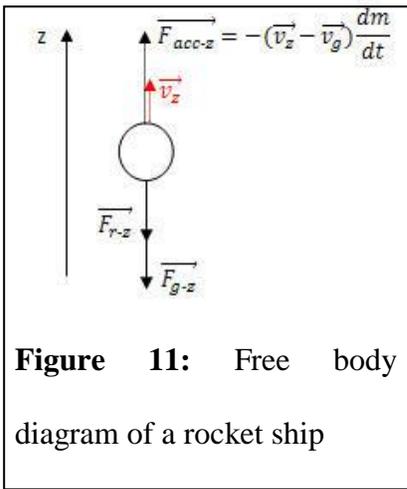
As discussed from the beginning, the significance of the non-uniform nature of the gravitational field is included in this work, because of the mathematical relationship of the falling raindrop to the rocket probe problem. Non-uniform gravitational field plays an essential role in the motion of a rocket probe which has a significant height compared to the radius of the Earth. The dynamical equation is analogous, though the physical

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rocket probe problem can be cast as a “control problem”. Consider a spherical rocket-ship probe losing mass as it takes off the ground, $dm/dt < 0$ or parameter K is negative. Under the same initial conditions, the raindrop falling in a non-stationary mist is analogous to a rocket probe

Accretion rate also yields:

$$m = \frac{4\pi\rho r^3}{3} \rightarrow \frac{dm}{dt} = 4\pi\rho r^2 \frac{dr}{dt} = K\pi r^2 \rightarrow r = \frac{K}{4\rho} t \quad (K < 0) \quad (29)$$



General Newton’s Second Law for this variable mass system:

$$\sum F_z = \frac{dp}{dt} = m \frac{dv_z}{dt} + (v_z - v_g) \frac{dm}{dt}$$

$$F_{g-z} + F_{r-z} = ma_z + (v_z - v_g) \frac{dm}{dt}$$

$$-\frac{GMm}{(R+z)^2} - bv_z - (K\pi r^2)(v_z - v_g) = ma_z \quad (30)$$

Following the same procedure as the raindrop, we let $u = R + z$ then

$v_z - v_g = z' - v_g = u' - v_g$ and $a_z = z'' = u''$. Equation (30) is then reduced to:

$$u'' + \left(\frac{72\eta\rho}{K^2 t^2} + \frac{3}{t} \right) u' + GM \frac{1}{u^2} = \frac{4\rho\pi r^2}{K t^2} v_g \quad (31)$$

The left-hand side of equation (31) for the rocket probe is exactly the same as equation (28) for the raindrop. However, their right-hand sides are different, making the equation (31) a nonlinear nonhomogeneous 2nd order ODE. If the center-of-mass velocity of ejected fuel v_g is zero under specific conditions, the rocket probe’s motion will be the same as the raindrop’s. Actually, in the short period before the rocket actually takes off

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the ground, the centroid of the gas cloud remains unchanged and indeed it is a good approximation that the vertical velocity $v_g = 0$.

This project can be further developed by considering realistic initial conditions of the rocket probe or using different models for drag model and accretion rate to investigate bigger raindrops. For example, after a certain amount of time, the raindrop will experience both laminar and turbulent airflow. Additionally, Krane (Reference 5) suggests many other accretion models that can be used corresponding to raindrops' physical conditions. It would also be interesting to approach this problem through energy analysis.

IV. MATLAB CODE Appendix

A. Air Resistance Without Accretion

```
t=linspace(0,0.1,100);  
  
G=6.673*10^-11; %Gravitational constant  
  
M=5.97219*10^24; %Mass of the earth  
  
d=1000; %density of water  
  
n=1.81*10^-5; %Viscosity of air  
  
R=6.378*10^6; %Radius of the Earth  
  
H=4900; %Initial height  
  
for r=0.00003:0.000002:0.000038;  
  
b=6*pi*n.*r;  
  
m=4*pi*d*(r.^3)./3;  
  
delta=(b./m)^2+8*G*M*(R^-3);  
  
c1=(b/m+sqrt(delta)).*(H-R/2)/(2*sqrt(delta));
```

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```
c2=(-b/m+sqrt(delta)).*(H-R/2)/(2*sqrt(delta));
e1=(-b/m+sqrt(delta))/2;
e2=(-b/m-sqrt(delta))/2;
z=c1.*exp(e1.*t)+c2.*exp(e2.*t)+R/2;
v=e1*c1.*exp(e1.*t)+e2*c2.*exp(e2.*t);
hold on; plot(t,z); grid on
title('Position Vs. Time'); xlabel('Time (s)'); ylabel('Position (m)');
end
```

To get the graph for velocity, the code is modified by using plot(t,v) instead of plot(t,z).

I also try to solve the nonlinear second order differential equation (8) by using numerical method, fourth- and fifth-order RK, and it yields the same results.

Create an M-file to define the second order differential equation

```
function yp=Z(t,y)
yp=zeros(2,1);
G=6.673*10^-11; % Gravitational constant
M=5.97219*10^24; % Mass of the Earth
d=1000; % Density of water
r=0.00003; % Radius of the raindrop
n=1.81*10^-5; % Viscosity of air
R=6.378*10^6; % Radius of the Earth
b=6*pi*n.*r;
m=4*pi*d*(r.^3)./3;
yp(1)=y(2);
```

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```
yp(2)=-b.*y(2)./m+2.*G.*M.*y(1)./(R.^3);
```

```
end
```

In the command window, run the code:

```
>> [t,y]=ode45(@Z,[0.0001,0.1],[-3184100,0]);
```

```
>> z=y(:,1)+6.378*10^6./2;
```

```
>> plot(t,z); title('Position Vs Time'); xlabel('Time(s)'); ylabel('Position(m)');
```

```
>> figure; plot(t,y(:,2)); title('Velocity Vs Time'); xlabel('Time(s)');
```

```
ylabel('Velocity(m/s)');
```

To get the different graphs for each radius we run the same program just with the radius changed.

B. Air Resistance With Accretion

Create an M-file to define the second order differential equation

```
function up=H(t,u)
```

```
up=zeros(2,1);
```

```
G=6.673*10^-11; % Gravitational Constant
```

```
M=5.97219*10^24; % Mass of the Earth
```

```
n=1.81*10^-5; % Viscosity of air
```

```
K=1; % Model Parameter
```

```
up(1)=u(2);
```

```
up(2)=(-G.*M.*(K.^2).*(t.^2)./(4000.*(u(1).^2))-
```

```
((18.*n+(3.*(K.^2).*t./4000)).*u(2))).*4000./(K.^2.*t.*t);
```

```
end
```

In the command window, run the code:

