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The Fight for Black Gold: How Foreign Interference Sparked the Iranian Revolution

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College of DuPage

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ESSAI

The College of DuPage Anthology

Of

Academic Writing Across the Curriculum

(Volume XV 2016-2017)

The College of DuPage, Glen Ellyn, Illinois

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College of DuPage

Awards and Recognitions

ESSAI is a recipient of the prestigious recognitions of

The 2005 Distinguished Achievement Award
of the Community College Humanities Association

The Society of Midland Author's Qwertyuiop Award

(Founded in 1915, the Society of Midland Authors has included for its members Hamlin Garland, Harriet Monroe, Vachel Lindsay, Edna Ferber, Carl Sandburg, Jane Addams, Clarence Darrow, and other literary luminaries.)

and

The 2009 Diana Hacker Two-Year College English Association (TYCA) Award for
Outstanding Program for Two-Year Colleges and Teachers
In the Category of Fostering Student Success
(The TYCA is a national organization that belongs to
the National Council of the Teachers of English-NCTE).

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We warmly salute all submitting instructors for their dedicated and inspired teaching which has contributed to the successful writing of their students and make it possible for ESSAI to continue.

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Dr. Ann Rondeau, President,
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Dr. Kirk Overstreet, Associate Vice President Academic Affairs,

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Dr. M. Ahmad Chaudhry, Dean, Biology and Health Sciences,
Dr. Mark Collins, Associate Dean, Adjunct Faculty,
Ms. Marianne Hunnicutt, Dean, Social/Behavioral Sciences and the Library
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"In this work, when it shall be found that

much is omitted,

let it not be forgotten that

much likewise is performed."

Samuel Johnson, the Preface to his *Dictionary*

Foreword

Created in 2002 by a cross-disciplinary faculty, *ESSAI, The College of DuPage Anthology of Academic Writing Across the Curriculum* is an annual academic journal that represents a unique but inclusive discourse community of student writers; it fosters student success through writing across the curriculum and in all levels of learning at College of DuPage. It rests on our belief that writing empowers and prepares our students for meaningful careers and advanced academic pursuits and that, to realize such goals, the entire college community is responsible for incorporating writing into their courses as a vital part of the academic experience at our college.

Like all the past volumes, this Volume XV continues to harvest our belief in fertile cooperation with our cross-disciplinary faculty who implement writing to learn and promote discipline in their teaching. Some of the published essays, therefore, have resulted because our students made use of journals, logs, microthemes, and other informal writing assignments encouraged in the classroom. In this way, students wrote frequently and improved their writing skills enabling them to comprehend better and to retain information longer. Others – expository work such as reports, article reviews, criticisms, research papers – attest to students' successful participation in academic discourse according to the conventions of language use and style expected in specific disciplines.

That we practice the philosophy of student success through good writing will become even more apparent in the journal's name. It harkens back and pays homage to Michel de Montaigne whose seminal style of writing "essais" connoted one of trials and attempts. Thus *ESSAI* chronicles our students' intellectual trials wherein they dialogically encounter diverse culturescapes, critically weigh various issues at hand and then engage in analytical exercises, while each evolving from a personal to a public writing self. The resulting published work is their expanded cultural and epistemological self endowed with talent, sophistication, and fresh scholarship, all expressed with clarity, eloquence, and grace.

We continue our editorial tradition in making the best selections for publication. The most exemplary of the year's submissions are those that:

- Are completed according to assignments' purposes
- Have mechanics, grammar, and other technical points in place
- Are imaginative, creative, logical, and risk-taking with respect to assignments' purposes
- Exhibit clarity of writing with respect to purposes
- Follow the disciplinary format
- Include relevant literature reviews where required
- Demonstrate analytical abilities
- Generate interest

Join with us in honoring the exceptional talents of our student authors and our student artist whose graphic design adorns our cover. And watch for Volume XVI of *ESSAI* which will be published in 2019. We appreciate your readership. Through your interest and support, our anthology will keep growing.

The *ESSAI* Editorial Board:

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Alexithymia and Eating Disorders

by Olga Avercheva

(English 1102)

Emotions are the primary reaction of the human psyche to various life situations and events. They are the signals of orienting and guiding person's thoughts and actions. Moreover, emotional experience occurs spontaneously and always affects human consciousness, and the inner spiritual world, as well as physiological processes of the body. Most of the mentally healthy people realize, in varying degrees, the emotions they experience and can categorize those emotions verbally. However, according to Karukivi et al., approximately 10% of the total adult population is unable to do so (2010, p. 227). This phenomenon was discovered relatively recently and named *alexithymia*[1], which literally means "no words for mood."