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```
>> [t,u]=ode45(@Hpaper,[0.0001,50],[6382900,0]);  
>> % Plot graphs  
>> plot(t,u(:,2)); grid on; % Velocity  
>> title('Velocity Vs Time'); xlabel('Time(s)'); ylabel('Velocity(m/s)');  
>> z=-6.378*10^6+u(:,1); % Height  
>> figure; plot(t,z); grid on;  
>> title('Position Vs Time'); xlabel('Time(s)'); ylabel('Position(m)');  
>> G=6.673*10^-11; M=5.97219*10^24; n=1.81*10^-5; K=1;  
>> acce=(-G.*M.*(K.^2).*(t.^2)./(4000.*(u(:,1).^2))-  
((18.*n+(3.*(K.^2).*t./4000)).*u(:,2))).*4000./(K.^2.*t.*t); % Acceleration  
>> figure; plot(t,acce); grid on;  
>> title(' Acceleration Vs Time'); xlabel('Time(s)'); ylabel('Acceleration (m/s^2)');
```

To get the different graphs for each values of model parameter K, we ran the same program just with the K changed.

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Motivations for Murder: “Ordinary” Germans and the Holocaust

Laura Calix (Bergen Community College)

Mentor - Dr. Sarah Shurts

When studying World War II, it's difficult to imagine the mentality of the individuals who carried out the atrocities of the holocaust. Many questions arise concerning the sentiment of the nation as a whole; did ordinary Germans feel horrified or indifferent to what was taking place? Were they ignorant of the horrors being committed, or did they agree with and support the ideals and actions of the Nazis? Historian Daniel Goldhagen has written on this very subject in his book “Hitler’s Willing Executioners”, claiming that *all* Germans were engrained with a specific type of anti-Semitism prior to the reign of the Nazi regime, called *eliminationist anti-Semitism*, which caused even “ordinary” Germans to become murderers naturally and organically. Historian Christopher Browning offers an opposing view on this subject, as expressed in his book “Ordinary Men” concluding that while anti-Semitism was prevalent and pervasive, there were many situational factors that caused “ordinary” Germans to participate in genocide rather than the monocausal approach taken by Goldhagen.

Through comparison of their theories and research on the general mindset of German civilians, officers, and soldiers both prior to and during World War II, insight can be gained into the extent and type of anti-Semitism among “ordinary” men and women during this time period. Although anti-Semitism was prevalent throughout Germany during this period of time, it is also clear that Goldhagen overstates the anti-Semitism of the nation of Germany by theorizing that most of the population had a pre-

Calix -- History

existing eliminationist mentality, which in turn caused the atrocities of the holocaust. Moreover, when looking at the holocaust from a psychological perspective, one can see that the reasons behind the murders of the holocaust are complex and cannot be simplified. Through personal testimony of the people who lived through this time period and particular events in history, Goldhagen's theory of the ease in which "ordinary men" became murderers can be refuted. Rather than Germans participating in the holocaust simply because they were Germans and this was their destined path, it can therefore be said that the perpetrator's actions can be explained by human, not German, tendencies when faced with particular situations and outside forces, especially during times of war.

Goldhagen explains that Germans were "led by a particular type of anti-Semitism that led them to conclude that the Jews ought to die."¹⁸ They had such a deep hatred for Jews already; a type of anti-Semitism that was more extreme than any other European nation at the time. Goldhagen writes "simply put, the perpetrators, having consulted their own convictions and morality and having judged the mass annihilation of Jews to be right, did not want to say "no."¹⁹ In other words, the Germans didn't need convincing by Hitler as they were "easily able to harness the perpetrator's preexisting anti-Semitism once Hitler gave the order to undertake the extermination."²⁰ He writes, "all Hitler did was unshackle and thereby activate Germans preexisting pent-up anti-Semitism."²¹ These statements portray the German people as "chomping at the bit" to exterminate the Jewish population; a nation of repressed killers who, when given the green light, acted on their murderous feelings. Goldhagen says that "well before the Nazis came to power a

¹⁸ Goldhagen, Daniel. *Hitler's Willing Executioners*. New York: Random House, 1997. P. 14.

¹⁹ Ibid. 14.

²⁰ Ibid. 399.

²¹ Ibid. 443.

Calix -- History

“virulent and violent “eliminationist” variant of anti-Semitism” was already developed and “when the Nazis did assume power, they found themselves the masters of a society already imbued with notions about Jews that were ready to be mobilized for the most extreme form of elimination imaginable.”²² Therefore, according to Goldhagen, it took little effort to convince ordinary Germans to kill as anti-Semitism was their motivation.

In contrast to this idea, however, the mindset of the general population can be revealed through comparison of the content of Hitler’s speeches. A change occurs from primarily focusing on anti-Semitism in his early speeches to shifting toward a focus on anti-Marxism.²³ In Hitler’s early years with the Nazi party, hardly a speech went by between 1920 and 1922 without his fanatical ideas about Jews. In his speech in Munich in 1922, Hitler rants that Jews “carry those characteristics which nature has given him, and he cannot ever rid himself of those characteristics.”²⁴ He continues “To us he is harmful. Whether he harms us consciously or unconsciously, that is not our affair. We have consciously to concern ourselves with the welfare of our own people.”²⁵ By the 1930’s, when the Nazi movement was making huge electoral gains, the main target emphasized by Hitler was clearly Marxism and the Weimar system. Rather than claiming that Jews were inferior, he speaks of communists in this way, saying “Communism is not a higher stage of development: rather it is the most primitive form of life- the starting point” as “in such a state communism is therefore a natural and morally comprehensible ordering of society.”²⁶ Therefore, it can be determined that Hitler had realized that anti-Marxism had a wider potential appeal and that although Germany had a history of anti-

²² Ibid. 23.

²³ Kershaw, Ian. *The Hitler Myth*. (New York: Oxford University Press, 1987) 235-40.

²⁴ Roussy de Sales, Raoul, Ed. *Adolf Hitler: My New Order*. (New York: Octagon Books, 1973) p.24

²⁵ Ibid. 24.

²⁶ Ibid. 201.

Calix -- History

Semitism, ordinary Germans were not ready to accept his radical ideals on “the Jewish question.” Therefore, “eliminationist” anti-Semitism was not a pre-existing idea for Germans, but rather for Hitler and the Nazis. Also, Goldhagen’s theory minimizes Hitler’s influence over the people of Germany, not taking into account his popularity during his leadership after stabilizing Germany’s economy. Historian Ian Kershaw writes “The adulation of Hitler by millions of Germans who might otherwise have been only marginally committed to Nazism meant that the person of the Fuhrer, as the focal point of basic consensus, formed a crucial integratory force in the Nazi system of rule.”²⁷ During the height of Nazi popularity the image of Hitler was that of a savior or hero, especially among the working class, as the Fuhrer became personally associated with whatever economic and social benefits they felt the regime provided them. Louise Solmitz, a Hamburg school teacher wrote of Hitler “How many look up to him with touching faith as their helper, their savior. Their deliverer from unbearable distress- to him who rescues the Prussian prince, the scholar, the clergyman, the farmer, the worker, the unemployed, who rescues them from the parties back into the nation.”²⁸ If the German people saw Hitler as a savior, it is possible for them to eventually not only overlook his radical ideology in favor of their own self-interests but also possibly be influenced as well.

In his book, “Hitler’s Willing Executioners,” Goldhagen specifically talks about the “Order Police” which he identifies as “ordinary” men whose actions, he believes, can be explained by “eliminationist” anti-Semitism. He describes them as having been drawn from “an ordinary population distinguished chiefly by its advanced age and its status of

²⁷ Kershaw, Ian. *ibid.* p. 1

²⁸ *Ibid.*42.

Calix -- History

not being enrolled in military service.”²⁹ The missions of police battalions and reserve battalions during World War II were not only fighting partisans and transferring populations, but “killing civilians, especially and overwhelmingly Jews.”³⁰ Goldhagen says that although they were subjected to “anemic thirty to forty-five minute” long weekly educational meetings on Nazi ideology, they were not particularly “Nazified.”³¹ Goldhagen specifically talks about police battalion 101, admitting that their Nazi Party and SS membership was somewhat higher than the national average while claiming that the majority were free from Nazi institutional affiliation. Therefore, it is questionable whether they were “true believers” in Nazi ideology yet they killed Jews en masse. Goldhagen’s effort to point out that the police battalion were not particularly “Nazified” is done in order to suggest that Nazi ideology and propaganda had not significantly influenced them during this time but rather that they acted on the anti-Semitism that had long been engrained in them. His focus on their “ordinary” nature is to prove that any average German citizen could have murdered if given the opportunity because they had also been long infected with anti-Semitism. Goldhagen’s theory is that the men in the police battalion whole-heartedly carried out these atrocities not because of the influence of authority or propaganda during the Nazi regime but because they *wanted* to and they enjoyed doing it. This analysis focuses on the actions of the perpetrators, yet Goldhagen does not provide much analysis of the general population. Therefore, the understanding of the feelings of the German population as a whole is limited. Also, other possible motivations for the men of police battalions to commit these acts are ignored, as well as

²⁹ Goldhagen, “HWE” 210.

³⁰ Ibid. 182.

³¹ Ibid. 185.

Calix -- History

testimony at the War Crimes trials of men who gave reasons for killing other than anti-Semitism.

“Ordinary Men” by Christopher Browning also relates the story of the Reserve Police Battalion 101, but instead explores a range of possible motivations to explain the actions of the perpetrators’ and, in turn, portrays the men in a different light. Browning details the accounts of the killings that the police battalion took part in using descriptions provided by the perpetrators through testimony. Through their testimony, a sense of hesitation, reluctance, and even grief is conveyed upon the initial orders they received to shoot 1500 Jews in the Polish Village of Josefow in 1942. According to testimony, the commander of the battalion, Major Wilhelm Trapp announced that “the battalion had to perform a frightfully unpleasant task.”³² He explained the orders to the men and offered the choice to step forward and excuse themselves from the impending murders. Many officers remember Major Trapp in tears over the orders he was given; not hiding his grief. A witness speaks of how Trapp sat on a stool in his room and “wept bitterly” and another remembers him saying “if this Jewish business is ever avenged on Earth, then have mercy on us Germans.”³³ A dozen of the policemen out of nearly 500 requested to be released from the firing squads and after shooting began many simply could not continue. When asked the reasons for taking part in the killing process, one policeman explained “who would have dared to lose face before the assembled troops.”³⁴ Another officer who subsequently asked to be excused after several rounds of killing said, “I must answer that

³² Browning, Christopher. *Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland*. New York: Harper Collins, 1992. p. 2

³³ *Ibid.* 58.

³⁴ *Ibid.* 72.

Calix -- History

no one wants to be thought a coward.”³⁵ He added, “It was one thing to refuse at the beginning, and quite another to try to shoot but not be able to continue.”³⁶ Therefore, the pressure to conform and to not separate themselves from the group is a situational and psychological pressure that the men testified to having felt as an explanation for the murders they committed. According to Browning, “Those who did not shoot risked isolation, rejection, and ostracism—a very uncomfortable prospect within the framework of a tight-knit unit stationed abroad among a hostile population, so that the individual had virtually nowhere else to turn to for support and social contact.”³⁷ Much of the police men that were interrogated testified that they didn’t remember having felt any choice in the matter. At the end of the day when the men arrived at their barracks, they were “depressed, angered, embittered, and shaken.”³⁸ They drank heavily that evening. The description by the men involved reveal the hesitation and regret that they felt upon this massacre at Jozefow, which offers a contradictory image of men so consumed by anti-Semitism, that cold-blooded killing was natural and easy. Rather, easing into the mindset of a murderer was more gradual. As Browning states, it was only over time that the perpetrators “became increasingly efficient and calloused killers.”³⁹

The human psyche when exposed to war in terms of ruthless killing can be observed especially by conversation between soldiers as it provides a more candid perspective than trial testimony. The book “Soldiers: Transcripts of Fighting, Killing, and Dying” contains secretly recorded conversations between German Wehrmacht soldiers during World War II, discussing their experiences in witnessing and taking part in

³⁵ Ibid. 72.

³⁶ Ibid. 72.

³⁷ Ibid. 185.

³⁸ Ibid. 69.

³⁹ Ibid. 68.

Calix -- History

murders and atrocities. The men often give different reasons, often chillingly simple, for killing innocent civilians. When a soldier was asked why he shot a Frenchman from behind at close range, the soldier chillingly replied “I wanted the bicycle.”⁴⁰ Another officer describes how he had to drop bombs on a train station in Poland. Eight of the sixteen bombs fell right into the middle of houses. He says when this happened “I didn’t like it. On the third day I didn’t care, and on the fourth day I took pleasure in it.”⁴¹ He talks of how he shot his machine gun from the aircraft where sometimes he said “you saw horses flying around.”⁴² He goes on to say “I felt sorry for the horses, not at all for the people. But I felt sorry for the horses right up until the end.”⁴³ Most soldiers showed no empathy when speaking of their victims, and some even showed pride. A Lieutenant talked about a raid over England, relating that their goal was “to shoot everything, just nothing military.”⁴⁴ He said “We mowed down women and children in baby carriages.”⁴⁵ A pilot tells of a raid in south eastern England: There was an event on the market square, crowds of people, speeches being given. We really sprayed them! That was fun!”⁴⁶ In order to explain this brutality, the authors of the book use war logic- a logic that surfaces during wartime where people kill or commit acts which they might otherwise deem immoral under the belief that their actions are dutiful. Another example of this concept was given during the Nuremberg War Crimes Trials, by defendant Field Marshal Keitel who was head of high command for five years and signed hundreds of orders from Hitler. He claimed that “In carrying out these thankless and difficult tasks, I had to fulfill my

⁴⁰ Fleischhauer, Jan. *Nazi War Crimes as Described by German Soldiers*. Soldaten (Soldiers): Fighting, Killing, and Dying, 2011. [http://www. Spiegelde/international/Germany.html](http://www.Spiegelde/international/Germany.html)

⁴¹ Ibid. 1.

⁴² Ibid. 2.

⁴³ Ibid. 2.

⁴⁴ Ibid. 3.

⁴⁵ Ibid. 3.

⁴⁶ Ibid. 3.

Calix -- History

duty” and although he then claimed that he often acted against his inner conscience, he said that he was a “loyal and obedient soldier of my Fuhrer.”⁴⁷ Therefore, morality was subject to the political conscience of the time and since these actions were not considered wrong by fellow comrades or the authority, these individuals did what they felt was expected of them and some even enjoyed doing it. The Wehrmacht soldiers showed cruelty in their merciless killing of civilians, yet it is important to note that these civilians were not necessarily Jewish. Therefore, anti-Semitism cannot explain the eliminationist actions in this case, and further exemplifies actions of men that believe they are fighting military enemies, where people are no longer people, but targets instead.

When interrogated, the men of Reserve Battalion 101 offered few anti-Semitic comments. Browning states that “although it would seem as though the men of the Reserve Police battalion had not consciously adopted the anti-Semitic doctrines of the regime, they had at least accepted the assimilation of the Jews as the image of the enemy,”⁴⁸ or an us versus them mentality. He writes “If it is doubtful that most of the policemen understood or embraced the theoretical aspects of Nazi ideology as contained in SS indoctrination pamphlets, it is also doubtful that they were immune to the influence of the times, to the incessant proclamation of German superiority and incitement of contempt and hatred for the Jewish enemy.”⁴⁹ This is evidenced when one officer testified that Major Trapp “bid us to think of our women and children in our homeland who had to endure aerial bombardments. In particular, we were supposed to bear in mind

⁴⁷ Fireside, Harvey. *The Nuremberg Nazi War Crimes Trials*. (NJ: Enslow Publishers, 2000).82.

⁴⁸ Browning, 73.

⁴⁹ Ibid. 186.

Calix -- History

that many women and children lose their lives in these attacks.”⁵⁰ This appeal was intended to make it easier for the men to carry out the orders as it placed a military justification on killing innocent men, women, and children. To carry out these orders, the Nazis knew that they had to instill blame on Jews for the fear, death, and hardships created by war. Further evidence of the “us versus them” mentality is revealed in letters of German officers to their families such as police secretary Walter Mattner from Vienna. He writes to his wife of the killings of Jews “It is only the just punishment for so much suffering they have caused to us Germans and still cause.”⁵¹ This excerpt shows that he believes that the Jews are the enemy and cause of the problems in Germany. He also says of the first time he shot “when it came to the first vans, my hand was still trembling when I shot, but one gets use to this,”⁵² revealing how routine killing could have become, especially when convinced that these innocent people were a threat and a detriment to the well-being of the German nation. His justification to his wife for these murders is that he has to “do away with this brood that has thrown all of Europe into war and is now also mongering in America until it has drawn the same war into Europe” and says “then Jewry will not win but it will be the end of Jewry in Europe.”⁵³ Again, Jews are suspected of being military enemies. In contrast, the officer believes that the German soldiers are the heroes that will save the nation. Mirroring Mattner’s tone, a member of the German air force and anti-air barrage battery sent a photo of a group of massacred Jews to his family with the caption “Yes, those are Jews. For them the dream of Germany’s destruction is over.” This ideology is typically seen in the letters of German officers and soldiers, and

⁵⁰ Ibid. 58.

⁵¹ Mallman, Michael, K., Reib, Volker, & Wolfrom Pyta. *Deutscher Osten 1939-1945*. (Wissenschaftliche Buchgesellschaft Darmstadt, 2003) 27.

⁵² Mallman, 27.

⁵³ Ibid. 27.

Calix -- History

signifies the influence of the Nazi propaganda that the soldiers and officers were constantly barraged with as innocent Jews became the image of the enemy.

When researching the extent of anti-Semitism in relation to Germany and the holocaust, it is crucial that one take into account that it existed not only in Germany before World War II, but throughout Europe as well. It can then be determined to what effect the influence of Nazi ideology had over the nation. In other words, did most Germans agree with their ideology or was it forced upon them? Colin Prichard, a child living in Yorkshire during World War II, remembers a clear differentiation in the view between ordinary Germans and Nazis. He recalls in his memoirs his father saying “You must remember that there are good and bad Germans as there are good and bad English; we’re fighting the Nazis, they are the ones who are evil.”⁵⁴ This reveals that even during wartime, people in Europe could distinguish between Germans who held Nazi ideology and Germans who did not agree with the brutality and ideology of the Nazis. In other words, the extreme ideology of exterminating the Jewish population was specific to the Nazis rather than the nation as a whole or “ordinary” Germans. Prichard reveals that when newsreels showed images of the liberation of concentration camps in a crowded cinema, even when Britain had “an endemic mild anti-semitism, the horror that those adults saw blotted everything out. All they saw was the brutality perpetrated against fellow beings and they could not tolerate the thought that it was other human beings who were responsible.”⁵⁵ From the personal perspective of Prichard, there is no doubt that

⁵⁴ Prichard, Colin. *A child's Perspective on the Holocaust*. (2004). WW2 People's War: An archive of World War 2 memories written by the public, gathered by the BBC. Retrieved on 7/24/2012 from <http://www.bbc.co.uk/history/ww2peopleswar/stories/05/a3181105/shtml>. o

⁵⁵ Prichard, Colin, *ibid*. Art. Id# A3181105

Calix -- History

anti-Semitism was prevalent in Germany and throughout Europe at the time, yet this type of inhumanity was unthinkable and shocking.

One can determine that the substantial difference between Germany and other nations in Europe to have been the influence of its leadership. Germany was ruled by an extremely anti-Semitic leader and a political party that believed in exterminating the Jewish population, or as Hitler called it “solving the Jewish problem.” A repressive dictatorship and totalitarian style of government, along with a constant barrage of propaganda combined to create intense fear which helped to fuel the holocaust. At the Nuremberg trials, the diplomat and former Chancellor Franz von Pappen attributed all of the evils of the holocaust to the unrelenting rule of Hitler and the irresponsibility of German leaders. He said that Hitler “had become a pathological liar over the years.”⁵⁶ German Hans Fritzsche’s statement as a defendant at Nuremberg reveals the way in which he feels the government influenced the actions of the people. He says “After the totalitarian form of government has brought about the catastrophe of the murder of 5 million, I consider this form of government wrong even in times of emergency. I believe any kind of democratic control would have made such a catastrophe impossible.”⁵⁷ In other words, if the people had the right to object, the holocaust may never have happened.

In terms of propaganda, as previously stated, the Jews became the image of the internal enemy as well as communists or anyone who was opposed to the Nazi regime. Nazism, as holocaust survivor Victor Klemperer wrote, “had permeated the flesh and blood of the people through single words, idioms, and sentence structures which were

⁵⁶ Fireside, 50.

⁵⁷ *Assessing Guilt: Nazi Crimes and Postwar Trials.*(2010) Retrieved on 5/9/2012 from <http://www.ushmm/propaganda/themes/assessing-guilt/>

Calix -- History

imposed on them in a million repetitions and taken on board mechanically and unconsciously.”⁵⁸ Klemperer writes that Jews were also beginning to accept their own persecution. He says “They are beginning to submit inwardly and to regard the new ghetto situation atavistically as a legal condition that has to be accepted.”⁵⁹ He says of his wife’s reaction to Nazism “Eva’s bitterness is greater than mine. National Socialism, she says, more precisely the attitude of the Jews toward it, is making her anti-Semitic.”⁶⁰ This shows that she was not only disgusted by the propaganda itself but also the influence it had on the public as well as the acceptance by German Jews. In November 1937 an exhibition opened in Munich named ‘The Eternal Jew’ which served to create the effect of “othering” by depicting “typical outward features” of Jews and also to create fear against Jews by attempting to suggest a world-wide Jewish-Bolshevik conspiracy. The focal image in the exhibit portrayed Jews as self-serving individualists contrasting with the ideals of German nationalism. The secret police reports claimed that it helped promote a sharp rise in anti-Semitic feelings.⁶¹ Therefore, this type of propaganda could be considered successful in its motive; to create a connection between Jews, Russia, and the image of the enemy “other.” However, there is also certain evidence that shows that there were many ordinary Germans who did not care for or buy into this type of propaganda. The documentary “The Eternal Jew” premiered in 1940, whose aim was to “fill the viewer with a deep gratification for belonging to a race whose Fuhrer is

⁵⁸ Klemperer, Victor. *The Language of the Third Reich: A Philologist’s Notebook*, trans. Martin Brady, London: Continuum, 2002. p.15-16

⁵⁹ Klemperer, Victor . *I will Bear Witness: A Diary of the Nazi Years, 1933-1941*. (New York: Random House, 1995). 35

⁶⁰ Ibid. 35.

⁶¹ Welch, David. *Nazi Propaganda*. (2011) Retrieved from http://www.bbc.co.uk/history/worldwars/wwtwo/nazi_propaganda_gallery05.shtml

Calix -- History

fundamentally solving the Jewish problem.”⁶² Initially, it was reported that the film was positively received. However, after the film’s outset there was a huge decline in the numbers of attending moviegoers, as people commented that they had had enough of the Jewish theme, and were nauseated by the depiction of slaughter scenes, while some even fainted or left the cinema in disgust. The politically active formed the bulk of viewers, but “ordinary” Germans revealed a significant degree of disgust and disinterest. ⁶³This indicates that exposure of this type of imagery to ordinary Germans was not tolerable as they did not represent a public consumed with a virulent anti-Semitism.

Whether or not Germans bought into the incessant propaganda, fear for their own lives caused them not to show any signs of opposition. People were afraid of their neighbors, their friends, and even their own children as they were taught in the Hitler Youth Program to be informants. Anyone who spoke negatively of the regime was to be reported, even family members. An expert on the Gestapo, Robert Gallately relates “Being turned into the authorities for the smallest sign of non-compliance was too common to not have stuck anxiety into the hearts of anyone who might under circumstances have found no fault with the Jews.”⁶⁴ Despite fearing for their own lives, there is evidence that there were many individuals who opposed the Nazi regime and silently and cautiously offered help to those who were being persecuted through acts of kindness, some even being German soldiers and officers. Maria Hay, a Polish girl of 18 years old who was taken by the Germans into a concentration camp, recalls that the sentiment in Poland was that Hitler and his SS men were nasty but the “ordinary soldiers

⁶² Kershaw, 242.

⁶³ Ibid. 242-43.

⁶⁴ Robert Gallately. *The Gestapo and German Society*, Oxford, 1990. Cited in *A Nation on Trial: The Goldhagen Thesis and Historical Truth*. Finklestein, Norman & Ruth Bettina Birn. New York: Holt paperbacks, 1998. p. 38-9

Calix -- History

were all right.”⁶⁵ She recalls a time when a young German officer, not making eye contact with her, told her that he wanted to help her. As he discreetly gave her his ration book and some money he told her to hide it as he could “get shot if it were found.”⁶⁶ She never saw him again. He may not have had the courage to openly voice his objections but he did reveal a compassion for her persecution and therefore an objection to it.

Fear, however, was powerful as shown in this instance. The authority was ruthless and persecuted any individual suspected of resistance, as also shown in the case of Sophie Scholl and “The White Rose.” Sophie Scholl was a college student at the University of Munich who had grown up in the Union of German Girls, which was the female branch of the Hitler Youth Organization. Her brother Hans had been in a leadership role in the Hitler Youth program. Therefore, both had been exposed to fanatical Nazi indoctrination by their superiors in these programs. Regardless of what they had been taught, however, they eventually came to understand the immorality of the Nazis. When Sophie and her brother enrolled at the University, they participated in the White Rose, an underground organization comprised of college students opposed to Nazism which attempted to expose the “most horrible crimes” committed by the Nazis. They created leaflets targeted toward students and University professors in the hope of raising social awareness which would ignite a revolt against the oppression of freedoms and persecution of peoples.⁶⁷ One such pamphlet read “Why are the German people so apathetic in the face of all these abominable crimes, crimes so unworthy of the human

⁶⁵ Hay, Maria. *Maria's story*. World War 2 People's War: An archive of World War 2 memories, written by the public, gathered by the BBC. Art. # 3864765(2005). Retrieved on 3/24/2012 from <http://www.bbc.co.uk/history/ww2peopleswar/stories/65/a3564765.shtml>

⁶⁶ Hay, Maria. Ibid. Art. #3864765

⁶⁷ Axelrod, Toby. *Hans and Sophie Scholl: German Resisters of the White Rose*. Rosen Publishing Group, Inc., 2001

Calix -- History

race? The German people slumber on in their dull, stupid sleep and thereby encourage these fascist criminals.”⁶⁸ The idea here is that the Germans, although not actively participating in these crimes against humanity, are accomplices because they are letting it happen. A group of medics belonging to The White Rose witnessed conditions in the Warsaw ghetto and became even more determined to expose the war crimes of the Nazis. Pamphlets stated “We will not be silent. We are your bad conscience. The White Rose will not leave you in peace!”⁶⁹ Yet they did have to remain silent, hiding their activity by organizing ways to secretly distribute the pamphlets so that they themselves would not be persecuted. Their attempt to resist ended sadly as a Nazi witnessed Sophie and her brother distributing pamphlets. Sophie, her brother, and one other member were arrested and shortly after their trial were executed. Instances such as these reveal that *any* German could be persecuted. There was no freedom of expression allowed. Therefore, even if the German people wanted to resist, the threat of their own death or punishment forced many into silence or even to take part in something they did not agree with.

The evidence presented through personal testimony of people who lived through the rise and fall of the Nazi regime provides a glimpse into what life was like at that time, revealing that it cannot be said that the German people were necessarily “willing executioners.” Eliminationist anti-Semitism was not, in fact, a pre-existing cultural characteristic of Germany before Hitler and the Nazis came to power but rather the holocaust was perpetuated through a more gradual process. The feeling among the nation can be proven through the speeches of Hitler, as he scaled back his radical ideology to

⁶⁸ *The White Rose Leaflets and Their English Translations*. The Holocaust Education & Archive Research Team (HEART). www.holocaustresearchproject.org/revolt/wrleaflets.html.

⁶⁹ *The White Rose Leaflets and Their English Translations*. The Holocaust Education & Archive Research Team (HEART). www.holocaustresearchproject.org/revolt/wrleaflets.html.

Calix -- History

gain approval from the people and win elections. When he felt comfortable in his position, his personal ideology once again came to the forefront. Credited by many for improving conditions for Germany, his popularity soared and his influence knew no bounds. Exacerbated by propaganda, the image of the Fuhrer became god-like to some, who even against their own moral conscience adhered to his policies. For others, fear provided the motivation to not speak out. The acts of kindness from Germans that have been reported by survivors reveals that resisters and “good” Germans did exist but perhaps were forced to quietly help those persecuted to protect themselves and their families. In comparing the theory of Goldhagen versus Browning, one can observe that Browning offers a more thorough and well-rounded analysis of the actions of “ordinary” men. Based on testimony, it can be shown that the officers of the police battalion faced extreme situational pressure when ordered to kill, and as Browning says, easing into the mindset of a killer was a more gradual process in which they became desensitized and killing became routine. This is corroborated through the secretly recorded conversations between Wermacht soldiers, who showed the same type of brutality when killing those that were considered enemies. They callously shot civilians simply because they could. They dropped bombs on homes, not knowing or caring for who was inside, paralleling the brutality that Goldhagen says stemmed from anti-Semitism in the “ordinary” men of police battalion 101. Their lack of distinction shows that anti-Semitism was not a motivator, yet they were “willing” to be Hitler’s executioners. When given free rein to destroy, innocent people were killed revealing how easy it is for men to commit atrocities when they are not restrained by social control. In explanation of the actions of the perpetrators, therefore, it can be concluded that the mentality that surfaced in soldiers and

Calix -- History

officers during the holocaust is common in wartime when hatred is encouraged, and situational factors create different rules. In other words, these actions cannot be explained simply by anti-Semitism but by a logic that exists in wartime situations where an us versus them mentality perpetuates violence. All of the evidence presented reveals that the brutality of the holocaust was caused by human tendencies, not German tendencies, which make this behavior even more important to recognize in order to prevent such horrors from happening again. To place labels on groups of people such as “eliminationist anti-Semites”, as Goldhagen has done to Germans is, in a sense, perpetuating the same type of stereotypical attitudes, hatred, and divisions that can lead to such atrocities.

Structural View Of The Myth Of Psyche And Cupid

Loide D. Polli (SUNY Westchester Community College)

Mentor - Professor B. Jo Stokes

According to anthropology, myths express collective ideas. “Myths are religious narratives or stories that provide the basis for religious beliefs and practices ... They also prescribe the rules of proper conduct and articulate the ethical and moral principles of society” (Stein & Stein 2010: 29). The Greek myth telling the story of Psyche and Cupid is a pre-Christian myth with a long history of oral tradition since classical times. This myth was first recorded in writing in Lucius Apuleius’ second-century Latin novel *The Golden Ass* (1994). Psyche and Cupid myth has been studied by psychologists, and is considered by many as one of the most fascinating accounts of the feminine personality. As fascinating as the psychological views are, a closer look into the myth of Psyche and Cupid from a structural perspective also reveals interesting insights about Psyche’s journey from mortal to goddess. The myth of Psyche and Cupid will be the background against which an attempt will be made to highlight elements of structuralism as proposed by French anthropologist Claude Levi-Strauss (1976), notably the concept of binary oppositions.

Acclaimed French anthropologist, Claude Levi-Strauss, considered to be the father of Structuralism. Levi-Strauss “... set about systematically putting into place, from the ground up, entire new systems for explaining humanity to itself. In effect, he reinvented modern anthropology” (Wiseman & Groves 1998:3). The concept of structuralism and the word itself appeared in the early ethnographic fieldwork he

Polli -- Social Science

conducted in central Brazil in the 1930s. In early 1940s, he moved from Paris to New York fleeing Nazi persecution and World War II. It was at the New York Public Library and the American Museum of Natural History in New York that he first came into contact with and became interested in the art of Native American tribes. The result was the book *Elementary Structures of Kinship* (1971), which established his reputation as a prominent anthropologist.

The foundation upon which Levi-Strauss based his concept of structuralism can be traced back to the work of Swiss linguist Ferdinand de Saussure and the influential Prague Linguistic Circle, also known as Prague Connection. Saussure postulated a dynamic relationship between the components of every linguistic sign (between language system and individual speech, and sound image and concept) (Kurzweil 1980:15). Saussure saw the study of language not as mere identification and classification of its various elements, but more importantly, he determined that it was the very interaction of those elements that revealed underlying binary structures. Based on Saussure studies, Levi-Strauss concluded that with regard to the study of culture, empirical observation and classification were insufficient as well. Levi-Strauss began looking for the underlying structural patterns he believed drove culture. On this foundation, he set out to build an ambitious "... general theory of culture which emphasizes the importance of hidden structures, analogous to a kind of syntax, operating behind the scenes" (Wiseman & Groves 1998:5). Later, Levi-Strauss collaborated with another influential member of the Prague Circle, linguist Roman Jakobson. With Jakobson, Levi-Strauss "... discovered the principles, methods, and ideas that were to enable him to crystallize his own conceptions and develop what he was to call structural anthropology" (Wiseman & Groves 1998:14).

Polli -- Social Science

Levi-Strauss postulates that in terms of thinking, the “primitive” man and the “modern” man are similar. He asserts that there is “the existence of a *pensee sauvage*, a ‘wild’ mode of thought, at work at the heart of human society” (Wiseman & Groves 1998:4). He claims there are two modes of scientific thought: the modern science with its origin in Greek culture, and a much more ancient “science sauvage” that can be traced to Neolithic times. The first is not a natural progression or evolution of the second; rather they represent two strategies of thinking that can be utilized by every human being. Modern science is based on abstractions, while the “wild science” is based on sensory perception (Wiseman & Groves 1998:68). “Wild science”, or what Levi-Strauss called “logic of the concrete”, is at the heart of structuralism because it reveals the human mind’s mechanism that drives the whole theory: analogies.

The logic of the concrete derives its conclusion from the “raw” sensory information acquired from the immediate environment: color, shape, height, etc. In order to illustrate this point, Levi-Strauss provided an aesthetic experience as an example: “If a lake in a painting evokes stillness, it is not because it symbolizes stillness or even represents it: stillness is *there*, immanent to the image of the lake” (Wiseman & Groves 1998:71). According to structuralism, the logic of the concrete sees stillness for what it is: the opposite of movement, and vice-versa. In searching for meaning, the human mind cannot escape its internal mechanism for producing analogies. In this regard, the human mind is held hostage to the perception of a world of dualities or binary oppositions. The result is an incessant current of comparisons, and the constant pursuit of patterns and meaning. Another aspect of the logic of the concrete is that it assumes that the outer appearance of something reflects certain inner quality of that object. Levi-Strauss does

Polli -- Social Science

not see this approach as a rudimentary or crude form of logic, but as the primary strategy humans use to interpret the world. There is a myriad of possible associations based on data gathered by the senses. With that in mind, Levi-Strauss developed a surprising concept that he borrowed from art: bricolage.

A bricoleur works with materials that have already been processed in some way. Similarly, when sensory perception enters consciousness, it has already been affected by some kind of classification of the raw data. To Levi-Strauss this concept is especially fitting with regard to the assemblage of myths. He draws an analogy between the bricolage process and myth formation. The logic of the concrete proceeds by combining and opposing in various ways elements of perception selected from nature. According to Levi-Strauss, primitive science is a form of bricolage in which the primary materials used are percepts, or rather, to be more precise, percepts promoted to the rank of signs” (Wiseman & Groves 1998:82).

To Levi-Strauss the study of myths is comparable in importance to what the study of dreams was to Freud. In this regard, structuralism and psychoanalysis reach common ground: the unconscious. In fact, Strauss asserted that “...anthropology is primarily psychology concerned with the mind’s structural functioning” (Wiseman & Groves 1998:56). Much like a bricolage, it is part of the nature of myths to gather seemingly unrelated data, making it possible for anything to happen within the narrative, therefore any conceivable association of ideas is feasible. There is no need for logic or veracity. Levi-Strauss claims that, given the apparent arbitrary nature of this particular feature of myths, there must be a single explanation for the similarities among myths from widely different regions. Levi-Strauss thinks such similarities stem from the common structure

of the human mind: "...they form a system – one that is analogous to the phonological system which underlies language" (Wiseman & Groves 1998:140).

A myth is an intriguing kind of narrative that often displays inconceivable situations, strange characters, and contradictions. Nevertheless, the fact that many myths endure the test of time is a testimony to the value of the cultural knowledge they unveil. Myths express collective ideas, and they provide knowledge about dynamics that are universal. According to the structural view of myths, the elements of a myth do not have an exact meaning in themselves. The meaning arises from the interaction among its elements, notably the point at which the tension of contrasting elements meet. Much like in language, only the combination of sounds, not the sounds themselves, is what produces meaning (Wiseman & Groves 1998:87). This tension created by the contrasting elements of a myth will be quite clear when considering the myth of Psyche and Cupid.

According to *The Anthropology of Religion, Magic and Witchcraft* by Rebecca L. Stein and Philip L. Stein, "Myths relate the origins of the human traditions and articulate a society's values and norms. They tell how to behave and distinguish good from evil" (31). The myth of Psyche and Cupid is a particularly interesting one. Its most salient themes endured over two millennia. Due to the fact that this myth originated in ancient Greece, it is infused with many of the cultural characteristics that modern western culture inherited from the Greek culture.

The following brief description of the myth of Psyche and Cupid is a portion extracted from the book *The Golden Ass* by Apuleius (1994). The main characters of this myth that portrays Psyche's transformation are Psyche herself, Cupid, and Venus. This myth displays the rivalry between Venus, the ancient symbol of femininity, and Psyche,

Polli -- Social Science

the new symbol of femininity. Venus, the goddess of love, beauty, and procreation, feels resentful of Psyche's rising status. Cupid, the winged god of love, is Venus's son. He causes bonds of love by randomly aiming his arrows at human and gods. This myth tells the story of the interaction of these three characters.

Psyche is the youngest of three princesses. In the myth, Psyche starts being seen as the new symbol of femininity, a replacement for the old symbol, Venus. Due to her ethereal feminine nature, men worship her, but no one asks for her hand in marriage. The king, Psyche's father, consults the oracle of the Milesian god to ask for guidance. The oracle prophesizes that Psyche is destined to marry a snake-like monster at the top of a mountain. The king and his wife do as instructed by the oracle.

Venus employs the help of her son Cupid to cause Psyche to fall in love with the monster that she is about to marry. Instead, Cupid pricks his finger with his own arrow and falls in love with Psyche. Cupid causes Psyche to avert her fate by having his servant Zephyr, the West wind, take her to a paradisiacal valley where she can live in a luxurious palace. The only condition is that she is forbidden to look at Cupid, her new husband.

Psyche misses her two sisters, so she asks Cupid to bring them to the valley to visit her. When they meet, Psyche's sisters grow envious of her good fortune, so they convince Psyche that her husband is a monster who plans to eat her and the child she is bearing. The sisters devise a plan so Psyche can kill her monster-husband and save her life. Psyche is to take a lamp and a knife, and kill the monster in his deep sleep. She does as instructed, but when she draws the knife, the light of the lamp reveals that he is not a monster but a beautiful god, he is Cupid himself. Psyche accidentally pricks her finger on

one of Cupid's arrows and falls in love with him. Then, she spills the oil of the lamp on his shoulder causing him to wake up. Cupid immediately flies away.

In structuralism, binary oppositions manifest as the ideas of high and low, above and below, deprivation and abundance, etc. Psyche is taken from the site of her demise at the top of the mountain, and brought to a valley of paradisiacal qualities. Another contrast is that of the lamp and the knife. As symbols, the lamp could be seen as knowledge, while the knife could be seen as destruction and death. Psyche uses the lamp first, and sets in motion her journey toward growth. Psyche's sisters could be seen as representation of a "trickster". To Levi-Strauss, there are three mediators in myths: the Messiah, the one who unites oppositions, and the trickster and the twins, both of which generate duality (Levi-Strauss 1976:166). It should also be noticed that Psyche's sisters are never referred to by their names or as two distinct individuals. Even though there is no mention of their being twins, the fact that they are portrayed almost as an undifferentiated duo may indicate a twin quality, thus the sisters are twice generators of duality, as twins and as tricksters. Mediators are the elements of myths that bring about change. Psyche's sisters cause her to lose her place in paradise, which sets in motion the events that will ultimately lead to her evolution.

Psyche reaches a point of no return. She is neither the princess nor the paradise dweller. The only option is to move forward. Alone and desolate, Psyche considers drowning herself. She is spotted by Pan, the cloven-footed god who dissuades her from her plan. He suggests that she seeks Cupid's help. In seeking Cupid, Psyche winds up finding her nemesis, Venus. Venus had promised to annihilate Psyche, but instead, she challenges Psyche to finish four difficult tasks.

At this point of the myth, Psyche must find Cupid and seek redemption through Venus's challenges. They both represent Psyche's opposite nature in different ways. Being the opposite gender, Cupid represents the side of duality that Psyche must seek in order to attain wholeness. Finding Cupid is about finding strength inside her. Seeking redemption through Venus is an attempt to unify both feminine natures: the unpredictable Venus-nature and human Psyche-nature. It should also be noticed that Pan, half-man and half-goat, is the one who gives Psyche the advice to find Cupid. In his article *Harelips and Twins: The Splitting of a Myth*, Levi-Strauss states that symbols that make references to images of dichotomy or separation are in fact references to the concept of twinhood. Again, twinhood represents duality; therefore it generates motion and change (Levi-Strauss 1979:33).

The first of Psyche's task constitutes of sorting a huge pile of several kinds of seeds before nightfall. Psyche ponders about the impossibility of the task. She succumbs to desperation and suicidal thoughts. Then, she becomes very still. What follows is the materialization of the help she needs to finish her task. Humble ants come to aid her with the sorting of the seeds, which is accomplished by nightfall.

The more obvious structural element in the first task is the contrast between the monumental undertaking and the size of the ants. The fact that she receives the help after becoming still reveals another contrast. Unexpected help from the ants appear when her emotions oscillate from two opposing mental states: suicidal desperation and complete stillness. A creative force is released when those two conditions meet.

Venus presents Psyche with the second task. Psyche is to go across the river and gather some golden fleece from the sheep that pasture there. This particular task is

Polli -- Social Science

challenging, as the sheep are dangerous. Again, Psyche becomes frightened and suicidal. She stands by the banks of the river that separates her from the field, and considers drowning herself. This time the aid comes in the form of advice from the green reeds growing at the edge of the river. The reeds instruct Psyche to collect the wool in the afternoon. Instead of confronting the sheep in order to finish her task, she is to collect the wool that has been gathered on bushes. Psyche completes the task by nightfall.

There are interesting binary oppositions in this portion of the myth. Psyche has to go to the other side of the river in order to accomplish the task; her faith this time lies between two locations. The potential danger embodied by the sheep is contrasted with the softness and preciousness of their wool. The reeds that advise Psyche regarding the course of action to be taken lie on a spot where two opposing natural elements meet: water and earth.

The third task is more complex. Psyche must fill a small vessel with icy water collected from a river called Styx. The Stygian waters are feared even by Jupiter. Its banks are guarded by dangerous snake-like monsters. The aid now appears as if by magic. Jupiter's eagle is the one who helps Psyche accomplish this task. The eagle takes the vessel and flies to the highest point of the stream. It fills the vessel with the water of the river and brings it safely back, helping Psyche finish the third task.

Psyche becomes paralyzed before this task. She feels overwhelmed because the perspective from which she sees the flow of the river is limited. However, this limitation is counterbalanced by the eagle's overall view of the same scenery. Another binary quality of this portion of the myth is the vastness of the river Styx compared to the crystal vessel that Psyche has to fill with water in order to complete her task.

Polli -- Social Science

For the fourth task, Psyche is instructed to descend to Tartarus, the domain of both Hades and Proserpina, the rulers of the underworld, to perform the most important and difficult task of all. Psyche, in possession of a box provided by Venus, is to go to the underworld and ask Proserpina for a small supply of her beauty-preparation. Psyche considers killing herself again, but now she does not think of drowning herself; she goes to the top of a high tower intending to throw herself as a sure way of ending her suffering “for she thought that this was the direct and most glorious possible route down to the world below” (Apuleius 1994:109). It is the tower that gives Psyche detailed instructions on how to proceed during her journey through the underworld, which she follows precisely.

Psyche finds the opening that leads to the passage to the underworld. She brings two pieces of barley cake in her hands to distract the three-headed dog that guards Proserpina, and two coins between her lips to pay for the river crossing in the underworld. On her way through the underworld her help is requested three times. A lame man driving a lame donkey needs help with fallen sticks. Then, a drowning man extends his arms begging for help. Finally, three women weaving at the loom also ask for help. However, as instructed by the tower, three times Psyche refuses to help.

In the presence of the goddess Proserpina, Psyche declines the feast that the goddess offers her. Psyche sits on the ground and eats a piece of coarse bread. Proserpina hands her the beauty-preparation without any question. Psyche makes her way back by giving the other piece of barley cake to distract three-headed dog, pays the ferry with the remaining coin, and leaves the underworld with what was called “the treasure of divine

beauty” (Apuleius 1994:111). The tower instructs Psyche to bring the beauty preparation back, and hand it to Venus, without ever looking at the content inside the box.

When Psyche crosses the threshold of the river Styx, she is technically beyond the world of opposites. Another contrast is revealed since Psyche is a living person in a journey through the realm of the dead. Also, being the symbol of femininity, she is expected to manifest feminine characteristics such as being giving, but three times she has to refuse to provide help.

Back to the realm of the living, Psyche ignores the tower’s warning and opens the box, but she does not find Proserpina’s beauty-preparation. Instead, she finds the sleep of Hades. Cupid hears about Psyche’s demise, flies to her aid, and awakens her from her deadly sleep by pricking her finger with one of his arrows. Psyche proceeds to finish her task and hands the beauty-preparation to Venus. Cupid asks his father, Jupiter, to accept Psyche as his mortal wife. Jupiter agrees to the request and demands that the couple gets married. At the wedding, Psyche rises to the status of a goddess after drinking ambrosia which makes her immortal. Psyche gives birth to a daughter named Pleasure.

Psyche’s journey was a transformation from mortal to immortal. When she successfully finishes all the tasks and is about to reach some sort of culmination in her journey, she does something very human: she opens the box. Instead of the beauty-preparation fit for a goddess, she finds the sleep of Hades. Death finally catches up with Psyche. However, her very human action is precisely what causes her to ultimately reach immortality at the very end. Facing death is actually what provides Psyche not only with redemption, but eternal life. Pleasure arises from the meeting of life and death, mortality and immortality.

Polli -- Social Science

Levi-Strauss' concept of bricolage applied to myths is especially fitting to the myth of Psyche and Cupid, as there is no shortage of seemingly disparate elements throughout the story: from sheep's golden fleece to talking reeds. The fashion with which those unrelated elements are apprehended is the effect of what Levi-Strauss refers to as the logic of the concrete. The data derived from the immediate environment is processed by the logic of the concrete and apprehended as binary opposites, which are at the core of Levi-Strauss' structuralism. Binary oppositions are abundantly found throughout the myth of Psyche and Cupid. From the beginning to the end of the myth, the major driving binary opposition is life and death. As the story progresses, the same main theme is revealed successive times in a sort of "crescendo" effect. The result is that the contrasts interact in a way that causes a flow of information that lead to a point of culmination represented by the knowledge being conveyed. As an illustration, when Psyche goes to the top of the tower in order to kill herself, the height of the tower is meant to emphasize her drastic descent to hell. One aspect of the binary opposition is only fully realized in relation to the other; the point of tension at which both binary oppositions interface informs the depth and relevance of her journey. When Psyche acquires immortality, she transcends the reality of pair of opposites and gives birth to Pleasure. This last portion of the myth may well represent the human mind longing to escape the very mechanism that justified the creation of the myth in the first place.

Polli -- Social Science

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The Real Enemy: Counterfeit and Substandard Antimalarial Drugs in sub-Saharan Africa and Southeast Asia

Kristen Emelio (Montgomery College)

Mentor - Prof. Efstathia Siegel

In February 2005, a 23-year-old man died from being treated with fake antimalarial drugs in Myanmar. He had gone to a rural hospital with a fever due to uncomplicated hyperparasitaemic falciparum malaria, meaning that he had no clinical signs of severe malaria.⁷⁰ The young man was treated with an oral artesunate, which had a 100% cure rate (out of 600 patients evaluated) in the area. However, his case quickly worsened, and after being transferred to another hospital he was found to be in a coma and suffering from renal failure. He was given a more intense treatment and transferred to yet a third hospital. While there, his case worsened and he developed cerebral malaria, dying within 12 hours.

The original drug used for his treatment was sent away for analysis and discovered to be counterfeit, as well as the rest of the stock that the hospital had bought. The village this young man came from was devastated by the news of his completely preventable death, and they took all antimalarial drugs they could find and publicly burned them. This dramatic display highlights the gravity of the substandard and counterfeit drug issue.⁷¹

⁷⁰ “Meaning that...malaria”: (White et al. “Hyperparasitaemia and Low Dosing are an Important Source of Anti-malarial Drug Resistance)

⁷¹ “In February...drugs”: This story comes from an article by Newton (et al.) titled “Manslaughter by Fake Artesunate in Asia – Will Africa be Next?”

Emelio -- Allied Health

Malaria kills more people in the world than any other communicable disease aside from Tuberculosis, and it is the lead killer in Africa, affecting 216 million people in 2010 alone.⁷² As if these statistics aren't bad enough, more than a third of all antimalarial drugs in sub-Saharan Africa and Southeast Asia are either substandard or counterfeit. A recent study showed that out of 1437 drug samples from seven countries in Southeast Asia, 35% of them failed chemical analysis, 36% of 1260 samples were counterfeit, and 46% of 919 failed a packaging examination. Out of 21 surveys from 21 countries in sub-Saharan Africa, 35% of them failed chemical analysis, 20% were counterfeit, and 36% failed a packaging examination.⁷³ These statistics show the vast problem on a regional level. On an international level, these antimalarials are a major obstacle to global access to effective treatment. Nayyar, who holds Master of Public Health and Master of Business Administration degrees from Johns Hopkins University, says that such drugs “pose an urgent threat to vulnerable populations and jeopardise progress and investments in combating malaria.”⁷⁴

These fake antimalarials also jeopardize progress by causing people living in areas where the drugs are most prevalent to lose trust in modern medicine. Recently this has become particularly apparent in Uganda. On January 24th, 2013, Kathleen McLaughlin reported in *The Washington Post*, “As Ugandans become more aware that a large portion of drugs may be fake, they have returned to their trust in the old ways.”

⁷² “Malaria is...alone”: These statistics come from the article “Malaria, Africa’s Biggest Killer.”

⁷³ “A recent...examination”: These percentages come from Nayyar’s (et al.) article, “Poor Quality Antimalarial Drugs in Southeast Asia and sub-Saharan Africa.” Nayyar is a lead and much cited researcher on the issue of substandard and counterfeit antimalarials.

⁷⁴ “Pose...malaria”: (Nayyar et al. “Poor Quality Antimalarial ...”)

Emelio -- Allied Health

Due to the counterfeit medicines that have flooded the market in sub-Saharan Africa, patients are beginning to return to witch doctors. One traditional healer, Muwangula Misambwa, said, “You find people who have taken bad tablets, several different types of malaria tablets, for example, and all of them have been fake. So many people have come to me like that.” In Tanzania just across the border, Rodgers Stephan, an AIDS activist, said a similar situation was taking place. He said, “People have stopped taking their drugs and they don’t know what to do, who to trust or which place to go. ... It has become a major problem in our community.”⁷⁵

It is clear that this issue has become widespread in sub-Saharan Africa and Southeast Asia. The death of the young man in Myanmar from fake antimalarials was just one of many mortalities, but a positive aspect of this case is that it was actually documented. Newton claims that the deaths of patients treated with substandard or fake drugs are “hidden in the inadequately documented mortality statistics of the relatively voiceless rural poor.” It is unquestionable that these deaths do happen, and more than likely on a frequent basis.⁷⁶ However, due to a lack of proper documentation, the issue is mired in disagreement. Why then, are such deaths not documented or at least recognized, and why has action not been taken by the countries involved in response to this problem? This paper will discuss how the issue of substandard and counterfeit antimalarial drugs in

⁷⁵ “*The Washington Post*...community”: These interviews come from Kathleen McLaughlin’s article “Fake Drugs Flood East African Markets,” published in *The Washington Post*.

⁷⁶ “Newton...basis”: This information comes from Newton’s (et al.) article “Manslaughter by Fake Artesunate...” Newton is a Member of the Royal College of Physicians, and has written many articles in the category of substandard or counterfeit drugs.

sub-Saharan Africa and Southeast Asia is not improving because of insufficient drug regulation policies and a lack of resources to reinforce these policies.

What are Counterfeit and Substandard Drugs?

It is important to distinguish the difference between substandard and counterfeit drugs, as they can easily become confused in the discussion of antimalarial medicines in developing countries. The World Health Organization defines counterfeit medicines as drugs that are not produced or packaged in accordance with the set quality standards, and thus are ineffective as well as harmful to the consumer's health. Counterfeit products are ones that intentionally have the wrong ingredients or contain incorrect amounts of the active ingredients.⁷⁷

The issue of counterfeit drugs is steadily growing on a global scale. The International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) says that the number of counterfeit drug incidents that are reported are continuing to increase every year. Paralleling this, the number of countries involved in these situations is on a consistent rise. A total of 1,693 counterfeiting cases were noted by the Pharmaceutical Security Institute (PSI) in 2009, and this was an increase of 7% from the previous year.⁷⁸

Substandard drugs are the result of inadequate manufacturing, but lacking any deceitful intentions. They usually contain either an insufficient amount of the active

⁷⁷ "The World Health...Ingredients": This information comes from the article "Counterfeit Medicines" released by WHO.

⁷⁸ "The International Federation...year": These statistics come from the article "Counterfeit" published by IFPMA.

Emelio -- Allied Health

ingredient or an excessive amount, with the latter being the more dangerous case.⁷⁹ These drugs are considered genuine drugs because they are manufactured by legitimate sources, but they are labeled substandard if they fail to meet the official pharmaceutical regulations under laboratory testing.⁸⁰

The difference between these two types of drugs is that counterfeit medicines are a deliberate mislabel of either the source or the identity of the drug, whereas substandard drugs are poorly manufactured or packaged – usually because the countries from which they originate do not have adequate access to sufficient or suitable resources. There is also a greater correlation between substandard drugs and developing countries. Dr. Roger Bate, who holds a PhD in economics, a MPhil. in land economy, and a MSc. in environmental and resource management says that “substandard drugs are a bigger problem than counterfeits until income reaches an annual level of approximately \$10,000 per person; after that, counterfeits are more dominant.”⁸¹

Malaria and Treatment

While the presence of these degraded drugs may seem discouraging in the fight against malaria, the disease is both treatable and preventable as long as the proper intervention measures and antimalarial drugs are utilized correctly. For example, mosquito bed nets are an easy way to prevent someone from getting infected, and the

⁷⁹ “Substandard...case”: (Nayyar et al. “Poor-quality Antimalarial Drugs in southeast Asia and sub-Saharan Africa”)

⁸⁰ “These drugs...testing”: This definition of substandard drugs comes from Wertheimer and Norris in their article “Safeguarding against Substandard/Counterfeit Drugs: Mitigating a Macroeconomic Pandemic.”

⁸¹ “Bate says...dominant”: (Bate 55).

Emelio -- Allied Health

disease responds very well to drugs (given that the right ones are used). Despite this, estimates show that in 2010 there were 216 million clinical cases of the disease and 660,000 deaths worldwide.⁸²

Children are the most susceptible to malaria, and they make up the majority of clinical cases and mortalities. These anomalous statistics are most apparent in Africa where approximately 20% of child mortality is due to this one disease. To put this in more blunt terms, in Africa a child dies every minute from malaria. Moreover, at least 90% of clinical cases and deaths due to malaria occur in Africa.⁸³

The World Health Organization states that malaria can be caused by five species of parasites (of the genus *Plasmodium*). *Plasmodium falciparum* is the most fatal of these species and it is the most predominant form of malaria in Africa. Humans may contract the disease after it is transmitted to them through the bite of infected mosquitos, and populations living in sub-Saharan Africa are at the greatest risk of infection.⁸⁴

The best available treatment, particularly for the *P. falciparum* form of malaria, is an artemisinin-based combination therapy (ACT). However, substandard and counterfeit forms of this drug, as well as other antimalarial drugs, proliferate in the regions of sub-Saharan Africa and Southeast Asia, largely negating the effectiveness of efforts to control and reduce the disease.

⁸² “Estimates show...deaths worldwide”: These numbers come from the fact sheet “Malaria Facts” from the CDC’s website.

⁸³ “Children are...Africa”: This information comes from a lecture titled “Malaria and Babesiosis.” It was given by Dr. Diemert of the Department of Microbiology, Immunology, and Tropical Medicine at George Washington University.

⁸⁴ “WHO...infection”: This comes from the WHO published article, “World Malaria Report: 2011.”

The fact that such drugs are rampant in these regions can be attributed to a number of different factors, including insufficient regulation facilities and policies, inadequate education for both health-workers and patients on the dangers of these types of drugs, and counterfeit drugs oftentimes being cheaper than legitimate ones.⁸⁵ Also, shortage of supplies (due to both high prices and limited resources), weak governments, oversight, and corruption can be added to this list of factors.⁸⁶ All of these causes explain why degraded antimalarials are such a significant problem in sub-Saharan Africa and Southeast Asia.

Drug Resistance

One of the obvious effects of counterfeit and substandard antimalarials is that they increase mortality and morbidity rates, because people are receiving “medicine” that is at best prolonging their illness, and at worst killing them. However, a less obvious but extremely critical threat that these types of drugs pose is antimalarial drug resistance. The WHO says that when drugs have an inadequate amount of the active ingredient they will manage to eradicate some of the weaker parasites, but the stronger and more resistant strains will linger and then multiply.⁸⁷

P. falciparum has already become resistant to antimalarials such as chloroquine that, prior to the use of ACTs, were the dominant form of treatment for malaria. It would be disastrous if this same thing were to happen with ACTs, because the combination

⁸⁵ “This can be attributed...ones”: (Nayyar et al. “Poor-quality Antimalarial Drugs ...”)

⁸⁶ “Also...factors”: Yankus states this information in his booklet, “Counterfeit Drugs: Coming to a Pharmacy Near You.”

⁸⁷ “WHO...multiply”: WHO released this information in the article “Battling Malaria Drug Resistance Along the Thai-Cambodian Border” published in 2012.

therapy is currently the only really effective treatment that is widely used against malaria.⁸⁸ Dr. Roger Bate says that “this has the potential to render entire classes of medicines useless, making malaria ... untreatable with currently available medicines.”⁸⁹

One interesting thing to note is the correlation between the prevalence of antimalarial drug resistance and the prevalence of the substandard and counterfeit forms of these drugs. Southeast Asia is one of the areas with the highest incidences of substandard and counterfeit antimalarial drugs, and subsequently the entire region is resistant to chloroquine. Areas around the borders of Myanmar, Laos, Thailand, Cambodia, and Vietnam are resistant to mefloquine (another antimalarial drug),⁹⁰ and statistics now show that resistance to artemisinin (a key component in ACT) is emerging in Cambodia, Myanmar, Thailand, and Vietnam.⁹¹ The Medicines for Malaria Venture (MMV) says of the situation in Southeast Asia: “Among the reasons believed to be at the root of emerging resistance is the indiscriminate and inappropriate use of poor quality medicines.”⁹² These statistics further back up the claim that substandard and counterfeit antimalarials can lead to greater drug resistance in endemic regions.

⁸⁸ “*P. falciparum*...used”: (Bate 62)

⁸⁹ “Dr. Roger Bate...medicines””: Dr. Roger Bate is a lead author in studies on substandard and counterfeit drug effects on antimalarial drug resistance. This quote comes from the article “Malaria Drugs in Africa are Often Chinese Fakes, New Study Says” by Erin Conway-Smith.

⁹⁰ “Southeast Asia...drug)”: These statistics come from Dr. Diemert’s lecture “Malaria and Babesiosis.”

⁹¹ “Artemisinin...border”: This information comes from the report “World Malaria Report: 2012” released by the World Health Organization.

⁹² “The Medicines...medicines””: This quote comes from the Medicines for Malaria Venture’s article “Artemisinin Resistance.”

Why No Action Has Been Taken

Given the severity of the problem of substandard and counterfeit antimalarials, why hasn't action been taken by the states involved to control it? Due to the complicated nature of the issue there are a significant number of reasons as to why not much has been done in retaliation, but there is one overarching issue that appears to be common (to greater or lesser degrees) to each country involved. This factor is insufficient drug regulation, and it is evident through corrupt governments, drug diversion, stockouts, lack of enforcement, and poorly structured policies.

Newton says that “the lack of financial and human resources available to many drug regulatory authorities often makes effective recognition of poor quality drugs and action impossible.” Approximately 30% of WHO member states completely lack drug regulation of any kind, or have some sort of regulation that is just barely functional. On the flip-side, only 20% of WHO member states have drug regulation that is well established and functional.⁹³ This shows how much of an impediment the scarcity of antimalarial medicine regulation is for the WHO, as these standards don't even exist for a large portion of the entity's own member states. Because most developing countries don't have the resources to assess the quality and validity of antimalarials, they must rely on organizations like the FDA, European Medicines Evaluation Agency, or the WHO to make assessments and decisions for them.⁹⁴ Due to the fact that these countries have a

⁹³ “Newton...functional”: (Newton et al. “Counterfeit Anti-Infective Drugs”)

⁹⁴ “Because most...them”: (Wertheimer “Safeguarding against Substandard/Counterfeit Drugs...”)

deficiency of fully functional Medicine Regulatory Authorities,⁹⁵ the WHO is still bogged down with the complicated issue of trying to define the scope of the problem.

In order to get an idea of the how prevalent this issue is, one need only look at the case of sub-Saharan Africa. In all of the malarious areas of Africa, there stand only two quality-control medicine analysis laboratories that are pre-qualified by the WHO.⁹⁶ This is a problem because if hospitals buy antimalarials from an approved and well established pharmaceutical company in a different country and have the medicine shipped to them, they won't know if the product is actually from that company or if it's counterfeit. The counterfeiters would simply fake the company's hologram in order for the product to look legitimate and then ship it to whatever country they choose.⁹⁷ This would only lead to more counterfeiting cases and prolong the problem even further. Thus, if there were more regulation facilities within the susceptible countries, hospitals could get their drugs directly from these facilities and be more assured that the products they receive will benefit their patients.

⁹⁵ A Medicine Regulatory Authority, according to Bate, is “responsible for ensuring the safety, efficacy, and quality of imported and locally produced medicines in both the public and private sectors, and its primary duty is to register medical and health care-related products for sale.” This implies that the MRA must not only keep a publicly available list, but it must also analyze each product to make sure it has “passed appropriate scientific trials” (42).

⁹⁶ “In all...Organization”: This information comes from a fact sheet released by WHO: “WHO List of Prequalified Quality Control Laboratories.”

⁹⁷ “The counterfeiters...choose”: The article “A Collaborative Epidemiological Investigation into the Criminal Fake Artesunate Trade in South East Asia” by Newton (et al.) describes how counterfeiters would use holograms as a way to make their products appear legitimate, and many of these holograms were so realistic that it was impossible to tell them apart from the real ones.

Emelio -- Allied Health

Corruption within the government is a huge factor adding to the lack of sufficient drug regulation, and this issue could apply to 40-50 different countries and territories.⁹⁸ There also exists corruption within different facilities and authorities in regards to allowing the sale of counterfeit antimalarials. Newton (et al.) gives an example of this, saying:

The staff of one drug regulatory authority were found to have taken bribes to pass spurious drugs for sale and drug inspectors were reported to charge wholesalers US\$65 per month to allow their illegal businesses to continue. Complex trade arrangements, without proper documentation, facilitate trade in counterfeits across porous borders, resulting in a low-risk, high-profit venture for counterfeiters.⁹⁹

Corruption in the pharmaceutical arena could include multiple forms: drugs could either be stolen or diverted while in the distribution system, and officials and authorities could charge illegal fees before approving different products, procedures, or prices (as was partially displayed in the previous example).¹⁰⁰

Scarcity or absence of resources also affects how large of a role the government takes on in drug regulation. These countries may lack the assets (or in some cases the resolve) to actually enforce the laws and policies that they have in place. Nations that

⁹⁸ “The most...territories”: (Wertheimer and Norris “Safeguarding against Substandard/Counterfeit Drugs ...”)

⁹⁹ “Newton...counterfeiters”: (Newton et al. “Counterfeit Anti-Infective Drugs”).

¹⁰⁰ “Corruption...example”: These are excerpts from a list presented in “Safeguarding against Substandard/Counterfeit Drugs ...” by Wertheimer and Norris.

gained their own independence during the past forty to fifty years from colonial powers may also have higher concerns than setting up an acceptable system of drug regulation.¹⁰¹

Government Involvement in sub-Saharan Africa

In order to get a better glimpse of why no action has been taken in response to the problem of degraded antimalarial drugs, it is necessary to look at specific countries' regulatory systems and where or why they are falling short. This can best be accomplished by looking at the case of several different countries in sub-Saharan Africa. Due to the more informal nature of health systems in Africa, it is difficult to track down detailed and accurate data.

However, Dr. Roger Bate, a current lead figure in bringing the issue of substandard and counterfeit drugs to light, was able to give comprehensive information and statistics on countries across the globe in his book *Phake: The Deadly World of Falsified and Substandard Medicines*. Starting in mid-2007 he embarked on a mission to seventeen different countries, collecting over 2000 drug samples (mostly antimalarials) and analyzing them. He also interviewed a variety of drug sellers and even spoke with members of counterfeit drug rings (covertly).

After personally visiting and carrying out case studies in a number of countries in sub-Saharan Africa, Bate said that corruption was a “widespread and major problem in most of the emerging markets” that he investigated, particularly in East Africa.¹⁰² He later went on to say, “In most of the countries I visited, governmental bodies were not

¹⁰¹ “There are...regulation”: (Wertheimer and Norris “Safeguarding against Substandard/Counterfeit Drugs...”)

¹⁰² “Corruption was...East Africa”: (Bate 5).

Emelio -- Allied Health

particularly helpful, and they often seemed to make little effort to improve the general drug-quality situation. Most health departments deny they have a significant drug-quality problem and particularly resent its exposure by independent foreigners.”¹⁰³

In Kenya, corruption and lack of resources overshadow any efforts to enforce drug regulation. Bate describes Kenya as having a weak (albeit fairly free) press, a “corrupt and unresponsive” legal system, and a corrupt but more responsive political system. To add to the problem, the Kenyan MRA staff is “few in number and underresourced.”¹⁰⁴

Due to this corruption and lack of resources, the issue of substandard and counterfeit antimalarial drugs in Kenya is at a standstill. Bate says that when he was in Kenya, there were widespread reports of stockouts of antimalarial medicines in government facilities. These “forced donors to purchase expensive emergency drugs to fill the void and allowed fake drugs a new entry point for infiltrating supply chains.”

Due to frequent stockouts like this, there will often be empty pharmacy shelves when patients arrive at the hospital. If the patient is able to pay, nurses can obtain medicines from whatever nearby private chemist is available. This opens up easy opportunities for patients to receive fake drugs from the private and unregulated suppliers. The nurses who obtain these supplies have been accused of theft and hoarding, but they claim that they are scapegoats for the government ministries, who are the real culprits.¹⁰⁵

¹⁰³ “In most...foreigners”: (Bate 64).

¹⁰⁴ “Bate describes...underresourced”: (Bate 341).

¹⁰⁵ “Bate says that...real culprits”: (Bate 107).

Emelio -- Allied Health

A spokesman for the National Nurses Association of Kenya, Luke Kodambo, pointed out that it was really mismanagement of the ministries of Public Health and of Medical Services, which jointly share responsibility for the oversight of drugs. In February 2010, drug orders were suspended by the suppliers until the unpaid bills from 2008-2009 were cleared due to a deficit in budgets at the Ministry of Medical Services. During this time, a ministry directive permitted the Kenya Medical Supplies Agency to purchase drugs from new, untested local producers – a decision that incited nurses’ concerns over the quality of the untried drugs. Kodambo expressed the fear that they “might end up having patients given expired drugs.” Bate notes that “such disarray encourages other, less-official sources of drug supply, including counterfeit products.”¹⁰⁶

Not only are the ordering and distribution systems ineffective in Kenya, but corrupt officials are moving drugs into the private sector and across borders, which increases the chances of criminal gangs, some even working for politicians, controlling the main distribution pathways. This practice is commonly known as drug diversion, and unfortunately it is very prevalent in Kenya and many other countries in sub-Saharan Africa. An official in the Kenyan Ministry of Health, Willis Akwhale, said that drugs contained in government storage facilities were being stolen and then diverted by people “directly involved in storing and distributing medical supplies.” This diversion occurred and is still occurring on a massive scale, with tens of thousands of drugs being stolen, smuggled across borders, and sold on the black market.¹⁰⁷

Although it may not be immediately apparent, drug diversion is a huge obstacle to improving the substandard and counterfeit antimalarial medicine issue. When diversion

¹⁰⁶ “A spokesman...counterfeit products”: (Bate 108).

¹⁰⁷ “Corrupt officials...black market”: (Bate 121).

Emelio -- Allied Health

occurs the drugs are sold on unregulated markets, meaning there is no accountability for the conditions they are transported and stored in. Because poor storage conditions and over-exposure to heat can damage the medicines, by the time they are sold at the local markets they are often expired and degraded.

In Uganda, efforts to control the regulation of medicines are undermined by corruption, drug diversion, and stockouts. Local papers in Uganda, namely the *Monitor*, spoke of how the Global Fund to Fight AIDS, Tuberculosis, and Malaria was forced to suspend \$367 million worth of funds in 2005 due to mismanagement by Uganda's Project Management Unit. It was found that approximately \$1.6 million had been stolen, and further investigation revealed that about 373 civil society and government officials were involved in this theft. However, five years later only eight of them had been prosecuted, and most of them were more insignificant contributors. This corruption and mismanagement points to a greater issue with the drug system as a whole in Uganda, and explains in part why the enforcement of more improved drug regulation is being overlooked.

In 2010, due to a failure of Uganda's national medical stores to deliver drugs on time, hospitals were forced to buy drugs from local markets – meaning a good deal of these were most likely fake or substandard. Meanwhile, the medicines were expiring in the national medical stores – a problem that is widespread in Uganda. The general manager of the Uganda Medical Stores, Moses Kamabare, acknowledged the fact that stocks of medicines have accumulated for years, saying, “People talk of fifteen years of expired drugs, and expiration of drugs is a common thing.”¹⁰⁸

¹⁰⁸ “Local papers in Uganda...common thing”: (Bate 109).

Emelio -- Allied Health

Togo is an example where massive drug diversion has restricted local access to proper medicines and largely increased the numbers of degraded drugs on the market. In 2010, it was reported that 544,161 artemisinin-combination therapy treatments (over a quarter of what had been donated by the Global Fund) had been stolen and then sold to local street markets throughout Togo. Because there is no regulation of drug storage at these markets, many of the treatments were probably degraded.

Later that year the Minister of Health, Komlan Mally, informed Togo's Council of Ministers that about \$1.59 million worth of antimalarial drugs from the Global Fund had been stolen. The chief financial officer of the Togolese distribution agency and four other agency officials were connected to this under allegations of corruption.¹⁰⁹ Situations like this are not unusual, as Bate states, "Drug theft in Togo was run out of the very government department charged with drug distribution."¹¹⁰

Similar problems with regulation can be seen in Angola, Zimbabwe, and Tanzania. Angola's distribution system, managed by the government, has significant control weaknesses which lead to massive drug diversion and the subsequent degradation of medicines.¹¹¹ In Zimbabwe, Bate says that due to "rampant inflation and arbitrary violence," the investigation of substandard and counterfeit drugs is not a top priority for anyone, particularly not for the government. The fact that patients consume the medicines quickly and dispose of the packaging means that an examination of the issue would be even more difficult.¹¹²

¹⁰⁹ "In 2010...corruption": (Bate 123).

¹¹⁰ "Drug theft...distribution": (Bate 341).

¹¹¹ "Angola's...medicines": (Bate 117).

¹¹² "In Zimbabwe...difficult": (Bate xxi-xxii).

Emelio -- Allied Health

Lastly, Tanzania's porous borders means easy access for counterfeit antimalarials. The Island of Zanzibar is considered a free port due to the limited regulation enforcement there, and because of this it is a chief destination for counterfeit drug shipments coming from Mumbai.¹¹³ It appears that hundreds of thousands, possibly even millions, of medicines in Tanzania have been stolen and diverted. There also exists a trend of expired drugs disappearing instead of being incinerated as they should.¹¹⁴

Case Study: Nigeria

While regulatory systems throughout the countries previously discussed are poor, Nigeria is a beacon of success. Before reforms were made, Nigeria was a major area for the marketing of counterfeit and substandard drugs. However, Dr. Dora Akunyili of NAFDAC, a new agency formed in 2001 after the first inefficient MRA was dissolved, led Nigeria in implementing effective policies to guard against counterfeit drugs, and in 2009 Dr. Paul Orhii continued her vision as the director-general. Two of the biggest steps that were taken were the restructuring of the National Agency for Food and Drug Administration and Control (NAFDAC) and the Port Inspection and Enforcement department aiding the administration in improving inspection and enforcement activities. Moreover, NAFDAC formed an enormous campaign with the aim of spreading awareness of the counterfeit drug issue to the general public, using different forms of media to do so.

The Nigerian Food and Drug Administration set up guidelines to halt the influx of counterfeit medicines, and these rules proved to be largely efficient. The first was that

¹¹³ "Tanzania's porous borders...Mumbai": (Bate 170).

¹¹⁴ "It also appears...as they should": (Bate 124).

Emelio -- Allied Health

any factory that exported drugs to Nigeria needed to be GMP (good manufacturing practices) certified, and NAFDAC officials were required to inspect any factory no matter where in the world it was before they registered or renewed their registration for drugs. The guidelines also selected analysts in China and India who recertified medicines from their countries before the drugs were sent to Nigeria. Pre-shipment information was required for any imported drugs, and banks would not process financial documents for importers until there was NAFDAC clearance.

These drastic alterations in drug regulation took place in 2001, and in 2004 studies revealed that the presence of counterfeit drugs had been reduced by over 80%.¹¹⁵ Through the use of resourceful leadership and strategic reformations, Dr. Dora Akunyili and Dr. Paul Orhii were able to use NAFDAC to spearhead a dramatic counterattack against degraded drugs, bringing hope and change to a somber situation and showing that the same can be done elsewhere.

After looking at the example of Nigeria, it is clear that in order for other countries to move forward they must restructure or improve their Medicine Regulatory Authorities. This is a broad statement to make, and it is evident that for some countries, their socioeconomic struggles must be further developed before improvements on MRAs can be made. Bate points out that, “Helping countries develop strong MRAs is surely a good policy, but where governance is poor, it may be futile or counterproductive to hand vast

¹¹⁵ “Dr. Dora Akunyili...80%”: This information comes from Wertheimer and Norris’s article “Safeguarding Against Substandard/Counterfeit Drugs: Mitigating a Macroeconomic Pandemic.”

Emelio -- Allied Health

funds to a nascent and possibly corrupt MRA.”¹¹⁶ In such cases as this it is crucial that strong leadership be obtained to counteract corruption, as was evident in the case of Nigeria.

Nigeria’s example of resourceful leadership and strategic reformations shows that improvement is possible elsewhere. It is crucial that other countries involved in the complicated issue of degraded drugs follow the example of Nigeria’s National Agency for Food and Drug Administration and Control by enhancing leadership, public education, and regulatory control. If they do so, it is possible that the issue of substandard and counterfeit antimalarials can improve for them as well, leading to the elimination of pointless deaths and subsequent progress across the globe.

¹¹⁶ “Helping...MRA”’: (Bate 56).

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Put Me In, Coach: A Look Into Discrimination Against Female Sports Journalists

Jacqueline Parsons (SUNY Orange County Community College)

Mentor - Professor Alexandra Kay
and Professor Elaine Torda

“There are still traces of discrimination against race and gender, but it's a lot different than when I started out. It just comes quietly, slowly, sometimes so quietly that you don't realize it until you start looking back.” Though many fights against discrimination are often loud and noticeable, Eddie Bernice Johnson's quote embodies the struggle many women face when they enter the sports media arena. Locker rooms are often considered a “boys club,” an area where men, both athletes and reporters, talk about games, statistics, and experiences as if they were a second language. Yet, when women wanted to participate, they met resistance. Many women endured crude name calling, sexual harassment, and other forms of discrimination as they began careers in sports media. The current state of sports media has improved. Female sports journalists have garnered more jobs in the field and started to achieve higher level positions. They do not always experience the same level of harassment and violence that women before them did. Yet, obvious signs of discrimination still exist. Although some of the discrimination has been alleviated, it still creates condescension from male coworkers, diminishes job opportunities, decreases job satisfaction, and creates a negative perception of female sports journalists.

Though women have been recorded as being in a sports press box as early as the 1920s, the 1970s was seen as the start of the battle against discrimination. As the fight

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began for equal opportunity in covering professional sports, female journalists were greeted with mistreatment by coaches, players, and their male coworkers. The first two women to enter a male professional sport locker room were Robin Herman and Montreal radio reporter Marcel St. Cyr. Herman was among the first class of women admitted to Princeton University in 1969, and she joined the *New York Times* in 1973 as its first female sports reporter (“Robin Herman’s Biography”). They were granted access to the locker rooms of the 1975 National Hockey League (NHL) All-Star Game by Wales Conference All-Stars coach Bep Guidolin and Campbell Conference All-Stars coach Fred Shero. Herman had tried to persuade NHL teams to give female reporters access to the league's locker rooms for a year before the request was finally granted. While she and St. Cyr just wanted to conduct post-game interviews, they instantly became news for being the first women admitted into the locker room of a US professional sports team. In one of her blog posts, Herman states, “I found myself forced to muster Supreme Court-worthy arguments for an inane, essentially logistical problem that could easily have been solved by a few big towels.” Herman sought access to all NHL locker rooms after the monumental moment in Montreal, but not all teams agreed. After five years in the field, she moved to writing about science and health, but is still remembered as the first woman allowed into a professional sports locker room. (Zinser). Herman was drawn back into controversy as other women started to gain access in other sports. As the number of female reporters in locker rooms grew, so did the number of critiques. Many believed that the female reporters wanted to look at naked men or find a boyfriend, not report on the sports the men played. Many wives and girlfriends of athletes accused the women of sleeping with the athletes. Many reporters refused to go public with the issues they faced,

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fearing that they would lose their jobs or be forced from the profession. A major stride in gaining equal access to locker rooms resulted from a lawsuit filed by Melissa Ludtke. Ludtke started her sports journalism career after when ABC sportscaster Frank Gifford provided her with contacts in the broadcasting business. After freelancing in New York and serving as a secretary at *Harper's Bazaar* magazine, she spent five years as a researcher for *Sports Illustrated* in September of 1974. Wanting to write articles about sports, she began manually recording scores for writers and progressed to writing a weekly column on baseball. She looked for more innovative ways to cover baseball, yet her attempts were hindered by a lack of access to the locker rooms (Ritchie). Ludtke was banned from the locker rooms in the 1977 World Series, causing her to miss important quotes and her deadline, while male colleagues had full access to the players. She sued Major League Baseball for equal access across the league. The case went to federal court and in 1978, determined that it was banning female reporters from male athlete locker rooms was illegal (Shahid). Though the lawsuit gained national attention and the court order was named "the Melissa Ludtke rule" (Ricchiardi 57), it was not always followed.

Female journalists were subjected to numerous degrading practices. One of the most famous cases of locker room brutality was when reporter Lisa Olson was harassed by some New England Patriot players on September 17, 1990. Olson was taunted by a group of naked players who made vulgar comments and lewd gestures as she tried to conduct interviews. She was subjected to even more harassment after news of the incident was released to the public; she received obscene phone calls and hate mail from Patriot fans. Victor Kiam, owner of the Patriots at the time, did not acknowledge the

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discriminatory act, and even labeled Olson a “classic bitch.” She eventually fled to Australia to work for the *Sydney Daily Telegraph Mirror* (Ricchiardi).

Still, progress was being made. Though men were often seen as the main issue preventing women from gaining equality, many sought to create diversity in sports reporting. Vince Doria, vice president and director of news at ESPN, made it a point to hire female sports anchors after his hiring in 1992. Roy Hewitt, sports editor at Cleveland's *Plain Dealer* also pushed for equal access for women in locker rooms in the mid 1980s, stating, “Diversity is good for any department at the newspaper, including sports” (Ricchiardi). Groups were being created in support of the women working in sports media. In 1987, the nonprofit Association for Women in Sports Media (AWSM) formed to “create a support network and advocacy group for women who work in sports writing, editing, broadcast and production, and public and media relations” (“About”). AWSM has allowed women throughout sports media to connect with others who understand the difficulties in their line of work. From discrimination to issues balancing family matters, AWSM has successfully provided a support system for women working in sports and is still thriving today. The foundation currently has 600 members, comprised of men and women.

Although progress was being made, the 1990s continued to bring discrimination. Famous tennis player John McEnroe insulted commentator Mary Carillo in 1993, saying that she was not as qualified as a man to comment on men's tennis. Carillo, considered one of the best broadcasters in tennis, had won the French Open mixed doubles title with McEnroe in 1977, yet he tried to have her banned from the booth when women were not playing. In a twist of fate, McEnroe shared the booth with Carillo at the 1995 U.S. Open,

Parsons -- Communication and Popular Culture

stating, “The bottom line is, she's scared she'll lose her job...If she can keep up with me, fine” (Wolff and Kennedy). In studies concerning job satisfaction among female sports journalists, numerous findings show that most experienced discrimination or sexual harassment. Male athletes masturbated in front of them, threw jock straps at them, and made sexually suggestive comments, just for being in the locker room. In a 1995 survey, one female reporter surveyed said that female sports journalists should “expect to face sexual harassment, not only in the locker room but also in the workplace” (Miller and Miller 889).

Harassment and discrimination are still evident today. A famous case of harassment was that of reporter Ines Sainz, a reporter for TV Aztec. She was covering a Jets practice in 2010 when players and coaches threw footballs in her direction. Later, while waiting in the locker room to interview quarter back Mark Sanchez, Sainz was subjected to catcalls and rude comments about her outfit. She sent tweets in Spanish, saying, “I'm so uncomfortable!” and “I want to cover my ears” (“Sainz: Others Balked”). The former Miss Spain and Miss Universe contestant faced backlash from the media and the public, most claiming that she was too scantily dressed to be near a locker room. This form of discrimination is still seen even in 2012, when most consider it to be a non-issue. On November 19th, Ravens' football player Jacoby Jones ended an interview with NBC *Sunday Night Football* sideline reporter Michele Tafoya with “Thank you, gorgeous” and a wink (“Jacoby Jones Flirts”). Many articles wrote his actions off as harmless flirting, rather than the act of discrimination it was.

Critics often point to a lack of employment opportunities in sports journalism as the reason that not many women are in the field. They claim that the rapidly declining

Parsons -- Communication and Popular Culture

number of jobs in the field makes obtaining a job difficult for everyone in journalism. The expected job growth for journalism is -6% from 2010-2020 (Bureau of Labor Statistics). Although the statistics suggest that few openings exist for sports journalists, they do not explain the current underrepresentation of women in all areas of sports media. Women currently comprise 6 % of sports editors and 9 % of reporters (Gibbons). These low rates, critics argue, can be attributed to a lack of qualified women to take the few existing jobs, exacerbating the problem. Yet, according to Harvard's Nieman Journalism Lab, women make up 60 to 70 % of journalism programs nationally (Royal), suggesting a plethora of women are qualified to work in sports journalism, so other reasons exist for them not being hired.

Many claim that a general aversion to sports plus family obligations explain the lack of women in the industry. That women are generally disinterested in or do not understand sports is notorious stereotype that carries over into sports journalism. In a study conducted by Hardin and Shain examining the job satisfaction of female sports journalists, it was found that family obligations were the major issue women encountered while working in sports journalism (804). Between travel, stress, and time spent writing or reporting stories, women are left with little time to have a family. Female sports journalists have claimed that their superiors have issues concerning their families. Women often make their family a priority and move away from the field, opting for careers that accommodate personal and family need. Editors, bosses, and other supervisors expect women to put their jobs ahead of their families. If superiors had been more understanding of their family obligations and allowed them to alter their schedules,

Parsons -- Communication and Popular Culture

more women may have stayed in the field. Creating a balance between work and personal lives remains an issue.

Critics claim that numerous women have stayed and succeeded in sports journalism. Women in sports media have been, and continue to be, honored by peers and prestigious associations alike. Journalist Lisa Olson, who experienced some of the worst discrimination against women in sports history, is a current member of the Baseball Writers Association of America, has appeared in *The Best American Sports Writing*, and currently holds a vote for the Baseball Hall of Fame. She has also received the Associated Press Sports Editors Red Smith Award, given annually to a person in sports journalism who has made major contributions to the field (Borzilleri). Suzyn Waldman has also garnered numerous awards. Organizations such as the Thurman Munson Foundation, the March of Dimes, the NY Baseball Scouts and the US Federal Women's Program have all honored her for her continued contributions to sports media and her pioneering career in sportscasting. That these have been honored by their respective sports shows a clear shift in the mentality towards women working in sports media. Yet, while these two women are doing well in the industry, others are not. Long time Minor League Baseball reporter Jessica Quiroli has continually exposed acts of discrimination. As recently as July 2012, she was denied access to the Staten Island Yankees' clubhouse, being told that not allowing women into the locker rooms "was in the media guidelines" ("Standing Up for Female"). While Olson and Waldman are being honored and praised for their work, journalists such as Quiroli are still subjected to discrimination.

One of the most prevalent forms of discrimination originates with male coworkers. In a field of work that is considered a "man's job," women are constantly

Parsons -- Communication and Popular Culture

surrounded by editors, managers, fellow journalists, and even athletes who are convinced that they do not belong. Women are often looked at as “quota hires” rather than viable assets. In sports journalism, quota hires “require broadcast stations, cable systems and satellite-TV providers to establish broad outreach efforts that ensure that job vacancy notices and general recruiting efforts reach minorities and women” (McConnell 20).

Many think women in sports media are only there because the company has to have them, not because they are qualified or knowledgeable enough to obtain the jobs. Male coworkers who hold these beliefs are less likely to treat women as equals or show respect for their work. Some men also hold an attitude, called hegemony, that “men are more apt for and deserving of dominance in sport and (consequently) culture” (Hardin and Shain 805). When women enter the sacred domain of sports journalism, some men feel they are losing dominance over sports. They are likely to challenge the presence of female coworkers. Hegemony in sports “has been more complete and resistant to change than in other areas of the culture” (Harden and Shain 805) because men try to maintain the status quo. This attitude, while often unnoticed by men who cover sports, affects how female sports journalists are treated. They are subjected to far more sexist language than those in news and have people questioning why they are in locker rooms in the first place (Miller and Miller 884). Some believe that a man could easily replace a female sports journalist, thus removing the controversy of women in locker rooms and excluding them from the field once again. This would only cause the hegemonic attitude in sports to grow. Even though an increase in the number of women entering the field exists, it “represent(s) only superficial social change because deep-seated ideological change has not occurred (Harden and Shain 805). This lack of ideological change is often demonstrated with

Parsons -- Communication and Popular Culture

female editors. Many reporters found that a number of female editors still practiced discriminatory actions towards their female journalists. One reporter said that female editors “tend to be very butch, 'manly' women. They're not very feminine. . . . Most of them tend to be very hard, kind of harsh . . . and I don't know why that is but I've observed that as something that is startling to me, that in order to be in charge they feel like they have to become mannish” (Ellmore 22). The adoption of “manly” qualities may be because men are commonly more respected. Female editors may feel as if they are expected to act like men in order to succeed. So, even though the number of female sports journalists has increased, it does not mean that progress is being made in how their coworkers, and society as a whole, view them. For change to truly occur and discrimination to disappear, an ideological change must occur.

As a result of the discrimination against female sports journalists from those in higher positions, such as managers or editors, women do not have equal opportunity for assignments and experience a lack of advancement in their field. They often are not taken seriously by their male superiors. Some are not given an opportunity to prove themselves in terms of how much they know about the sports they are covering and are given less significant assignments. Women sometimes struggle with deadlines when they encounter resistance from those in the locker room: being refused entrance to the locker room or having men decline to speak with them because of gender. This can cause editors to pass over women when handing out beats, assuming that this will occur and deadlines will be missed. Women also become invisible to those in rank, including editors, their talents lost to friendships forged outside of the office. When women meet with male coworkers, athletes, or coaches outside of the direct environment of work, some critics often see this

Parsons -- Communication and Popular Culture

as a gateway to a romantic relationship. Yet, men do this regularly in order to build a network of contacts and sources, meaning that female sports journalists are missing out on a crucial part of the job when they are unable to meet with coworkers outside of work. Those who challenge the socially acceptable way to perform their jobs are often seen as “deviants” and undesirable to a company; therefore, women are socialized to accept the institutional sexism as a normal part of the news routine (Hardin and Shain 806). As a result of a lack of contacts and strong relationships with those in the field, female sports journalists experience a lack of promotional opportunities. A study done to determine the level of satisfaction women have in their jobs as sports journalist showed dissatisfaction with the “frequency, desirability, and importance” of their promotions (Smucker et al. 403-404). Arguably they see promotions as being more important than pay, as they are more visible to others in the company, while pay is more confidential. Often when women see no advancement with one company, they move on to another. The constant changes make establishing themselves and advancing difficult as they work their way up from the bottom each time. Women often become tired of the constant changes and choose different professions, where they can more easily network and progress in their fields.

A lack advancement for women in the field often leads to a lack of overall job satisfaction. The lack of job satisfaction drives women away from sports. Much of the dissatisfaction comes from constant discrimination. Everbach and Flournoy conducted a study about women leaving journalism. A major factor was the gap in pay between men and women of the same rank. One journalist discovered “that a male colleague in the same position earned \$10,000 a year more than she” (56-57). Another common theme

Parsons -- Communication and Popular Culture

was that they were constantly overlooked for assignments. One reporter stated she “became disillusioned with newspapers after recognizing managers singled out reporters, most of them male, anointing them ‘golden boys’ and giving them choice assignments” (55). Both forms of discrimination create a general dissatisfaction with womens’ sports journalism careers. Although many of the former journalists expressed that they had great passion for their work, issues such as pay and assignment discrimination pushed them out of the field. Other studies echo the findings concerning exclusionary practices and discrimination. Elmore interviewed fifteen newsroom journalists about their past experiences: many women felt that the male dominated work environment left them at a disadvantage, one saying, “the strong male network gave men the social capital women lacked to get better assignments or promotions” (Elmore 21). Women across all forms of media who repeatedly experience some form of discrimination often choose to leave their field because of the industry’s structure. Had editors and other superiors not participated in discriminatory practices, some women would have been inclined to stay in sports media.

Some suggest that an increase in the number of women in upper level positions would help reduce this problem, allowing women a chance to have relationships that would provide a better work environment for the women, as they would better relate to superiors of their gender. In a study concerning the effects female editors have on newspapers, findings showed that for several reasons, women did not differentiate between male and female reporters when assigning beats, therefore leveling the playing field:

Parsons -- Communication and Popular Culture

Logically, women editors may feel sympathy for female reporters because, in many cases, the editors faced similar obstacles early in their careers. This sympathy may lead women editors to elevate female reporters to the same level of work as male reporters, something that may not be happening at male-dominated newspapers (Craft and Wanta).

Another possible explanation was, “a newspaper without a glass ceiling for women in managerial positions may likewise feel compelled to support women reporters. Thus, the overall philosophy of the newspaper may be to support women both in management and in reporting positions” (Craft and Wanta). With more female editors, a newspaper or any other form of media can work to eliminate discrimination. Having more female superiors should help increase the number of women in the field and allow both male and female sports journalists to be viewed as equals.

Though many do not care to admit it, appearance plays a role in the career of female sports journalists. A simple Google search of “female sports journalists” results in numerous pages dedicated to condemning women covering sports. The first result on the page is a link to an article on bleacherreport.com entitled “50 Hottest Female Sports Broadcasters from Around the World,” written by Amber Lee, which provides pictures of fifty female sports broadcasters around the world, some of them more revealing than most would expect in a professional setting. Although the pictures do include some of the journalists’ credentials, including education and experience, they are also accompanied by “fun facts,” details about the woman’s personal life or the author’s opinion of the woman. Comments left under the picture of a prominent journalist, Charissa Thompson,

Parsons -- Communication and Popular Culture

are especially concerning. Lee claims that she is “incredibly boring...all she does is watch sports, participate in sports and tweet about sports. You won’t be seen’ [sic] this broad in *Maxim*” (25). Even though female journalists are expected to know everything possible about a sport and are sometimes even tested on that knowledge in order to obtain a job, Thompson is chastised for being too passionate about sports. Lee even suggests that her obsession with them makes her less attractive. Though she is clearly knowledgeable of and has a deep love for sports, which many fans demand of those who cover them, she is condemned for this. Many would consider a male sports reporter watching, participating in, and tweeting about sports on a daily basis to be normal. This double standard pressures female journalists to meet impossible expectations. Women must be knowledgeable about sports but not too passionate. They must be beautiful but not let their appearances overshadow their reporting. Articles such as this exemplify the discrimination female sports journalists encounter. When searching for “hottest male sports journalists” in Google, numerous lists for the hottest female sports journalists appear, suggesting that no such lists exist. Fans and sports bloggers alike are more concerned with the quality of a male’s work than his looks. Male sports journalists are judged more on their writing, reporting, or other forms of coverage while an emphasis is placed on the appearance and personal life of female sports journalists. These skewed judgments belittle the work of the latter and show the work their predecessors did to gain acceptance in the field did not bring them complete equality.

When tuning into a national broadcast of a sporting event of any kind, rarely does one find a woman in charge of the play-by-play or color commentary. Most female sports journalists are found on the sidelines, appearing once or twice throughout the game to

Parsons -- Communication and Popular Culture

provide little tidbits of information relevant to what those in the booth discuss. Female sports reporters can also be found “in the trenches,” conducting post-game interviews in the locker room, which are often chopped into segments lasting only seconds. While no sports reporter, especially a female, would turn his or her nose up at a job working the sidelines of a nationally broadcasted game or interviewing players, the position is seen as inferior to one as a play-by-play or color commentator. Only infrequently are women found in the broadcast booths for professional male sporting events. One monumental moment came only last year, when the first woman participated in a national television broadcast for a Major League Baseball game. Two-time Olympic softball gold medalist and ESPN analyst Michele Smith was in the booth for a TBS broadcast of a Braves-Dodgers game in August of 2012, marking the first time a woman provided analysis on a national broadcast (Rykoff). Though the reaction to Smith’s appearance was mainly positive, she was not asked to broadcast any additional games, neither regular nor post season. One of the more famous examples of a woman in the broadcast booth is Suzyn Waldman. Waldman has been a color commentator for the New York Yankees’ radio broadcasts since 2005, and even provided play-by-play coverage for the team during the mid-1990s (Rykoff). Though she has achieved what many women who enter sports journalism hope to do, she also faced some of the worst discrimination throughout her career. She dealt with radio station owners wanting her fired to receiving condoms and death threats in the mail. When Waldman first started, she claims the men surrounding her “were terrible to me,” stating that being hated for being a woman “was a real shock to me” (Barmash). Though many tried to force her to quit or walked out of the room when she was on the air, she persevered, often taking jobs no one wanted, such as interviewing

Parsons -- Communication and Popular Culture