Alexithymia does not mean the absence of emotions; alexithymics experience the same spectrum of emotions as an average person. Indeed, their main problem is the impossibility to express these feelings and to differentiate them from physical sensations, which ultimately lead to a sense of inner dissatisfaction, much distress, and consequently, to numerous psychosomatic and psychiatric disorders including abnormal eating behaviors. Furthermore, the presence of alexithymic personality traits has a direct correlation with the possibility of development of anorexia nervosa (AN), bulimia nervosa (BN), and binge eating disorder (BED) and severity of their manifestation.

Despite the relatively low prevalence rates, about 3.2% of the adult population of the United States suffers from some forms of eating disorder[2] (www.nimh.nih.gov), they have the highest mortality rate among all mental illnesses (Arcelus et al., 2010, p. 729). It was noted that many of these patients had problems differentiating their physical feelings from their emotions and correlating episodes of their abnormal eating behavior with any emotional stimulus. These observations led researchers to propose that one of the predisposing factors or causes of occurrence and development of these pathological conditions was the low level of emotional awareness in these patients, which is so typical for alexithymia (Budlowski et al., 2005, p. 325).

In regard to this hypothesis and to better understand the alexithymia phenomenon, and also in order to develop effective strategies for the treatment of these dangerous disorders, a number of scientific studies were conducted. Kessler, Schwarze, Filipic, and Traue, a group of researchers from the University Clinic of Psychosomatic Medicine and Psychotherapy at the Ulm University, Germany, under the supervision of Professor Joern von Wietersheim, a vice director of Department of Psychosomatic Medicine and Psychotherapy, Ulm University Medical Center, performed one of them in 2006. The main purpose of this research was to find support for an idea that alexithymia is relevant to eating disorders (ED), such as anorexia nervosa (AN) and bulimia nervosa (BN), and to find out whether the inability of facial emotions recognition is the one of the components of alexithymia, or an independent skill.

In the article "Alexithymia and facial emotion recognition in patients with eating disorders," researchers claim that patients with ED are "clearly alexithymic and show psychopathologic symptoms" (Kessler et al., 2006, p. 248). They found evidence supporting this statement in the results of the research, in which the group of 79 female patients with eating disorders and the control group of 78 healthy female volunteers were tested by the Toronto Alexithymia Scale questionnaire. Comparative analysis of the data gained during the test showed that the patients with AN and BN had a higher rate of alexithymia traits than the control group in the subscales Difficulties Identifying Emotions and Difficulties Describing Emotions. However, the scores of both groups in the scale of

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facial emotion recognition examined by the FEEL Test did not have any significant differences. This allowed the scientists, in contradistinction to previous theories, to conclude that "emotion recognition from faces and alexithymia are two independent phenomena" (p. 248).

A similar study was conducted by a group of Italian scientists headed by Alesandro Carano, MD of psychiatry, from the Oncology and Neurosciences Department of the Institute of Psychiatry of University "G. d'Annunzio" in Chieti and under the supervision of Filippo Maria Ferro, a professor of psychiatry. However, the purpose of this work was to reveal the place that alexithymia and body dissatisfaction occupy in the development of binge eating disorder (BED) and the extent of its manifestation.

The study involved more than 100 patients of both genders, suffering from BED, selected by special parameters to maintain purity of the experiment, and which were examined by TAS-20, the Binge Eating Scale (BES), the Body Shape Questionnaire-Short Version (BSQ-S), and some other techniques. As a result, 39.6% were found to have alexithymic trait, compared to 13% in the general population. Further analysis of the data showed that patients with BED and alexithymia stated a higher severity of disorder and body dissatisfaction than patients without this personal trait. Carano et al. concluded that "the presence of alexithymia could play an indirect role in the pathogenesis of BED, facilitating the presence of depressive symptoms and lower self-esteem" (2006, p. 337).