players (Barmash). Waldman worked her way from the bottom up, as most sports journalists do, and has rightfully earned her place as a color commentator. The issue is that though many women have traveled the same road as Waldman with the same goal in mind, they have not achieved it. Andrea Kremer has been a TV sports journalist for twenty-six years, produced, directed, and hosted numerous sports television shows, reported for the Olympics and NFL, and even won Emmy Awards for some of her stories. Though she seems very qualified and has expressed interest in doing so, she has not been given the chance to be a play-by-play or color commentator at a major league game (Farhi). While some female sports journalists are more than content with being on the sidelines, others are livid with the barrier, claiming that it is “the most misogynist part of society...It’s the last bastion of acceptable sexism” (Farhi). Those who claim women are not interested in or do not want to become color commentators or play-by-play analysts are clearly wrong. There are women who are qualified to become commentators but are still turned away. Some of the blame is placed on female sports reporters. Laurie Orlando, a senior vice president of ESPN, claims, “Women have historically moved towards sideline reporters because that is what has been acceptable” (Farhi). They choose to take what they can get in the business, which is understandable considering the nature of the sports reporting industry. Yet, if women do not push for more broadcast booth positions, they will continue to be sidelined. Women must push for equal access to the booths, no matter how long it takes.

Though the sports journalism industry has made tremendous strides in eradicating discrimination, many areas still need to be addressed. Critics can claim that jobs are lacking in sports journalism or that women are just not interested in the field. They can

Parsons -- Communication and Popular Culture

also claim that the women who do work in the field are highly respected and viewed in a positive light among editors, coworkers, and fans. Yet, the evidence does not lie; discrimination still exists. While a deficiency of employment opportunities in sports journalism is a feasible argument as to why women are not gravitating towards sports media, the fact that journalism school enrollment is clearly dominated by women cannot be ignored; theoretically, they should make up a larger portion of the sports journalists. Of course, these women could have gravitated towards other areas of media, such as television news or radio because of a general disinterest of sports among women, yet, the fact that women make up nearly half of the fan bases of every major sport in America suggests otherwise. Critics also point to the number of successful women, like Lisa Olson and Suzyn Waldman, who have and currently work in sports journalism, to show that discrimination does not occur. Yet, these are all trumped by more cases of severe disrespect for female sports journalists, like Jessica Quirolli, or those who have been denied access to sports locker rooms.

A quote from Robert Joffe, lawyer for Melissa Ludtke when she sued Major League Baseball, summarizes the fight for equality in sports journalism perfectly with his comments of women being admitted into the Yankees locker room: "Chaos did not ensue and the morals of the nation survived" (Associated Press). The evidence that women in sports media are still being discriminated against is staggering. Women who have been a part of sports journalism have not only worked in the field, but have contributed to its improvement. It is entirely possible to end discrimination in sports through the hiring of more female sports editors or broadcasters. Yet, female sports journalists will not escape discrimination until the hegemonic attitude that exists in male professional sports is

Parsons -- Communication and Popular Culture

eradicated. Until it occurs, female sports journalists will refuse to warm the bench and continue to force their way into the game, whether the coach wants them there or not.

Parsons -- Communication and Popular Culture

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Forced to Flee: Acknowledging Climate Refugees

Siobhan Summers (Montgomery College)

Mentor - Professor Efstathia Siegel

In a special report, the Intergovernmental Panel on Climate Change recognizes that “One outcome of climate change is that entire communities could be required to relocate and in some cases...the relocation will be international. Such relocation can have significant social, cultural, and psychological impacts...”¹¹⁷ Recently, there are more and more news reports about people who are losing their homes or who have to leave their homes and communities due to the effects of climate change precipitated by global warming. Bangladeshis are losing their homes to rising sea levels;¹¹⁸ the island nation of Tuvalu makes arrangements with New Zealand to accept citizens of Tuvalu should the nation be overtaken by the sea;¹¹⁹ Shishmaref, Alaska’s land is eroding away;¹²⁰ the Maldives are in danger of rising sea levels;¹²¹ Ethiopian pastoralists are affected by severe drought.¹²² These are just a few examples of places where people have been or will likely soon be migrating from their homes and communities because of the negative effects of anthropogenic climate change¹²³. Global warming induced climate change and

¹¹⁷ “In a special report...and psychological impacts...” (Intergovernmental Panel on Climate Change 300-301).

¹¹⁸ See “Climate Refugee” and “Bangladesh faces serious sea-level rise impacts: WB” for more about the affects of rising sea levels on Bangladesh.

¹¹⁹ See Biermann and Boas 61 of “Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees,” and “Climate Refugee” for more detailed information.

¹²⁰ On the effects of global warming on Shishmaref livelihood, see Sutter; and Willis.

¹²¹ See “Climate Refugee” and Biermann and Boas 10 from their article “Protecting Climate Refugees: The Case for a Global Protocol.”

¹²² Refer to “Drought in Ethiopia: Natural Hazards.”

¹²³ “Anthropogenic climate change” refers to climate change caused by human activity, specifically the production of greenhouse gasses by humans (Intergovernmental Panel on Climate Change 4).

Summers -- Interdisciplinary Studies

the underrepresented people and communities affected by this phenomenon are not addressed with the urgency that they require by industrialized nations and the international community. These people are the world's climate refugees.

The idea of there being climate refugees as well as the term itself is a well contested topic. There are some who feel that climate refugees are not a serious issue while there are others who believe that this is a serious issue that needs to be addressed urgently by individual countries as well as inter-governmental organizations. Then, there are many who recognize the problem but disagree with the term climate refugee and on the severity of the issue.

So, with so much conflicting information and opposing viewpoints, where does this issue stand in the global arena? Is there such a thing as climate refugees, and if so, what is the phenomenon caused by and how can it be alleviated? I, like others such as Frank Biermann and Ingrid Boas, both professors and researchers for the Department of Environmental Policy Analysis at the Institute for Environmental Studies, Vrije Universiteit, Amsterdam, the Netherlands, believe that climate refugees are caused by global warming induced climate change, and since industrialized nations contribute to global warming more than the global south, industrialized nations need to take greater responsibility in creating a policy that ensures that climate refugees are recognized and offered protection by the United Nations.¹²⁴

¹²⁴ "...Frank Biermann and...Amsterdam, the Netherlands," ("Protecting Climate Refugees: The Case for a Global Protocol," Biermann and Boas 15-16).

What are climate refugees?

Climate refugees are people who are forced to leave their homes and relocate because of the effects of climate change.¹²⁵ This is a very broad definition and can be applied to many people since climate change is defined as gradual changes in all of the interconnected weather elements on the planet.¹²⁶ This definition includes all weather phenomena including warming and cooling of the atmosphere and water, precipitation rates, changes in sea level, and storms to name a few. Because these definitions are so general, many scholars have created their own more specific definitions of “climate refugee” which has caused a lot of dissention over what the true definition of climate refugees is. In “Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees,” Frank Beirmann and Ingrid Boas say that “there is no consensus [on the] definition of ‘climate refugees.’”¹²⁷

In this paper, climate refugee will be defined based on the causes of migration and the types of migration.¹²⁸ This will help to add clarity and to establish who should be included in the category of “climate refugee.”

First, the definition of climate refugees should only include individuals who are forced to migrate from their homes and communities because of global warming induced climate change factors. These factors include rising sea levels, drought, melting land ice, an increased number of storms with greater intensity and damage potential, and erosion

¹²⁵ “Climate refugees are...of climate change” (“Climate Refugee”).

¹²⁶ “...climate change is...on the planet” (“Climate Refugee”).

¹²⁷ “there is no...of ‘climate refugees’” (Beirmann and Boas 62-63).

¹²⁸ Biermann and Boas apply these two factors among others in order to define climate refugees. For more on other factors addressed in defining climate refugees see Biermann and Boas 63-67 of “Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees.”

Summers -- Interdisciplinary Studies

caused by rising sea levels and storms. Only storms that are abnormally devastating and that are caused by global warming induced oceanic and atmospheric alterations, such as changes in temperature, barometric pressure, etc., are accepted in this definition. These extreme storms or weather events will be distinguished from average storms by consensus among reputable meteorologists and meteorological organizations such as the World Meteorological Organization¹²⁹. This definition of climate refugees excludes individuals who migrate due to temporary (one consecutive year or less) environmental changes caused by climate change that diminishes the habitability of a given location. The restriction of this definition “...excludes forced migration that is caused by measures that are related to the mitigation of, and [in some cases the subsequent] addition[al] [impact] [on], global warming.”¹³⁰ Therefore, excluded are any changes that people make to the environment in an attempt to alleviate some of the effects of global warming and climate change that may negatively impact some people and communities and force migration such as, in drought stricken areas, redirecting the natural flow of water by constructing dams. The third restriction excludes migration caused by environmental damage that people instigate.¹³¹ It also excludes all natural disasters unrelated to human activity or global warming.¹³² This would include natural occurrences such as volcano eruptions and earthquakes that have no known connection to global warming and climate change. The last restriction of this definition excludes individuals who migrate because of

¹²⁹ “The World Meteorological Organization (WMO) is a specialized agency of the United Nations. It is the UN system's authoritative voice on the state and [behavior] of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources” (“World Meteorological Organization”).

¹³⁰ “...excludes forced migration... global warming” (“Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees,” Biermann and Boas 63).

¹³¹ “The third restriction...that people instigate” (“Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees,” Biermann and Boas 64).

¹³² “It also excludes...or global warming” (“Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees,” Biermann and Boas 64).

Summers -- Interdisciplinary Studies

political strife and conflict caused by decreasing natural resources resulting from global warming.¹³³ These restrictions are necessary because they ensure that the term climate refugee does not overlap with other categories such as traditional refugees or environmental refugees.

Second, the definition of climate refugee used in this paper identifies the types of migration acceptable for a person to still be considered a climate refugee. This definition includes both forced and voluntary migration. A distinction is necessary because often times what is considered voluntary to some is the only option for the individuals making the decision to migrate. This definition also includes internal migration as well as external migration. Internal migration refers to the migration of individuals from one area of a country to another area of the same country. For example, in Bangladesh, as people living in coastal areas face the threat of constantly rising seas submerging their homes, they are moving to the more urban cities of the country that have the advantage of being located on higher ground. According to Rita Afsar, “Rural to urban migration is the most prevalent form of migration in Bangladesh.”¹³⁴ External migration refers to the migration of individuals from one country to another. For example, “The island nation of Tuvalu has struck an agreement with New Zealand to accept its 11,600 citizens in the event that rising sea levels overtake the country.”¹³⁵ Tuvalu has taken preemptive measures to ensure that its citizens will be able to externally migrate when it becomes necessary to do so. It is common for climate refugees to migrate internally before external migration when possible.

¹³³ “The last restriction...from global warming” (“Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees,” Biermann and Boas 64).

¹³⁴ “According to Rita...migration in Bangladesh” (i).

¹³⁵ “The island nation...overtake the country” (“Climate Refugee”).

Summers -- Interdisciplinary Studies

Therefore climate refugees will be defined as "...people who have to leave their habitats, immediately or in the near future, because of sudden or gradual alterations in their natural environment related to at least one of three impacts of climate change: sea-level rise [and melting land ice], extreme weather events, and drought and water scarcity."¹³⁶

How are climate refugees different from other refugees?

Based on the parameters explained above that define the term climate refugee, climate refugees are distinct from traditional refugees and environmental refugees. "The 1951 Refugee Convention establishing UNHCR spells out that a refugee is someone who 'owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country.'"¹³⁷ Currently the United Nations Office of the High Commissioner for Refugees rejects "...the term environmental or climate 'refugee' because of the legal rights that the intergovernmental system currently bestows upon 'refugees,' that is, persons who cannot avail...the protection of their home state for fear of (political) persecution."¹³⁸ Instead they prefer the term "environmentally displaced persons."¹³⁹ There are however some other agencies and offices within the United

¹³⁶ "...people who have...and water scarcity" ("Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees," Biermann and Boas 67).

¹³⁷ "The 1951 Refugee Convention...of that country" ("Refugees").

¹³⁸ "Currently the United Nations...of (political) persecution" ("Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees," Biermann and Boas 66).

¹³⁹ "Instead they prefer... 'environmentally displaced persons'" ("Preparing for a Warmer World: Towards a Global Governance System to Protect Climate Refugees," Biermann and Boas 66).

Summers -- Interdisciplinary Studies

Nations that use the term ‘environmental refugee.’ “The term environmental refugee was coined in the late 1980s by the United Nations Environment Programme and refers to people who are forced to leave their community of origin because the land can no longer support them.”¹⁴⁰ The definition given in this paper is much more inclusive than the definitions of the other two refugee terms. The definition of climate refugee used in this paper is structured in such a way that it is clear who is included and who is excluded.

Some may argue that a specific category for climate refugees is not needed because climate refugees are not really refugees at all. They may argue that unlike traditional refugees, climate refugees do not have any warranted fear of persecution, and this may be true. Climate refugees do not fear persecution, but what these individuals do fear is premature death because the land that they live on can no longer sustain them due to the effects of anthropogenic climate change. They fear the devastation wrought by the next catastrophic storm. They fear that their homes will be submerged or washed away by the sea. The UN hesitates to acknowledge climate refugees as actual refugees because they do not conform to the traditional characterization of refugees which may cause more strife in international discourse.¹⁴¹

What’s more is that not only do climate refugees fear, they experience. Global warming induced climate change could lead to “the inundation of coastal cities; increasing risks for food production potentially leading to higher under and malnutrition rates; many dry regions becoming dryer, wet regions wetter; unprecedented heat waves in many regions, especially in the tropics; substantially exacerbated water scarcity in many

¹⁴⁰ ““The term environmental...longer support them”” (McGrath).

¹⁴¹ “The UN hesitates...in international discourse” (“Protecting Climate Refugees: The Case for a Global Protocol,” Biermann and Boas 11).

Summers -- Interdisciplinary Studies

regions; increased intensity of tropical cyclones; and irreversible loss of biodiversity, including coral reef systems.”¹⁴² According to Jennifer McGrath, Bangladesh’s Bhola Island experienced severe permanent flooding caused by rising sea levels in 2005. “Approximately 500,000 people were left homeless, with many eventually settling in slums in Dhaka, the capital of Bangladesh.”¹⁴³ In Ethiopia, “Some 12 million [Somalis] need food aid after rains failed for the second year running across the Horn of Africa.”¹⁴⁴ These are just a few of the many examples of the fears and hardships that climate refugees encounter. Their fear is just as warranted as, and arguably more so, than a person’s fear of persecution.

Effects of Global Warming Induced Climate Change on Climate Refugees

Global warming induced climate change, also alluded to as anthropogenic climate change, refers to climate change associated with “an increase in the average temperature of the Earth’s air and oceans” caused primarily by humans, especially those living in developed countries.¹⁴⁵ Some of the main properties of global warming induced climate change affecting climate refugees are atmospheric and oceanic temperature changes, melting glaciers and land ice, rising sea levels, drought, and extreme weather events/storms.

Atmospheric and oceanic temperature changes affect climate refugees because these changes affect biodiversity. Biodiversity “...refers to the variety found in biota

¹⁴² “Global warming induced...coral reef systems” (“Bangladesh faces serious sea-level rise impacts: WB”).

¹⁴³ “Approximately 500,000 people...capital of Bangladesh” (McGrath).

¹⁴⁴ “In Ethiopia ‘Some...Horn of Africa’” (Plaut).

¹⁴⁵ “Global warming induced...in developed countries” (“Climate Refugee”).

Summers -- Interdisciplinary Studies

from [the] genetic make up of plants an[d] animals to cultural diversity.”¹⁴⁶ Temperature changes can affect ecosystem productivity negatively which can lead to a decrease in the availability of many goods and services that people in a given area rely on for survival. For example, plants and animals that were once plentiful and a dietary staple in the past might now be scarce because those flora and fauna were unable to adapt to the changes in temperature. This decrease in variety can over time make the land less capable of sustaining human life. Changes in temperature can also affect the productivity of domesticated crops and animals. Many plants and animals thrive in specific conditions. In Ethiopia, herders are suffering from more than just lack of water. Their herds are rapidly dying because the naturally occurring flora in the region that the herds eat is dying.

When conditions relating to temperature change, productivity decreases. “The global surface temperature is based on air temperature data over land and sea-surface temperatures...”¹⁴⁷ The global surface temperature has been rising. According to the National Oceanic and Atmospheric Administration’s (NOAA) National Climatic Data Center, the global average temperature “...shows an increase of approximately 1.4°F since the early 20th Century.... the 20 warmest years have all occurred since 1981, and the 10 warmest have all occurred in the past 12 years.”¹⁴⁸ The global upper ocean heat content is also rising.¹⁴⁹ This temperature rise is directly related to the amount of greenhouse gasses emitted into the atmosphere.

The melting of glaciers and land ice also greatly affects climate refugees. According to NOAA, “Warming temperatures lead to the melting of glaciers and ice

¹⁴⁶ “Biodiversity ‘...refers to...to cultural diversity’” (“Climate change and human health: Biodiversity”).

¹⁴⁷ “When those conditions...sea-surface temperatures...” (“Global Climate Change Indicators”).

¹⁴⁸ “According to the...past 12 years” (“Global Climate Change Indicators”).

¹⁴⁹ “The global upper...is also rising” (“Global Climate Change Indicators”).

Summers -- Interdisciplinary Studies

sheets. The total volume of glaciers on Earth is declining sharply. Glaciers have been retreating worldwide for at least the last century; [and] the rate of retreat has increased in the past decade.”¹⁵⁰ Also, there has been an observed increase in the melting and “...‘calving’ off of icebergs from the world’s land ice.”¹⁵¹ The Inuit Community of Shishmaref, Alaska has witnessed firsthand the increase of melting land ice over the past few decades. Resting at the edge of the Arctic Circle, this small village witnesses its homes being swallowed by the sea more and more frequently. BBC Correspondent David Willis reports that increased temperatures have caused glaciers to melt which results in rising sea levels. “Some estimate that the sea moves inland three [meters] a year” in Shishmaref.¹⁵² In addition, “The increased temperature is also thawing the frozen ground, which is known as permafrost, on which...arctic communities such as Shishmaref were built,” which causes the earth to crumble into the sea.¹⁵³ As the earth crumbles away, the villagers’ homes are collapsing into the ocean as well. The melting of glaciers and land ice definitely contribute to rising sea levels. However, the melting also negatively impacts the fresh water supply in some regions like parts of Asia and South America. A renewable fresh water source is vital to human survival. Even if a community had everything else necessary to sustain life, without fresh water they would have to migrate to a place that offers fresh water or they would not be able to survive.

Third, rising sea levels appear to be one of the factors most directly plaguing people who are or may soon become climate refugees. Many island nations like Tuvalu and the Maldives greatly fear the rapidly rising sea levels. Coastal towns and cities and

¹⁵⁰ “According to NOAA...the past decade” (“Global Climate Change Indicators”).

¹⁵¹ “Also...world’s land ice” (“Ice over the Poles”).

¹⁵² “Some estimate that...year’ in Shishmaref” (Willis).

¹⁵³ “The increased temperature...into the sea” (Willis).

Summers -- Interdisciplinary Studies

low-lying areas are also at risk of being overcome by the rising sea levels. According to NOAA, the global mean sea level annual average rise over "...the past 100 years... is significantly larger than the rate averaged over the last several thousand years."¹⁵⁴ Satellite data collected by the National Aeronautics and Space Administration (NASA) indicate that the average rate of change in sea level has been 3.11 millimeters per year since 1993.¹⁵⁵ Sea level rise is caused by the melting of glaciers and land ice as well as "...by the expansion of sea water as it warms up in response to climate change..."¹⁵⁶ Rising sea levels are literally submerging the land that people live on. Low-lying coastal regions and island nations are experiencing it now, but if the world, and especially industrialized nations, continues on the path that has been set, people living inland who once considered themselves safe may find themselves fleeing as the rising seas knock on their own back doors. The land lost due to mounting sea levels will displace many people and those individuals will need protection and refuge as they seek out new homes.

Fourth, while some people's homes are flooded, others are forced to relocate due to severe drought. Drought, "period[s] of greatly reduced precipitation," and desertification, "the spread of desert conditions in arid regions, usually caused by human activity," are becoming increasingly worrisome to people living in various at-risk regions of the world.¹⁵⁷ Drought and desertification can change a once arable and thriving landscape into an uninhabitable desert. Take for example previously mentioned Ethiopia. Communities who rely on the pastoralist as a way of life once thrived in an arable and sustainable environment. The land was able to nourish their herds and, by extension, the

¹⁵⁴ "According to NOAA...several thousand years" ("Global Climate Change Indicators").

¹⁵⁵ "Satellite data collected...since 1993" ("Global Climate Change: Vital Signs of the Planet").

¹⁵⁶ "Sea level rise...to climate change..." ("Global Climate Change: Vital Signs of the Planet").

¹⁵⁷ "Drought, 'period[s] of greatly reduced...of the world'" ("Climate Refugee").

Summers -- Interdisciplinary Studies

people. However, years of recurring drought has caused many to flee their homes and the now unforgiving land that they once inhabited. In underdeveloped regions, when drought hits, it is very noticeable and greatly affects the livelihoods of farmers and herders. Drought is the main culprit of producing climate refugees inland.¹⁵⁸ For example, in the landlocked country of Ethiopia, climate refugees are not caused by rising sea levels or melting glaciers and land ice. Usually in the horn of Africa, extreme weather events are not an issue either. Drought however can and does kill. That is why it is important to remember these inland climate refugees. Similarly, in Australia, people rely on the predictability of a wet and a dry season. The drought that has struck the interior of Australia has deeply impacted the lives and livelihoods of most people living in the southern regions of the continent. Drought leads to crises over water scarcity, crop failure, and decreased livestock production and sustainability which all contribute to decreased human sustainability and therefore an increase in climate refugees.

Finally, extreme weather events have recently become the frequent cause of climate refugees. Unlike the other four factors mentioned that affect climate refugees, extreme weather events and storms have not yet been linked to global warming and climate change. However, Peter Miller shares an enlightening quote in his National Geographic article on extreme weather. “Gerald Meehl, a senior scientist at the National Center for Atmospheric Research in Boulder, Colorado [says] Global warming...has changed the odds for extreme weather.”¹⁵⁹ Miller gives Meehl’s baseball metaphor in his article:

¹⁵⁸ “Drought is the...climate refugees inland” (“Climate Refugee”).

¹⁵⁹ ““Gerald Meehl, a senior...for extreme weather”” (Miller).

Summers -- Interdisciplinary Studies

“Picture a baseball player on steroids,”...“This baseball player steps up to the plate and hits a home run. It’s impossible to say if he hit that home run because of the steroids, or whether he would have hit it anyway. The drugs just made it more likely.”

It’s the same with the weather, Meehl says. Greenhouse gases are the steroids of the climate system. “By adding just a little bit more carbon dioxide to the climate, it makes things a little bit warmer and shifts the odds toward these more extreme events,” he says. “What was once a rare event will become less rare.”¹⁶⁰

These more frequent extreme weather events can quickly arise and leave large populations suddenly without homes and claiming climate refugee status. Tornadoes, hurricanes, typhoons, tsunamis, Super Storm Sandy’s¹⁶¹ are all becoming more prevalent. These types of weather events do not allow time for individuals to contemplate relocation. Instead they leave devastation and homelessness in their wake.

Why Industrialized Nations need to be held more accountable for protecting climate refugees

The number of climate refugees is increasing significantly around the world, and although climate refugees can derive from anywhere, whether that location is developed, developing, or unindustrialized, the proportion of climate refugees from developing and

¹⁶⁰ “Picture a baseball...will become less rare” (Miller).

¹⁶¹ “Hurricane Sandy, [also known as Super Storm Sandy,] a late-season post-tropical cyclone, swept through the Caribbean and up the East Coast of the United States in late October 2012. The storm left dozens dead, thousands homeless and millions without power. Total damage is expected to be in the billions of dollars” (Sharp). Super Storm Sandy is just one recent example of an unprecedented storm that created thousands of climate refugees.

Summers -- Interdisciplinary Studies

unindustrialized nations is far greater than that from developed and industrialized nations. This disproportionate ratio is due in large part to the ability of industrialized nations to give more support and protection both financially and physically to their citizens who find themselves with the plight of other climate refugees than less developed regions of the world. It is imperative, though, that industrialized nations take more accountability for the role that they play in anthropogenic climate change and its subsequent effects on humanity and climate refugees.

NOAA's National Climatic Data Center supports the claim "...that observed warming over the last half-century cannot be explained by natural factors alone, and is instead caused primarily by human factors."¹⁶² NOAA's global climate models show that observed temperature changes between 1900 and 2000 coincide with projected global temperature changes resulting from both natural and human forces compared to projected global temperature changes resulting from natural forces alone.¹⁶³ Humans are catalyzing both the rate and intensity of global warming induced climate change. As a result, the number of climate refugees is on the rise.

Carbon dioxide emissions, making up the largest percentage of greenhouse gas emissions, have been rapidly increasing since around 1950.¹⁶⁴ Because industrialized nations emit more CO₂ than unindustrialized nations, the origins of many climate refugees, they are contributing the most to the main factor affecting climate refugees – anthropogenic climate change. According to NOAA, "The concentration of CO₂ in the atmosphere has increased by roughly 35 percent since the start of the industrial

¹⁶² "...that observed warming...by human factors" ("Global Climate Change Indicators").

¹⁶³ "NOAA's global climate...natural forces alone" ("Global Climate Change Indicators").

¹⁶⁴ "Carbon dioxide emissions...since around 1950" ("Global Climate Change Indicators").

Summers -- Interdisciplinary Studies

revolution.”¹⁶⁵ In 2008, more than half of the CO₂ emissions came from China the United States, and the European Union.¹⁶⁶ To put into perspective just how much more industrialized nations affect climate change than unindustrialized nations, take into account the total greenhouse gas emissions of the United States versus that of Tuvalu and the Maldives, both of which are facing the threat of rising sea levels. According to the United Nations Statistics Division, the United States emitted 6,924.56 million tons CO₂ equivalent of greenhouse gasses. Combined, Tuvalu and the Maldives only emitted 0.16 million tons CO₂ equivalent of greenhouse gasses.¹⁶⁷ The United States produced and emitted 6,924.40 million tons of CO₂ equivalent of greenhouse gasses, more than the two island nations combined. However, it is the unindustrialized nations like Tuvalu and the Maldives that suffer more. The unindustrialized regions of the world see the most climate refugees while contributing the least to anthropogenic climate change.

Industrialized nations need to take more responsibility for climate refugees. The global south should not have to bear the consequences alone when the global north most impacts anthropogenic climate change which is causing the problem of climate refugees.

A United Nations Policy to Protect Climate Refugees

The United Nations recognizes climate change as an issue and the necessity for action. The organization even acknowledges the human factors perpetuating the problem. Referring to the United Nations climate change conference, Christiana Figueres says,

¹⁶⁵ ““The concentration of...the industrial revolution”” (“Global Climate Change Indicators”).

¹⁶⁶ “In 2008, more...the European Union” (“Global Emissions”).

¹⁶⁷ “...the United States...of greenhouse gasses” (“Environmental Indicators: GHGs”).

Summers -- Interdisciplinary Studies

“Science tells us that global greenhouse gas emissions must peak this decade and decrease rapidly thereafter. More importantly, peaking of global emissions must occur soon if we are to lessen human costs. Global extreme weather events in every region of the world provide ample proof of the mounting human costs, in particular to the most vulnerable.” So, it is reasonable to assume that the UN is also aware of the climate refugee crisis.

The United Nations and all of its member nations, both industrialized and unindustrialized, need to address this issue. I, like others, feel that the UN needs to propose policy concerning climate refugees because it “...is the only platform that grants all countries, large and small, access to global decision-making.”¹⁶⁸ Frank Biermann and Ingrid Boas propose a policy that is built within “...a separate, independent legal and political regime created under a Protocol on the Recognition, Protection, and Resettlement of Climate Refugees to the United Nations Framework Convention on Climate Change.”¹⁶⁹ By expanding the UN framework to include climate refugees in the Convention on Climate Change, the UN would be able to address climate refugees specifically while addressing climate change globally.

Under any policy, it is important to focus on safe relocation and long term or permanent resettlement of individuals and communities. The policy should address supporting the affected countries’ and regions’ governments, and if and when those governments are proven to be inadequately assisting their climate refugees, the UN

¹⁶⁸ “...it ‘...is the...global decision-making’” (Figueres).

¹⁶⁹ “...a separate, independent...on Climate Change” (“Protecting Climate Refugees: The Case for a Global Protocol,” Biermann and Boas 12).

Summers -- Interdisciplinary Studies

International Regime for Climate Refugees¹⁷⁰ should be given the power to take over relocation and resettlement programs.

As Biermann and Boas say, “the protection of climate refugees must be seen as a global problem and a global responsibility.”¹⁷¹ I believe that any policy on climate refugees has to address distribution of responsibility. I would propose that a greenhouse gas emission threshold be calculated and set for each member. The amount that each member surpasses their set threshold, they will have to increase the amount that they contribute to the UN International Regime for Climate Change.

Climate refugees need protection and every country, especially industrialized nations, has a moral responsibility to do their part in protecting these people and communities. Climate refugee policy reform is a huge undertaking because such large volumes of people are involved. Any policy and program will need major funding. Therefore, the best way for industrialized nation to take responsibility is fiscally. I believe that imposing fiscal responsibility will not only fund climate refugee policy reform, but it will also incentivize industrialized nations to decrease their greenhouse gas emission levels.

A policy addressing climate refugees will not only help people and communities. It will aid in the quest for climate change policy reform as well. Scientists have given the statistics and warnings. It is now in the hands of IGOs such as the UN to take action. The time for talking has run out and the time for policy reform and implementation is now.

¹⁷⁰ Biermann and Boas use the term “Regime for Climate Refugees” in “Protecting Climate Refugees: The Case for a Global Protocol” (11-12).

¹⁷¹ “the protection of...a global responsibility” (“Protecting Climate Refugees: The Case for a Global Protocol,” 13).

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Uneven Playing Field: Outsourcing Clinical Trials

Jennifer Yeboah (Montgomery College)

Mentor - Professor Efstathia Siegel

Health care providers write out prescriptions in confidence that whatever they prescribe will cure ailments. These medications are created, tested, and then made available in neighborhood pharmacies across the country. Medication bottles list symptoms, side-effects and other warnings. In all these processes, it is never openly acknowledged that medications are often tested on unsuspecting peoples in developing nations. Researchers, pharmaceutical companies and their sponsors, partner to develop human health trials, also known as clinical trials, to draw conclusions on emerging diseases and illnesses. According to the National Institute of Child Health and Human Development, a clinical trial is “one type of clinical research that follows a pre-defined plan or protocol [and] by taking part in clinical trials, participants can not only play a more active role in their own health care, but they can also access new treatments and help others by contributing to medical research.”¹⁷² This definition leaves out the millions of people who are subjected to treatment without full disclosure of their role in experimentation and testing.

While clinical trials are an important part of the development of medicinal cures of diseases by researchers and pharmaceutical companies, these outsourced trials raise concern because the human participants do not always give consent to researchers prior

¹⁷² (“Clinical Trials”)

Yeboah -- Social Justice

to testing. Individuals in developing countries are primarily sought after for clinical trials, even if they pose a threat to their present or future health. This can be attributed to the fact that it is difficult for pharmaceutical companies to find participants for trials in the developed world. For instance, in the United States, “less than 4 percent of cancer patients...volunteer for experimental drug trials” even though they are known to benefit most from the outcomes of these trials since treatments for cancer are still being discovered¹⁷³. It is also easier for pharmaceutical companies to venture overseas because of the lack of regulation by governmental agencies in developing countries versus developed countries¹⁷⁴. As defined by the National Institute of Child Health and Human development, clinical testing is essential, however the way it is being conducted now, denies the victims’ basic human rights outlined in Article 3 of The Universal Declaration of Human Rights which states that, “Everyone has the right to life, liberty and security of person” and in Article 5 which says, “No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment”¹⁷⁵. Illustrated in the case studies that will be addressed in this paper, is the manipulative means by which researchers and pharmaceutical companies recruit participants without notifying them. As a result, it is critical that the United Nations Trust Fund for Human Security fund the establishment of international policy to regulate clinical testing of drugs in developing countries by the United Nations Development Program: Crisis Prevention and Recovery.

¹⁷³ (Shah 4)

¹⁷⁴ (Barlett 3)

¹⁷⁵ (“The Universal”)

Who Benefits and How?

In the chain of benefactors it is obvious that pharmaceutical companies and researchers gain the most from outsourcing clinical trials. Conducting trials overseas offers a larger population and a quicker trial for cheaper. A trial in India costs 60% of the total cost in the US¹⁷⁶, an aspect that makes venturing out very appealing for pharmaceuticals. In 2003 Pfizer saved \$200 million a year when they decided to set up new clinics and offices in “low cost countries” such as India¹⁷⁷. In India the resources are vast and invaluable such as large groups of people who are distinct from one another by their genetic make-up and the availability of 700,000 hospital beds to put them in. This is crucial for Phase 3 in clinical trials which require “several hundred to several thousand patients... which can last for several years.”¹⁷⁸ Phase 3 aims to “prove a drug’s effectiveness with statistical certainty”¹⁷⁹ which is why developing countries become the main testing sites. Using human test subjects, researchers can prove a drug’s effectiveness and full side-effects both for advertising and marketing purposes.

It is through the work of the government, hospitals, contract research organizations (CRO), and doctors that pharmaceutical companies are able to undergo trials. By opening up the market for clinical trials the Indian government brings in an average of \$500 million a year, an income expected to increase to \$1 billion by 2016.¹⁸⁰ Hospitals also benefit from equipment donated by sponsors. Pharmaceutical giant, “Pfizer has donated \$100,000 [in] bone density–measuring instruments to six hospitals testing its

¹⁷⁶ (Jayaraman)

¹⁷⁷ (Shah 9)

¹⁷⁸ (“Overview”)

¹⁷⁹ (Shah 3)

¹⁸⁰ (“Gov”)

Yeboah -- Social Justice

new osteoporosis drug.”¹⁸¹ This incentive leaves the hospital with valuable equipment soon after the clinical trial is over. Also aiding in recruitment are Contract Research Organizations (CRO) that are paid to take a companies’ blueprint and find the necessary investigators and patients needed to produce results.¹⁸² Doctors are bribed by CRO who reward them for recruiting trial participants in large numbers. The task of recruiting patients is executed through doctors because they have easier access to patients. When an individual is admitted to a hospital for a condition, doctors can lead them to believe that they are receiving treatment when they are actually being recruited to participate in a placebo group¹⁸³ (as will be shown in case study below). Often times the patients do not have a condition at all, and they become more appealing for this very reason because they yield better results with no external factors. According to Dr. Anand Rai, a doctor who was present during some of the unethical practices at Indore's Maharaja Yeshwantrao Hospital¹⁸⁴, “the doctors conducting trial violated all norms to grab big chunk of money and foreign trips”¹⁸⁵. These doctors were bribed with material gifts to make certain that they would comply with the progression of the trials.

Case Study: India

Sue Lloyd-Roberts reported that vulnerable individuals were being used in clinical trials conducted by major international firms such as Astra Zeneca and GlaxoSmithKline British in her article “Have India’s Poor Become Human Guinea

¹⁸¹ (Jayaraman)

¹⁸² (Shah 6)

¹⁸³ (Barlett 2)

¹⁸⁴ (discussed in case study below)

¹⁸⁵ (“Dr. Anand Rai”)

Yeboah -- Social Justice

Pigs?”¹⁸⁶ for British Broadcasting Corporation (BBC). These families living in poor, rural India are considered Dalits in their community because their status is at “the bottom of the Hindu caste system.”¹⁸⁷ When they go to doctors, they are seen last, often sitting in waiting rooms for hours, bearing out the name, “untouchables.” However, one day when Nitu Sodey took her mother-in-law, Chandrakala Bai, to the hospital, suddenly she did not have to wait in the waiting room for hours. Another bonus was that instead of being limited to the five rupee vouchers, which are usually given to Dalits, the doctor agreed upon treatment that would cost 125,000 rupees and explained to Mrs. Sodey and her mother-in-law that the rest would be taken care of by a “special government fund for poor people.”¹⁸⁸ In a country where the poverty line set by the government is at 42p a day¹⁸⁹, the offer of free medicine made all the difference for Sodey and her mother-in-law. What Sodey and her mother-in-law were not told was that Bai was being recruited into a trial for the drug Tonapofylline.¹⁹⁰ Neither woman remembers giving signatory or oral consent. A short while after she began taking this drug, Bai suffered from cardiac issues, was taken off of the medicine, and died at the age of 45 year (less than a month after her cardiac issues).¹⁹¹ Her case is among numerous others in India that are unaccounted for. There have been “73 clinical trials on 3,300 patients - 1,833 of whom were children” taking place over the course of seven years in the Indore's Maharaja Yeshwantrao Hospital.¹⁹² This data only accounts for one hospital in that region. There

¹⁸⁶ This article was written in October 31, 2012, indicating the current prevalence of this issue.

¹⁸⁷ (Lloyd-Roberts)

¹⁸⁸ (Lloyd-Roberts)

¹⁸⁹ According to advnf.com the conversion of 42p (pence) to the US dollar is £0.6219/ \$1. This shows that individuals living below the poverty line in India live on less than 1 USD a day (“Convert”).

¹⁹⁰ This drug trial was sponsored by Biogen Inc, a drug company registered in the United Kingdom (Lloyd-Roberts).

¹⁹¹ (Lloyd-Roberts)

¹⁹² (Lloyd-Roberts)

are also many more cases that occur yet, because of the nature of this practice, uncovering reliable data is difficult.

Marginalized Testing

Often, another unethical element of outsourced clinical testing by pharmaceutical companies is that they conduct tests for illnesses that are not relevant to and will not benefit the host country. Researchers and pharmaceutical companies disregard testing for the best interest of the host country and instead conduct trials for monetary gain, turning vulnerable individuals into human guinea pigs. The following case studies show testing for Psoriasis treatment done in Argentina and Alzheimer's disease experiments in South Africa.

Psoriasis is a form of dermatitis. Individuals who live in moderate cold climates experience this disease at high rates over those who live in tropical climates. Yet clinical trials that have been conducted by Pfizer have been in countries such as Argentina which, according to the psoriasis-aid website, is a region that has extremely rare cases.¹⁹³ This trial lasted over a period of approximately four years, from October 2005 to March 2009, and in the end none of the findings would go to benefit the Argentineans recruited.¹⁹⁴ This unethical practice raises the questions of the efficacy of the results produced from the trial. If tests are not being conducted on the intended population that the drug is developed for, then there can be many side effects that present themselves after the drug is introduced to the intended population because they were not observed in the study.

¹⁹³ ("Psoriasis")

¹⁹⁴ ("Study")

Yeboah -- Social Justice

This irresponsible form of testing can contribute to the reason why prescription drugs kill approximately “200,000 Americans every year.”¹⁹⁵

On the other hand, clinical trials are not being tested on populations that are showing signs of increased rates of a disease. An example of this is Alzheimer’s disease in South Africa, a developing country. Though Alzheimer’s disease is not a disease that discriminates according to region or demographic, there are high rates existent in developing countries such as South Africa. The World Health Organization found that “about three-quarters of the estimated 1.2 billion people aged 60 years and older [with Alzheimer’s disease] will reside in developing countries” by 2025.¹⁹⁶ Despite the current increased need to have trials that will help the management of this disease for the developing nation demographic there are not many tests being conducted. It would be significantly necessary and beneficial to have these tests administered because of the lack of resources and access to financial support in these developing countries when the rates of Alzheimer’s increases. Clinical trials could address and uncover the factors that cause this disease in developing countries to provide solutions to best control the situation later.

Current Policy

In December of 2011, India officially received accreditation for their patient (clinical trial) protection program, to ensure that patients used in health trials would be consented, receive compensation, and any data taken would be accurate. This program is also aimed to foster better relations between institutions, ethics committees, researchers, and research staff.¹⁹⁷ However, all of the individuals interviewed in the Indian case study (above), “claim that, contrary to Indian laws governing drugs trials, there was no

¹⁹⁵ (Barlett)

¹⁹⁶ (Kalaria)

¹⁹⁷ (L.)

informed consent.” Since 2005, “...80 cases of severe adverse events in trials have been recorded in Indore.”³² Yet in 2008 there were 288 deaths, all of which involved families that were not compensated by drug companies.¹⁹⁸ The planning of this patient protection program began in 2010; the cases in Indore have been taking place since 2005, yet unconsented clinical trials are still able to occur. This Indian protection program was designed solely for the protection of patients, and so if that is not being done, then this program has already failed the thousands of families who were promised to be protected.

Ramadhav Shrivastav is an example of a patient who was not protected by the Indian patient protection program. He was a part of the Indian Indore case study described above. Shrivastav discovered from a journalist who read his *English* discharge papers, that he was a part of a drug trial administered by Astra Zeneca for acute coronary syndrome, though he was admitted for his heart attack¹⁹⁹. Shrivastav is a non-English speaker so his discharge papers were not accessible to him even if the company claimed that he had received them because of his inability to understand the content.

Another issue that frequently occurs in these studies is that records are not taken as seriously as they should be. Either researchers or investigators do not keep record of the missing lives (brought to media attention by families) or records surprisingly come up missing. The BBC article, “Trust of Medical Volunteers ‘Betrayed,’” stated that research information gained through many clinical trials have never been published. Thus doctors who specialize in particular diseases will not have this vital information at their disposal.²⁰⁰ The most important aspect of this situation is that it is not required by law for

¹⁹⁸ (Lloyd-Roberts)

¹⁹⁹ (Lloyd-Roberts)

²⁰⁰ (Walsh)

Yeboah -- Social Justice

pharmaceutical companies to publish information on new research data²⁰¹. This also allows future trials to have vital information such as symptoms, and trends depending on ethnicity on record to avoid retrial. If trial information cannot be readily accessible for all drug companies to look into then there can be multiple tests under the same conditions for drugs and illnesses that yield adverse consequences.

Current Action

There are organizations and individuals that address the issue of biased research through their websites or promote the execution of organized trials such as the World Health Organization (WHO) and Office for Human Research Protection (OHRP)²⁰². These organizations understand that there is a need to correct the unfair treatment of vulnerable individuals who unknowingly partake in these clinical trials. There have also been other modes of support by individuals that hope that by speaking out against this issue, a change will happen.

Indian Society for Clinical Research (ISCR) “provides a forum for exchange of information and learning... to build awareness of clinical research ...while helping to evolve the highest standards of quality and ethics” in India.²⁰³ Clinical researchers are able register to become a member and have easy access to suppliers, equipment vendors, and can communicate with one another freely. This society and site promotes open communication lines with clinical researchers so that ethical practices can take place in a connected environment. Another organization along with ISCR that is invested in the

²⁰¹ (Barlett 2)

²⁰² This office is a branch under the United States Department of Health and Human Services.

²⁰³ (“Mission”)

Yeboah -- Social Justice

well-being of clinical research in India is Jananeethi, which educates and provides aid to poor individuals who become victims in illegal schemes.²⁰⁴

Moreover an individual that supports the vision of international cooperation and public awareness is Dr. Anand Rai. He was fired when he began to suspect unsettling activity in the Indore's Maharaja Yeshwantrao Hospital. When he began to question why the Dalits were being taken into the rooms for the rich, he was quickly fired. Since that incident he has dedicated himself to researching hospital trials. On January 5, 2013, Dr. Rai stood in front of the Supreme Court and expressed his views on poor, illiterate individuals being used in clinical trials due to their illiteracy. Up to date, Dr. Rai has “filed more than 1,000 Right to Information (RTI) forms to get information regarding current medical facilities and other drug trial reports in Indore and Madhya Pradesh for overall welfare of all people.”²⁰⁵ The RTI is an act in India that was passed to contain corruption. Any information found on “corrupt practices of public/private companies [are], therefore, largely in public interest.”²⁰⁶ It allows for investigations to be conducted to reveal ill practices by any group and allow for correction. More than the 100 of the 1,000 Right to Information (RTI) forms are directly regarding clinical trials. Through his enduring efforts, Dr. Rai brought this issue to the attention of the Supreme Court and had illegal clinical trials banned. His next goal is to have families who have been largely impacted by these trials compensated for their losses.²⁰⁷

²⁰⁴ (“Objectives”)

²⁰⁵ (“Dr. Anand Rai --”)

²⁰⁶ (Pandey)

²⁰⁷ (“Dr. Anand Rai”)

Proponents of Current Practices

Not everyone feels that taking advantage of the ignorance of unsuspecting poor individuals and recruiting them into clinical trials without their consent is unethical. Clinical researcher Dr. Michael Potts “advocates[s] stripping away health protections for subjects in developing countries in order to speed trial results to investigators”. In his own words he believes that the “ill health of the developing world ... is now proving valuable for Western science to mine...”²⁰⁸ Potts’ sees the poor Indian population’s lack of access to proper health care, resulting in untreated persons, as a great benefit to the progression of Western medical science. His choice of words is harsh but he states a belief that many of these pharmaceutical companies seem to hold.

Individuals in developing countries are sought for the most dangerous phase in clinical trials. Phase 3 requires so many participants over such an expanded period of time that many people can die from the experimental drugs. This practice occurs especially in India where the India’s Health Ministry proposed an amendment in 2007 that allowed pharmaceutical companies to conduct a wider variety of tests in India prior to taking complete safety measures.²⁰⁹ On the websites of countless pharmaceutical companies, regarding the unethical cases, they ensure that all trials are done under the best interest of their patients’ health. Most “companies talk about codes of conduct and audit, only four companies disclosed details of disciplinary action that had taken place when conduct had fallen short.”²¹⁰ This statement was refuted by the Association of Clinical Research Organizations (ACRO) who said that “Clinical Research Organizations actually face more exposure if there is a problem with a trial because poor performance

²⁰⁸ (Shah 10)

²⁰⁹ (Singh)

²¹⁰ (Dreaper)

Yeboah -- Social Justice

can be a death knell for them, because the primary business is research. In this business, reputation is everything.”²¹¹ Despite this assertion there are many cases, described above even, that dispute this statement. Pharmaceutical companies do not comply with all of the necessary ethical standards that they claim. If that were the case, if reputation was such a great influencing factor, then there would not be sufficient evidence to support this claim on inequities in outsourced clinical trials.

International Policy Suggestion

It is evident that unethical clinical trials should be declared unlawful. However, as explored in the above analysis there is much more that goes into an international law than meets the eye. In conjunction with international law, there are local laws that also have to be considered in order for the agenda to be achieved on all ends of the spectrum. For international policy regarding human test subjects to be effective, there needs to be criteria that will consider all aspects of this matter. The criteria should include, but not be limited to, emphasizing the role of regional, national, and sub national levels in the countries involved. Emphasizing the role of these different levels of government, through increased communication, would allow for regulations to be thoroughly developed with the best interest of all involved. Also, the more groups that are involved, the more information can be made available to the public-- decreasing foul play. This step is necessary because only on the regional and local level could concerns unique to an area be carefully analyzed.

As of January 2013, the Indian government was targeted by spokespersons and members of the Supreme Court for their inability to address the “havoc” that is being created by uncontrolled drug trials. Monitoring drug trials effectively has now been

²¹¹ (Dreaper)

Yeboah -- Social Justice

placed under the responsibility of the Union Health Secretary to help end the lack of compensations being made to participants in clinical trials. It has been observed that “over the past four years, 10 persons have died every week in such trials.”²¹² Of the 438 individuals who died in 2011, only 22 families were compensated. Having compensation paid to patients and their families is an important step to addressing this unethical issue. For too long, the Indian government has remained in a “deep slumber” over this practice. There is no regulation, the pharmaceutical companies set up their own committees and investigators for any “adverse events” (deaths) that take place. However, as the bench of the Supreme Court pointed out, “It is very easy to form a committee or a commission. It is done just to divert people’s attention on the issue.” Due to the increased attention that outsourced clinical trials are receiving, more people are becoming aware that this issue exists. In an effort to wean the attention off of their lack of involvement the government may appoint an individual to regulate, such as the Union Health Secretary in this case, to show the public that something is being done to rectify the issue even if simply appointing the role was the only intended step. It is important that the government use the 300 voices represented at the hearing to realize that the issue in this practice goes beyond how much revenue is being added to their finances because there are millions of families affected by it.²¹³

In the United States, the Food and Drug Administration (FDA) can take partial fault when it comes to properly regulating the actions of pharmaceuticals. In 2008 the FDA “visited only 45 of the 6,485 locations where foreign drug trials were being

²¹² (“Govt”)

²¹³ (“Illegal”)

Yeboah -- Social Justice

conducted.”²¹⁴ It is difficult to trust just one body of government to monitor the activities of these drug companies because their work is vast and numerous. These examples further prove the point that another body of authority, such as the United Nations, should take it upon themselves to initiate the first steps to declaring justice in this issue through the assistance of United Nations Development Program: Crisis Prevention and Recovery.

It is important that there be a sufficient pool of funds to support this process from the United Nations Trust Fund for Human Security with regulation ensured by the United Nations Development Program: Crisis Prevention and Recovery. Maintaining a stable financial foundation ensures that this plan can develop well when holding pharmaceutical companies responsible for their wrong doing. If acquiring the necessary funds for further investigation in experiments is not an issue then researchers will not be hesitant to go through the necessary steps to confirm hypothesis if/when questions arise.

It would be helpful for the UN to team up with different organizations in the host countries to have them maintain the effectiveness of the trials. This could save the time and resources of the UN. If there are fewer people in the chain of communication, to oversee the status of a clinical trial then it would decrease the amount of time that the processes in the initial stages of the projects have to take. For example, if key players in the UN are concerned with finding the appropriate group of individuals, location, venue, or contact persons, then an individual from the inside could have all of that done with their network. Promoting a helping hand within the host country can also raise awareness and cause more foreign agents to be weary of pursuing an illegal act because of the fear of being caught (and jailed if legal action is taken against them). This is necessary because “the F.D.A. does so little monitoring that the companies can pretty much do and

²¹⁴ (Bartlett 3)

Yeboah -- Social Justice

say what they want” to make their case of ethical practice. When the FDA fails to check on the sites where clinical trials are being done, and keep in touch with the investigators and regulators present, they leave a window for fault and the chance for processions not to be carried out to a suitable standard.²¹⁵

All of these factors would contribute to the overall plan to create a legal and ethical balance between testing in the host country and pharmaceutical companies involved. It is impossible to aim for a completely fault-free clinical trial system so early in the process of change. As a result, a regulation would be known as a “one for one system.” For this system if a drug is tested on a population where the disease is not prevalent, as seen in the psoriasis case, then the drug company has to devise a comparable plan to test a drug for an illness that is prevalent to the host country that would balance out the gain. In this event the tested individuals would have to be voluntary and explained all of the possible faults that can occur. Though many do not volunteer for a test with the hindsight that they are putting their health at risk, there could be those who do not mind if they are receiving monetary compensation because they need to support their family. On the other hand, any test conducted in a developing world that is not relevant to the population there has to be moved to a country that would directly benefit from testing. For example, in January 2012, GlaxoSmithKline, in conjunction with many other organizations, began testing to combat tropical diseases that are often neglected in developing countries.²¹⁶ Combating these tropical diseases that usually do not receive much attention is a way for pharmaceutical companies to help out the population that is being, so that in the end both sides are able to benefit in some way.

²¹⁵ (Bartlett 2)

²¹⁶ (“Fighting”)

Yeboah -- Social Justice

With this new regulation, there would have to be as much money and support to fund these programs as there would be to foster trials that are for the sole benefit of the developing world. This plan is in no way perfect and may not seem feasible. However, it is a step in the right direction. This solution will help make sure that everyone involved reaps some sort of benefit. It could also ensure that when participants are recruited for trials, they are in the position to be helped rather than hurt.

Going Forward

In order for the UN to keep with the Millennium goals to aid the global effort to eradicate poverty by 2015, it needs to be acknowledged that the “Medical profession is for serving the people. Not killing them. When a doctor follows unethical practices in his profession, he becomes a public threat. He has no right to practice as a doctor.”²¹⁷

Engaging in clinical trials has had the opposite effect on eradicating poverty. The use of these poor, vulnerable families in these trials, has led to the loss of family members. If the head of the household, who are usually men in these situations, becomes sick or dies as a result of these trials the standard of living for these families will diminish. This was the case for Ramadhar Shrivastav, the only worker for his family who suffered injuries so serious that he was no longer able to work. Research companies do not compensate families for their loss; they claim that “their findings” often reveal that the cause of death was not a result of the clinical trial.²¹⁸

Public distrust of large institutions does not benefit anyone. The Dalit families in India believed that they were receiving the best treatment, treatment that they were not used to and so like anyone would they accepted. Unfortunately, the doctors did not regard

²¹⁷ (“Dr. Anand Rai”)

²¹⁸ (Lloyd-Roberts)

Yeboah -- Social Justice

their rights because of their low social standing, and some of these families went on to live with worse conditions than they were admitted into the hospital with²¹⁹. In the case of the Argentinian population, they were being tested with a Psoriasis drug that did not pertain to their region and as a result would benefit from the results of the trial in no way. On the other hand South Africans with Alzheimer's disease are neglected and do not have enough clinical trials administered even though the population would benefit due to the expected increase in dementia expected by 2025.

There have been laws passed to address the issue of unethical clinical trials in the countries of the pharmaceutical companies that administer these tests, and the host country however the prevalence of this issue is still evident. Motions have been made by institutions, organizations, and individuals to alleviate this issue through court hearings, community formation, and website awareness. The Indian Patient Protection program has great foresight in what it is that they want to achieve, however they are not doing a good job following through. Dr. Rai made a bold step when he stepped out to the Supreme Court to see to it that the unethical practices by pharmaceutical companies were changed. It could very well be that his courage helped with the development of new action taken by the Supreme Court to appoint the Union Secretary as lead of the regulation committee of clinical trials. The UN has also set millennium goals to reach by 2015 that relate to the promotion of decreasing the core issue of this situation such as poverty and without this international law put in place there can be a greater increase in these rates because many are becoming sick at the hands of pharmaceutical drugs.

When there is injustice permitted on a small scale, many other can be impacted on a larger scale. Faulty trials lead to faulty conclusions and result in incoherent diagnosis. If

²¹⁹ Reference to Mrs. Bai (in Indian case study) and Mr. Shrivastav

Yeboah -- Social Justice

a patient cannot go into a doctor's office and feel safe that they will be guaranteed the best possible care, then where else can they turn? This is true in the case of the patients who are admitted for clinical trials unknowingly, and the patients in the West who may be receiving the wrong prescriptions due to a trial tested on population that is not exposed to the illness tested.

The obstacles are evident. There is no way for the UN to absolutely eradicate this act in a few years because not every trial is expected to be published and there is no way of knowing whether or not there are illegal trails being conducted in remote countries. Nevertheless motioning for action to be taken sends the message to the pharmaceutical companies, researchers, and doctors who partake in this immoral act -- action that can be taken in the form of an international policy to hold all those who disregard the value of human life to a higher moral standard. This action carried out by United Nations Development Program: Crisis Prevention and Recovery can begin the new "one for one solution" where individuals are promoted with trial information prior to testing if they want to participate and the host country benefits from another clinical trial to solve disease prevalent at home.

Global health is important because it "... [alleviates] unnecessary human suffering"²²⁰. It is also important to remember that "Global health problems are challenges that transcend national boundaries and demand international cooperation". This statement supports the foresight that the execution of an international policy by the UN can have the answer to the problem of biased clinical trials be to promote international cooperation.

²²⁰ ("Why")

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The Nature, Cause and Prevention of Elementary School Bullying

Erin Hazen (Bergen Community College)

Mentor - Dr. Anne Maganzini

Abstract

Throughout the lifespan, one has to experience many social hardships that may test one's ability to cope with his or her environment. An example of this is bullying in schools. Although bullying is most commonly seen in college and high school, elementary schools are also seeing a dilemma in physical and verbal abuse. This paper is focused on answering the following questions:

1. What is the nature of bullying?
2. What are some typical characteristics of a bully and victims of bullying?
3. What are the consequences of the bullies and their victims?
4. What research has been done on bullying?
5. Who is an example of an elementary school bully? What changes that behavior?
6. Who is an example of elementary school bullying?
7. What actions have been taken to prevent bullying?

By defining "bullying" and studying the causes and effects of bullying, mistreatment and abuse in schools can be prevented and students who are oppressed by their peers can be given a strong support system.

Bullying in Elementary Schools

Nature of Bullying

According to the pioneer of bullying research, Dan Olweus, bullying is “a specific type of aggressive behavior that involves intent to cause harm, occurs repeatedly, and involves power of imbalance (Hunt, Peters, Rapee, 2012). Olweus also has defined it as “a student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students” (Dake, 2003). In Joseph A. Dake’s article, he found that elementary school bullying in Norway, Sweden, Denmark, Finland, Germany, Spain, Italy, English, Scotland, Ireland, Australia, Japan, and Canada is just as prevalent as in the United States. For example, 49.8% of elementary school students in Ireland are exposed to bullying while in the United States, the percentage is 19.7% (2003).

The common stereotype that is associated with bullying is that the targets tend to have physical disabilities, obesity or other distinct physical characteristics. However, Olweus realized in his studies that the actual victims of bullying tend to be “smaller and weaker than students not involved in bullying” (2003). However, despite studies focused on the profiles of victims, there has not been any definite nor confirmed information in the distinction between victimized and non-victimized students (2003). Another aspect of bullying is deviation in gender. In relation to physical bullying, boys are more likely to initiate this type of abuse compared to girls. However, studies have shown that girls are more likely to engage in indirect bullying like social exclusion and spreading rumors (2003).

Hazen -- Psychology

In addition, certain behavioral conduct has been correlated to bullying. Those who initiated in victimizing students were usually linked to issues like “physical fighting, weapon carrying, theft, property damage, substance abuse, cheating, and breaking the law” (2003).

Extent of Bullying

The damaging effects of bullying have shown to have significant long-term consequences on both the bullies and their victims. In Dake’s article, he states that bullies “began dating at a younger age than other students and these relationships often evolved at a more advanced level than peers” (2003). However, these type of relationships are “less emotionally supportive and less equitable” and are reported to “more acts of physical and social aggression toward their dating partners”.

In a study conducted by Mark S. Chapell (2006), the continuity of bullies, victims, and bully-victims were studied from elementary school to college. By surveying 119 undergraduates, he found from his questionnaires that “25 who were bullied in college, 18 (72%) had been bullied in high school and elementary school” and, thus, there was a “positive correlation between having been bullied in high school and elementary school” (2006). Chapell adds that “Sourander, Helstela, Heienius, and Piha’s (2000) 8-year longitudinal study found an association between being bullied at age 8 and age 16 and between being a bully at age 8 and 16, and this also found the same positive correlation.” (2006). According to both of these experiments, Chapell concludes that when a young elementary school is student is bullied, he or she is more likely to become a bully himself or herself in high school or college. When the issue of bullying is not addressed or resolved in elementary school, there is a cycle of bullies creating victims

and victims becoming bullies.

Research on Bullying

Since elementary school bullying has been shown to have long-term consequences, there have been studies to further understand bullying during this period and to create a valid test for studying bullying. In Australia, two elementary schools were given questionnaires to students 8 years and 15 years and completed the first version of the Personal Experience Checklist (Hunt 2012). This checklist, also known as PECK, was developed as a self-report to measure the students' exposure to bullying (2012). On this test, male and female students from different ethnic and cultural backgrounds from each school were given an open-ended sixty-five item test which included a scale of frequency ranging from 1 which indicated "never" to 5 which indicated "most days" (2012).

Based on the answers, two studies were produced. The first study was to develop a factor structure for bullying. The test was divided into five factors which included the total mean PECK score, "relational/verbal bullying", "cyberbullying", "physical bullying", and "bullying based on culture" (2012). After statistical studies and ensuring that the data was approximately normally distributed, it was found that "most participants reported low to moderate levels of bullying resulting in moderate positive skew." In addition, the consistency of each scale was ".91 for verbal-relational bullying, .90 for cyber bullying, .91 for physical bullying, and .78 for bullying based on culture" and total correlation between these factors was .40 within each of the scales (2012). The second study also confirmed the validity of PECK test.

From the data it was found that students were reported to have been bullied two or more times a month (2012). In addition, the factors from the PECK test were put on a

Hazen -- Psychology

chart with items from another test called the OBVQ cut-points. This new chart showed that there was 20.8% global bullying measure, 15.3% verbal bullying, 9.3% physical bullying, and 11.1% students who reported rumors spread about them (2012). Another aspect of bullying that was shown was the feelings and psychological consequences. It was found that the “relations between these measures of psychopathology and the total and relational-verbal PECK scales were moderate, and their relations to the physical bullying and bullying based on culture scales were small in magnitude. The associations between these measures of psychopathology and the cyber bullying scale were small or not significant” (2012). Although the PECK test indicated moderate results, the PECK test was proven successful in further bullying research and indicated how strong of a correlation there was between the experiences described in the OBVQ test and the experiences described in the PECK test.

Confessions of An Elementary School Bully

One of the most effective ways to determine how bullying occurs is to see how a bully thinks and behaves. In a special report in *People*, fifteen-year-old Daniel Harrison reflects on his elementary and middle school experience as a bully. In elementary school, Daniel Harrison began making fun of his friend Courtney Kondor (p. 70, 2010). Initially, it began as light-hearted teasing like messing up her hair and calling her names. For Harrison, “it felt cool to not be made fun of and to be the one making the fun” and never considered himself a “mean bully” but rather “as a playful bully: I bullied with a smile on my face” (2010). However, the joking took a more serious turn in December 2007 when the bully snatched Kondor’s hat from her head and began tossing it around with other students and then proceeded to stick the hat down his pants.

Hazen -- Psychology

The next morning, Harrison was sent to the dean's office. Although he was punished, he states, "I was worried about getting grounded...I wasn't worried about hurting Courtney's feelings" (2010). Although he was punished by the dean and his parents, Harrison finally realized his mistakes when he began reading Ben Mikaelson's *Touching Spirit Bear*. This story depicts an angry teen that torments a white bear. Harrison states, "It was just perfect timing to read that book...I realized who I was, and I hated it" (2010). In response, Harrison wrote a letter to Mikaelson explaining how his novel had inspired him.

A few months later, Harrison took top state honors in the national Letters About Literature Contest. Ever since this transformation, Harrison has mended his friendship with Kondor. Through this experience Harrison has become active with the bullying issue and states, "I always end up befriending the people being bullied...its satisfying to help them out" (2010).

Example of Elementary School Bullying

Despite the fact that the suicide and bullying are occurring in high school and college, a number of cases are beginning to involve out of control bullying in elementary schools. In 2009, 11-year old Carl Joseph Walker-Hoover hung himself after school bullies had repeatedly teased him about his sexuality (James). Although Carl Joseph Walker-Hoover appeared to be a healthy individual who participated in many social activities like Boy Scouts, football, charity, and church functions, Hoover was called offensive and homophobic names on a daily basis. According to his mother, Sirdeaner L. Walker, Carl had experienced bullying ever since he had started sixth grade. After seeing her son victimized, Walker pleaded to the New Leadership Charter School for

Hazen -- Psychology

intervention. However, on April 6, her son was found hanging by an extension cord on the second floor of his home.

In response, the Gay, Lesbian and Straight Education Network launched a “multipronged education campaign that fought against the usage of anti-gay language and bullying”. According to the GLSEN spokesman Daryl Presgraves, “When you are in elementary school, one of the first things you learn is the feeling of hurt when you are called ‘gay’ or ‘fag’...it doesn’t matter if you are gay or straight. The term ‘gay’ has become synonymous with ‘uncool’” (2001). Although Ann Haas, director of the Suicide Prevention Project at the American Foundation for Suicide Prevention stated that the amount of elementary school students committing suicide is relatively low, the numbers are nonetheless “creeping up” (2001). Despite the fact that Hoover’s life was cut short, his mother continues to stress the importance of anti-bullying and states, “I am determined for the rest of my life to advocate on behalf of students who are voiceless and silent” (2001).

Solutions: Harvard Anti-Bullying Program

Since elementary school bullying is clearly an issue that needs to be addressed, psychologist Izzy Kalman and Harvard Elementary School have attempted to discover an approach that “teaches kids in a fun and powerful way to use well-established psychological principles to handle bullying by themselves, without anyone’s help and without getting anyone in trouble (Kalman 2010). The solution came from the Harvard Elementary School fifth-grade class. In a letter, the students explained how they researched different programs and websites about how to handle bullying. They discovered that educating people about the issue was the most effective way to counter-

Hazen -- Psychology

act bullying. So, the students began working on different projects like power points, plays, posters, comic strips, podcasts, and created a website. On this website, the solutions included confronting the bully about rumors, agreeing with the bully, changing the conversation to a different topic, acting as if he or she won, and to show no emotion (ByeByeBullies). In addition, this website provides helpful videos, examples, and visual aides to help students handle bullies. Due to these pro-active methods, local newspapers and CBS New York have taken an interest in the project. So, Kalman and the Harvard Elementary School fifth grade class learned that they need “an approach that is based on psychology rather than law-enforcement” and to “teach people how to handle the problems of life, not to try to protect them from those problems and to punish problem-makers out of existence” (Kalman 2010).

Solutions: Elementary School Bullying Intervention

In order to test different ways to address this important issue, researchers wanted examined the effectiveness of elementary school bullying intervention through a longitudinal study. This pilot study consists of “1) zero tolerance for behavioral disturbances such as bullying, victimization, and standing by during violent acts, 2) a discipline plan for modeling appropriate behavior, 3) a physical education plan designed to teach self-regulation skills, and 4) a mentoring program for adults sand children to assist children” (Twemlow, Fonagy, Sacco, 2001). In this study, two elementary schools were used as the experimental and control group. The experimental group received teacher in-service on zero-tolerance bullying training. This intervention program ran independently from 1994-1998 with minimal support from the research team. Personnel from schools volunteered their time and at least \$1500 was spent on materials like data

Hazen -- Psychology

entry, analysis, and write-up for school bullying (2001). However, both schools received psychiatric consultants who focused on medical assessment and referral. In addition, the Metropolitan Achievement Test was given to assess reading, written language, science, social studies, and research and thinking skills.

The results from this study showed “a dramatic reduction in disciplinary referrals in the experimental school associated with the induction program from 74 for physical aggressiveness in 1994-1995 to 34 in 1995-1996 and 36 in 1996-1997” (2001). In addition, the scores for the Metropolitan Achievement Test showed that the experimental school that had the intervention program showed significant improvement in academic subjects (“from the 40th percentile to the 58th percentile) compared to the control group which did not change during the time of the study (2001). In addition, “analyses indicate that not only did the school’s overall performance improve over the period of the program but individual students’ performance improved significantly more in the experimental school” (2001). Clearly, the need for pro-active education on bullying shows a correlation with students’ academic success.

Solutions: New Jersey HIB Law

Three months after the death of Rutgers University student, Tyler Clementi, New Jersey Governor Chris Christie signed the Harassment, Intimidation, and Bullying Law. According to the State of New Jersey Department of Education, “harassment, intimidation and bullying’ means any gesture, any written, verbal or physical act, or any electronic communication, whether it be a single incident or a series of incidents, that is

Hazen -- Psychology

reasonably perceived as being motivated either by any actual or perceived characteristics....” (*State of New Jersey* 2011). In addition, the law appoints specific people to run anti-bullying programs, requires investigation the same day the events occurs, requires mandatory bi-yearly reports from the superintendents in which the school will receive an online letter grade, and trains teachers, school board members, and administrators (Perez-Pena 2011). The policy also includes specific description of expected behavior from students, consequences and appropriate remedial actions for a person who commits any acts of HIB (*State of New Jersey* 2011).

Although the HIB law has ensured protection against all forms of bullying, some have considered the law too extreme and has commonly been considered “the toughest legislation against bullying in the nation” (Hu 2011). According to New Jersey Association of School Administrators Richard G. Bozza, “I think this has gone well overboard...Now we have to police the community 24 hours a day. Where are the people and resources to do this?” (Hu 2011). In addition, thousands of school employers were required to attend training sessions which have totaled up to two-hundred districts and \$1295 package that includes a DVD and a one-hundred page manual (2011). Currently, the balance between appropriate consequences and overstepping privacy boundaries is still in discussion.

Conclusion

Through close examination of the nature, extent, and examples of elementary school bullying, effective solutions can be made to counteract this epidemic issue.

Although many schools have responded to the issue, further studies and improvements on bullying laws must be made to further eliminate bullying throughout the lifespan. In addition, families should also stress the importance of respect and acceptance so that children are enforced at both home and school. By taking precautions beforehand, bullying can be controlled before it gets out of hand.

Hazen -- Psychology

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Rogue Species Unleashed: Examining Non-Native Invasive Species, A Biological Problem With Socioeconomic Consequences

Caitlyn Maczka (Montgomery College)

Mentor - Prof. Efstathia Siegel

Globalization can be described as the increasing interconnectedness among people across the globe. Over the past 100 years, the rate of globalization has steadily increased with new technologies such as trains, airplanes, cars, the internet, and cell phones, thus expanding the international exchange of ideas, information, products, and culture. There is a plethora of social and economic ramifications related to this growth, however one often overlooked side-effect of globalization is a biological one. With increased human transportation and international trade, the world becomes smaller for not only humans, but for nature as well.

Each and every species on the planet has its own ecosystem, its own unit of space with a unique environment and a community of other organisms. Nature has a way of keeping itself organized, and separating one ecosystem from another. There are several reasons why a species will generally not travel far from or out of its native habitat, including various natural physical boundaries such as oceans, mountains, ice sheets, river valleys, and distance.²²¹ Occasionally these natural barriers are breached by a species due to events like climate change, natural disasters, wind currents, and ocean currents²²². A species may naturally travel to or migrate to a new ecosystem, eventually expanding its

²²¹ Lockwood, Hoops, and Marchetti (2007)

²²² Lockwood et al. (2007)

range. Scientists have many names for such species, including immigrants, waifs, and colonizers²²³.

Besides these natural forces removing physical boundaries, there are also human forces which attribute to species movement. An “introduced species” is an organism brought to an area (usually by humans) where it would not naturally occur²²⁴. Ever since humans have engaged in transcontinental travel, they have helped organisms breach geographic boundaries, transporting them out of their native habitats and into a new one. Sometimes this transfer of organisms is purposeful, and other times it is unintentional. Today species are spread through four major vectors: the international ornamental horticulture trade, agriculture trade, pet trade (and release), and accidental means²²⁵ (i.e. via ballast water in ships). Regardless of intent, humans are primarily responsible for increasing the number of worldwide species introductions as compared to what species movement would naturally occur²²⁶. Although quantitatively measuring the exact rate of introductions is difficult, Mark A. Davis, the DeWitt Wallace Professor and Chair of Biology at Macalester College, Saint Paul, MN (2009), claims, “given the increased travel of humans and their commerce in the past several hundred years, it is difficult to imagine that introduction rates for many organisms have not gone up”. This can be seen on a small scale through the following case study of Hawaiian flora:

The National Research Council calculated that the Hawaiian native plant flora could have arisen from a natural dispersal rate of one species every 100,000

²²³ Lockwood et al. (2007)

²²⁴ Glossary (2007)

²²⁵ Davis (2009)

²²⁶ Lockwood et al. (2007)

years...The rate of addition of plant species to Hawaii accelerates to one new plant species every 50 years after the arrival of the Polynesians, and to one new species every 22 years after the arrival of the Europeans. The end result is a near doubling of the number of plant species persisting on the Hawaiian Islands as compared to what may have naturally dispersed and evolved there.²²⁷

Human vectors of transport have historically played a huge part in the introduction of foreign fauna to the Hawaiian Islands. This trend of increasing species introductions can be seen all over the planet²²⁸. With the growing mobility of people and goods, there is no question that globalization is a pathogen for species introductions.

It is important to keep in mind that species introductions are not inherently adverse. Most species introduced purposefully possess beneficial traits, such as aesthetic appeal, agricultural or nutritional value, landscape or ecological advantages, etc., hence the reason why they were introduced in the first place. Problems arise when a species thrives in and takes over a given environment. This is called a species “invasion”. A non-native species is to be considered “invasive” when it out-competes native species for space and resources²²⁹. A single species takes over an entire ecosystem, and a dramatic loss in biodiversity occurs²³⁰. Species invasions are no small predicament. The UN Convention on Biological Diversity (CBD) estimated that the *annual* worldwide cost of

²²⁷ Lockwood et al. (2007)

²²⁸ Lockwood et al. (2007)

²²⁹ “Glossary” (2007)

²³⁰ Davis (2009)

control, management, and damages caused by non-native invasive species is \$1.4 trillion – that is 5% of the global economy²³¹.

Species invasions have tangible implications for human well-being. The Millennium Ecosystem Assessment²³² identified “several key components to human well-being: the basic material needs for a good life, freedom and choice, health, good social relations, and personal security. Well-being exists on a continuum with poverty, which has been defined as “pronounced deprivation in well-being.”²³³ As Dennis Rangi, chair of the Global Invasive Species Programme²³⁴ (n.d.) explains, “while the accessibility of these [components] to any particular individual or community is significantly influenced by their socio-political circumstances, the availability of many is dependent on biodiversity, ecosystems and ecosystem services”. “Ecosystem services” are natural assets of the environment vital to human health.²³⁵ These ecosystem services include resources such as food, water, building material and traditional medicines; processes regulating water purification, soil formation, flood attenuation, erosion control, crop pollination and nutrient cycling, as well as cultural aspects such as recreational opportunities and spiritual fulfillment.²³⁶ Invasive species pose a threat to all of these services.

²³¹ According to the CBD, these estimates would increase dramatically if we had monetary values for all aspects of nature that are affected, including losses in biodiversity, species extinction, and ecosystem services. (“Seal”, 2009)

²³² According to the Global Invasive Species Programme, The Millennium Ecosystem Assessment “was conducted between 2001 and 2005 to assess the consequences of ecosystem change for human well-being, and to analyze options available to enhance the conservation and sustainable use of ecosystems and their contributions to human well-being”. (Rangi, n.d.)

²³³ “Ecosystems” (n.d.)

²³⁴ The GISP is an international partnership of scientists, non-governmental organizations (NGOs), intergovernmental organizations and policymakers assisting the UN Convention on Biological Diversity (CBD) and the UN Environment Programme (UNEP) in decision-making. (“Seal”, 2009)

²³⁵ “Ecosystem services” (2011)

²³⁶ Rangi (n.d.)

Unfortunately, invasive species (along with many other environmental concerns) are often overlooked as a threat, and/or written off as “second priority”.

Environmental matters are put in a separate category from human concerns, pushed aside for “more important” matters. Even many environmentalist groups add to this mindset.

The Earth First! Movement believes in biocentrism, that the life of the Earth (i.e. plants and animals) comes first above all else, including human needs and desires²³⁷. This false division between nature and humans is not only unnecessary, but very dangerous. If we continue to see these two issues as completely separate, or in competition with one another, we will inherently make decisions for one by neglecting the other, and will soon find ourselves in a place where it is impossible to alleviate the damage that we have done to ourselves. Environmental and human interests should be seen as one in the same, where we fix one to fix the other. Dealing with the burgeoning invasive species crisis is not simply a matter of protecting Mother Nature, but of protecting human lives.

Globalization has biological consequences, and these consequences have socioeconomic ramifications. Invasive species are not simply environmental disasters, but human catastrophes.

Although almost every country suffers significant economic losses from non-native invasive species, damages are felt most drastically by the world’s poor²³⁸. In developing nations where the economy relies heavily on agriculture, forestry, and fishing, people’s livelihoods are almost solely based in these economic sectors²³⁹. Anything having significant impacts on these sectors has extreme effects for the people relying on them for income. In addition to these concerns, the poor are not financially equipped to

²³⁷ “About” (n.d.)

²³⁸ Davis (2009)

²³⁹ Rangi (n.d.)

deal with threats to their livelihoods. Farmers in a developed country may, for example, invest in some method of control or eradication of a pest which is destroying their crops. However poor farmers do not have the means to pay these costs, and are forced to cut their losses, and take the devastation as it comes²⁴⁰. Due to the plethora of preexisting problems for those living under poverty, invasive species serve as a weight, securing a lifetime of destitution and turmoil.

The water hyacinth invasion in Lake Victoria in Africa clearly illustrates this point. Lake Victoria is solely responsible for maintaining the livelihood of more than 30 million people²⁴¹. This lake serves as the main source of water for bathing, drinking, and cooking, and the lake's fish populations provide protein and income for families²⁴². The Lake Victoria community is one fighting overfishing and pollution in the lake, and job and revenue loss due to decreased fish stocks²⁴³. The lake has a history of eutrophication caused by the dumping of raw sewage into the lake, and ecological problems with the invasion of the Nile Perch²⁴⁴. While the water hyacinth is not the sole issue impacting the lake and surrounding communities, it could definitely serve as the "final straw" between life and despair for riparian people.

Worldwide, the water hyacinth, or *Eichhornia crassipes*, has earned the title of the world's worst aquatic weed. Floating in the water suspended by air-filled sacs in its leaves²⁴⁵, this species has beautiful, large, violet flowers which make it a popular ornamental plant for ponds. For this reason, it was taken from its native habitat in South

²⁴⁰ "Farmers... as it comes": Davis (2009)

²⁴¹ Kagolo (2012)

²⁴² Mulisa (2012)

²⁴³ Kagolo (2012)

²⁴⁴ Godfrey (2013)

²⁴⁵ "Water" (2011)

America, and introduced to several countries via the international horticulture trade. Today more than 50 countries on five continents are infested with the plant.²⁴⁶

The weed first became a problem for Lake Victoria in the early 1980's, and devastation peaked around 1995. During this time, the plant became so ruthless that there was a campaign launched in hopes of complete eradication. After endless time and efforts spent between the Kenyan, Tanzanian, and Ugandan governments, and also the international community, in 1999 the weed had almost completely disappeared from the area. Unfortunately because these mitigation methods were only temporary fixes, no permanent solutions were created and the weed has since made a fierce come-back. As Meddy Mulsa of Tanzania Daily News (2012) reports, "There are now clear signs that water hyacinth will have more devastating consequences on marine life and...human beings in Lake Victoria."

Some of the data and information presented in the following case study is information retrieved from studies done in the 1990's at the weed's peak. It should be noted that while current levels of hyacinth coverage are lower than these peak levels, growth has since begun to increase once again, and there is a severe threat that hyacinth coverage will return to the high levels of the late 1990's. Along with this increased hyacinth growth comes the same socioeconomic impacts felt by riparian communities at this time.

The water hyacinth poses some major economic obstacles. Its thick, dense, growth patterns cause problems in waterways. In irrigation canals it reduces flow and clogs intake pumps. It interferes with the navigation of recreational and commercial boats, negatively impacting fishing and availability of recreational activities. The loss in

²⁴⁶ "Worldwide... plant": (IUCN/SSC, 2006)

recreational activity availability reduces real-estate values and tourism appeal. A hydroelectric plant in Jinga, Uganda was forced to shut down due to the clogging of intake pipes. There were also reports of increased cases of water borne diseases in the area, because the stale and stagnant water harbors mosquitos and other disease inducing organisms²⁴⁷. In addition to all of this, other countries are reluctant to trade with nations infected with the species, as they do not want the hyacinth to be accidentally transported to their own country²⁴⁸. The water hyacinth also consumes large quantities of water from the lake, which through the process of transpiration is evaporated into the air. This increases evaporation rates in the lake to eight times what would normally be lost through open water surface evaporation. The plant lowers the pH, dissolved oxygen, and light levels of the water beneath its mats, as well as increasing CO₂ tension and turbidity. This water quality degradation decreases fish health, and kills other marine life as well. The biological decay causes water quality to even further deplete, making the water undrinkable for humans and livestock²⁴⁹.

The primary reason why the water hyacinth is especially detrimental to the riparian communities surrounding Lake Victoria is because of its impact on fishing. The plant makes it almost impossible for fishermen to guide their boats through the lake. In 2012, a group of 60 fishermen were stranded in the middle of the lake for three days, trapped by the water hyacinth and unable to get ashore. They were forced to throw out what little fish they had caught (due to rotting), and survived by drinking the polluted lake water and consuming raw fish. This was the third time an incident such as this had been reported in

²⁴⁷ "Irrigation canals... diseases in the area": (IUCN/SSC, 2006)

²⁴⁸ (Davis 2009)

²⁴⁹ Kateregga (2008)

the lake since 2007²⁵⁰. Occurrences such as this one are costly to both fisherman and rescue teams; precious time and resources are wasted. The rescue coordinator for the incident strongly encourages fishermen to avoid the lake all together while the hyacinth still claims so much of the water²⁵¹.

This fishery shutdown presents monumental setbacks. Lake Victoria is Africa's number one source of inland fishery production²⁵². Unable to sustain themselves on livestock due to periodic yet intense droughts, communities depend on fishing in Lake Victoria for their protein needs²⁵³. According to a study by Eseza Kateregga and Thomas Sterner for The Environment for Development (EfD) initiative (2008), water hyacinth was seen to decrease the catchability of fish by an average of 45 percent, 2 percent, and 6 percent in the Kenya, Tanzania, and Uganda sections of Lake Victoria, respectively²⁵⁴. The large reduction in Kenya's section is due to the higher abundance of hyacinth growth in these waters as compared to the other two sections. Kenya is more drastically affected because the small part of the lake which touches its borders is almost completely covered in the weed²⁵⁵.

The reaches of the plant are not purely economic. Due to the effects on traditional forms of livelihood and other factors, an invasive species has the potential to split a community at the social and cultural seams, as is the case for Lake Victoria communities. An invasion's devastation does not always impact all members of society equally, and the water hyacinth invasion has different implications for women and men. Gender

²⁵⁰ "In 2012... since 2007": Ojwang (2012)

²⁵¹ Ojwang (2012)

²⁵² Balirwa et al. (2003)

²⁵³ Balirwa et al. (2003)

²⁵⁴ Kateregga and Sterner (2008)

²⁵⁵ Kateregga and Sterner (2008)

differences in the lake start with different gender roles associated with various occupations and responsibilities. Men traditionally serve as the primary bread-winners, as they directly pull fish from the lake. Women come in at a secondary role, prepping and selling the fish in the market. As Medard, Sobo, Ngatunga, and Chirwa in *Women and gender participation in the fisheries sector in Lake Victoria* (2001) explain, “Men have more advantages compared to women due to their being able to directly access the catch in terms of capital, transportation and time”. This can be witnessed quantitatively, as in the study it was shown that “Men earned an average of \$17.8 per landing while females earned about \$7.72 per day”²⁵⁶. When the water hyacinth decreases fish catchability, and in turn decreases profits from the fishing industry, men are losing more per capita than women. In addition to this, the primary responsibility of men is to fish. When they can no longer do this in Lake Victoria, they are forced to either find elsewhere to fish or find another source of income, which is a very difficult thing to do. However, women have multiple responsibilities within the community, so they are more versatile when this one sector is limited. Although a woman’s income is significantly diminished, her power within society remains relatively the same compared to what it was previously. Men, on the other hand, lose a significant amount of power because they are no longer able to contribute to the family and community as they once were.

Another factor even further increasing this distance between genders is the women’s ability to use the water hyacinth as an entrepreneurship opportunity. Women such as Caroline Agwanda have found a way to dry out the plant and weave it, producing furniture, baskets, jewelry, clothing, and other merchandise which they sell for a profit. Agwanda heads Hyacinth Ornaments Production Enterprises (HOPE) in Kisumu,

²⁵⁶ Medard et al. (2001)

Kenya²⁵⁷. HOPE, founded in 1998, is a women's organization which trains individual artists, women with disabilities, and women and youth groups in the Lake Victoria region in Kenya in the art of hyacinth weaving²⁵⁸. Hyacinth weaving employs disadvantaged women, empowering them in ways that they have never previously experienced.

Agwanda and her group have been so successful that they are looking to expand their business, asking for resources to build a factory where they can manufacture more efficiently, consuming even more of the hyacinth, aiding to control efforts²⁵⁹. This is significant because while the men are losing from the hyacinth invasion, women have found a way to bounce back and use it to their advantage. Although the economic implications from a decrease in fishing have impacted women negatively, they are a bit reluctant to completely destroy the new source of power and revenue. This has created tension within the community, a side effect reaching further than any economic implications. Not all parties are excited about the unique business opportunity. Philip Ochieng, a research scientist working with the government to mitigate environmental problems caused by hyacinth, does not advocate this use of the plant. He argues that transportation of the plant from the lake could help it to spread²⁶⁰. Not surprisingly, most men advocate for the water hyacinth's complete removal from the area. Lake Victoria fishermen have been especially vocal to the Lake Victoria Environmental Project, expressing "the need to put in place immediate measures to curb the weed"²⁶¹.

Intercommunity conflict is slowing the process of finding an effective solution to the problem, thus creating a ravaging downward spiral.

²⁵⁷ Leposo and Ko (2012)

²⁵⁸ "Hyacinth" (2013)

²⁵⁹ Leposo and Ko (2012)

²⁶⁰ "Philip... spread": As cited in Leposo and Ko (2012)

²⁶¹ Ochieng (2012)

Like the water hyacinth, *Prosopis* weed in Ethiopia presents major socioeconomic threats to communities in the region. *Prosopis* is a genus in the family *Fabaceae*, or pea plants. There are 45 different species of trees and shrubs within the genus; four of which (*prosopis glandulosa*, *P. velutina*, *P. juliflora* and *P. pallida*) are considered to be some of the most highly invasive plants in the world²⁶². As of 2010, the plant was known to invade millions of hectares in Asia, Africa, Australia, and the Americas²⁶³. *Prosopis juliflora* more specifically, is a thorny shrub native to South America. It was common to plant the shrub for its use as a rangeland restoration plant and shade and resource provider, offering honey, charcoal, timber, fuel, and fodder for human and animal consumption²⁶⁴. For these benefits, several governmental organizations in Ethiopia planted large quantities of *Prosopis* as a part of an afforestation campaign following a mass drought in 1970 in hopes of improving harsh conditions in the area. Despite what good it may have done at the time, only twenty years later the plant had naturalized and become a fierce and independent invader²⁶⁵.

The *Prosopis* problem and food security in the Afar region of Ethiopia are directly linked. As Admasu (2008) explains, over 80% of the population (84 million people) live below the poverty line of \$2 a day, 31 million of which live below the national poverty line of less than half a dollar a day. As one of the poorest and least developed countries in the world, every year between six and thirteen million people are at risk of starvation due to food shortage. In arid and semi-arid areas, like the Afar region, the situation is significantly worse due to little rainfall, economic and political marginalization, and

²⁶² Wakie, Evangelista, and Laituri (2012)

²⁶³ Wakie et al. (2012)

²⁶⁴ “*Prosopis juliflora*... consumption”: Fish et al. (2010)

²⁶⁵ “For these... independent invader”: Wakie et al. (2012)

undeveloped infrastructure²⁶⁶. The Afar region is completely dependent on livestock production for both food and income, and as Admasu (2008) claims, “the added impact of invasive species can further intensify food insecurity and increase vulnerability to hazards and risks”.

The weed presents problems for several reasons. First, *Prosopis* overtakes agricultural fields choking out crops. It overtakes rangeland killing native grasses which would normally provide food for livestock consumption. *Prosopis* thickets harbor predators as well, which present a threat to both livestock and herders. In addition, *Prosopis* peapods can be ground and added to goat and cattle fodder, reducing costs of the fodder. However, only 20% of the animal’s feed should contain *Prosopis* flour. In many parts of Ethiopia and the Afar region specifically, farmers use higher concentrations of *Prosopis* flour in their fodder. Although this saves money initially, it leads to sickness and nonviable livestock. Animals also eat peapods directly from the *Prosopis*, causing sickness and eventually death²⁶⁷. Income depletions in crop and livestock are losses that the people of the Afar region simply cannot afford.

As was the case of water hyacinth, *Prosopis* causes not only economic, but social plights. *Prosopis* causes intercommunity conflict. Because the plant takes over rangeland, men are forced to travel further and further in search of suitable grazing land for their livestock. Good grazing land is hard to come by even without the effects of the *Prosopis* due to irregular rainfall; the species invasion magnifies preexisting problems²⁶⁸. According to Fish et al. (2010), the extended area used for grazing because of the *Prosopis* invasion “triggers conflict with neighboring communities who are also having to

²⁶⁶ “As one of the poorest... infrastructure”: Admasu (2008)

²⁶⁷ “First... as well”: Wakie et al. (2012)

²⁶⁸ “Because the plant... preexisting problems” Fish et al. (2006)

search further afield”²⁶⁹. Hirut Kassam, Farm Africa Afar Prosopis Management Project Manager, also cited similar occurrences.²⁷⁰

Prosopis causes conflict not only between communities, but also within a single community. According to Fish et al. (2010), in the Afar region, the responsibility of collecting materials for house construction goes to women. Prosopis crowds out the native species which women need to gather, causing the women to search longer and travel further for suitable grasses and woody plants. This has a number of implications, including increased risk and cost for obtaining material, and decreased time availability for the women to participate in other duties.

This decreased time availability has consequences. As Fish et al. (2010) explains, women in Ethiopia are at a tremendous disadvantage when it comes to decision making and overall power within society. In the Afar region specifically, women are rarely included in public forums, where communities make resolutions regarding natural resource management, including invasive species issues. Fish et al. (2010) attributes the women’s absence to several reasons, including lack of education, lack of confidence to participate, lack of experience, and a dedication to domestic responsibilities. This lack of female participation leads to male-oriented decision-making, causing the marginalization of women. Fish et al. (2010) explains that there has been a movement by women’s groups to overcome the deficiencies in education, confidence, and experience, in order to increase female participation in the meetings. However, these women’s groups are not solving the fundamental problems associated with female dedication to domestic responsibilities. As stated before, Prosopis increases the amount of time that it takes for

²⁶⁹ Fish et al. (2006)

²⁷⁰ As cited in Bulbula (2012)

women to gather building materials and other such subsistence supplies, thus it takes women much longer to fulfill responsibilities. It ultimately reduces the amount of free time she has which could be spend attending community meetings. Indirectly, the species invasion is decreasing women's power within society.

Presenting another conflict between men and women is the topic of utilization. Many Prosopis management plans consist of some sort of utilization strategy, in hopes of fully exploiting the plant for resources, ultimately leading to eradication²⁷¹. The Food and Agriculture Organization of the United Nations ("Survey", 2009) maintains that "Gender issues are... an important aspect, since children, women and men use [Prosopis] in different ways." Prosopis is commonly used in the Afar region for fuelwood. The plant provides cheap material that burns easily, even when wet. Since women are the primary gatherers and consumers of fuelwood, this practice disproportionately benefits them in comparison to men²⁷². However, Prosopis can also be sold or traded as products for construction and fencing poles, as well as charcoal. These uses primarily benefit males. Fish et al. (2010) explains that through studies, it was determined that the practice of charcoal production was overwhelmingly reported to be a male dominated trade, and that they are the ones who reap the economic benefits. The production of trade goods is a for-profit activity, while fuelwood is consumed for subsistence²⁷³. Mwangi (2005) expresses that "There is a danger that a shift to higher valued Prosopis commodities may crowd out lower income, though beneficial uses" such as fuelwood consumption. A shift in this direction would leave women at an additional disadvantage, as finding firewood would become more a difficult and costly task. However, men are losing a significant

²⁷¹ Wakie et al. (2012)

²⁷² "Prosopis is commonly... comparison to men": Mwangi (2005)

²⁷³ Mwangi (2005)

amount of income due to losses in livestock, costs which women do not directly suffer. As Mwangi (2005) explains, it has been proven that economically, men suffer many times more than women do from the *Prosopis* invasion. If men are unable to reap any economic benefits from the plant, their debts only become elevated. The species invasion puts men and women in direct conflict with one another.

As illustrated, the biological consequences of increased species introductions due to globalization is not in fact a purely biological, or even an economic disaster. The social implications of the issue cannot be ignored. As seen through the case studies of water hyacinth and *Prosopis*, there are multifaceted harmful effects. Although most of the socioeconomic problems in these areas were well established before the respective species invasions, the invaders serve to amplify the issues, increasing overall severity. Although finding an effective solution to these invasive species problems would not solve all of the adversities experienced by the people of the Afar and Lake Victoria areas, alleviating the adversities is significantly harder, if not impossible, without first managing the invasive species. Admasu (2008) makes an applicable argument, that “These lessons may serve to alert other communities, practitioners and decision-makers in areas susceptible to the same problem of the high risks and costs of invasive species, and contribute evidence advocating for enabling policy environments to effectively manage invasives species.”²⁷⁴

Once an invader species becomes established, species management and eradication are incredibly difficult and expensive tasks. Achim Steiner, UN Under-Secretary General and Executive Director for the UN Environment Programme (2009)

²⁷⁴ Admasu (2008) claims this as the purpose of FARM-Africa’s study and report on Invasive Plants and Food Security in the case of *Prosopis juliflora* in the Afar region of Ethiopia

argues that preventing alien invasive species from being introduced to new areas is demonstrably cheaper than waiting for a species to become established before attempting to deal with it. Steiner (2009) asserts that “Alien invasive species have for too long been given a free ride – raising awareness among policy-makers and the public and accelerating a comprehensive response is long overdue.” However, Stas Burgiel, policy director at the Global Invasive Species Program (GISP) (“What”, 2012), refutes that preemptive solutions are much easier discussed than implemented. Burgiel (“What”, 2012) explains that the primary roadblock is getting national legislation assistance. The UN Convention on Biological Diversity claims that although there are many existing international and regional binding agreements and voluntary guidelines that include regulations on invasive species, there is a need for further international cooperation, and collaboration among governments, economic sectors, and non-governmental and international organizations²⁷⁵. Only after the global community acknowledges and works together to lessen this global calamity, can effective solutions be developed, and livelihoods spared.

²⁷⁵ “What” (2012)

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The Old Musician (1862) Edouard Manet

Lynn Bonde (Montgomery College)

Mentor - Dr. Claudia Rousseau

Political and social disorder in France in the the late 18th and early 19th century spawned a dramatic upheaval in philosophy, political ideology, and the arts beginning in the mid-1840s. New perspectives driven by these upheavals would revolutionize the way artists viewed their work in terms of both its craft and its meaning or purpose, and how it would be viewed by others. A pivotal figure in this quiet revolution was Edouard Manet, the artist who became the fulcrum between art as it had been and art as it was to become in the mid-nineteenth century.

From his birth in January 1832, Manet, the first son of an affluent, bourgeois Parisian family, grew up amid remarkable political and military instability. In his first two decades, he was deeply affected by the Revolution of 1848, the rise of the Second Republic and its collapse into the Second Empire.²⁷⁶

This social turmoil generated deep consternation among artists and philosophers about how to frame their newly emerging world in meaningful visual, philosophical, and

²⁷⁶. John Richardson, *Edouard Manet: Paintings and Drawings*, New York, 1958. p. 8. Manet retained his Republican sympathies throughout his life despite his upper-class upbringing and independent means.

poetically metaphorical terms.²⁷⁷ For many dynamic thinkers of the time, the past and its strictures were considered stale and moribund, while the present was dramatic, if not terrifying, and the future, in some mysterious amalgam of the two, exhilarating. The times generated a nascent optimism about a better world to come and demanded the articulation of a language to express it.²⁷⁸

Artists, poets, and philosophers took on the challenge of articulating a way to create a bridge between their age and the past and the reasons why that bridge required a different verbal and visual vocabulary. They produced a definition of their contemporary era and called it “modern.”²⁷⁹ Charles Baudelaire may have been the first to articulate this notion of *modernité* and the contemporary artist’s responsibility within its framework: “By modernity I mean the ephemeral, the fugitive, the contingent; the half of art whose other half is the eternal, and the immutable.”^{280 281} For the “ephemeral and contingent,” the

²⁷⁷. Anne Coffin Hanson, *Manet and the Modern Tradition*, New Haven, 1977. p. 3.

²⁷⁸. Hanson, 1977. p. 3.

²⁷⁹. “Modernity: a word that emerges and rebounds between Gautier and Baudelaire in the space of a little more than 10 years . . . between 1852 and 1863. And this was always done with caution, with the awareness of introducing an alien notion into the language.” John Simon, “Paris Review,” *New York Times Book Review*, p. 14, November 18, 2012, quoting Roberto Calasso, *La Folie Baudelaire*, (tr.) Alastair McEwen, New York, 2012.

²⁸⁰. Charles Baudelaire, (tr. and ed.) Jonathan Mayne, *The Painter of Modern Life and Other Essays*, 1995. London. (Accessed at http://www.columbia.edu/itc/architecture/ockman/pdfs/dossier_4/Baudelaire.pdf, 12/5/12). The fact that Baudelaire was referring in this essay, published in 1863, to Constantin Guys as the epitome of this new philosophy, rather than to his friend Manet reportedly rankled Manet, but perhaps no more than the fact that for the remainder of his life Baudelaire never gave Manet the approval he apparently wished for. Indeed, when Manet wrote to complain to Baudelaire about the critical thrashing his *Olympia* had received, Baudelaire reportedly replied “*vous n’êtes que le premier dans la decrepitude de votre art.*” These slights may have been rectified slightly when, near the end of his life, Baudelaire is reported to have sat up in his sickbed and cried, “Manet! Manet!” But it remains a mystery to historians how Baudelaire failed to see in Manet the personification of the artist conjured by his own vision. See, J.A. Hiddleston, “Baudelaire, Manet, and Modernity,: *The Modern Language Review*, Vol. 87, No. 3 (July 1992), p. 568. (Accessed at <http://www.jstor.org/stable/3732920>, 12/5/12).

²⁸¹. Henri Meschonnic, (tr.) Gabriella Bedetti and Alice Otis, “Modernity Modernity” in *New Literary History*, Vol. 23, No. 2, Spring 1992, p. 421 (excerpted from Meschonnic, Henri, *Modernité modernité*,

transitory stuff of everyday life, it was only the true artist, Baudelaire wrote, “who knows how to tear from contemporary life its epic side and make us see and understand, with color or line, how great and poetic we are in our neckties and our polished boots.”²⁸² ²⁸³

Manet, with his myriad personal and artistic contradictions²⁸⁴, may have been the epitome of the this conception of the modern artist. He was both classically trained in the application of paint to canvas and possessed of the keen eye and sensibility of an intelligent observer of the world around him. Well-educated, highly cultured, and destined for a career in law²⁸⁵, Manet was, from early childhood, an inveterate sketcher. Even as a youngster, in drawing lessons arranged by his maternal uncle, Colonel Edouard Fournier, he rebelled against copying plaster casts and history paintings, remarking that Diderot “was talking nonsense when he maintained that an artist should not paint a man

Paris 1988, pp. 9-46) (Accessed at <http://www.jstor.org/stable/469243> 12/5/12). “If the modern is a function of the subject, its meaning, its activity is not making the new but making the unknown: the historical adventure of the subject. Which would allow resuming the habitual oppositions between tradition and invention, order and disorder. Locked oppositions: the two goats on the bridge.”

²⁸². Michelle Hannoosh, “Painters of Modern Life: Baudelaire and the Impressionists,” *Visions of the Modern City: Essays in History, Art, and Literature*, (eds.) William Sharpe and Leonard Wallock. 1987. Baltimore. (Accessed at <http://eres.indproxy.org/edoc/LS755Hannoosh-09.pdf> 12/5/12.) Baudelaire wrote in *Salon de 1845*, “*Au vent qui soufflera demain nul ne tend l'oreille; et pourtant l'héroïsme de la vie moderne nous entoure et nous presse. [. . .] Celui-là sera le peintre, le vrai peintre, qui saura arracher à la vie actuelle son côté épique, et nous faire voir et comprendre, avec de la couleur ou du dessin, combien nous sommes grands et poétiques dans nos cravates et nos bottes vernies.*”

²⁸³. This was, of course, not a universally held view. For traditionalists of the Salon, an artist passing off a depiction of modern life as “Art” - with a capital A, as it were – was to bring the whole enterprise nearly to its knees. Young artists were instead encouraged to embrace historical events, noble themes, and the elevation of man as a moral being as the subject matter for their work. The problem of charting a path through this thorny time could, they believed, adequately be addressed through teaching traditional skills by traditional means. Hanson, 1977. p. 4-5. See also, Philip Gilbert Hamerton, *Painting in France After the Decline of Classicism, An Essay*, Boston, 1905, p. 50. (digitized by Google and accessed at <https://play.google.com/store/books/details?id=8i9LAAAAMAAJ&rdid=book-8i9LAAAAMAAJ&rdot=1> 10/27/12). “A realist, in France, is an artist who entirely rejects beauty, or at least is supposed to do so (for here again some reservation might be made), and who is supposed to paint whatever happens to be before him, taking the worst material along with the best, and the most vulgar subjects along with the most elevating, preferring indeed, when the choice is offered, mean and low subjects to sublime ones. . . . Realism, in short, is a sort of mud-bath which, under certain circumstances, may be highly beneficial to the system; but as a general rule we prefer to keep mud at a distance, and even admit, without accusation of effeminacy, a taste for clean linen and *savon de luxe.*”

²⁸⁴. Richardson, p. 7.

²⁸⁵. Richardson, pp. 8 and 10.

in contemporary dress: ‘One must be of one’s time,’ said Manet, ‘and paint what one sees.’²⁸⁶

His father, an official in the Ministry of Justice, and his mother, the daughter of a French diplomatic envoy to the Swedish court, studiously sought to dissuade young Edouard from what was considered for their class a grossly inappropriate career.²⁸⁷ After failing his first attempt at the entrance exam for the Naval College, Colonel Fournier arranged for the 16-year old Manet to ship out on a training voyage on the *Havre et Guadeloupe* bound for Brazil.²⁸⁸ Far from learning enough seamanship to pass the Naval College entrance exam on his second try, Manet’s success on the ship came through his drawing caricatures of the crew and painting the cheeses that were the worse for their exposure to salt water so that they looked fresher and more salable.²⁸⁹

Upon his return to France, Manet’s parents were finally convinced to allow him to pursue a career as an artist. In 1850, at the age of 18, he was enrolled at the studio of Thomas Couture, a famous historical painter.²⁹⁰ From Couture, Manet acquired an appreciation of eclectic sources, and studio practices that he retained throughout his life.

²⁸⁶. Richardson, p. 10.

²⁸⁷. Théodore Duret (tr.) J. E. Crawford Fritch, *Manet and the French Impressionists*, Philadelphia, 1910. p. 4.

²⁸⁸. Beatrice Farwell, “Manet, Edouard,” *Grove Art Online*. Oxford Art Online, Nov. 29, 2010. (Accessed at <http://www.oxfordartonline.com/subscriber/article/grove/art/TO53749>. 12/5/12.)

²⁸⁹. Duret, p. 5. See also, Philadelphia Museum of Art, Division of Education, “Manet and the Sea, February 15-May 31, 2004,” teacher packet accompanying the exhibition, Philadelphia, 2003, p. 1, quoting a letter to his mother that Manet wrote during his voyage: “I have to tell you that I developed a reputation during the crossing. All the ships’ officers and all the instructors asked me to make caricatures of them. Even the captain asked for one, as his Christmas present.”

²⁹⁰. Couture is described by one art historian as “a middle-of-the-road painter, politically liberal and possessing a sure technique.” James. H. Rubin, *Manet’s Silences and the Poetics of Bouquets*, Cambridge, 1994. p. 36. Another notes that Couture was “an arrogant, irascible, and bitter man.” Richardson, p. 10.

²⁹¹ However, in his first independent paintings he decisively and dramatically abandoned the classical aspects of his training that involved the traditional techniques and uses of color favored by his master. In this renunciation and in his adoption of radical subject matter, Manet established himself firmly as a Realist. Unfortunately, Couture had “an unreasoning hatred of realism.”²⁹²

Realism, the aim of which “was to give a truthful, objective and impartial representation of the real world, based on meticulous observation of contemporary life,”²⁹³ was identified initially with and by Gustave Courbet in the 1840s. From the outset, it was a problematic notion for both its critics and its adherents. As the first stylistic manifestation of “modern art,” Realism was decried by its critics as “sacrifice[ing] a higher and more permanent for a lower, more mundane reality.”²⁹⁴ Their view was that art should depict humankind in a manner that would elevate its own conception of itself. This expectation was promoted in the technical training students received and in the subject matter they were taught was deemed appropriate for expression by the serious artist. For its supporters and practitioners, Realist art was an exploration “in the realm of fact and experience,” the contemporary world in which the artist found himself.²⁹⁵ As Manet had said, “One must be of one’s own time.”

²⁹¹. Farwell. “He retained for life, however, the use of studio aids and gadgets such as plumb lines and black mirrors and continued throughout his career to outline figures and objects with paint in a kind of brushed drawing derived from Couture’s sketching method.”

²⁹². Richardson, p. 11. Although he studied with Couture for six years, Manet’s relationship with his teacher was contentious and difficult. Ultimately, the two finally broke over Couture’s scathing criticism of Manet’s *Le Buveur d’Absinthe*, submitted to and rejected by the Salon Jury of 1859.

²⁹³. Linda Nochlin, *Realism*, Middlesex, England, 1971. p. 13.

²⁹⁴. Nochlin, 1971. p. 14.

²⁹⁵. Nochlin, 1971. p. 15.

Being of one's own time had been a philosophical underpinning of the Romantics as well, but it assumed "a meaning at once narrower and more concrete in Realist theory and practice."²⁹⁶ For the Realists, attitude and approach had to be earnest and intense; the work of making art had become a public rather than a sacred, private enterprise.²⁹⁷

The appropriate imagery to reflect the times rejected "both pompous rhetoric and the grandiose subjects of the past."²⁹⁸ For the Realists, the subjects of significance were all around them: the poor, both urban and rural, the workers of the newly industrialized economy, and those left behind by the *laissez faire* policies of the July monarchy.²⁹⁹ Their style was aimed at "consciously stripping their minds, and their brushes, of secondhand knowledge and ready-made formulae."³⁰⁰

By the early 1860s, Manet had begun to create works that adopted both the subject matter of Realism and a style that categorically rejected Romantic traditions. Two of his paintings were accepted for the Salon of 1861 – *The Portrait of M. and Mme. Manet* (1860) and *The Spanish Singer* (1860), for which he was awarded a prize, although not a first. This unwavering commitment to his own vision of art³⁰¹ appeared consistent with his achieving the public approbation he desired.³⁰² Or perhaps more

²⁹⁶. Nochlin, 1971. p. 105.

²⁹⁷. Lawrence R. Schehr, *Rendering French Realism*, Palo Alto, 1997. pp. 177-178 (Accessed at <http://www.sup.org/ancillary.cgi?isbn=0804727872;gvp=1> 11/25/12).

²⁹⁸. Nochlin, 1971. p. 111.

²⁹⁹. Prof. Claudia Rousseau, lecture December 6, 2012.

³⁰⁰. Nochlin, 1971. p. 20.

³⁰¹. "You aren't a painter unless you love painting more than anything else. And then, it's not enough just to know your trade; you have to be moved. Science is all very well, but for us, don't you see, imagination is more important. . . ." Linda Nochlin, "Realism and Tradition in Art, 1848-1900: Sources and Documents," *Sources and Documents in the History of Art Series*, (ed.) H.W. Janson, Englewood Cliffs, 1966, citing Edouard Manet in *Manet reconté par lui-même et par ses amis*, Pierre Courthion (Geneva: Pierre Cailler, 1945). p. 78.

³⁰². Duret, pp. 6 and 34.

accurately they did not immediately seem to be in conflict. It appeared that his career was off to a successful start. But this bright hope was short-lived.³⁰³

His next work, *The Old Musician* (1862) (Figure 1)³⁰⁴, perhaps conceived as an entry for the Salon³⁰⁵ but never submitted, was virtually ignored when it was finally exhibited in Martinet's gallery in 1863 because it was hung next to his much smaller and even more controversial, and roundly panned, *Music in the Tuileries Gardens* (1862).³⁰⁶ From then on, the generally condemnatory critical response to his work continued through Manet's lifetime.³⁰⁷

Nevertheless, and despite its early hostile reception, *The Old Musician* has subsequently generated much commentary by art historians. It is described by many as "mysterious,"³⁰⁸ for understandable reasons.

The first impression the viewer has of *The Old Musician* is its size. At over eight feet wide by six feet high, with an additional foot of heavy, gilded frame all around, as exhibited at the National Gallery in Washington, D.C., the picture makes a bold statement and commands the viewer's attention. The second impression is the picture's surprising

³⁰³. Hanson, 1977, p. 45. The generally held view that Manet was a critical failure, especially in the Salon, is belied by his record with the Salon juries. From 1859, when he submitted *The Absinthe Drinker*, which was, of course, rejected, through the course of his life, Manet submitted thirty-seven works to nineteen of the twenty-one Salons that were held. Twenty-six were accepted over fifteen exhibitions. Twice he sent no work, and he was completely rejected only from four others.

³⁰⁴. National Gallery of Art, West Main Floor Gallery 89.

³⁰⁵. "The very dimensions of *La Vieux Musicien* proved that Manet had the Salon in mind. It was what the students called 'a scheme for a medal.'" Henri Perruchot, (tr.) Humphrey Hare, *Manet*, Cleveland, 1962. p. 95.

³⁰⁶. George Mauner, *Manet Peintre-Philosophe: A Study of the Painter's Themes*, University Park, 1975. p. 46.

³⁰⁷. Manet "had the privilege of being the laughing-stock of all Paris. . . ." Hamerton, p. 46. See also, Alain de Leiris, "Manet, Guérault and Chrysispos" in *The Art Bulletin*, Vol. 46, No. 3 (Sep., 1964). p. 401. (Accessed at <http://www.jstor.org/stable/3048193> 11/27/12). But see Note 28.

³⁰⁸. Beth Archer Brombert, *Edouard Manet: Rebel in a Frock Coat*, Chicago, 1996. p. 104. See also, Rousseau. December 6, 2012; Gerald Needham, *19th Century Realist Art*, New York, 1988. p. 227; de Leiris. p. 401; Mauner, p. 48.

flatness. The frieze-like array of six figures, the ground on which they stand, and the painterly background all seem to press forward, vying to dominate the same space and to draw the viewer in.

The figures – from the left a girl holding a baby, two boys, the old musician, a man in a top hat and cloak, and an old man half out of the frame on the far right – all stand in the same plane, without pictorial recession or modulation of scale. The heads of the four figures on the left are all at the same height, while the heads of the two men on the far right reach up into the darker area of the sky above.

All of the figures stand in front of a series of indistinct, layered bands of softly applied colors that transition from lighter tones to darker as they move horizontally across the picture, pressing up against the back of the figures. Distinct spots of lighter tone highlight three small areas in the lower half of the picture. The first, in a creamy hue, is to the left of the girl's skirt, and the second and third, in yellower tints, between the darker boy and the musician and between the musician and the man in the top hat seem oddly placed and slightly illogical for their brightness.

The picture shows two sources of illumination. The first and more dominant originates beyond the picture plane out where the viewer is standing. This flat, direct light highlights the face of the boy on the left and creates shadows below the girl's skirt. It also seems to be the source of the shadow behind the slightly raised leg of the man in the top hat as well as creating a shadow below the brim of his hat while illuminating the other half of his face. A second, slightly suggested source of light seems to emanate from the upper right area of the sky, behind the green tree or vine that arches over the girl,

illuminating the clouds above her head in a manner echoed in the lighter area to the left of her skirt.

The sense of compressed space is amplified by the subdued palette and the absence of half-tones and modeling in the figures. The painterly quality apparent in the dun-colored motley foreground and the softly painted backdrop, is also evident in the depiction of the figures. This is *alla prima* painting executed with deft expertise, even at this early point in Manet's career. The skirt of the girl, the clothes of the boys, and the cloak of the musician are comprised of layered brush work that produces a complete and compelling effect of weight, volume and drapery without specific detail or realistic rendering.³⁰⁹ At other points, the child in the girl's arms, the pants and cloak of the man in the top hat, and the bag at the feet of the musician, for example, are, like the soft, painterly backdrop, suggested rather than depicted. In a small grey area between the girl and the tree, there is a faint indication of a tower, perhaps intending to show that the scene is taking place not far from the heart of the city. The body of the violin is clearly drawn, yet the strings are indicated by a single sharp black line that sits awkwardly away from the bridge. Once noticed, this line continues to draw the viewer's eye back to almost the exact center of the picture.

Evidence of Manet's skill with color can also be found in intriguing moments across the picture. For example, the same shade of blue in the girl's skirt is echoed in the top-hatted man's sock and, in a darker shade, in the sock of the old musician. A lighter tone of the same blue is found in a small patch between the girl and the first boy. The

³⁰⁹. Hanson. p. 160. Manet is said to have worked and re-worked his application of color, scraping and re-applying the paint and taking a great deal of time to create the effect he sought to his satisfaction.

sky, which takes up nearly all the upper half of the picture behind the figures, is deeply evocative, comprised of multiple layers of color applied in a painterly fashion.

The figures touch one another across the painting, but in an incidental, arbitrary way. One figure's clothing or drapery brushes up against another's, but seemingly only in passing, although they are all rooted to the ground of the picture.³¹⁰ Only the two boys are connected, with one's arm draped around the neck of the other, though their expressions offer no hint of a relationship.

For all the skill in its execution, the painting has been criticized as failing to come together without further explication.³¹¹ Beyond the formal analysis³¹², a raft of questions arises. Who are these people? What do they represent? And what they are doing together in the frame? What does this painting *mean*?

In 21st century terms, the painting is a mash-up³¹³ – a compilation of compositional ideas and characters drawn from many other, disparate sources.³¹⁴ The

³¹⁰. De Leiris, p. 403-404.

³¹¹. Hanson, 1977. p. 61.

³¹². De Leiris, p. 401.

³¹³. “Mash up (noun) – (a) informal a mixture or fusion of disparate elements: the film becomes a weird mash-up of 1950s western and 1970s TV cop show. (b) a musical track comprising the vocals of one recording placed over the instrumental backing of another: a classic dance floor mash-up. Oxford Dictionary of English (3 ed.) 2010, (ed.) Angus Stevenson, London, 2010. Current Online Version: 2012 eISBN: 9780191727665. (Accessed at http://mchoudini.montgomerycollege.edu:2114/view/10.1093/acref/9780199571123.001.0001/m_en_gb0985340?rskey=DvLzGB&result=1&q=mashup 11/25/12.)

³¹⁴. Manet's quotations from other artists continues to draw vituperative criticism: By drawing simultaneously on Titian, Raphael, Hals, Velazquez, Ribera, Zurbaran, Murillo, Le Nain, Watteau, Goya, Gericault (and countless others, the list of whom grows longer every day thanks to the ferocious effort of the iconographers); by borrowing from Japanese art; and by seeking inspiration in photography, Manet subverts the notions of linear continuity, progress, and source. We are faced with the paradox of an *oeuvre* that, at the very moment when it becomes saturated with references, suspends the possibility of a genealogy of forms. It is precisely because he quotes--and by his mode of quotation--that Manet breaks with the fiction of an art history always already grounded in precedent. In squandering the past, he only adds to the uncertainty of its future: all teleology collapses in a chaos of references, into which meaning, plan, and program sink as well

most widely recognized source for the composition as a whole is Diego Velazquez's *The Triumph of Bacchus (The Drinkers)* (1628-29) (Figure 2).³¹⁵ Art historians have consistently noted the importance of 17th century Spanish artists in Manet's work, perhaps the most significant influence among the wide array of other sources from which he drew.³¹⁶ In particular, Manet has long been known to have admired Velazquez, even before he took his first trip to Spain in 1865.³¹⁷ Goya had apparently made an engraving of *The Drinkers*, which Manet likely would have seen.³¹⁸

Later scholarship suggests another, perhaps more immediate, source for *The Old Musician*, found closer to home in the work of the Le Nains, three brothers who made paintings together in France in the 1640s.³¹⁹ Two Le Nain works have been identified by art historians as likely sources for both the composition as a whole and for specific elements; others have been discussed as additional possible references.³²⁰ Manet's contemporaries and friends, particularly, Champfleury,³²¹ "re-discovered" the Le Nain

Jean Clay, (tr.) John Shipley, "Ointments, Makeup, Pollen," October Winter 1983. p. 4. (Accessed at <http://aaaaarg.org/sites/aaaaarg.org/files/textz02/October-No27-Winter-1983.pdf> 11/27/12).

³¹⁵. Richardson, p. 13. Michael Fried, *Manet's Modernism or, The Face of Painting in the 1860s*, Chicago, 1998. pp. 29 and 176. See also, Alan Bowness, "A note on 'Manet's compositional difficulties,'" *The Burlington Magazine*, Vol. 103, No. 699 (June, 1961). p. 276.

³¹⁶. Duret, p. 17. See also, Hamerton, p. 49; Richardson, pp. 14-15; Needham, p. 226.

³¹⁷. While on his first trip to Spain in 1865, where he was able to see first-hand the paintings of Velazquez that had only been available to him in France through copies by others, he wrote his friend Henri Fantin-Latour, "[W]hat a joy it would have been for you to see Velasquez, who alone is worth the trip. All the painters of the school who surround him the Madrid Museum and who are very well represented there, seem mere scribblers. He is the painters' painter." Hanson, 1972, p. 79.

³¹⁸. Richardson, p. 13.

³¹⁹. Fried, p. 30. See also, Hanson, 1977, p. 62. Manet would have been familiar with the work of the Le Nain brothers through their reproduction in Charles Blanc's *Histoire des peintres*.

³²⁰. E.g., Fried, p. 178.

³²¹. Champfleury was the *nom de plume* of French playwright, critic, and philosopher Jules François Felix Fleury-Husson.

brothers in the 1850s.³²² Champfleury subsequently wrote extensively about their work declaring them to be the forefathers of the Realist movement.³²³

Among the Le Nain works, *Le vieux joueur de Flageolet* (1644) (Figure 3), attributed to Antoine Le Nain,³²⁴ appears also to have served as a model for the seemingly disconnected grouping of figures in *The Old Musician*. In addition to a common subject matter, this Le Nain work shares with *The Old Musician* an absence of pictorial depth different from the Velazquez, as well as the same slightly disturbing sense of figures finding themselves arbitrarily situated in the same space.³²⁵

The characters of *The Old Musician* are the poor of urban Paris, with whom Manet was in daily contact. In the early 1860s Manet's studio was located near a poor neighborhood known as *Le Petit Pologne*, a slum that was populated by the poor: beggars, gypsies, *chiffonniers*, immigrants from the countryside, and those generally excluded from the economic prosperity exemplified in Baron Haussman's extensive renovations of Paris.³²⁶ Manet's use of these characters in *The Old Musician* places him squarely among the Realists in terms of subject matter.

The dominant figure in the painting, the old musician himself, appears to be a product of a combination of influences and sources. The image is attributed to Manet's quoting from a Roman replica of a statue of the Greek philosopher Chrysippos (Figure

^{322.} Fried, p. 66.

^{323.} Mauner, p. 65.

^{324.} Needham, p. 228.

^{325.} Bowness, p. 276. See also Mauner, p. 64.

^{326.} Rubin, p. 36. See also Brombert, p. 109.

4),³²⁷ a sketch of which by Manet survives (Figure 5). Although the character in the painting is not an exact replica of Manet's drawing, it is a reflection, especially in the angle of the head, the stooped posture of the figure on his block seat and the shape of the hand holding the neck of the violin.³²⁸ A second source is another Le Nain work, *The Resting Horseman* (1640s) (Figure 6).³²⁹ Finally, the old musician seems to have been modeled by Jean Legrène, a gypsy who lived in Manet's neighborhood and worked as an artist's model.³³⁰ A photograph dated 1865 (Figure 7) seems to be an exact original of the character in Manet's painting. Although dated after the creation of *The Old Musician*, as Michael Fried writes, "We might say the photograph has certified Legrène himself as a 'source.'"³³¹

Manet apparently looked to both historical and contemporary sources for the figures he included in *The Old Musician*.³³² One image art historians have identified as a likely source for the gypsy girl is Henri-Gaillaume Schlesinger's painting *The Stolen Child* (1861) (Figure 8), an illustration of which was printed in the *Magasin pittoresque*.³³³ While Manet's character does closely resemble the young girl holding a baby on the far right of the print, reversed in a manner similar to the way in which *Le*

³²⁷. De Leiris, p. 401. The statue, apparently without a head when it was originally excavated, was fitted with a cast of the head of Aristotle. Manet sketched the statue sometime in the late 1850s or early 1860s. Later it was determined that the sculptor Euboulides had actually produced a sculpture of the philosopher Chrysispos and the wrong head was replaced with a cast of the correct head obtained from the British Museum.

³²⁸. De Leiris, pp. 401-402.

³²⁹. Hanson, p. 62.

³³⁰. Fried, p. 176, citing Marilyn R. Brown, "Manet's 'Old Musician': Portrait of a Gypsy and Naturalist Allegory," *Studies in the History of Art* 8. pp. 77-87.

³³¹. Fried, p. 176.

³³². Hanson, 1972, p. 139.

³³³. Fried, p. 181. See also, Hanson, 1977, p. 63. Other art historians have suggested additional possible sources for the little girl, including Louis Le Nain's *Les Moissonneurs* (1841) and Antoine Le Nain's *Le Vieux Joueur de Fifre* (1842), both of which were illustrated in *Gazette des beaux-arts* in 1860, which also included an illustration of Watteau's Gilles. Hanson, 1971, p. 145.

vieux joueur de Flageolet was reflected, radiography has shown that the girl as originally painted was very different. Her legs apparently were three inches longer and her hair done in a more severe style, pulled back into a bun, suggesting that she was intended to represent the mother of the child she is holding rather than, perhaps, the sister.³³⁴ Why Manet made this change is unknown, but it suggests that this earlier conception of the figure did not ultimately serve Manet's compositional purpose.

The boy in white has long been identified with Watteau's *Gilles (as Pierrot) and Four Other Characters from the Commedia dell'Arte* (c. 1719) (Figure 9).³³⁵ The work would have been available to Manet in 1860 when it was shown as part of an exhibition at the Martinet gallery that was reviewed in the *Gazette des beaux-arts* with an accompanying illustration of the work.³³⁶ The quotation would have reminded viewers of the *commedia dell'arte*, and the character of Pierrot, who had become symbolic of the "everyman."³³⁷ Even more pointedly perhaps, the reference may have called to mind the destruction, as part of the Parisian urban renewal projects of Baron Haussman, of the *Théâtre des Funambules*, home for decades of the some of the most popular productions in pantomime of the Pierrot plays.³³⁸

As far as the source for Gilles' darkly clad companion, art historians have again pointed to Spanish sources including Murillo's *Ragged Boys*.³³⁹ One art historian has

^{334.} Brombert, p. 108.

^{335.} Fried, p. 33.

^{336.} Mauner p. 52. Also illustrated in that edition of *Gazette des beaux-arts* were paintings by both Louis and Antoine Le Nain. Hanson, 1972, p. 145.

^{337.} Mauner, p. 53 quoting critic and philosopher Théophile Gautier, "[I]sn't he the symbol of the human soul, still innocent and white, while tormented with infinite aspirations toward the beyond."

^{338.} Mauner, p. 53.

^{339.} Rubin, p. 39.

emphasized the fact that the two boys are the only figures in the picture that intentionally touch or seem to show a relationship to one another.³⁴⁰ From this juxtaposition he extends his analysis to another figure from the *commedia dell'arte*, the “Pierrot noir,” suggesting that the two boys represent the dichotomy of man’s nature – dark and light, animalism and sensibility³⁴¹ - although there appears to be nothing in the painting itself to support this view.³⁴²

The man in the top his is lifted directly from Manet’s own *The Absinthe Drinker* (1859) which was rejected by the *Salon* in 1859 and ridiculed by Manet’s teacher.³⁴³ Manet used the character of the absinthe drinker as a version of himself as the artist who had been rejected by the *bourgeoisie*, marginalized and separated from society.³⁴⁴ The original model for the figure has been described as another artist, a friend of Manet’s,³⁴⁵ and as a *chiffonnier* or ragpicker who practiced his trade around the Louvre, either of whom would have served the artist’s purpose of depicting a character alienated from society.³⁴⁶

The old man on the far right of the painting, half out of the frame, has been identified as the “Wandering Jew,” the subject of many contemporary prints, a widely-known novel of the time by Eugène Süe, and a popular song by Béranger with the catching refrain, “*Toujours, toujours, toujours, toujours/tourney la terre ou moi je*

³⁴⁰. Mauner, p. 51.

³⁴¹. Mauner, pp. 56-57.

³⁴². Needham, p. 228. “Mauner’s interpretation is convincing as a theoretical statement, but it is not something we grasp from looking at the work.”

³⁴³. Richardson, p. 11. “‘There is only one absinthe-drinker here,’ was Courbet’s comment, ‘the painter who perpetrated this madness.’”

³⁴⁴. Rousseau, December 6, 2012.

³⁴⁵. Rousseau, December 6, 2012.

³⁴⁶. Hanson, 1977, p. 65.

cours.”³⁴⁷ Art historians also have noted an entry in Manet’s address book of the time, “Guérault, vieux Juif à barbe blanche,” who was originally thought, perhaps erroneously, to have been the model for the musician, but who is more likely to have been the model for this figure in the picture.³⁴⁸ The allusion to the “Wandering Jew” does, irrespective of its specific source, place the figure, along with all the others, as one on the margins of society.

The Old Musician was universally dismissed in Manet’s own time. Many have viewed his accretion of quotations and references and the flattened, frieze-like presentation of its group of disconnected, and perhaps disaffected figures, as the mark of an immature artist who, although skillful enough in his craft, had yet to find his own voice or to solidify his ability to compose a coherent picture.³⁴⁹ Yet others have seen in the compilation of references “a visual wholeness,”³⁵⁰ an expression of Manet’s highest ambitions,³⁵¹ and “potently expressive” of the disaffection and marginalization of its subjects.³⁵² Regardless, Manet’s *The Old Musician* continues to intrigue the viewer and to cause her to ask the questions that may have been most important to Manet himself.

³⁴⁷. Needham, p. 227, Hanson, 1977, p. 66.

³⁴⁸. Mauner, p. 75.

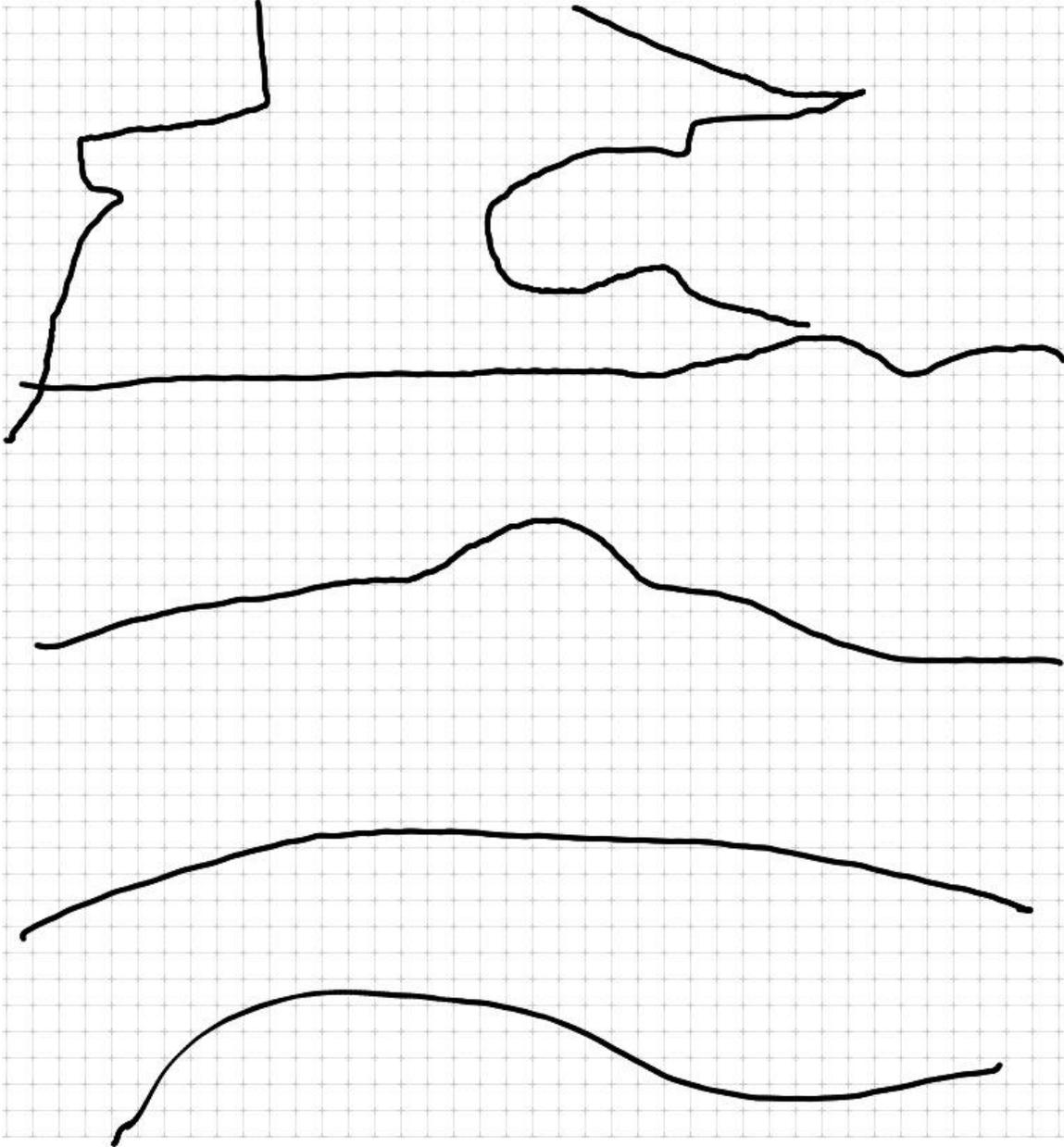
³⁴⁹. Richardson, p. 13, “Manet’s sense of design was faulty.” See also Perrouchot, p. 95, “[The Old Musician] falters in the looseness of its composition. . . . emphasize[ing] the unsatisfactory, disjointed, almost artificial composition of the canvas.” Rubin, p. 38.

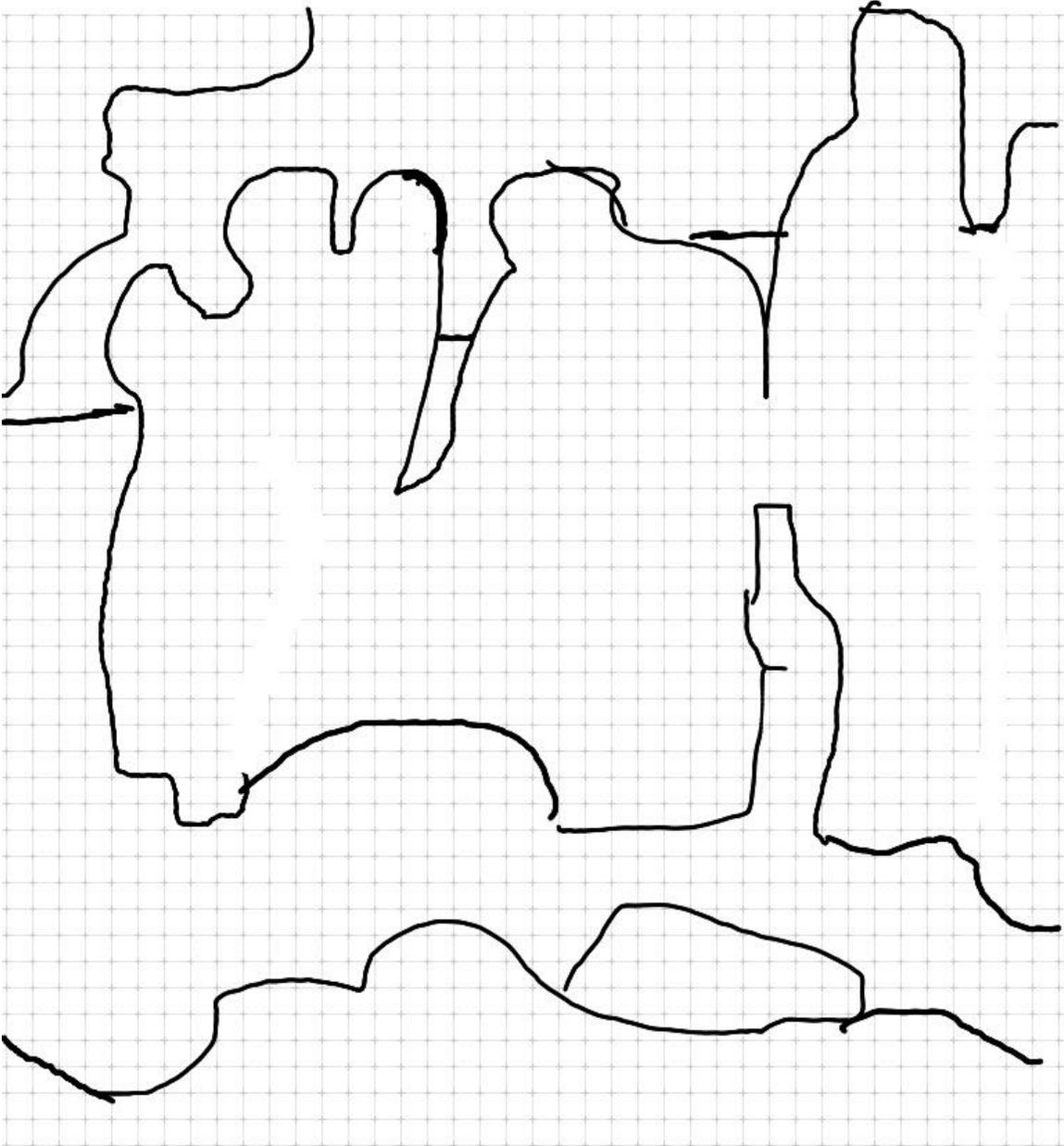
³⁵⁰. Brombert, p. 104.

³⁵¹. Fried, p. 29.

³⁵². Hanson, 1977, p. 66.

Analytical Sketches





Figures

Figure 1



The Old Musician (1862)
Edouard Manet

Figure 2



The Triumph of Bacchus (1628-29)
Diego Velázquez

Figure 3



Le Vieux Joueur de Flageolet (c. 1642)
Le Nain Brothers

Figure 4



Seated Philosopher (Chrysippus)
Paris, Louvre
(photo: Musées Nationaux)

Figure 5



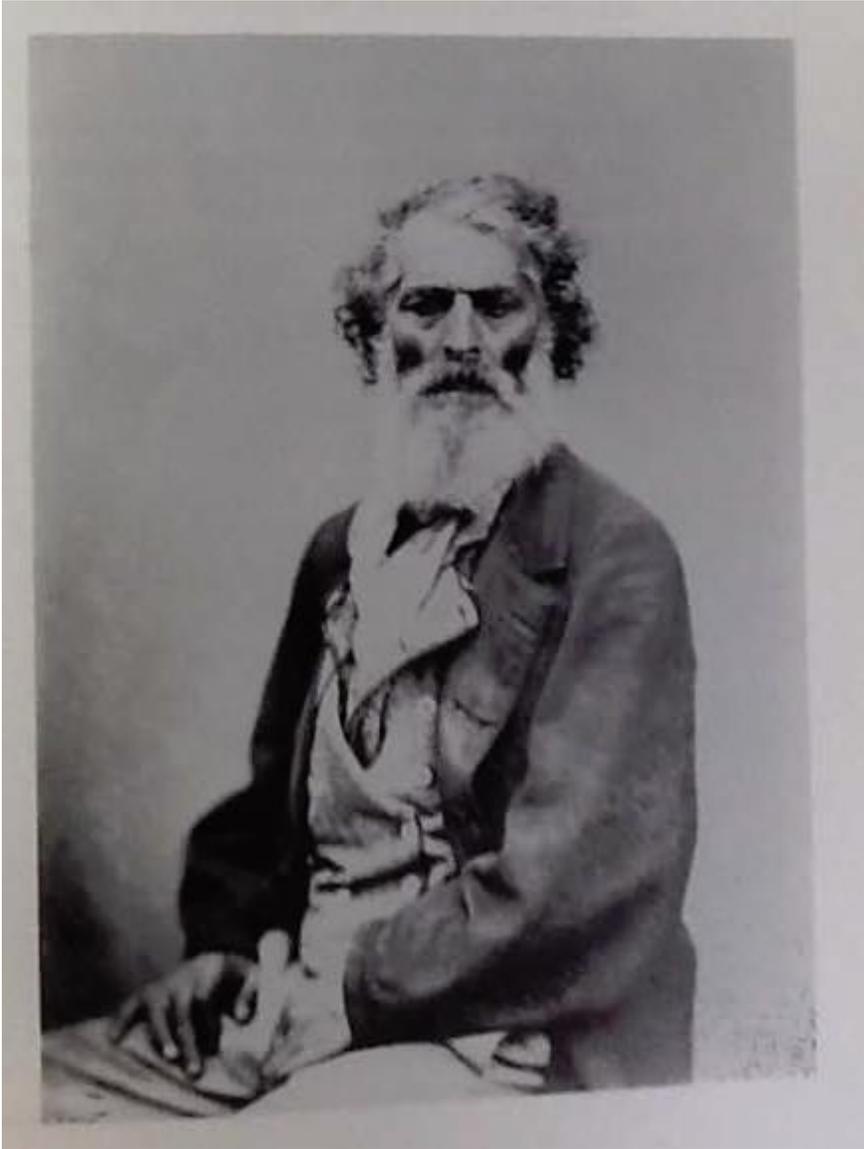
Seated Man (1850s?)
Edouard Manet
Paris, Louvre (photo: Bulloz)

Figure 6



The Resting Horseman (1640s)
Louis Le Nain
Victoria and Albert Museum, London

Figure 7



Jean Legrène, photograph (1865)

Figure 8



The Stolen Child (1861)
Henri-Guillaume Schlesinger

Figure 9



Gilles (as Pierrot) and Four Other Characters from the Commedia dell'Arte
(c. 1719)
Antoine Watteau

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Testing the Antibacterial Qualities of Common Essential Oils

Michele Andrews (Lehigh Carbon Community College)

Mentor - Professor Eric DeAngelo

INTRODUCTION:

Throughout history humans have found themselves in a constant battle of fighting illness and disease. As early as 60,000 years ago evidence exists for the use of plants as remedies (Cowan, Chevallier 9). Early records of medicinal plants have been mentioned by Hippocrates, the Bible, and Dioscoride's book "*DeMateria Medica*" (Cowan). Plants continued to be used in the struggle with disease through the mid-19th century, until the discovery of antibiotics marked a shift in treatment from plants as remedies to the use of antibiotics as medicine (Cowan). All microbes become resistant to antibiotics by numerous mechanisms over time (Tortora 579). The rise in microbes resistant to antibiotics has led to a new interest in herbal antimicrobials. People have begun to look back at the past and examine the use of medicinal plants to help combat resistant bacteria and adverse side effects of the antibiotics themselves (Chevallier 9). Scientists are looking deeper into the phytochemicals and secondary metabolites of plant extracts to find substances that may carry antibacterial or antimicrobial chemicals (Cowan). 25 to 50 percent of pharmaceuticals today are derived from plants yet none are currently used as antimicrobial agents (Cowan). New avenues of research can hopefully change this statistic. The plants utilized throughout history as antimicrobial are just a limited few compared to all the plant species that exist in nature. Opportunity exists for researchers to

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discover a plethora of new antibacterial compounds by exploring this vast resource available to us.

The goal in this research is to conduct experiments to test the effectiveness of lavender, myrrh, pine, lemon, and tea tree essential oils against some common bacteria to see if the oils exhibit bactericidal or bacteriostatic qualities. The bacteria chosen for the experiments were *Staphylococcus aureus*, *Escherichia coli*, and *Pseudomonas aeruginosa*. They are commonly found as part of our normal flora, or in our surroundings and are potential pathogens (Todar, Tortora307-16). Numerous antibacterial claims have been made pertaining to each of the oils used in our experiments (see Appendix).

MATERIALS AND METHODS:

The bacteria used in our experiments were brain heart infusion broth cultures of *Escherichia coli*, *Pseudomonas aeruginosa* and *Staphylococcus aureus*. All the cultures were incubated at 25 degrees Celsius and results were assessed at two separate times at 24 hours and 48 to 72 hours after inoculation.

Experiment #1, the disc diffusion experiment, was performed using the following procedure. 5 millimeter sterile paper discs were soaked in the individual essential oils (lemon pine lavender and tea tree) until saturated. The TSA plates were inoculated with the bacteria, two agar plates per bacteria for a total of six plates. Sterilized forceps were used to place the saturated discs on the inoculated agar plates. Each plate contained four discs, one of each type of oil. (See table #1 and figures 1-6)

The agar well diffusion assay used for our second experiment employed the same type of agar and plates as the disc diffusion experiment. The wells were made in the agar using a sterile pipette cut in half horizontally to produce 5 millimeter diameter wells.

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Four of the twelve plates were inoculated with *P.aeruginosa*, four with *S.aureus*, and the final four with *E.coli*. A calibrated micropipette was used to add 10 microliters of essential oils into the wells. Each agar plate had two wells in each petri dish and we proceeded to fill them in the following fashion: (see table # 2). At this time I inoculated TSA broth with a pure culture of *S. aureus* that had grown back on experimental plates from week 1.

The broth dilution assay used Brain Heart Infusion broth in experiment number three. The oils used for this experiment were lavender and tea tree oils. The bacteria used were *S. aureus* and *E.coli*. The oils were divided and the tubes inoculated as follows: (see table #3) one tube of BHI was used as a control. Results were taken at 48 hours after inoculation. (See table #3)

In the fourth experiment essential oils were added directly to melted TSA media, mixed with a vortex, poured into empty plates, and let to solidify. The agar was infused with 10 μ L of specific oil per 20mL melted TSA media. Pine, lavender, and tea tree oils were used making two plates per essential oil. *P.aeruginosa* was inoculated onto one of each of the three kinds of oil infused agar plates and left to incubate. Our controls were *P.aeruginosa* inoculated on a plate of TSA media, and one of each kind of oil infused agar plates that were not inoculated with *P.aeruginosa*.

The fifth test was a disc diffusion experiment which used the pure culture of *S.aureus* obtained from 1st experiment. Four sterile paper discs were used per agar plate inoculated with the *S.aureus* and 10 μ L of essential oil was pipetted onto each of the discs. Each plate had one specific type of oil on it. We used pine oil, tea tree oil, and lavender oil.

RESULTS:

The first disc diffusion tests exhibited varying results depending upon the bacterium. Examination of the *P.aeruginosa* plates clearly showed that lemon oil did not inhibit its growth at either the 24 hour or the 72 hour mark. The lavender oil was also not effective when applied to *P.aeruginosa*. The *P.aeruginosa* bacteria showed a thicker irregular growth pattern around the lavender discs on both plates 72 hours after incubation (not noticeable in the figures 5-6). The pine oil and the tea tree oils showed slight zones of inhibition at 24 hours after inoculation, which did not change at 72 hours after inoculation. (Refer to table #1)

The *E. coli* plates showed that both the pine oil and the lemon oil had no effect against the *E. coli* bacteria. Lavender oil and tea tree oil more effectively inhibited the growth of *E coli*. These oils together appeared to produce a synergistic effect that cleared a large portion of the area around the discs when observed 24 hours after inoculation .(See table #1 and pictures 1-2) 72 hours after inoculation of the *E. coli* plate the results still showed high efficacies for the tea tree oil. There was a slight change in zone diameter on the plate from 40mm to 35 mm and 39mm to 34 mm respectively. The lavender zone diameters diminished in size from 31mm to 17mm and 32mm to 15mm respectively at 72 hours after inoculation and numerous colonies grew back around the lavender infused discs.(See figure 1-2 and table #1)

S.aureus appeared unaffected by lemon oil. The Pine oil infused discs had small zones of inhibition for both plates. Lavender oil and tea tree oil produced a synergist effect against the *S. aureus* bacteria. The synergist effect cleared almost half the plate around the discs when observed 24 hours after inoculation. At 72 hours after inoculation

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both plates of *S.aureus* showed that the synergist effect between tea tree oil and lavender had disappeared. Distinct zones of inhibition could clearly be observed circling the tea tree oil infused disc (see figure 4). Lavender still had a very large diameter zone of inhibition on both plates while the tea tree discs had their corresponding zones more than cut in half. A few *S. aureus* colonies were growing around the tea tree discs. (See figures 3-4)

The results for the experiments done in week two are shown in table #2. Additional results that are noteworthy are the appearance of thicker growth around one of the lavender wells with the *P.aeruginosa* bacteria. This cannot be seen in the figures but was apparent when observing firsthand. The appearance of lavender, pine and tea tree oils in the wells were clear while the myrrh oil was a thick bright yellow resin. The results produced in the broth experiment done in the third week of testing can be viewed in table #3.

The three oil infused agar plates that were inoculated with *P. aeruginosa* all had a thick, yellowish, mucoid, growth of bacteria covering them. This growth was considerably thicker than the control plate growth of just *P. aeruginosa* on agar without any oils. The control plates with infusion of the oils in agar without any *P. aeruginosa* growing on them showed a slight change in the color of the original agar, but nothing that would account for the color change seen in the plates with the thicker yellow growth. (See figure 9)

The experiment using the pure culture from a colony of *S.aureus* showed that tea tree had an inhibition zone that looked like plus sign with zones of inhibition measuring 26mm, 21mm, 20mm, and 25mm diameters. Measurements were taken clockwise

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around the plate (see figure 10). The lavender oil infused discs on the *S.aureus* plate had 15mm zones of inhibition around each of the four discs (see figure 11). The pine infused discs showed a 7mm zone of inhibition around all four discs. The myrrh infused discs showed no zone of inhibition around any of the discs.

DISCUSSION:

Myrrh essential oil showed no antibacterial qualities in any tests conducted against *E.coli* and *P.aeruginosa*. Bacterial growth covered the agar plates in both the experiment with the wells and also the discs. The myrrh oil in the well diffusion experiment did show a zone of inhibition against *S. aureus*, which was not repeated in the final disc diffusion experiment using the *S.aureus* colony culture. These mixed results are inconclusive as to the antibacterial qualities of myrrh against the gram positive *S. aureus*. Myrrh oil became very viscous and sticky when used in these experiments. There is a possibility that myrrh was unable to penetrate the agar and infuse very well as to provide the means to show a zone of inhibition.

Lemon essential oil did not inhibit the growth of a *E.coli*, *S. aureus*, and *P. aeruginosa*. The consistency of lemon oil when poured in the plate for disc saturation was very fluid. After saturation of the discs the lemon oil became very viscous, sticky and stringy. It is unknown if this phenomenon played any part in lemon oils inability to inhibit the growth of bacteria. The stickiness may have played a part in the oils ability to diffuse through the agar. The consistency of the myrrh oil was very similar to that of the lemon oil. This factor can be seen in figure 1-6 for the lemon and figure 7 for the myrrh. Different experiments should be undertaken with these lemon and myrrh oils taking into account these factors before any final conclusions can be expressed.

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Pine oil displayed a small zone of inhibition against *S. aureus* and *P. aeruginosa*. When pine was tested against *S.aureus* in the third week of experiments it was consistent with the results obtained in the first week of experimentation. *S.aureus* is pathogenic in the nasopharynx and oropharynx if it adheres to the mucous membranes and colonizes (Bailey 224-26). This supports some claims that traditional uses of pine help in treating respiratory illnesses as well as increasing secretions (Karch143-44). It was intriguing to see a slight zone of inhibition around the pine oil on the *P. aeruginosa* plate due to the durability of this particular bacterium. But the third round of testing with the *P. aeruginosa* on top of the oil infused agar showed no inhibition of bacteria, and actually showed the appearance of thicker growth compared to the agar with no oil infused in the medium.(see figures14 and 16). Pine oil did not inhibit the growth of *E coli* in any of our experiments.

Lavender oil inhibited the *S.aureus* in all of our experiments. For the diffusion methods lavender had the largest zones of inhibition of all the oils. Examination of the broth dilution showed that lavender somewhat inhibited *S.aureus* but it took the highest dose of lavender, 100 μ Ls, to show clear broth with sediment. Lavender exhibited bacteriostatic qualities against *S. aureus* but the presence of sediment showed that there was bacterial growth which excludes lavender as being bactericidal at the doses that we tested. Our results support the possibility that lavender can ease some respiratory illnesses since *S.aureus* can be found in the upper respiratory tract. (Bailey 224-26). When the lavender oil was tested against *E. coli*, the diffusion tests showed positive results that were large and consistent. The broth diffusion tests were conclusive that lavender inhibits the growth of *E.coli*; the dose needed was between 25 μ L and 50 μ L oil

to be bacteriostatic, the sediment showed the presence of bacteria. At the higher doses of 75 μ L and greater the lavender oil exhibited bactericidal qualities, *E. coli* was unable to grow at all in the broth assays. The claim that lavender helps heal wounds is also quite possible based on the fact that both *E. coli* and *S. aureus* are bacteria found in clinically cultured wound infections (Bailey280).

Tea tree oil did not inhibit the growth of *P. aeruginosa*. The results obtained from either the disc or well diffusion experiments performed against *P. aeruginosa* were inconsistent. Tea tree oil showed the most promising results in our experiments having great success against both the gram positive *S. aureus* and the gram negative *E. coli*. The disc diffusion method from week 1 of experimentation showed that when tea tree oil was applied to the *S. aureus* inoculated plate it produced large zones of inhibition which was synergistic with lavender. This phenomenon will be discussed separately. Tea tree oils zones of inhibition results at the 24 hour mark were extremely large, measuring 30mm and 39 mm respectively. In the well diffusion method on *S. aureus*, the zone of inhibition was 12 mm in diameter which is still a large zone when you take into account all zones around the well experiments were significantly smaller in comparison to the disc diffusion wells. The broth dilution assay results were also consistent with tea tree being effective against *S. aureus*. Tea tree showed bacteriostatic qualities at 50 μ L/10mL and 75 μ L/10mL, the broth was clear but still showing sediment while at the higher dose of 100 μ L the tea tree oil was bactericidal, containing no bacterial growth at all. Against *E. coli* tea tree oil showed positive results with large zones of inhibition in the disc diffusion experiments and well diffusion methods. The broth dilution assays containing tea tree oil inhibited all growth of *E. coli*, from the most dilute concentration of 25 μ L/10mL on up to

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100 μ L/ 10mL broth. Tea tree oil appeared to have bactericidal qualities against *E. coli*.

All these experiments show great promise in tea tree oils ability to inhibit or kill bacteria.

While we obtained promising results from lavender and tea tree oil by themselves it is clear that they produced a powerful synergistic effect when applied together.

Lavender and tea tree oil showed a synergistic effect against both *E. coli* and *S. aureus* in the disc diffusion experiments. Both bacteria showed no growth around the lavender or tea tree discs, the zone of inhibitions encompassed almost half the plates for all four of the experimental plates observed and measured at the 24 hour mark. The well diffusion experiment did not show a synergistic effect between lavender and tea tree oil (see figure 8) but this may be due the oils not diffusing through the agar as easily as the oils could in the disc diffusion method.

Observations at 72 hours into the experiment showed intriguing results. For the *S. aureus* inoculated plate, the synergistic effect was not noticeable. Distinct zones of inhibition around each disc were observed. The lavender disc had a much larger zone now in comparison to the tea tree oil disc but the zone was smaller than at the 24 hour mark. Colony growth around the lavender disc was noted, that was not apparent at 24 hours. The colonies were specifically in the zone of inhibition of the lavender disc. (It was from one of these colonies that the pure culture was obtained and then used in final disc diffusion method). On the same plate the zone around the tea tree oil had a bacterial lawn that now grew where it was previously inhibited. The zone of inhibition was between 14-18mm smaller than at the 24 hour observation. The *S. aureus* that was inoculated on the plate at the beginning of the experiment was now able to grow in this area around the tea tree disc. The synergistic effect on the *E. coli* plate was also greatly

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diminished, this time showing shrinkage around the lavender oil disc of approximately 14mm. The tea tree oil infused disc zone of inhibition was still quite large but the zone diameter also decreased. The growth of *E.coli* on the plate appeared as lots of colonies close together and not a complete lawn of bacterial growth the cause of this was unclear. A pure culture of these colonies was procured but did not grow in the broth so we were unable to test the colonies any further.

The disc diffusion experiment showed consistently diminished zones of inhibition around the tea tree and lavender discs after 72 hours. The *S.aureus* and the *E.coli* bacteria were able to grow in around the lavender and tea tree discs where they were previously inhibited at 24 hours after inoculation. The effects of these essential oils diminished with the passing of time. The oils or specific chemicals in the oils may have started to evaporate over time allowing for bacterial growth. Lavender and tea tree oil were less viscous than the other three oils which may explain the results of zone changes that pertains to these oils.

It appeared that lavender had a more powerful inhibition effect against the gram positive *S.aureus* while the tea tree oil was stronger inhibiting the gram negative *E.coli*. The results from our inoculated broths correlate with the tea tree being a stronger inhibitor of the *E.coli* bacteria, but tea tree also had better inhibiting results against *S.aureus* in our broth dilution experiment. There is a possibility that the tea tree oil may evaporate faster than the lavender oil on the agar plates and that would account for the mixed results.

The final round of experiments using the pure culture obtained from the first disc diffusion experiment was performed to test if the colonies growing around lavender were

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a strain of *S.aureus* that was resistant to lavender oil. When comparing the zones of inhibition on the individual oils it should be noted that the zones around tea tree infused discs were comparable to the zones exhibited in the first experiment. The pine oil also was consistent with results showing 7mm zones of inhibition in both experiments. When looking at the results of the zones of inhibition for the lavender infused discs for the first experiment they were large even at the 72 hour mark when the synergist effect with the tea tree oil wore off. In the final disc diffusion experiment the zone of inhibition was 15 mm diameter, which is almost half of what the zones were previously. There appears to be the possibility that *S.aureus* strains could be resistant to the lavender oil. Further testing should be conducted to test this possibility.

P. aeruginosa is an extremely resistant bacterium (Todar). The oils used for our tests showed little if any promise of inhibiting it. The slight zones of inhibition produced by pine and tea tree were not consistent throughout the various diffusion experiments. Some tests showed no zones while the same experiments on a different plate showed inhibition zones. This lack of consistency when testing oils on *P. aeruginosa* negates any positive findings. Further testing would need to be done. The experiment where essential oils were infused directly into the agar showed a thicker growth of *P. aeruginosa* on these agar plates compared to the *P.aeruginosa* grown on regular TSA media without the essential oils. These essential oils actually appeared to stimulate the growth of *P.aeruginosa*, as it seemed to thrive on the oil infused agars. Todar's textbook of bacteriology states that *P. aeruginosa* can use at least 75 different organic substances for growth (Todar). This bacterium is found in a wide variety of habitats, has been growing and living around plants for millions of years, and some species are known pathogens to

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selected plants (Todar) including lavender (Chase). These facts may play a role in the possibility that *P.aeruginosa* may be using these plant oils as a nutrient.

Our experiments showed some promising results pertaining to the antibacterial qualities of common essential plant oils. This leads to an array of possibilities in the study of plants being used as antimicrobials in the future. New avenues of research should be undertaken with the goal to aid mankind in the fight against pathogenic bacteria by utilizing the plethora of plants available to us. Our experiments used a few common oils but there are plants and oils out there that have never been analyzed or even discovered yet. A focus on education and conservation is also necessary to protect plants before we destroy this valuable resource.

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Tables and Figures

Table # 1 Measurement of the Diameter of Zone of Inhibition (mm) in Week 1 Disc Diffusion

Oils used	<i>E. coli</i>		<i>S. aureus</i>		<i>P. aeruginosa</i>	
	24 hour	72 hour	24 hour	72 hour	24 hour	72 hour
Tea tree Plate #1	40	35	30	12	9	9
Tea tree plate #2	39	34	39	25	0	0
Lavender plate #1	31	17	39	25	0	0
Lavender plate #2	32	15	44	40	0	0
Pine oil Plate#1	0	0	7	7	8	8
Pine oil plate #2	0	0	7	7	9	9
Lemon oil Plate #1	0	0	0	0	0	0
Lemon oil plate #2	0	0	0	0	0	0

Results of Disc Diffusion Experiment, Week 1

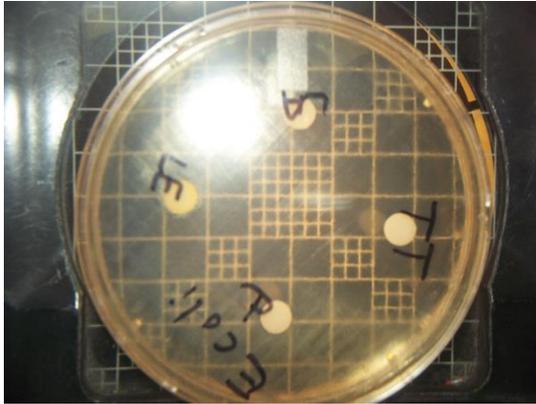


Figure 1 *E.coli* #1 @ 24hours

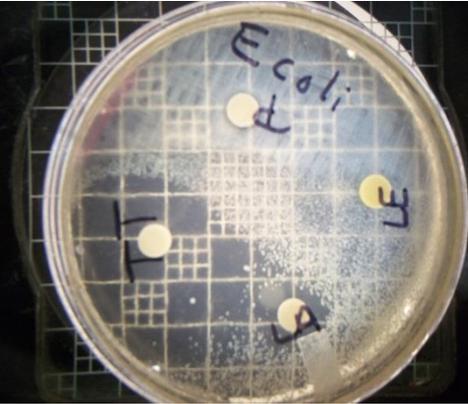


Figure 2 *E.coli* #1 @ 72 hours



Figure 3 *S.aureus* #1 @ 24 hours



Figure 4 *S.aureus* #1 @ 72 hours

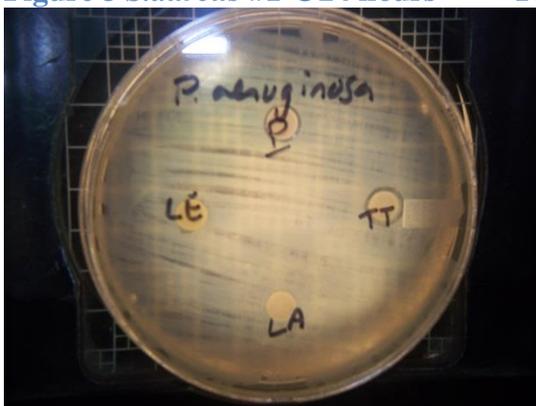


Figure 5 *P.aeruginosa* #1 @ 24 hours

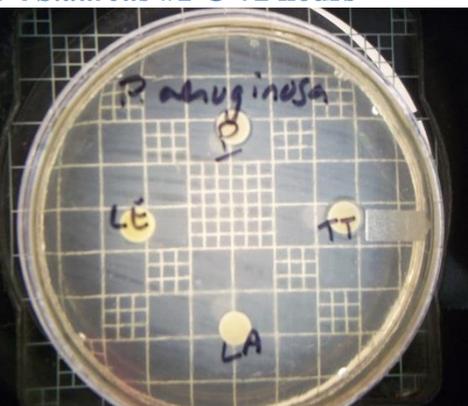
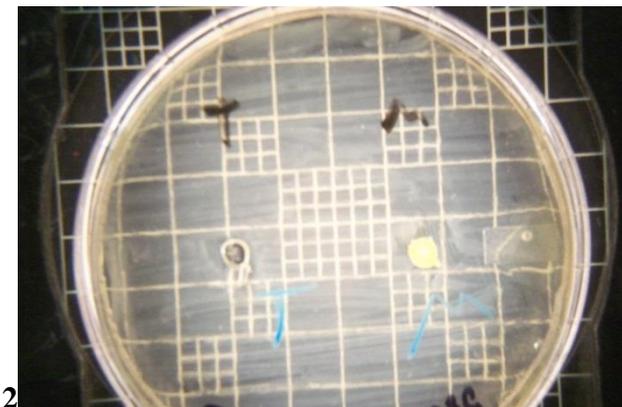


Figure 6 *P. aeruginosa* #1 @ 72 hours

Table #2: Week 2 Well Diffusion Experiment: Zones of Inhibition (mm)

<i>P. aeruginosa</i>		<i>S.aureus</i>		<i>E.coli</i>	
Inoculated plates		Inoculated plates		Inoculated plates	
#1 tea tree 6	#1 myrrh 0	#1 tea tree 12	#1 lavender 15	#1 tea tree 13	#1 lavender 10
#2 pine 9	#2 myrrh 0	#2 lavender 12	#2 well cracked	#2 lavender 9	#2 tea tree 12
#3 lavender 0	#3 tea tree 0	#3 lavender 10	#3 myrrh 8	#3 myrrh 0	#3 lavender 9
#4 pine 0	#4 lavender 0	#4 myrrh 7	#4 lavender 15	#4 lavender 7	#4 pine 9

Selected Pictures from Well Diffusion Experiment, Week



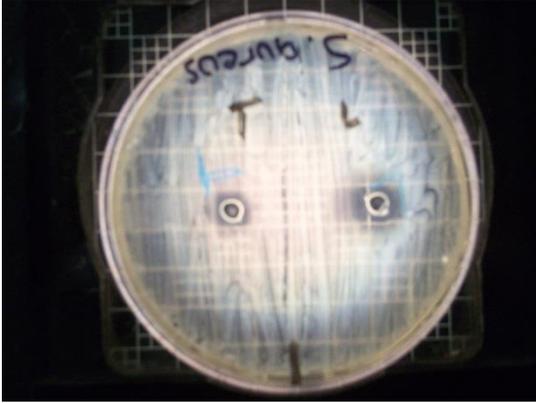


Figure 7 *P.aeruginosa* #1 @24 hours

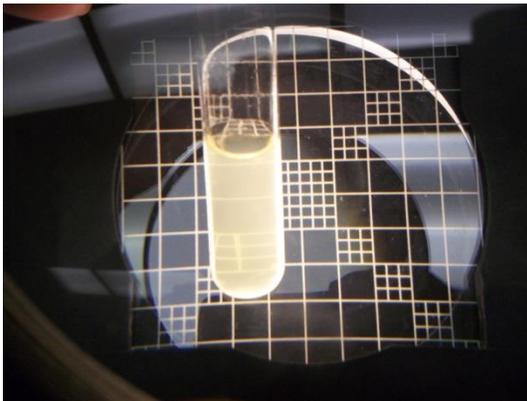
Figure 8 *S.aureus* #1 @ 24 hours

Table #3: Results of Inoculated 10mL Broths at 48 Hours

(cloudy = growth throughout, sediment= growth on bottom , clear= no growth in the broth,)

<i>Staphylococcus aureus</i>		<i>Escherichia coli</i>		
Tea tree oil		Lavender oil	Tea tree oil	Lavender oil
25µL	Cloudy/sediment	Cloudy/sediment	Clear broth	Cloudy/sediment
50µL	Clear/sediment	Cloudy/sediment	Clear broth	Clear/sediment
75µL	Clear/sediment	Cloudy/sediment	Clear broth	Clear broth
100µL	Clear broth	Clear/sediment	Clear broth	Clear broth

Pictures from Broth Dilution Assay





25 μ L of lavender in *S.aureus* inoculated broth cloudy/sediment



100 μ L of lavender In *S. aureus* inoculated broth clear/sediment

Picture of results from oil infused agar inoculated with *P. aeruginosa*

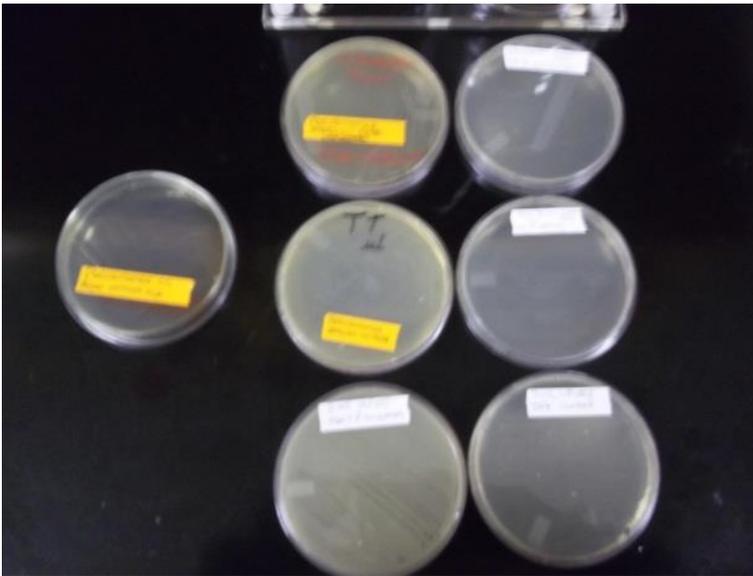


Figure 9 single agar is control (no bacteria or oil)
Middle row is agar plates infused with the oils, and
Third row is the essential oils without *P.aeruginosa*

Pictures of Colony Regrowth from Pure Culture Grown from Initial Colony of *S.aureus*

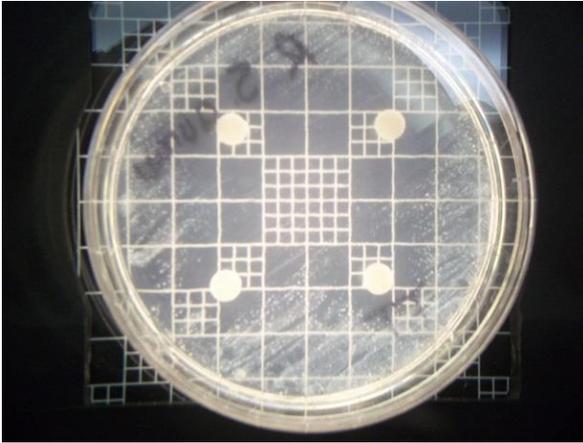


Figure 10 *S.aureus* with tea tree discs

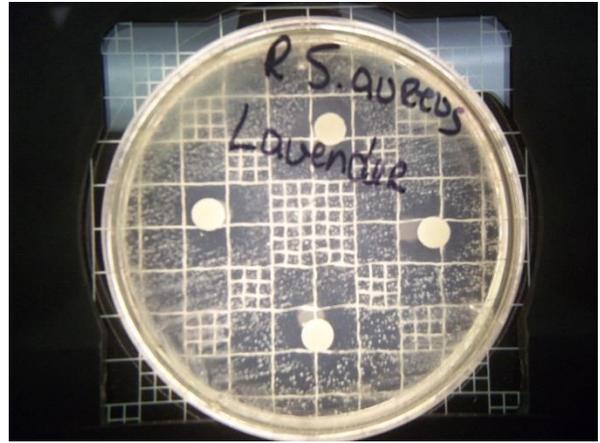


figure 11 *S.aureus* with lavender infused discs

APPENDIX 1

BACKGROUND:

Lavender oil is extracted from the flowers of the lavender shrubs (*Lavandula officinalis*, *L.latifolia*, *L.angustifolia*, *L.stoechas*). Lavender plants initially came from the Mediterranean region, (Mosby 385) and are now widespread throughout the world.

Lavender has been used in herbal remedies for thousands of years. It has a wide array of uses like treating insomnia, lowering high blood pressure, a stress reliever, antidepressant, and having antitumor properties (Oils and plants, Mosby 385-86). Lavender is touted as having antibacterial ingredients helpful in treating sore throats, secondary infections from the flu, relief from sinusitis, treatment of acne, and healing of wounds and sores (Oils and plants).

Tea tree oil comes from a tree found in Australia. Its scientific names are *Melaleuca alternifolia*, *M. linariifolia*, and *M. uncinata*. The oil is used as an antifungal, antiviral, immunity booster and an antibacterial agent. Antibacterial claims state that it helps with rashes, infections, intestinal issues, acne, and gingivitis (Oils and plants). Some studies conducted have shown that tea tree oil is effective against *Staphylococcus aureus* and *Escherichia coli* but not as effective against *Pseudomonas aeruginosa* (Mosby 584).

Lemon oil is extracted from the peels of the lemon. Its Latin name is *Citrus limonum*, Lemon trees are thought to have originated in India and subsequently spread throughout the Mediterranean region and beyond (Oils and plants). Lemon oil is sometimes used as an antiseptic; it is widely added to cough drops and throat lozenges to help ease throat infections. A drink made of lemon and honey has traditionally been used

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to help with coughs, colds, flu and upset stomach complaints (Chevallier 104). Other uses are as an astringent for acne, a diuretic, and relief for diarrhea (Oils and plants). The oil can be found in a variety of household cleaners.

Pine oil is extracted from the needles of the *Pinus sylvestris*. Pine trees can be found growing throughout the world. Pine has been used to treat cough and respiratory illnesses as well as chest infections. Throughout history pine oil was used to help increase mucous secretions (Karch 143). Additional claims have been made that muscle aches, pains and acne treatments can be treated with pine (Oils and plants, Karch 143). Pine oil is also found in a variety of cleaning products.

Myrrh oil is extracted from bushes or small trees that grow in Somalia. Its scientific name is *Commiphora myrrha*. or *Commiphora molmol*. The use of myrrh for medicinal purposes has been documented for thousands of years. It is mentioned in Greek mythology (Karch135). Claims have been made that myrrh has antimicrobial and antiseptic qualities. It has been used as a mouthwash, and also to treat cuts and wounds (Chevallier 107). Traditionally used for a variety of illnesses such as respiratory issues, syphilis, leprosy, gingivitis, and wounds (Mosby's 50) "Culpepper's Herbal," which was written in 1790, had a list of uses for myrrh that included inducing labor and killing parasitic worms as well as the above mentioned.

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Fitzgerald -- Literature II

The Veil of Fiction: An Analysis and Comparison of the Characters and Events In Upton Sinclair's *The Moneychangers* with the Events and Major Figures of the 1907 Banking Panic

Gillian K. Fitzgerald (Bergen Community College)

Mentor - Dr. Geoffrey J. Sadock

The Moneychangers, by Upton Sinclair, is a work of fiction based on the economic panic of 1907. In 1907, the U.S. economy was reeling from the effects of the San Francisco earthquake and a downturn in the stock market. Against this back-drop, and through seemingly unrelated events, the second largest bank trust in New York, the Knickerbocker Trust, collapsed, creating a nationwide panic that brought the U.S. economy to its knees. Before the financial situation could deteriorate beyond repair, J. Pierpont Morgan, one of the richest and most powerful bankers in the country at the time, stepped in and used his enormous financial influence to bail out many of the endangered banks and major enterprises, effectively saving the United States economy and becoming known as a great and selfless hero by the American people. However, instead of viewing J. P. Morgan's intervention as heroic, some contemporaries, such as Upton Sinclair, questioned if the banking tycoon may have actually had a hand in creating the panic, then further inciting it in order to eliminate rivals, quiet government opposition, and to acquire valuable assets for little to no expense. Although Sinclair dramatizes some events and does not use the same names in *The Moneychangers*, he draws many parallels between the actions of characters such as Dan Waterman and Stanley Ryder, and the historical facts, events and actions of prominent figures of the 1907 panic, such as J.P. Morgan and

Fitzgerald -- Literature II

Charles Barney that would suggest that a conspiracy of a contrived economic panic is not implausible. The purpose of this paper is to explore these parallels between the actual events and figures of the 1907 panic and the events and characters within *The Moneychangers*.

Upton Sinclair is one of the most well known American social novelists and journalists. In his most famous novel, *The Jungle*, he brought the American people's attention to the horrific conditions and practices of the Chicago meat-packing industry. Although the names are different in *The Moneychangers* and the novel is considered a work of fiction, Sinclair seems to be trying to bring attention to a very real possibility that the supposed savior of the economy, J.P. Morgan, in the 1907 Panic may have orchestrated the upset in order to further their own agendas. In Sinclair's later the novel *The Brass Check: A Study of American Journalism*, he refers to *The Moneychangers*: "Recall *The Moneychangers*, a novel dealing with the causes of the 1907 panic...The veil of fiction was thin, and it was meant to be"(Sinclair 260). However, when the novel was published in 1908, it was not at all popular. But almost as if he expected this, Sinclair represents himself in the novel in the character of the silenced, socialist reporter, Mr. Bates.

In 1907, before the Knickerbocker Trust collapsed, the economy had already been significantly weakened by the mass devastation of the 1906 San Francisco earthquake, together with a weak cotton harvest. As stated in the Frydman, Hilt and Zhou scholarly essay,

The Panic of 1907 occurred following a series of economic shocks, which precipitated the onset of a recession. The San Francisco earthquake and fire

Fitzgerald -- Literature II

of 1906 had had a profound monetary and financial impact, both domestically and internationally. Gold flowed into the United States as foreign insurers paid claims on their San Francisco policies; New York financial institutions also faced reduced gold reserves resulting from their own transfers to San Francisco...A relatively weak cotton harvest in 1907 resulted in low export revenues, further aggravating the stress on the financial system. The New York money market thus entered the fall of 1907 low on gold reserves and vulnerable to shocks. (Frydman, Hilt, Zhou 6)

During this time the New York banking system was also changing because of the proliferation of trust companies: "In the ten years ending in 1907, trust company assets in New York State had grown 244 percent (from \$396.7 million to \$1.364 billion) in comparison to a 97 percent growth (from \$915.2 million to \$1.8 billion) in the assets of national banks" (Frydman, Hilt, Zhou 6). J. P. Morgan, one of the richest and most influential men in finance at the time, spearheaded this trend on Wall Street (Chernow 2313). Because trust companies held huge amounts of money and assets, they wielded immense power over the economy. Unlike banks, trust companies could not give out bank notes, but could give out loans, and take deposits, and yet they were not subject to the banking laws and regulations. Many "specialized in providing financing for corporate investments and acquisitions" (Frydman, Hilt, Zhou 7).

As with the 1907 Panic, the economic upset in Sinclair's novel is not a simple spontaneous event. Although he goes to great lengths to describe the opulent wealth, privilege and opportunity enjoyed by the Wall Street society and its titans, Sinclair also instills a sense of uneasiness within this community almost from the beginning, mirroring

Fitzgerald -- Literature II

the increasing anxiety felt by many in the United States as the year 1907 progressed, an uneasiness that crescendos throughout the period of a year as the inevitable fall of the Gotham Trust, the trust that mirrors Knickerbocker, approaches:

...it was a period of great anxiety in the financial world. Men felt the unrest, even though they could not give definite reasons. There had been several panics in the stock market throughout the summer; and leading financiers and railroad presidents seemed to have got the habit of prognosticating the ruin of the country every time they made a speech at a banquet. (Sinclair 136)

In *The Moneychangers*, the prelude to the economic panic is the fall of John Price and the Mississippi Steel Company orchestrated by Dan Waterman. In the book, Price is an agent of Waterman who intentionally overreaches his funds trying to accomplish illegal acquisitions and business regarding the Northern Mississippi Railroad, and was consequently unable to “make the quarter,” resulting in the exposure of his illegal activities. Stanley Ryder, the president of the Gotham Trust, had the Trust money heavily hypothecated “to pledge something as security”, into the Mississippi Steel company stock, not only lost all the money but was also exposed for his unsavory involvement with Price, causing a run, or a rapid withdrawal of money from the Trust. Although not identical, the similarities between the novel and the actual characters and events are undeniable, if somewhat simplified by Sinclair.

In reality, the onset of the crisis was brought on not by a steel mogul, but by a copper mogul by the name of F. Augustus Heinze. In 1907, Heinze, a very independently wealthy owner of copper mines, with the backing of Charles Barney, the president of

Fitzgerald -- Literature II

Knickerbocker, and C. W. Morse, the president of the Mercantile National Bank, attempted unsuccessfully to acquire the United Copper Company: “The financial empire of Augustus Heinze began to unravel in October 1907 when he overreached himself in an effort to corner the stock of the United Copper Company. (An investor who tries to “corner the market” on a commodity or a stock is attempting to gain control in order to fix the price)”(The Federal Reserve Bank of Boston 3), and “These individuals had gained control of a series of small banks and used some portion of their resources to finance their ventures. These banks suffered losses when the attempt to corner the shares of United Copper, which was undertaken to engineer a ‘bear squeeze’, failed spectacularly” (Frydman, Hilt, Zhou 9). As with Sinclair’s character John Price, Heinze’s unsavory machination would have had no resounding effects on the economy if he had been just a wealthy entrepreneur, but because of his and his business partner’s heavy involvement in the financial market and their many interests in banks such as the Knickerbocker Trust and the National Mercantile Bank, the situation escalated.

When the word got out that Charles Barney the president of the Knickerbocker Trust, and the model for Sinclair’s Stanley Ryder, had been involved with using the Trust’s funds in Heinze’s attempted hostile takeover of the United Copper Company, on October 18,1907 the depositors of the Knickerbocker Trust began to withdraw their money all at once. However, people really began to worry that same day “when the National Bank of Commerce announced it would no longer act as Knickerbocker’s Clearing House agent” (The Federal Reserve Bank of Boston 5). This was devastating because “As a trust company, Knickerbocker was not eligible for membership in the Clearing House and, therefore, needed an agent to process its checks. In the event that

Fitzgerald -- Literature II

Knickerbocker failed, National Bank of Commerce didn't want to be stuck with a lot of Knickerbocker checks that wouldn't be honored"(The Federal Reserve Bank of Boston 5). Without the help and support of the New York Clearing House Association Barney and the Knickerbocker Trust had little hope of staying afloat. However, it is worth noting that the NYCHA did bail the Mercantile out,

The NYCHA provided a loan to Mercantile, and publicly pledged to support the other member banks connected to those men as well. As a condition for this aid, the NYCHA required the resignation of the entire board of directors of Mercantile, and demanded that Morse, and Heinze resign from all other clearing banks where they held directorships. The very public support from the NYCHA and the change in management ended the run on Mercantile, although it was liquidated the following January. It is possible that the expulsions of these individuals from New York's banking industry contributed to the perception that they had embezzled funds or committed fraud. (Frydman, Hilt, Zhou 9)

On October 21, after the announcement of the Knickerbocker Trust's disqualification from the Clearing House Association, Charles Barney resigned his position as president, in hoping that the Knickerbocker Trust would receive aid from J. P. Morgan and his syndicate. In the end, Morgan refused aid, effectively putting an end to the Knickerbocker Trust, which was what triggering the true panic of 1907. Less than a month after his resignation, Charles Barney committed suicide on November 14.

Sinclair's fictional parallel to those real events proposes a more proactive role by J.P Morgan in precipitating the events of the Panic. In the highly dramatized Clearing House meeting in chapter nineteen of the Moneychangers, Dan Waterman, the character modeled after J. P. Morgan, tells Major Prentice the president of Trust company of the Republic, a trust with close affiliation with the Gotham Trust, and the other members of the association, all powerful bank owners and trust presidents modeled after such figures as J.D. Rockefeller and Andrew Carnegie to stop clearing for Stanley Ryder. "The

Fitzgerald -- Literature II

Clearing House has thrown out the Gotham trust" (Sinclair 155)! When it was announced that Gotham Trust was no longer part of the Committee, Stanley Ryder resigns as president and, like the man he was modeled after, commits suicide. The Knickerbocker Trust, unable to recover its capital and its reputation due to the ruthless dealings of Waterman and his agents, closes its doors forever, thus "beginning the panic as Montague saw it" (Sinclair 177).

At the end of *The Moneychangers* Dan Waterman, despite being the villain responsible for the crisis, saves the day by bailing out the banking system. Along the way he eliminates a rival not only in business, but in the matter of Lucy Dupre, and silences the President's objections to the uncontrolled growth Wall Street. As an added bonus, he is hailed as a national hero, while subsequently acquiring many new and profitable assets such as the Mississippi Steel, virtually without cost, thereby giving him, the main proprietor of the Steel Trust, a complete and undisputed monopoly over the highly profitable product. "Realizing the desperate situation, the Steel Trust was willing to do its part to save the country-it would take over the Mississippi Steel Company, provided only the government would not interfere. The desired promise was given; and so the last of Waterman's purpose was accomplished" (Sinclair 177).

When we are first introduced to Dan Waterman, Montague says, that "It is not the money he owns," said Montague; "it's what he controls. He is master of the banks; and no man can take a step in Wall Street without his knowing it if he wants to. And he can break a man's credit; he can have all his loans called. He can swing the market so as to break a man. And then, think of his power in Washington! He uses the Treasury as if it were one of his branch offices"(Sinclair 18). This characterization resembles J.P. Morgan

Fitzgerald -- Literature II

and the power he utilized in order to solve the 1907 Banking crisis. When the crisis began, Morgan immediately organized a team of bankers and auditors and charged them with “determining the solvency of the financial institutions that came under pressure” (Frydman, Hilt, Zhou 13), and with this influence “Morgan coordinated a series of rescues of trust companies, securities dealers, and the City of New York that were instrumental in resolving the financial crisis” (Frydman, Hilt, Zhou 13). Naturally, after the NYCHC denied them a loan, the first company to ask for assistance of Morgan and his committee was the Knickerbocker Trust. Morgan then

...committed to provide aid the following day only if it was determined that the institution was solvent. On October 22, with panicked depositors forming long lines outside of its branches, Knickerbocker paid out all of its \$8 million in cash. Morgan’s men, who examined Knickerbocker’s books throughout the morning, said they were unable to determine whether the trust was in fact solvent.

Therefore no aid was provided, and at 12:30 PM Knickerbocker had no choice but to close its doors. (Frydman, Hilt, Zhou 19)

As a result of the decision not to aid the Knickerbocker Trust, the real panic began. However, it was, in fact, untrue that the Knickerbocker Trust was insolvent. “That the Knickerbocker was not hopelessly insolvent was evident from the fact that the bank reopened on March 26, 1908, with assets of \$52 million and a surplus of \$14 million. There was an infusion of \$2.4 million by stockholders and an additional \$13 million collected by the receivers from the disposal of assets” (Wicker 92). How could such a mistake, which ended up costing millions of dollars to bail out the numerous institutions that suffered major runs as a result, be made?

Fitzgerald -- Literature II

Elmus Wicker, the author of *Banking Panics of the Gilded Age*, says “that it is indeed curious that Morgan concluded that the Trust company was insolvent since he took such pride in not getting involved with the details of the individual case and accepting judgment of his trusted colleagues, which he did in all subsequent requests for support” (Wicker 92). One can speculate that being the second largest independent trust company in the city the Knickerbocker Trust was competition for big bankers like Morgan and Rockefeller, and therefore when presented with the opportunity to eliminate an enemy, the temptation might have been more than Morgan could resist. In his novel Sinclair explains their enmity well:

There's only one thing about which the banks are agreed," continued the other.

"That is their hatred of the independent trust companies. You see, the national banks have to keep twenty-five per cent reserve, while the trust companies only keep five per cent. Consequently they do a faster business, and they offer four percent, and advertise widely, and they are simply driving the banks to the wall.

(Sinclair 138)

The biggest departure between the actual events and the events of the novel is Sinclair's character John Price. This character best mirror's Augustus Heinze, however, within Sinclair's story Price is revealed as “one of Waterman's agents in every big thing he does” (Sinclair 152). Waterman uses Price not only to get Ryder to ruin himself, but to intentionally cause a domino effect that would send the country into a panic that would subjugate all opposition to his agendas. He is not only an opportunist, but also an orchestrator. This raises questions about J. P. Morgan. There is no question that Morgan's actions during the panic saved the economy, however, one could make the argument that

Fitzgerald -- Literature II

the same power and influence he used to save the financial system could just as easily have been used to thrust it into chaos. Although there is no hard proof linking Heinze and his actions to J.P. Morgan, the Mercantile bank, one of Heinze's banks was one of the first to be bailed out during the crisis, while Charles Barney and the Knickerbocker Trust seemed to have been "left out to dry" by Morgan and his committee.

Whether or not Morgan instigated the crisis itself has been a conspiracy theory favored by many people, Sinclair included, but never solidly substantiated. Whichever way one chooses to look at the issue, there is no doubt that Morgan benefited from the panic, but whether or not he instigated it, as did his surrogate Waterman, the world will probably never know.

In conclusion, the parallels between Upton Sinclair's *The Moneychangers* and the actual events and characters of the 1907 Panic are clear, except for the two main differences between Waterman and J.P. Morgan. The first is that in *The Moneychangers*, Waterman is the undisputed villain, willing to trample over any person in his way, he is unquestionably responsible for intentionally Orchestrating the Panic, where as with Morgan, the he is at the very least an opportunist, but there is a question as to whether or not it goes further then that into the realm of instigator like his surrogate, Waterman. The second difference is that Waterman is a fictional character, where as Morgan is not, and, as Upton Sinclair said, "the veil of fiction is thin."

Fitzgerald -- Literature II

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Syria on the Brink

Victoria Winch (Montgomery College)

Mentor -- Dr. Aram Hessami

The world has seen few men as evil as Bashar al-Assad. Absolute power tends to corrupt even the strongest minds. The Assad regime has seen multiple instances of tumult in Syria, but the country did not face imminent collapse until Bashar al-Assad took his place as Syria's leader. In April, 2011 peaceful protests broke out across Syria. Similar protests had occurred in the past; it was the government's reprehensible response which made them significant. Assad replied by sending tanks to attack the populations of restive cities and open firing on crowds. He objectively calculated his actions in order to cause peaceful protestors to become violent, which justified further use of force. Rebel groups formed to protest this treatment, and the conflict has developed into a civil war. There have been 70,000 casualties to date. 860,000 Syrian refugees have fled the country, and 5,000 more do so every day.³⁵³ It is estimated that 4 million people are displaced within Syria, without access to water and electricity. This is all happening in a country of only 21 million people: almost a quarter of Syria's population has either been displaced or killed. All of this destruction is the result of one violent man and his army.

The United Nations, arguably the world's most influential international body, was specifically designed to deal peacefully with such issues. The obvious inquiry is why the UN has not yet taken action to stop Assad's reign of terror.

This is not to say that the UN and other international bodies have failed to intervene in human rights violations in the past; in fact, the truth is quite the opposite. They have long been known to intervene to promote peacekeeping and counteract human rights violations with international organizations. The UN has been a particularly active player in this tradition, but

³⁵³ "The Country Formerly Known as Syria." *The Economist*. N.p., 23 Feb. 2013. Web.

Winch -- International Studies

NATO, the U.S. and other international bodies also contribute significantly to the peacekeeping tradition.

A powerful example of a relatively successful intervention in the face of human rights violations occurred during the Bosnian conflict in the 1990s. This conflict, widely acknowledged as “Europe's worst conflict since 1945,³⁵⁴” was rooted in the ethnic differences in the country of Bosnia-Herzegovina. Bosnian Serbs committed ethnic cleansing against Bosniaks, two of many ethnic groups present in the country. The conflict garnered international attention because of its ethnically-rooted, violent nature, and in 1996 the U.S. and NATO intervened to end the violence. A cease-fire, known as the Dayton accords, was negotiated 1995.³⁵⁵ The Dayton accords were a significant peacekeeping accomplishment, because they are “Bosnia's best hope for peace. . .and the commitment by the United States to play the major role in the military implementation force.³⁵⁶” The Dayton accords are a real-life model of the the long term, diplomatic effects peaceful intervention can have.

Unfortunately, not all ethnic conflicts end with such diplomatic recognition and closure. The Rwandan genocide, which also took place in the early 1990s, exemplifies the consequences of international bodies' inaction during human rights conflicts. In Rwanda, there are two major ethnic groups: the majority Hutu, who held most of the power in the Rwandan government after the 1950s, and the minority Tutsi. During a short and violent period in the spring of 1994, Rwanda's Hutu population committed numerous acts of genocide against the Tutsi. Alan J. Kuperman, author of 'Rwanda in Retrospect,' notes that “Perhaps the most remarkable aspect of the genocide was its speed.” The majority of attacks happened within 14 days of the conflict's start.³⁵⁷ Apart from the speed of the genocide, the number of people who were involved is

³⁵⁴ Williams, Michael. “The Best Chance for Peace in Bosnia.” *The World Today*, Vol. 52, No. 1 (Jan., 1996), pp. 4-7. Royal Institute of International affairs. *JSTOR*.

³⁵⁵ "Bosnian Conflict." *Britannica*. Encyclopedia Britannica, n.d. Web. 10 Dec. 2012.

³⁵⁶ Williams

³⁵⁷ Kuperman, Alan J. “Rwanda in Retrospect.” *Foreign Affairs*, Vol. 79, No. 1 (Jan. - Feb. 2000), pp. 98. Council on Foreign Relations. *JSTOR*.

unimaginable:

“ It is estimated that some 200,000 Hutu, spurred on by propaganda from various media outlets, participated in the genocide. More than 800,000 civilians—primarily Tutsi, but also moderate Hutu—were killed during the campaign. As many as 2,000,000 Rwandans fled the country during or immediately after the genocide.³⁵⁸”

The rapid slaughter of this many people also quickly garnered international attention. However, unlike the situation in Bosnia, no international body took effective action to stop the genocide. There was a small UN presence in Rwanda during the genocide, but the peacekeeping troops were woefully outnumbered and also confined by UN peacekeeping constraints on weapon use. Thus, while troops were present, they could do little to actively protect Tutsis and moderate Hutus from the greater Hutu population. The world sat back and watched while almost a million people were murdered with machetes, often by their own neighbors. Such a drastic failure on the part of the UN did bring about reforms in UN peacekeeping. However, these reforms appear to have had little effect on the way the UN actually handles these situations.

After the horrors of genocide committed during the second World War, a special convention on genocide was created by the UN: “On December 9, 1948, the General assembly of the United Nations adopted at its Paris session a resolution approving the annexed Convention on the Prevention of Punishment of the Crime of Genocide.³⁵⁹” Author Josef Kunz states that genocide

“was defined as the 'destruction of a nation or ethnic group,' 'not only through mass killings, but also through a coordinated plan of different actions aiming at the destruction of essential foundations of the life of a national group, with the aim of annihilating the groups

³⁵⁸ "Rwanda Genocide of 1994." *Encyclopedia Britannica Online*. Encyclopedia Britannica, n.d. Web.

³⁵⁹ Kunz, Josef L. “The United Nations Convention on Genocide.” *The American Journal of International Law*. Vol. 43, No. 4 (Oct., 1949), pp. 738. American Society of International Law. *JSTOR*.

themselves.³⁶⁰

In light of the historical horror of genocide, “never again” became the rallying cry for all who believe that mankind must speak out against genocide. But genocide has happened again, in Rwanda, and Darfur, and Bosnia and in still other places. And in light of the UN's failure to intervene in Syria's ongoing civil conflict, it appears to be happening again, with no resistance from powerful international bodies.

As an extremely influential organization, the UN has an incredible range of responsibilities and expectations from member countries and the world at large. Although the UN is a uniting agent, its member countries have always maintained sovereignty. Chapter 1, Article 2 of the United Nations Charter, signed by the United States and 50 other nations in 1945, states that “the [UN] is based on the principle of the sovereign equality of all its Members.³⁶¹” The Article elaborates that “nothing contained in the present Charter shall authorize the United Nations to intervene in matters which are essentially within the domestic jurisdiction of any state.³⁶²” This idea of sovereignty, or the power of the state, goes back to the Treaty of Westphalia in 1648. As historian Derek Croxton says, “...in a system of sovereign states, each recognizes the others as the final authorities within their given territories, and only they can be considered actors within the system³⁶³” Sovereignty, a founding principle of the UN charter, was instrumental in the creation of the organization because it reassured member nations that the UN's power would not compromise their sovereignty.

The UN later issued a 'Universal Declaration of Human Rights.' This Declaration, adopted by the UN General Assembly in 1948, focused on individual instead of state rights and outlines the rights of an individual as a human being. The first article states that “All human

³⁶⁰Kunz 738

³⁶¹ "Charter, United Nations, Chapter I, Purposes and Principles." *UN Nations*. UN, n.d. Web. 8 Dec. 2012.

³⁶²"Charter, United Nations, Chapter I, Purposes and Principles." *UN Nations*. UN, n.d. Web. 8 Dec. 2012

³⁶³ Croxton, Derek. "The Peace of Westphalia of 1648 and the Origins of Sovereignty." *The InternationalHistoryReview* 21.3 (1999).*JSTOR* n. pag. Web. 8 December 2012.

Winch -- International Studies

beings are born free and equal in dignity and rights;” the third article goes on to say that “Everyone has the right to life, liberty and security of person.³⁶⁴” These statements, broad as they are, make equality and the value of human life international principles rather than being decisions left to states. The declaration speaks to the ambition of the UN as a moral, not just a political, body. The UN charter carefully stated that all nations have the equal right to sovereignty, but the declaration of human rights explains that all people have the right to this same power over themselves. It states the expectation that everyone has the right to freedom and justice, not only those who are already privileged by these principles.

This parallel of power distribution raises the question of state versus individual rights. If a state does not give its citizens the freedom to maintain life, liberty, and security of person, is outside interference disallowed on the basis of sovereignty? The UN issued its charter separately from the Universal Declaration of Human Rights, and did not give any indication as to which overrules the other. To clarify this discrepancy, the United Nations developed the Responsibility to Protect in 2005, shifting the focus of UN policy language to individuals. Significantly, the phrase 'Responsibility to Protect' replaced the UN's former policy of a state's 'right to interfere.' This change in language places the importance of individual rights over the previously more influential rights of the state. However, it does nothing to clarify how action might actually be taken in this type of situation.

The Libyan conflict began in 2011 when the Libyan government arrested multiple critics and activists. These arrests sparked peaceful protests across the country, which Gaddafi attempted to quell by use of force. According to Human Rights Watch, “government forces responded by arresting and attacking peaceful demonstrators in Benghazi and other eastern cities. The government used excessive force when protests spread,” killing over 100 people and arresting many more.³⁶⁵” This blatant disregard for the sanctity of human life calls for boundless

³⁶⁴ UDHR

³⁶⁵“World Report 2012: Libya.” *HWR.org*. Human Rights Watch, n.d. Web.

remorse, yet Gaddafi showed none.

This confidence may have stemmed in part from Gaddafi's connections with Russia. In January of 2010, Russia made a deal with Libya to sell weapons, including fighter jets and tanks, to bolster the otherwise out-of-date Libyan military.³⁶⁶ As Libya's military had traditionally been supplied by the Soviets, the fall of the Soviet Union in 1990 resulted in a decided lack of funding for Libya's military.³⁶⁷ This arms deal in 2010, just a year prior to the protests that led to Gaddafi's demise, renewed Gaddafi's confidence in his Russian connections. Gaddafi's unthinkably assured reaction could also have come from his decades-long rule over Libya. Gaddafi took control of Libya in a 1969 military coup which ousted then-king Idris, and has ruled the country ever since.³⁶⁸ Having absolute power over Libya for 42 years, Gaddafi probably did not think twice about murdering his own people when they began protesting against his actions.

Gaddafi's cruel and immediate backlash was the worst possible response when Gaddafi showed alarmingly little remorse for the unnecessary deaths of his own people, the international community reacted swiftly. Within two weeks of Gaddafi's violent response to protestors, "the United Nation Human Rights Council condemned 'gross and systematic' violations in Libya and called for the creation of a commission of inquiry. The next day the UN Security Council unanimously passed Resolution 1970, imposing an arms embargo, sanctions on Gaddafi and key members of his family and government, and referring the situation in Libya to the International Criminal Court (ICC).³⁶⁹" The UN also authorized "a no-fly zone over Libya and air strikes to protect civilians, over which NATO [assumed] command."³⁷⁰ These robust measures, carried out in a timely manner by the UN Security council, ensured that Gaddafi would not live to inflict further suffering on Libya's citizens. A few months after the National Transitional Council was

³⁶⁶ "Libya Profile: A Chronology of Key Events." *BBC News*. BBC, 29 Jan. 2013.

³⁶⁷ "Libya Seeking Arms Deals." *Defense Industry Daily RSS News*. Defense Industry Daily, 04 Mar. 2012.

³⁶⁸ World Report 2012: Libya.

³⁶⁹ World Report 2012: Libya.

³⁷⁰ World Report 2012: Libya.

Winch -- International Studies

recognized as the legitimate government of Libya,³⁷¹ Gaddafi was captured and killed by rebels.³⁷²

The Syrian conflict seems to have begun in 2011, but the history of the civil war really began much earlier. When the world placed its hopes in Bashar Assad, heir to the Syrian legacy, soft-spoken and educated in the field of ophthalmology, it could not have imagined the consequences. When Assad's father died, the West assumed that Assad would be more cooperative, based on his past actions. The BBC notes that “In the last years of his father's life, [Bashar al-] Assad emerged as an advocate of modernisation and the internet, becoming president of the Syrian Computer Society.” In fact, “The country initially underwent a degree of political liberalisation,” but this trend did not continue: “the pace of change soon slowed - if not reversed - and subsequent years saw the creation of "liberalised authoritarianism" rather than democratic rule.³⁷³ Then, when the Syrian uprising occurred, Assad ordered for rebellions to be violently crushed—and that has been his policy ever since.

These actions, occurring within a month of the events in Libya sound chillingly similar to those committed by Muammar Gaddafi. Both Syria and Libya were under the control of a powerful dictator when peaceful protests occurred. Both dictators, Assad and Gaddafi respectively, sought to crush these protests through violent means. Both had connections with Russia, yet only Libya drew UN intervention. Although simplification of the situations is tempting, it is imperative to note a few key differences between the Syrian and Libyan uprisings. These differences help explain why Gaddafi was killed 8 months after the uprising first started, while Assad is still in power two years after the first Syrian protests were quashed.

For one, Assad has much more powerful connections with Russia than Gaddafi did. Syria is Russia's strongest ally in the Middle East, and Russia is not willing to support any change of leadership in the country. Russia is a significant arms supplier to Syria: according to the BBC,

³⁷¹ “2011 July. . .of Libya.” World Report 2012: Libya.

³⁷² “2011 20 October - Col Gaddafi is captured and killed.” World Report 2012: Libya.

³⁷³ “Profile: Syria's Bashar Al-Assad.” *BBC News*. BBC, 12 July 2011. Web.”

“10% of Russia's global arms sales go to Syria, with current contracts estimated to be worth \$1.5 billion.³⁷⁴” Russia's continued alliance with Syria is primarily concerned with defying the West, because it is not particularly beneficial to Russia. Regardless of Putin's motives, a continuing alliance with Syria means that Assad has a powerful ally at his back and that his regime has an abundance of current weapons technology. This access to military power makes Assad a much more difficult target for removal than Gaddafi.

Another key difference which explains the lack of UN intervention in Syria is that while Libya's neighbors fully supported an intervention, Syria's do not. Countries bordering Libya were glad to see Gaddafi go; they wanted someone to put an end to his unspeakable human rights violations. The international community generally agrees that the Libyan intervention was a success, especially in the face of what could have happened had Gaddafi remained in power.³⁷⁵ Assad's human rights violations have been on an even larger scale than those Gaddafi committed, so it speaks to reason that the other countries in the Middle East would want Assad gone. Unfortunately, the situation in Syria is more complicated than that. Neighboring countries, especially Israel, are terrified to see Assad go because they fear that instability would result. They are worried that Syria's ethnic diversity and many rebel groups would cause it to fall into a chaos of warring factions and regions. Essentially, if Assad goes, Syria could become another Somalia—another failed state—directly in the heart of an already troubled region.³⁷⁶ Failed states are often hotspots for terrorist organizations because they lack government regulation and control, and Syria's neighbors will not risk creating an unpredictable monster in their own backyard³⁷⁷.

Finally, and most significantly, Syrian intervention does not have the backing of the UN

³⁷⁴ “Krechetnikov, Artyom. "Syria Crisis: Why Is Russia Defending Bashar Al-Assad?" *BBC News*. BBC, 31 Jan. 2012. Web.

³⁷⁵ “In contrast to what. . . qualified success.”

Clark, David. "Libyan Intervention Was a Success, despite the Aftermath's Atrocities." *The Guardian*. Guardian News and Media, 28 Oct. 2011.

³⁷⁶ "Syria: The Death of a Country." *The Economist*. The Economist, 23 Feb. 2013. Web.

³⁷⁷ Herzog, Michael. "As Syria Crumbles, Israel Prepares for Instability." *Washingtoninstitute.org*. The Washington Institute for Near East Policy, 31 Jan. 2013. Web.

Winch -- International Studies

security council, as did the Libyan intervention. Russia and China consistently veto intervention proposals submitted to the Security Council. This is partly a psychological move from Russia's Putin, because he knows the United States is pushing for an intervention. However, it is more an unforeseen consequence of successful UN intervention in Libya. Kofi Annan, the UN's special envoy to Syria, has said that "honestly, the way the 'responsibility to protect' was used in Libya created a problem for the concept. The Russians and the Chinese believe they were tricked. They had agreed on a UN resolution, which was then transformed into a process of regime change, which wasn't the initial goal according to these countries.³⁷⁸" Intervention in Libya was, significantly, the first time the UN has used the Responsibility to Protect to justify humanitarian intervention in a country. R2P is the obvious justification for intervention in Syria, but China and Russia now refuse to vote for any Syrian intervention proposals because they do not want to be duped into inadvertently ousting Assad. Russia and China are also protecting their own interests: both countries are huge proponents of human rights abuses, and neither wants to set a precedence of UN intervention on these grounds. They fear that, in the future, such justification could be used to intervene in their own countries.

Even though significant differences exist in the circumstances of Libya and Syria, the issue comes back to the Responsibility to Protect and the UN's promise to uphold universal human rights. While the adoption of R2P in 2005 was an encouraging step in the right direction, the doctrine is completely useless if it is not applied correctly. Libya was the first example of such an application, and the results were overwhelmingly positive. But if the internal structure of the United Nations stays the same, Russia and China will continue to hold the power to block R2P's fair usage, even in the face of staggering support from other countries. The old adage, that actions speak louder than words, is applicable in this case: the words of the Responsibility to Protect, and the promise it seeks to uphold, mean nothing if they are not then used to bring justice

³⁷⁸ Nougayrede, Nathalie. "'Tricked' In Libya - Kofi Annan On Why Russia And China Won't Budge On Syria." *Worldcrunch.com*. Le Monde/Worldcrunch, 07 Sept. 2012. Web.

Winch -- International Studies

to those who desperately seek it. This is exactly what is happening in Syria. There is a clear case for using the Responsibility to Protect to justify an intervention in Syria. All of the factors that were present in pre-intervention Libya are now present, on a much larger scale, in Syria. The death toll in Syria has reached thousands of times its counterpart in Libya, and the United Nations is powerless to stop it because of Russia and China's presence in the security council. There is something inherently wrong with a power structure when it allows for the continued deaths of innocents on such a large scale.

The real issue here is that most of the United Nation's power to act lies with the P5, or the five members of the Security Council—namely, the U.S., U.K., France, Russia, and China. America, France and Britain have all supported previously proposals for Syrian intervention, but Russia and China still refuse to do so. To date, the two countries have vetoed three resolutions on Syrian intervention. They did not reject similar intervention proposals in Libya, which causes disparity in the security council. The United Nations invoked the Responsibility to Protect in order to justify intervention in Libya, and this had the unforeseen consequence of forever alienating Russia and China from a similar proposal for Syria. Consequently, they now refuse to pass a similar proposal for Syria. Two countries should not have so much veto power when in specifically contradicts multiple UN doctrines and principles.

The most significant doctrine this is the Responsibility to Protect. The doctrine states that “the duty to prevent and halt genocide and mass atrocities lies first and foremost with the State, but the international community has a role that cannot be blocked by the invocation of sovereignty.” This statement conflicts with the fact that sovereignty is a founding principle of the United Nations. R2P elaborates: “If a State is manifestly failing to protect its populations, the international community must be prepared to take collective action to protect populations, in accordance with the Charter of the United Nations.³⁷⁹” This vague phrasing allows for too much

³⁷⁹ "The Responsibility to Protect." *Office of The Special Adviser on The Prevention of Genocide*. United Nations, n.d. Web. 8 Dec. 2012.

Winch -- International Studies

flexibility when it comes to actually dealing with a state's failure to protect its citizens, and this is the root of the problem that exists today in dealing with the Syrian conflict.

Assad's actions are also in direct violation of a much older piece of UN policy: the Universal Declaration of Human Rights. The declaration is a key piece of the organization. Assad's actions in Syria violate specific articles in the declaration. Article 3 states that "everyone has the right to life, liberty and security of person." Articles 18 and 19 elaborate that "everyone has the right to freedom of thought, conscience and religion" and "the right to freedom of opinion and expression." Assad took away the right to life and security of person by open firing into crowds of protestors; he took away freedom of thought and opinion when he reacted violently. More specifically, the declaration states in articles 5 and 9 that "no one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment," and that "no one shall be subjected to arbitrary arrest, detention or exile."³⁸⁰ There is a long history of arbitrary arrests throughout the conflict, with Assad often ordering the arrests of the families of activists.³⁸¹ The Assad regime also has no qualms about torture: 27 'torture centers' were recently discovered in Syria, and were used by Syria's intelligence agency to glean information from prisoners.³⁸² Perhaps most significantly, article 21 states that "the will of the people shall be the basis of the authority of government," and this has not been the case in Syria for decades. Assad has violated not only the UN policy which deals with large-scale human rights abuses, but also a declaration that is inherent to the UN's mission. Not intervening in such a situation is an embarrassment to the principles that the UN was founded on.

However, there is still hope of a United Nations-sponsored intervention in Syria. Much like it did in Libya, the Human Rights Council wants to take Assad to the International Criminal

³⁸⁰ "The Universal Declaration of Human Rights, UDHR, Declaration of Human Rights, Human Rights Declaration, Human Rights Charter, The UN and Human Rights." *United Nations*. UN, n.d.

³⁸¹ "Syria: Targeted Arrests of Activists Across Country | Human Rights Watch." *HRW.org*. Human Rights Watch, 15 May 2011. Web.

³⁸² "Syria: Torture Centers Revealed | Human Rights Watch." *HRW.org*. Human Rights Watch, 3 July 2012. Web.

Winch -- International Studies

Court for his crimes against humanity. The ICC only accepts nominations by the Security Council, so any nomination would be blocked by Russia's support of Syria. However, the Human Rights Council still has significant power within the United Nations, and it is doing all it can to convince the Security Council to listen: recently, it sent a letter to the Security Council, signed by 57 countries, recommending the referral of the situation in Syria to the International Criminal Court.³⁸³ But it remains to be seen how this increase in power will unfold, and if the Human Rights Council will be able to incite change in the UN.

If the United Nations does not take action because of vetoes in the Security Council, the organization should be restructured. Blatant disregard for the value of human life cannot go unanswered, and measures for automatic UN intervention if certain criteria for human rights violations are met. This would help prevent situations like Syria from occurring, where 70,000 people have died while the West waits for approval from Russia and China to act. The United States can also obtain international validation from NATO and other organizations, and do not have to depend on the United Nations' approval. However, in the case of Syria such action would be unwise, because intervention lacks legitimacy from neighboring countries fearing instability. Syria has many different ethnic and religious groups, and neighbors fear that intervention would lead to chaos. Early in the conflict, Assad encouraged minority Alawites to commit violent acts against majority Sunnis to increase tensions. Now the Alawites are afraid that when Assad goes, Sunnis will seek retribution³⁸⁴. The Kurds in the north of Syria are also significant players in this equation, because they are a concentrated group that might break off from Syria if Assad is ousted. It is important to note that “[militant Kurds]. . . put ethnic identity before allegiance to Syria, and their goal of some form of autonomy has put them at odds with Syria’s rebels.³⁸⁵” If

³⁸³ "Human Rights Council Opens Twenty-second Session and Starts High-level Segment." *United Nations Human Rights*. Office of the High Commissioner for Human Rights, 25 Feb. 2013. Web.

³⁸⁴ DeFraia, Daniel. "Assad's Alawites Fear a Time When Sunnis Seek Revenge." *GlobalPost.com*. GlobalPost, 22 Aug. 2012.

³⁸⁵ Wood, Josh. "Kurds Try to Balance Security and Alliances." *The New York Times*. The New

Winch -- International Studies

Assad falls, the Kurds could break away from Syria completely, adding yet another component of instability to the ensuing chaos.

The United States and other countries do have the power to bypass UN Security Council approval, if NATO, the EU or even regional support is obtained. These allies could help stop Assad's violence by instating no-fly zones and economic sanctions against Syria, and by establishing safe havens for activists and refugees. The most practical way to hinder Assad is by organizing and arming pro-democratic groups in Syria. Unfortunately, there is a fear that these weapons will fall into terrorist hands³⁸⁶. This fear is what stops the U.S. and others from arming rebels, in turn making them less powerful than Assad's fighters³⁸⁷. This means that when the current regime falls, the most powerful and best-equipped group to fill the leadership vacuum will be terrorists. The U.S. is also wary of involving itself in another decade-long foreign conflict,³⁸⁸ which would require an outpouring of resources and commitment that the struggling U.S. economy could not support. Foreign involvement could incite outrage from citizens who want Obama's focus to be closer to home.

Whatever the reason for a lack of intervention, the question remains: how much is too much? That is, how much more killing will it take for the world to act? The United Nations' charter promises "to save succeeding generations from the scourge of war" and "to reaffirm faith in fundamental human rights, in the dignity and worth of the human person, in the equal rights of men and women and of nations large and small."³⁸⁹ Allowing the civil war in Syria to continue unhindered violates the most fundamental mission of the United Nations. Mass killings have occurred before, in Rwanda, and Bosnia, and Sudan, and there was universal agreement that

York Times, 07 Feb. 2013. Web.

³⁸⁶ Risen, James, Mark Mazzetti, and Michael S. Schmidt. "Militant Forces Got Arms Meant For Libya Rebels." *The New York Times*. The New York Times, 06 Dec. 2012.

³⁸⁷ Carpenter, Ted Galen. "The U.S. Should Be Wary of Arming Syrian Rebels." *US News*. U.S. News & World Report, 01 Nov. 2012. Web.

³⁸⁸ Naouss, Robert. "Syrian Civil War: Why the US Is Still Not Fully Supporting the Syrian Opposition." *PolicyMic*. N.p., Dec. 2012.

³⁸⁹ "Charter, United Nations, Preamble." *UN News Center*. UN, n.d. Web.

Winch -- International Studies

intervention should have been more timely. In fact, the UN developed and adopted the Responsibility to Protect because of regret for the handling of the Rwandan genocide; the UN realized that it needed more specific policies in the case of large-scale human rights violations. The Responsibility to Protect was not developed for show; it was meant to be used to stop situations like Syria from occurring. The internal structure of the United Nations should not allow the security council to block intervention even when it directly conflicts with UN policy. Thousands more people should not have to die because of bureaucracy in the United Nations. It is imperative that the international community learns from its past mistakes. Inaction in the face of a situation like Syria is not simply a mistake: it is a conscious decision to abandon the people of a nation to a terrible fate.

Winch -- International Studies

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A Nation Without Immigration: Why Is Japan Still Resisting?

Rachel Czarniak (Montgomery College)

Mentor - Prof. Efstathia Siegel

Almost all industrial nations are facing population increases in this 21st century, causing significant challenges for economies and governments. It is rare that a prominent nation on a worldwide scale would be experiencing a population decrease in this age of new medicine, advanced technology, and easily accessible transportation between countries. However, one very important country that is in danger of a plummeting population is the nation of Japan.

The size of a nation's population greatly affects its social standards, workforce, production, and economy. A nation that wants to remain in control of those factors must first have control of its inhabitants, both native citizens and foreigners. Understanding and utilizing population control methods is an important tool to utilize in the building and maintaining of an economically and socially powerful nation.

Population size is influenced by many factors, including the nation's fertility rates, life expectancy, and the transparency of their borders for foreigners. While birth rates and life expectancy are difficult, if not impossible, to change, foreign migration policy is in the control of each individual nation. Immigration is one of the key methods to managing population sizes in any industrial country.

Japan ranks as the 10th highest population in the world, after China, India, the United States, and a number of other nations. Despite these strong demographics, population statistics gathered at the end of 2010 recorded the largest drop in population

growth that the country has seen since statistics began being taken. The growth rate has dropped approximately 7% in Japan since 1975.³⁹⁰ Over a span of five years between 2005 and 2010, Japan's population remained almost completely stable, with only a 0.2% increase.³⁹¹ This has occurred because of Japan's growing elderly population, as well as a significant decrease in fertility rates over the past decades. The implications of this population change are astronomical for Japan. Without a large enough population to support the workforce *and* increase the nation's fertility rate, the economy will suffer. Recent natural disasters have also played a role in a quick decrease in population without any hope of replacement.³⁹² Japan will be facing many crises in the future if their current practices are not changed to alter projections. Low birth rates will create fewer people in future generations. In turn, this will reduce the amount of people that are reproducing, creating a cycle effect that will only continue to diminish the population size. With the country's fertility rate at an all-time low³⁹³ and no other means of increasing the population, "Japan's population will steadily decline unless effective measures are taken in a timely manner."³⁹⁴

Migration between nations is one of the primary ways to maintain a balanced and economy-sustaining population. According to anthropologists, "Large-scale immigration, although not a new phenomenon, is considered one of the processes of globalization."³⁹⁵ Because of increased globalization, such as advances in human communication, transport, and global economy, "the scope, intensity, and consequences of such migration

³⁹⁰ "Ministry of Internal Affairs and Communications"

³⁹¹ "Japan ranks...increase": ("2010 population census")

³⁹² "Population statistics...replacement": ("Reversing...decline")

³⁹³ Need to add an explanatory footnote about fertility rates. (Reversing...decline")

³⁹⁴ ("Reversing...decline")

³⁹⁵ Fedorak 70.

Czarniak – Multicultural Studies

have been drastically amplified.”³⁹⁶ Increasing the number of immigrants in a country increases the available employees for many under-staffed professions, creates a stronger consumer-producer cycle, and encourages higher fertility rates.³⁹⁷ Thus, population replenishment is one of the primary purposes a country would encourage immigration.³⁹⁸

According to The Population Bulletin, “Immigration makes up for a significant part of the population growth in countries in which fertility has sunk so low that annual deaths outnumber annual births.” Japan would be a prime example of this situation, and it would make sense for them to embrace a more liberal immigration policy in order to combat their population problems. Yet their current immigration policies do not reflect a desire to utilize this tool—in fact, they have made considerable efforts in the past 50 years to increase their immigration security. Due to current policies being maintained, citizenship is nearly impossible to attain for foreigners living in the country on a visa, and the process to attain a visa is even more challenging. Despite its projected decline in population, Japan has made a surprising effort to oppose immigration instead of welcoming it. Primary reasons that Japan has maintained such strict policies include their longstanding national roots of isolation, the perceived effect of heavy immigration on crime rates, a frequently-changing government, and a xenophobic attitude towards migrants from other nations.

In order to understand these various reasons, a look at the nation’s history of policy would be beneficial. The first major law enacted in Japan after World War Two

³⁹⁶ Walsh 786.

³⁹⁷ Developing countries usually have higher fertility rates, therefore immigrants from those countries are likely to bring their cultural norms with them. Even if they do not influence natives to change their family habits, immigrants will increase the population with their own larger-than-average family sizes (“Transitions...Population”).

³⁹⁸ Fedorak 71.

Czarniak – Multicultural Studies

was the Immigration Control Law in 1952, in response to a spike in population growth. Many war refugees and native Japanese were returning to the country with their new families, causing a significant increase. This law set up a “basic framework” for immigration policy,³⁹⁹ intended to mirror the United States’ system, although it was not approached with the same accepting perspective. Rather, it increased monitoring for registration systems to a very rigid and strict process, and attempted to reject all war refugees from the citizenship rights.

Regardless of Japan’s less-than-welcoming approach, immigration to Japan slowly increased over the decades following World War Two. A national census at the end of 2004 recorded 1.97 million foreign nationals registered in Japan, which equals approximately 1.6% of the total population.⁴⁰⁰ In spite of of this slight increase in immigration for a while, the numbers began to plateau just a few years after the turn of the century. Attitudes towards foreigners in Japan were becoming increasingly negative, associating the rising crime rates with the increasing migrant residents. There was a “growing perception among the public that immigrants, particularly those with unauthorized or questionable status in the country, [were] contributing to the rising crime rate and general deterioration of public security.”⁴⁰¹ Due to this assumed correlation between crime and immigration, the Japanese government established a plan in December 2003 to cut their number of immigrants in half within five years.

In 2004, the Immigration Control and Refugee Recognition Act was passed in Japan. The purpose of this legislation was to lower the number of unauthorized

³⁹⁹ (“Japanese...Pressures”)

⁴⁰⁰ (“Japanese...Pressures”)

⁴⁰¹ (“Japanese...Pressures”)

Czarniak – Multicultural Studies

immigrants in the nation by removing them rather than allowing them residency.⁴⁰²

Article I in the document states the purpose clearly: “to provide for equitable control over the entry into or departure from Japan of all persons and to consolidate the procedures for recognition of refugee status.”⁴⁰³ While the act was specifically to address the laws regarding immigration, it served as a means for the Japanese government to more closely control the amount of foreigners in the country.

Since the enactment of this legislation, there has been no opportunity for immigration rates to increase. Instead, they are being further constricted, and migrants within the country are finding it harder to obtain citizenship. When looked upon in light of Japan’s predicted economic crisis, this approach towards immigration seems illogical.

The obstacles Japan is expected to face are primarily financial, leaving their economy with minimal support in the workplace. A case study in 2008 regarding engineering jobs in Japan has already noted significant concern for this problem in the current day, not just for future projections. According to the study, Japan’s lessening population is significantly contributing to a “dwindling number of young people entering engineering and technology-related fields.”⁴⁰⁴ Because younger generations have interest in pursuing more financially beneficial fields, engineering and manufacturing companies are being left in the lurch. This problem is only going to increase as future generations become smaller in size.

This particular case study focuses on foreign workers as one of the only solutions to the problem. “The country has slowly begun to accept more foreign engineers,” the

⁴⁰² (“Japanese...Pressures”)

⁴⁰³ Immigration Control and Refugee Recognition Act

⁴⁰⁴ Fackler.

Czarniak – Multicultural Studies

article says, “but nowhere near the number that industry needs.”⁴⁰⁵ Since Japanese immigration regulations prohibit the amount of migration needed to boost this field of work, businesses are resorting to personally funding foreign students in engineering schools. While this has made a small dent in the larger problem, companies will not long be able to fund foreign workers. Adverse relationships with China have caused many anti-Japan campaigns over the past year, leaving many large Japanese companies with over \$100 million in losses after many legal attacks.⁴⁰⁶

Even though individual businesses or corporations have made an effort to include foreigners in the fading Japanese workforce, no lasting change has been made because there has been minimal national action. “Labor experts warn Japan may be doing too little, too late. They say the country has already gained a negative reputation as discriminating against foreign employees, with weak job guarantees and glass ceilings.”⁴⁰⁷ Again, this ties back to the country’s preference of isolationism and an overriding prejudice against newcomers in the nation.

This case study is only a small example of many economic problems developing for the future. Spokesman Shigetaka Wako from Altech, an international importer of packaging machinery, says, “Japan is slowly realizing that its economy cannot continue without [foreign workers].” However, it is not enough for individual countries to be supporting foreigners in their migration. Japan’s government policy must be altered in order for immigration to become an effective way to rescue their economy and workforce.

⁴⁰⁵ Fackler.

⁴⁰⁶ “Adverse...attacks”: (“Japan-China Relations at a Crossroads”)

⁴⁰⁷ Fackler.

Czarniak – Multicultural Studies

Another specific example of the negative effects of Japan's current policies is found in the story of Mr. Abubakar Sinaj, illegal Ghanaian immigrant in Japan. A recent article in the Economist discussed the story of this man's death during deportation due to neglect and abuse. Mr. Sinaj was taken into custody after his visa expired. He was bound, gagged, and abused before being placed unconscious on a plane to return to his own country. He died on the flight, causing surprisingly little publicity and investigation. The story was kept out of the news as long as possible, and when names were eventually published, Mr. Sinaj's widow was fired to avoid causing a scandal at the company she worked for.

While individual stories contain various details and circumstances that effect their outcome, this story illustrates a number of issues with Japan's current attitude towards immigration, and also gives a platform for investigating the reasons behind their actions.

This Economist article, "A Nation's Bouncers," first points out the unreasonably callous deportations in recent years. Parents of children born in Japan are frequently being deported while their children remain in the country. Special Residency Permits are barely ever granted due to unspecific criteria for approval, and they are only available to illegal residents. This means that legal immigrants are not able to apply for a Special Residency Permit until their visa runs out—which only leaves the option of turning themselves in to the authorities and hoping for mercy. Because of this, most immigrants attempt to remain undetected as long as possible. This is unproductive for the country because they are supporting foreigners who are not legally permitted to contribute in the economy and workplace. Mr. Suraj is an example of this situation. His visa expired while

Czarniak – Multicultural Studies

he was living in Japan, but he was unable to gain further admittance to the country unless he was arrested. In his case, the result was fatal and, sadly, inevitable.

The story of Mr. Suraj and the specific policy details they bring to light would certainly beg the question, why has Japan refused to alter their immigration policies? The previous research presented would suggest that reformed immigration laws in Japan would boost their economy and prove beneficial to both immigrants and natives.

This article in the Economist that expounds on Mr. Suraj's tragic story also discusses a possible cause of the strict policies. The article suggests that, due to recent reformation attempts in Japan's Justice Ministry, "the old guard is clamping down."⁴⁰⁸ For years, the population of Japan has held a stigma of isolationism and heavy tradition. Because of this strong emphasis on the nation's isolationist history, there is an attitude of avoidance when it comes to flaws in the current system, or the topic of reform. This was displayed in the story of Mr. Suraj's death and the very minimal response it was given both from the media and the government. It is often easier to ignore a problem than to confront it. Of course, increased pressure to reform naturally causes the challenged practices to take a stand. As the issue of immigration becomes more and more prevalent in Japan, the fight between logical reform and centuries of tradition continually grows stronger.

The concept of immigration as a solution for population decline is not unheard of, and has been utilized in other industrialized nations as a remedy for similar problems to the ones Japan is facing. Canada is a prime example of this. Although this nation is currently described as "a nation of immigrants," this was not always the case. Canada's history includes very similar policies to those which Japan currently holds, and their

⁴⁰⁸ "A specific example" (9) to "...clamping down" (10): ("A Nation's Bouncers")

Czarniak – Multicultural Studies

change in immigration policy was chiefly due to population decline, which Japan is also facing. Anthropologist Shirley Fedorak gives more insight on the reasons for this shift in policy. The nation's early immigration policies consisted of strict regulations, allowing foreign laborers in the country only for fields that needed more support, and only when it specifically served to boost their economy, which was seldom at the time.⁴⁰⁹ When Canada's population began dropping in size, due to lower fertility rates and an aging population, the economy then became in need of more support from foreign workers. Canada's altered immigration policies were catalyzed by population and economic needs. In many ways, they were designed to mimic the immigration policies of other Western nations with similar demographic challenges.⁴¹⁰ Policies began to change in the 1960s to allow immigrants from previously restricted lifestyles and backgrounds, including refugees. In the 1980s and 1990s, foreign investors, businessmen, and professionals were welcomed due to even more policy changes.

The results of this shift in policy were mutually positive. While foreigners were able to pursue higher education and careers in lucrative fields, Canada's economy began to thrive once more with the amount of skilled workers needed to maintain a productive workforce. Migrants also brought much business to the country as well, creating a consumer-producer cycle that was beneficial to families and businesses alike. This example could be replicated in Japan with similar results, if they chose to make the policy changes.

⁴⁰⁹ Fedorak describes Canada's early immigration policies as "ethnocentric" and, in some cases, "racist" (72). The nation's population was not declining at this time, therefore immigration was not necessary to support the economy.

⁴¹⁰ "Canada's altered...challenges": (Fedorak 71)

Czarniak – Multicultural Studies

There are many examples of the beneficial effects of immigration found in other countries as well. The United States is one of the most well known countries that has a large number of immigrants from various nations and backgrounds. The effects of this extensive immigration have had a major impact on the nation's workforce and, in turn, their economy. While this country uses extensive outsourcing and a lower level of in-country production, increasing the number of workers and consumers in necessary fields *within* the country allows for a greater cycle of production.

Immigration is obviously a tested and proved solution to the problems that stem from population decline. This can be seen in the example of other countries with similar problems, and also in the negative effects that have been observed in Japan due to their currently strict immigration policies. Why then, with the help that increased immigration could bring to Japan, are they purposefully taking action against it?

A nation's ability to dictate societal and economic norms is closely linked to its ability to enforce policy, especially regarding citizenship and border restrictions. James Walsh, author of the book Navigating Globalization, says, "In proclaiming what national members *should* look like, migration policies perpetuate dominant visions of society and nationhood."⁴¹¹ Japan's approach to immigration policies is closely tied to this concept of control over its societal traditions. Their nation has a very rich culture and central traditions that are potentially threatened by the arrival of other people groups in their country. Their history of isolation and an aspiration for independence has greatly contributed to their desire to keep the borders of Japan as closed as possible. By maintaining strict policies regarding foreigners, Japan is fostering a xenophobic attitude in the hopes of maintaining their longstanding culture, rather than looking outward for

⁴¹¹ Walsh 787.

Czarniak – Multicultural Studies

support and help in the midst of a population crisis. Japan has yet to fully realize that immediate policy reform action is required in order to profit at all from the economic benefits that immigration offers.

Reform is also a difficult process in a constantly changing political world. Since September 2010, Japan has gone through six ministers of justice. One of these men resigned due to financial scandal, causing a previous minister to return to office as a last minute replacement. This unstable leadership in the Justice Ministry causes disorder in regards to general policies and procedures, such as the unspecific Special Residency Permit criteria mentioned above. If Japanese government is unable to properly control their current policies, there will only be greater confusion and conflict when attempting reform. This is one of the reasons why minimal effort has been made in this area.

Japan's history includes a long period of isolationism beginning in the 17th century, originating as a response to religious disagreements.⁴¹² Yet even though this era ended for Japan centuries ago, the attitude has not disappeared. Examples of isolationist attitudes amongst the Japanese people are primarily found in relation to migrants and foreigners in their nation.

When it comes to national priorities, Japan has been very preoccupied with their relationship with China over the past years. Although their internal stability has a great deal of influence on their interactions with China, Japan has allowed their “tremendous efforts”⁴¹³ with China to distract them from internal reform. Both nations are currently vying for economic dominance in the world, disregarding their own internal affairs as a secondary concern. Also, recent changes in Chinese government have given Japan hope

⁴¹² Need to add explanatory footnote about religion and isolationism (Voss).

⁴¹³ Genba.

Czarniak – Multicultural Studies

that relations might improve with this rival nation. According to Koichiro Genba, the foreign minister of Japan, “The government of Japan hopes to enhance its relations with China’s new leadership...China's development is an opportunity for the global community, including Japan.”

Former Economist editor Bill Emmott discusses the power struggle between China and Japan in his book, Rivals. In early 2011, the Journal of International Affairs published a review of this book, outlining its major points and discussing the implications of the current interaction between the two nations. According to the article, “if the Japanese government is to overcome twenty years of economic stagnation, it should embrace more forceful reforms.”⁴¹⁴ And although Japan has been confronted with outdated policy in regards to immigration, they continue to remain preoccupied with Chinese relations instead. Election candidates over the past few years have largely been evaluated on their position regarding China, not their plans to revive the economy. This national distraction is one of the reasons why Japan has yet to change its internal policy.

Since the topic of immigration has been viewed in a variety of lights, there will always be differing opinions on its importance and value. While the benefits of immigration that have been discussed on previous pages are accurate, there are several cautions against it that are raised in arguments against Japanese immigration policy reform. In understanding these concerns, it’s helpful to look at a country that exemplifies some of the potential consequences being discussed. The United States is, in some ways, a good example of this. The president of Immigration Works, Tamar Jacoby, describes

⁴¹⁴ Lee.

Czarniak – Multicultural Studies

their current immigration system as “broken”⁴¹⁵ in an article comparing the positive and negative effects of immigration in the United States.

One of the primary concerns with Japanese policy reform is that they will go too far in the other direction. Japan is concerned that, were they to ease their borders and allow more foreigners into the country, they could lose control of their borders and their population. According to Jacoby, the current immigration influx in the United States is the second largest in its entire history, topped only by a wave that happened a hundred years ago. This amount of migration, she says, “is not some kind of voluntary experiment that Washington could turn off at will, like a faucet.”⁴¹⁶ Currently, with the amount of immigration permeating the United States, the government would not be able to shut it down without extreme cost. Jacoby describes a virtual scenario in which “regular raids on all U.S. businesses, a Big Brother-like national tracking system, and extensive use of ethnic profiling”⁴¹⁷ would be necessary. Regardless of each individual citizen’s opinion on the matter of immigration, this type of society would certainly be detrimental to the country.

Japan doesn’t want to get anywhere near that kind of threat to their culture and way of life, and this is obvious by their lack of action to change their immigration policies. Such a large change would also introduce a number of ethical questions that must be addressed with the policy changes. Some might argue that it’s easier to avoid those questions altogether by not allowing immigrants in the first place. However, the logic in this argument is seriously flawed—there are just as many ethical concerns that the nation must maneuver regardless of the amount of foreigners they allow into the

⁴¹⁵ Jacoby.

⁴¹⁶ Jacoby.

⁴¹⁷ Jacoby.

Czarniak – Multicultural Studies

country. Mr. Suraj's story is only one example of a morally challenging situation that the Japanese government is called to address. Their current policies to keep immigrants *out* of the country require just as much moral thought and consideration as policy reform would demand.

These “drastic measures” that Jacoby references aren't the only concern that has been raised with increasing immigration. It is a commonly held opinion that more foreigners in a country will decrease the amount of native-born citizens who can gain an education or be successful in the workforce. However, statistics do not back up this assumption. In the United States, a country with one of the highest immigration levels in the world, most Americans are actually doing better in school and work than previous decades. According to Immigration Works, “in 1960, half of all American men dropped out of high school to look for unskilled work, whereas less than ten percent do so now.”⁴¹⁸ Whether or not foreigners have positively affected this education rate is debatable. Regardless of this, there has been no negative impact on native citizens' abilities to be educated properly and become skilled workers.

There is a strong counter to the “faucet” example as well, which warns Japan not to let their country become overwhelmed with immigration to the point of no return. While it is true that flippant decisions or lax rules could send Japan too far in a different direction, careful changes in policy would not place their country in a position of weakness, but of power. Currently, nearly 100,000 foreigners in Japan are illegal,⁴¹⁹ therefore they are unable to contribute significantly to the country's economy, and are causing a financial and social burden for the government to handle. However, were

⁴¹⁸ Jacoby.

⁴¹⁹ “A Nation's Bouncers”

Czarniak – Multicultural Studies

changes to be made which incorporated immigrants into Japan's social and economic systems, foreigners would be boosting the wealth of the nation and therefore increasing their power, both within the nation and across the world. Looser immigration policy doesn't make population a "faucet" that cannot be turned off—when approached with discretion and careful deliberation, it creates an opportunity for wealth and prosperity. A controlled system of foreign immigration in Japan would be highly beneficial to their nation.

In any situation where policies are being changed, there is a concern that control may be lost if the country is unprepared to maintain its new standards, or that it might introduce more issues that the leadership did not anticipate. Currently, this is one of the contributing factors to Japan's inaction.

One of the most common perceptions of foreigners is that their presence will negatively impact the society in which they are joining, specifically in the realm of crime. Daniel Griswold, policy reform scholar and author, observes that "Opponents of expanded immigration through...legalization argue that allowing more low-skilled workers...will swell the ranks of the underclass." This, they claim, will ultimately bring "rising rates of crime and social chaos."⁴²⁰ Heather MacDonald, writer at the Manhattan Institute, says that welcoming immigration policies create "a second underclass...with the potential to expand indefinitely."⁴²¹ As mentioned before, Japan has a very similar perception of immigrants based on a correlation they drew in previous decades between foreigners and crime rates. Since that time period, when foreigners were considered

⁴²⁰ "Opponents...chaos": (Griswold)

⁴²¹ Griswold.

Czarniak – Multicultural Studies

detrimental to society, there has been a negative attitude towards their admittance into the country.

Griswold refutes this claim with statistics from the United States, the nation in question in MacDonald's writing. While the past few decades have seen one of the highest immigration rates in America's history, crime rates are not rising to meet or exceed them. Griswold says that "The past two decades have seen the fastest increase in immigration since the early part of the 20th century. The past 15 years have seen the most rapid drop in crime rates in the nation's history." While these statistics do not prove without a doubt the same scenario in Japan, they do remind us that perception of something is not always as it seems. Japan will be unable to observe the effect that foreigners have on their crime rates until they are legally allowed into the country. If the country maintains careful observation and action when necessary, they should be well equipped to deal with an increasing foreign population. In fact, there is a chance that their crime rates will decrease from the current state that they are in if immigrants are allowed to gain legal access to the country. Currently, since it is nearly impossible for a foreigner to obtain residency once they have a visa to live in the country, many immigrants remain in Japan illegally, causing much more work for their judicial system than necessary.

By now, Japan's need to support their economy in the future should be evident. Their current population plateau is projected to plummet in the next fifty years, leaving the country with a steadily declining economic system. Careful observation of the country's migration policies would reveal not only that increased immigration would be beneficial, but that their current standards are detrimental to both natives and foreigners. Their existing immigration laws generate a significant amount of work in the legal and

Czarniak – Multicultural Studies

law enforcement systems in Japan, burdening their country's public safety department. Foreigners' rights, lifestyles, and health are being jeopardized in the migration process. Japan's economy is being denied extra support because foreigners and illegal aliens are not allowed to become legal in the country and join the workforce. Altering the nation's birthrates would be a difficult and timely task, and would not make up for the quickly decreasing population. Therefore while immigration is not the nation's only option, it is one of the most effective and beneficial.

Despite the numerous advantages of increased immigration rates in Japan, the nation has yet to make any significant changes in this area. If anything, their law enforcement and government involvement has become more substantial in an effort to keep the country clear of foreigners. Japan's opposition to immigration comes from a variety of reasons, including a national history of isolationism, constantly changing political and governmental leaders, a preoccupation with Chinese relations, and an effort to maintain control over their citizens.

Japan has revolutionized the international world with their exports and trade over the past centuries, and they have the potential to continue soaring in the globalized world, both economically and culturally. However, this will not be possible if their population declines as it is projected to. Were Japan to undertake the policy reform necessary to increase foreign access to their country, their workforce would be much better supplied, and therefore their financial systems would be able to thrive and increase. Japan wants to be a powerful nation, as it has been in the past—this is evident in its history as well as its current dealings with China. An educated population and a wealthy nation are two things that will make Japan a stronger international player and decrease their dependency on

Czarniak – Multicultural Studies

other nations. Japan needs to realize that their internal affairs should take precedence over their external endeavors for supremacy. A nation that is not stable within itself will not be able to stand firm for long in the modern day global society.

Czarniak – Multicultural Studies

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Toxic Charity and Microfinance: Charity's Blindspots and Microfinance's Potential for Global Poverty Alleviation

Catherine Hoover (Montgomery College)

Mentor - Professor Efstathia Siegel

Charity at its purest core is selfless and sacrificial – a noble cause to be engaged in as often as possible. The heart behind charity seeks to help the less fortunate who are caught in poverty or misfortune. The driving force behind charity is compassion and a strong desire to help give these people a better life, or to pick them up after a national catastrophe. For instance, with Haiti, where, according to Nicole Wallace of the Chronicle of Philanthropy journal, “80 percent of the population lives in poverty” (“A Charity Helps . . .”). After the January 2010 earthquake that devastated the land and the people, charities from the United States, Great Britain, and Ireland to name a few, swarmed in to help give relief aid to the Haitians. Two Ph.D. pharmaceutical students from a group that went down to provide medical aid later wrote about how they met a woman who was recovering from eye surgery and was “anxious and panic-stricken over the loss of her most prized possession, a bottle of eye drops” (“Lessons from a Service Learning Trip to Haiti”). The two students took a new bottle to her later in the day and were deeply affected by the immense gratitude she showed them, saying “When we left her home that night, we left [with] much more than the satisfaction of a successful pharmacy intervention. We learned the lesson of truly knowing a patient.”

Stories like this show how charity is fundamentally necessary and extremely helpful during crises. However, despite these incredible acts of human interaction, there are blind spots within charity that undermine its original intent, and instead of being constructive, actually hurt those that charity is so desirous of helping.

The concept of charity is a common, even fashionable, thing to do in the United States and among other developed countries. But does charity always, truly, help those in need? Clothes and food drives for charity – do these make a difference in the lives of the people charity is attempting to help? Does all charity actually raise people in less developed countries from their poverty by unloading boxes of free clothes and shoes for them, or are they temporary fixes?

Jeff Rutt, founder of HOPE International, told a story at an informational session in November: he had gone to Ukraine after the fall of the Soviet Union with a group of people who were desirous of helping the people in a particular city by providing food and other supplies. Rutt explained how he first noticed a problem when he was handing out bags of rice and noticed a local man trying to sell his crop of rice to the people of that city; he wondered how that man could be making money while he, Rutt, was there, giving away pounds of the same item for free? Was he helping the people there by his charity or was he in fact making things worse? Would that man go out of business and fall into greater poverty because he could not compete with the free goods the American team brought?

Charity that hurts people by taking away entrepreneurial initiative and creating dependency rather than helping them is called by author Robert Lupton

“toxic” charity (7). In his book entitled *Toxic Charity*, he discusses the widespread commonality of charity and aid-giving within the United States, commenting,

The food we ship to Haiti, the well we dig in Sudan, the clothes we distribute in inner-city Detroit—all seem like such worthy efforts. Yet those closest to the ground—on the receiving end of this outpouring of generosity—quietly admit that it may be hurting more than helping. How? Dependency. Destroying personal initiative. When we do for those in need what they have the capacity to do for themselves, we disempower them. (3)

This is the problem with traditional charity: by seeking to help, oftentimes the result is one step forward and two steps backward for the very people charity is so eager to help. While charity has benefits, it has blind spots that negatively affect its recipients, undermines their personal and local economic growth, and even insults their human sense of dignity. However, with microfinance and savings credit associations, these harmful effects of well-meant aid can be reversed and make individuals in poverty financially and materially independent of future foreign charity.

During those first few months following Haiti’s 2010 earthquake, there were thousands of shipments of supplies pouring into the country. However, when aid does not move from relief to rebuilding, when the people of Haiti continue to be treated as victims, a level of dependency on charity is fostered. It becomes increasingly difficult for businesses to restart if people become

comfortable and dependent on charity to provide what they need for free through the relief aid cause. For instance, how can locals like tailors and seamstresses rebuild their businesses when thousands of free clothes from the developed countries are continuously being pumped into the country? The *New Internationalist* magazine comments that

Aid has not managed to eradicate poverty: about 1.5 billion people live in about 100 countries that are actually poorer now than they used to be. They may even be poorer today than even before in their history. They have experienced negative economic growth. (“Aid – the Facts: the Point of Aid. . .”)

Instead of helping Haitians rebuild themselves, a constant influx of charity actually puts out local businesses, resulting in a depression of their economy, which leads to more poverty and dependence on charity. This not only applies to the business sector of Haitian economy but also the agricultural sector, as Laura Zanotti makes clear in her article “Cacophonies of Aid, Failed State Building and NGOs in Haiti” by noting that one researcher, Timothy Schwartz “has shown that food aid may end up hampering the sustainability of local agriculture” because instead of local farmers obtaining refrigeration technology, “NGOs [keep] on delivering food and therefore [contribute] to destroying, not to fostering, the sustainability of local farming.” Haiti has consistently been in a state of receiving aid but has not moved much further than subsistence living, which has been in part due to the effects of toxic charity. Lupton summarizes by noting, “When relief does not transition to development in a timely way, compassion becomes toxic” (*Toxic*

Charity 7). This apparent inability to move away from compassion-motivated relief-giving is the factor that crosses the line of helping and hurting. And rather than empowering people, charity disempowers them by facilitating economic dependence instead of independence.

Africa is a prime example of what the negative impacts of toxic charity look like. Even though billions of dollars have been poured into the continent, there has been no great change or boost of the economies within it, a testament to the fact that simply giving charity does not really alleviate poverty. Instead, it decreases incentives within the continent to create a market: why should anybody put an effort into making money when free resources will always be coming in? This mentality fosters dependence, and does not encourage growth if the people are sitting on charity as a wheelchair. For example, when teams of people from developed countries go to dig wells, they believe they are making real and immediate changes in the villagers' lives. However, the blind spot of this benevolence is when the team leaves, no one from the village knows how to upkeep and maintain the wells. No training was given to ensure the sustainability of the water source and no one had the resources and connections to fix the wells should they break down. When the wells break, as they inevitably do, the villagers will be forced to go back to their former means of water collection until the team comes the next year and fixes the wells. Instead of putting the reins of independence and capability into the hands of the people, that team only created more dependence on outside help.

Jeff Rutt gives an example of how toxic charity works among the people on the receiving end: the first time charity comes, the reaction is gratitude; the second time, anticipation; the third time expectation; the fourth time entitlement; and by the time charitable aid has come more than five times, there is an unhealthy level of dependency that has been formed (“Investing in the Dreams.”).

Bruce Gilley, author of “The End of African Renaissance” writes,

It is no wonder that world opinion has balked at calls for a new “big push” to pour resources into Africa . . . G-7 aid to sub-Saharan Africa is running at only \$20--\$30 billion a year, far less than the \$40 billion promised at the 2005 Gleneagles summit. Gadfly aid critics from Africa . . . now utter the previously unutterable: most aid to Africa should be stopped because it feeds dependency and corruption, contributing nothing to actual development.

Gilley does not say that all aid should be cut. Charity can be good, but the blind spots in it have had such negative impacts that over the years this call for an end to toxic charity is reaching more people in the developed nations.

In short, charity has become the opposite of what it was originally intended to be: helpful. Despite its noble goals of stimulating economic growth through pumping money and resources into the economy, aid has resulted in halting the elevation from poverty.

What does this create in the people who receive thousands of shipments of charity when the symptoms of toxic charity continue to escalate? Among a

myriad of other effects, their sense of human dignity is both insulted and degraded, because, as one microfinance officer said, toxic charity, whether or not the donor means to say it, communicates: “you are incapable of taking care of yourself and your family” (“Investing in the Dreams. . .” paraphrased). This can become a crippling concept that is picked up by the recipients of toxic charity; it takes away their sense of self worth and capability by making them feel themselves to be charity cases. Toxic charity creates a donor-recipient distinction that sets the one above the other, one to take care of what the other is incapable of doing.

Unfortunately, one prevailing problem behind toxic charity is that charity is sent off by those with hearts of good intentions. There are those who genuinely want to be of service to those in poverty, and donate pounds of clothing and shoes to the donation bins around the community. Yet what these hearts of gold do not always realize is that they are not actually helping, but hurting.

In some cases, though, these actions of charity do not come from good intentions, but a desire for a good face. Lupton writes about big businesses in America, saying, “Corporations realize they can enhance their images through cause-related marketing while also building up employee loyalty and pride in the company” (*Toxic Charity* 2). This “compassion industry” as he says, is smiled upon, encouraged, and even marketed (2, 14). Missions and service trips end up focusing on the individuals going rather than the individuals receiving their help. Service projects that could have been done by locals instead of foreign students and youth groups who spend, as Lupton quotes from a 2008 *USA Today* article, “\$2.4 billion” on these trips, are often not helpful to the locals, but only give a false

sense of purpose and generosity to the visitors. Lupton elaborates by saying, “If we listen to those on the receiving end of these service projects, we see a different picture emerge” (16). He describes a group that went to lay tile in a seminary dormitory in Cuba. Twenty teenagers and adults were untrained in tile laying, but even though there were “skilled tile layers [that] sat outside the seminary gates, waiting to see if there would be any work left for them”, the president felt obligated to let the youth group do the work instead of hiring locals (16-17).

While genuinely wanting to be of use to those less fortunate, the economically stable take themselves to places where they are not wanted and sometimes not needed. One thing that is needed is knowledge. Christine Baingana, a specialist from HOPE International says that people who want to raise themselves from poverty have dreams and desires, but lack the ability to obtain the knowledge and training to achieve these dreams (“Investing in the Dreams. . .”). The interconnectedness of our world does not always entail an expansion of knowledge – globalization of understanding how the poor can raise themselves needs to increase for there to be real change in how charitable aid is given.

A viable alternative to charity is the business of small loans. Microfinancing has the ability to reverse the effects of toxic charity – not just on a human dignity level but also on an economic level – and is one of the leading solutions for poverty alleviation. By giving small loans to entrepreneurs, microfinance institutions allow those in poverty to pursue and take initiative in a form of business, whether that’s selling rice, raising cattle, or making clothing to sell. Sometimes these loans are miniscule, even as little as one hundred dollars, but

they are the catalyst for helping people raise themselves out of poverty. They put the reins of potential and capability into the hands of the poor, circumventing the traditional holders of power and empowering individuals themselves to come out of poverty.

Microfinance allows for unique situations to occur that might not have happened in a donor-receiver mentality toward helping the poor. Nicole Woolsey Biggart writes,

Advocates for the poor have found new support from business elites attracted to the concept of self-sufficient enterprise as a tool for poverty reduction, especially since microcredit relies primarily on loans and not grants. (“Banking on Each Other” 130)

Microfinance and microcredit facilitate these two groups that might normally not have had dealings with one another, and allows for the needs of microfinance clients to be met while fulfilling the agendas of advocates and businesspeople alike.

The Grameen Bank is one of the first microfinance institutions in the world. By giving small loans to people to help them jumpstart their business, it has enabled millions of people to improve the quality of their lives in poverty-stricken, rural Bangladesh.

Founded by Muhammad Yunus in 1983, the Grameen Bank has been a highly successful microfinance institution among the, as the 1996 article “Lessons Learned from Grameen Bank” says, “2 million households and 10 million people”. Within four years of operation, the bank had, according to author

Mahabub Hossain, “opened 298 branches and mobilized nearly 250,000 households from 6 percent of the villages in the country” (see graphs below); Hossain also records that 74% of the bank’s members are women (“Credit for Alleviation. . .”). From this article, Hossain discusses the Sixteen Decisions, a list of resolutions clients must sign, stating, among other things, “We shall bring prosperity to our families”, and “We shall always be ready to help each other.” By beginning with these resolutions, the Grameen Bank extends loans to its clients, thereby equipping them to rise from poverty through their determination and ingenuity, and not by receiving a hand out.

HOPE International, also a microfinance institution, operates in approximately sixteen countries around the world in Eastern Europe, Africa, Asia, and Latin America. HOPE is a unique MFI because it is a Christian organization, making it a part of the .8% of all MFIs that are Christian-based (HOPE International). This percentage has received some criticism from HOPE, who document, “[Clients] served by Christian organizations like HOPE represent less than 1 percent of the total demand for microfinance” (HOPE International). Since its founding in 1997, they have become a successful name in microfinance, servicing 466,176 clients, and issuing over 1,500,000 loans (HOPE International). While not as large as the Grameen Bank, HOPE has made great strides in entering and thriving in the microfinance community.

Microfinancing as a prime strategy for the alleviation of poverty has an extensive track record of success. HOPE International shares one story of a client, Ms. Blacina Guerrero Sanchez from the Dominican Republic. Her goal

was to send all of her children through college; according to HOPE, “Blacina sought a \$145 loan from HOPE International’s partner . and invested it in her small store, buying items in bulk and repackaging them in smaller, more affordable quantities for her neighbors” (*HOPE International*). No longer a beggar because of that loan, Blacina grew her business and became a seller with a means of sending her children to college. This is one example of the transforming effect of microfinance in a person’s life, but there are thousands more like it.

However, microfinance cannot service those who are desperately poor, who have little to no education, money, or assets. Therefore, microfinance has a sub division that goes by several different titles, one of which is Savings Credit Associations (SCAs). These are small-scale groups focused on interdependency and often begin with very little money. A small number of people from the same community form a group, and each contributes a portion of money to a communal money box. Supposing one person has no money at all – he or she could be employed by an SCA member in their field or business, receive a wage, then use that money to become eligible for inclusion in the group.

Once the group has pooled their money together, they can use it to buy an asset, such as a chicken that will lay eggs they can sell. In some SCAs, the entire “pot” will go to one commodity for the whole group, and at other times, the money is passed around monthly as a loan to members in the group who are responsible for repaying it. Pressure to make repayments is enormous since every person in the group knows everyone else personally; defaulting could

result in a significantly lowered social status. Timothy Besley, in his collaborative article “The Economics of Rotating Savings and Credit Associations”, writes:

The key to understanding [SCAs] is noting that, unlike markets, they are not anonymous institutions. They use preexisting social connections between individuals to help circumvent problems of imperfect information and enforceability. . . . Ardener observes that ‘a member may go to great lengths, such as stealing or selling a daughter into prostitution in order to fulfill his obligations to his associates’. (805)

As a result of these pressures, savings credit associations often prove to be successful ventures. Biggart also quotes R.T. Anderson who writes, “the extensive network of mutual interrelationships weave such a tight net that no villager can hope to survive in the village if he does not fulfill his obligations” (“Banking on Each Other” 144). In this instance, peer pressure acts as a catalyst to keep SCAs in operation and make them accountable for success.

In order to show how microfinance is working to sustainably alleviate poverty, examples from Haiti, Uganda, and Bangladesh will be discussed in an effort to explain how microfinance removes the effects of toxic charity.

Haiti, the poorest country in the Western Hemisphere and among the poorest in the world, has, according to the CIA Factbook, a GDP per capita of \$1,200 (US dollars) and, as the article “Haitian Microfinance Industry Overview” documents, “54% of the population live on less than \$1 per day and 78% of the population live on less than \$2 per day” (“Central America and the . . .”). While their main industries include textiles, flour milling, cement, and sugar refining, the

article notes that “the unemployment rate is estimated to be two-thirds of the labor force” (“Haitian Microfinance. . .”). The country’s largest MFI, Fonkoze, was founded in 1994, and services over 50,000 clients, 99% of whom are women (“Summary of Client. . .”, “Meet Fonkoze’s Clients”). Strategies of reaching the poorest of the poor include programs such as “Path to a Better Life,” where members learn to run small businesses, and access health care and education services (“Meet Fonkoze’s Clients”). Typically, these members include women who solely are raising multiple children who do not attend school, and, according to Fonkoze, don’t have any “income-generating assets” or access to food or healthcare. Due to geography and inaccessibility, microfinance does not have a very large presence in Haiti compared to commercial banking in urban areas; according to one article’s report, “Only 38.6% of the potential saving account market is currently being served, indicating that there is potential for all MFIs which accept such accounts to significantly increase deposits” (“Haitian Microfinance. . .”). Microfinancing, while a relatively young enterprise in Haiti, has room to grow and thrive in future years.

Although proving useful in Haiti, microfinance has a longer resume of success in Uganda. A study that was conducted in 1999 compared three microfinancing institutions operating in Uganda. Entitled “An Assessment of the Impact of Microfinance” and written by Gayle Morris and Carolyn Barnes, the case study discussed the methods of how the microfinancing clients were chosen to participate in the study as well as the non-clients, then how the researchers

conducted a questionnaire in 1997, and again in 1999 when they went back and located as many of the participants as possible.

One of the institutions that was studied, FINCA (Foundation for International Community Assistance) is based in Kampala, the capital city of Uganda. Morris and Barnes write of it, “FINCA operates on a village banking model, lending money to and accepting savings from low-income women organized in groups . . . in 1997, FINCA had operations in nine districts servicing 9,000 individual clients; by 1999 it had approximately 20,800 clients” (“An Assessment of. . .” 41). The researchers found that clients of MFIs are more likely to add new products or services, move to new premises or sell in a new market location, reduce costs through buying in bulk, or increase the size of stock in two years (46). Participants were encouraged to engage in acquiring a second form of income and often became empowered because of microfinance to accomplish this. Since Uganda is primarily an agriculture-based society, many people worked in that field. Morris and Barnes document, “The expansion in land cultivated had a direct relationship to an increase in income earned from crops 12 months prior to the 1999 interview, indicating a strong association with participation in MFIs” (50-51).

As they recorded their findings in 1999, Morris and Barnes noted an “Increase in value of durable assets purchased—mattress, radio, stove, beds— was regarded as a strong indicator of MFI impact on their clients, serving as a proxy measure of household wealth” (48). On looking over the use of business revenue, they also saw that Food for household members was the second largest expenditure

for clients (48%) and nonclients (56%). Debt payment was the third for clients (45%) . . . [and] reported expenditures on household basic needs (e.g., food, education, medical expenses) as the primary use of revenue from [their first enterprise]. (46-47)

As their data shows, microfinance as a means of alleviating poverty is successful in Uganda because, from the growth of private businesses, families are able to purchase basic necessities without any condescending hand of charity reaching down to provide them with those things. Being able to provide for one's family out of the income of one's own business restores a sense of dignity and self worth that charity unknowingly takes away from a recipient.

Not only is microfinance known to have been successful in Haiti and Uganda, it also has a proven track record in Bangladesh, where the Grameen Bank, one of the most successful, well-known MFIs in the world, is located. There, indications of a family having left poverty are, according to Nathanael Goldberg, "living in a house with a tin roof, drinking pure water, using a sanitary latrine, [possessing] mosquito nets, and [having] no member of the family that goes hungry at any point in the year" ("Measuring the Impact of Microfinance").

In his article, Goldberg discusses Shahidur Khandker's book *Fighting Poverty with Microcredit*, writing about Khandker's study of poverty and the – if any – effects of microfinance in Bangladesh from 1992 and 1999, reporting "moderate poverty in all villages declined by 17 percentage points. . . . Khandker estimated that more than half of this reduction is directly attributable to microfinance". Small loans allow for big initiative to take small steps toward the

seemingly impossible goal of leaving poverty. Goldberg further describes Khandker's findings, stating:

Khandker showed that microfinance reduced poverty among *non-participants* [in the study] as well—moderate poverty by about 1.0 percentage points and extreme poverty by 1.3 percentage points a year Based on this data, he concluded that microfinance accounted for 40 percent of the *entire* reduction of moderate poverty in rural Bangladesh. (“Measuring the Impact of Microfinance”)

Rather than donation-based charity, microfinance is the one strategy that seems to be proving itself the most effective for relieving poverty.

Not only does it work according to Khandker, but it has shown itself to be just as effective according to Mahabub Hossain's document on the Grameen Bank. He writes, about a survey taken in five villages and two control villages that discovered “Grameen Bank members had incomes about 43 percent higher than the target group in the control villages” (“Credit for Alleviation of Rural Poverty”). The Grameen Bank not only boasts of the success of its clients, but also on its consistent loan repayments. Hossain comments that “[o]nly .5 percent of loans to 975 borrowers surveyed were overdue beyond one year, and overdue weekly installments . . . were only 3.3 percent of the total amount borrowed”. On the business side, the Grameen Bank is flourishing, with the MFI and clients equally receiving the benefits of microfinance.

Possibilities that were previously unaffordable open up for clients of microfinance. Authors Elizabeth Littlefield, Jonathan Murdoch, and Syed

Hashemi write, “One of the first things poor people all over the world do with new income from microenterprise is invest in their children’s education” (“Is Microfinance an Effective. . .?”). Not only are children being educated as a result of microfinance, but the authors report that there is “better nutrition, health practices, and health outcomes” for those who engage with an MFI than those who do not. By being able to treat health problems immediately, the chances of a malady turning dangerous or fatal decrease as clients are able to “treat health problems promptly rather than waiting for conditions to deteriorate”.

As can be seen, microfinance is a key strategy in reducing poverty and bringing people above the poverty line. It which equips people with knowledge and resources to realize their entrepreneurial dreams, and restores dignity as men and women become financially able to provide for their families by their own labors.

This being said, not all of charity is hurtful or “toxic.” There are excellent examples of good charity in the form of relief aid, such as the immediate help sent to the earthquake victims in Haiti in 2010. However, too often charity hurts rather than helps when, according to one businessman, the movement from relief to recovery is not made (Allen).

Where micro-loans are unable to reach the poorest of the poor, savings credit associations step in as a grass root system of building up money and acquiring assets. Because of this, SCAs can reach even the lowest levels of poverty, and are more universally versatile than microloans because of the greater scope of people they can service.

The heart of charity seeks to relieve material poverty by providing free goods and services, giving time and resources to extend relative wealth to their recipients. But while the motives are usually out of a desire to help and set a difficult situation to rights, this form of charity often makes things worse. It is hurtful because it discourages initiative, creates dependence, and insults the human dignity of those on the receiving end of charity. This is the crucial blind spot of traditional charity, this rusting of initiative and the spirit of entrepreneurship that paralyzes business growth and drags communities further into poverty.

Microfinance has the ability to turn around the negative effects of this toxic charity by equipping entrepreneurs within a community to be able to accumulate money and goods, jumpstart a business, and begin to raise themselves from poverty. It is an especially effective strategy for poverty alleviation because the growth comes directly from the people themselves, not a third-party intervention giving charitable aid on a donor-recipient stratification. As a result of this economic progress, the poor are restored their sense of self-worth by the development of a business they built themselves, and by the enhanced level of care they can provide their families such as mosquito nets, mattresses, clothing, education, food, pure drinking water, and medical attention.

These results of microfinance certainly outweigh the temporary fixes that traditional charity brings, and foster a healthier alternative to the alleviation of poverty; it must be encouraged and brought to the forefront of the public's attention so that hurtful charity can be decreased and eventually stopped by those in search of a sustainable means of erasing the poverty line. Microfinance provides

this means of escaping from that line: there are millions in desperate need of this strategy; all they need is to be equipped to start their trek out of poverty.

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