Funded from the Turku University Foundation and the Turku Municipal Health Care and Social Services, research undertaken by a scientific team from University of Turku, Finland, in contradistinction to the two previous one, was designed to identify and evaluate the interconnection of eating disorders symptoms and alexithymia in a non-clinical adolescent population sample. Participants, whose average age was 19 years, were examined by the SCOFF ("Sick," "Control," "One," "Fat," "Food") Questionnaire, specializing in the main symptoms of anorexia nervosa and bulimia nervosa, and also by the 20-item Toronto Alexithymia Scale. Data derived from of the statistical analysis of the results showed a distinct correlation between alexithymia and eating disorder symptoms in adolescents, and that, compared to the non-alexithymic sample, alexithymic adolescents had a higher risk of developing an ED. Also, they found no evidence pointing to a mediating role of sociodemographic factors and the relationship between eating disorders and alexithymia. They considered as interesting findings of this study a definite correlation between the presence of alexithymic features and evaluation of the general state of health: the alexithymics rated their health as moderate or fairly poor (Karukivi et al., 2010, p.233).

While the link between alexithymia and eating disorders finds many evidences, the mechanisms of their interaction have not been studied enough. Some scientists believe that "emotion-processing deficits induce intense, often uncontrolled, affective reactions" and pathological eating behaviors could "represent a way of discharging negative affects" (Budlowski et al., 2005, p. 326). Interesting conclusions were made by a group of scientists from the Institute of Psychiatry of "G. d'Annunzio" University Chieti-Pescara, Italy, in collaboration with Domenico De Berardis[4] in their article "Alexithymia and its relationships with dissociative experiences, body dissatisfaction and eating disturbances in a non-clinical female sample." The results of their study not only confirmed that the presence of alexithymia personality traits potentially increases the possibility of eating disorder development, but also allowed them to identify their causal relationship. They indicate that "misinterpretation of perceptual and behavioral aspects of body image," due to alexithymic features, can cause the formation of a "vicious circle" of dissatisfaction body and low self-esteem, which ultimately increases the risk of developing eating disorders (De Berardis et al, 2009, p. 476).

Although the list of factors provoking abnormal eating behavior[3] is not just limited to alexithymia, a lack of inner emotional awareness may exacerbate the problem and complicate recovery. However, this condition of emotional blindness can be corrected, and nowadays, there are many methods for this, starting from the classic psychotherapeutic techniques such as group therapy, skill-based therapy, and relaxation techniques, and ending with a simple daily journaling and even

reading “emotional” books. So, maybe, romance novels are not as useless as they seem to be …

Notes

1. The term “alexithymia" was invented by psychotherapist Peter Sifneos in 1973.
2. For more information on this topic, please see www.nimh.nih.gov/health/topics/eating-disorders.
3. For more information on this topic, please see Polivy, J. & Herman, C. P. (2002). Causes of eating disorders. *Annual Review of Psychology*. *53*(1), 187-213. Retrieved from http://www.web.b.ebscohost.com
4. For more information about Domenico De Berardis, please see www.publicationslist.org/domenico.deberardis

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Red Sky, Black Death

by Cristian Barrea

(History 2225)

Red Sky, Black Death is a memoir by Anna Yegorova which tells the story of a village girl whose dreams, ambition and a desire to serve her nation led her to become a decorated pilot of the Soviet Union. Anna's memoir begins a few years prior to the start of World War II, or as the Russians called it The Great Patriotic War, and recounts her journey leaving her village to work in the underground metro construction in Moscow to her training to become a pilot and her many missions in the Eastern Front of the War. Her memoir is full of themes such as courage, brotherhood and family but it is her patriotism and desire to overcome barriers as a woman that appear several times throughout her story.

Anna Yegorova decides to start her story before she joins the Air Force and includes a chapter called Volodovo[1] which is a conversation she had with her mother. This story is significant because not only did this take place before the war but because it discusses her patriotism towards the Soviet Union. This conversation shows the opposing views Anna and her mother ad towards the communists' rule. Anna's mother states "The parish had such a lovely church, with a high bell tower. That bell was so loud, you could hear it even in our village, calling us to Mass. But Soviet power destroyed all that."[2] Anna's brother asks if she believed life was better before the revolution to which she says absolutely. Anna replies saying "How can you keep glorifying pre-revolutionary times? Lok around! What have we inherited from those days? The past has given us nothing but poverty and ruins. Socialism is a new start for us!"[3] Anna includes this conversation because of its significance regarding her views towards The Communist Party which ultimately is the reason she is able to become a pilot. Anna would leave her home because "the newspapers issued a call to action…to take part in the Five-Year Plan."[4] She left for Moscow to become a Komsomol at the Metrostoy. Her eagerness to do her part in the communist nation can be seen when she accepts a position as a steel framework fitter regardless of what the job entailed and her lack of knowledge to do the job.[5] Through her work in the Metrostoy construction she would read a newspaper announcement regarding the Aeroclub. Once again, her desire to serve pushes her to new challenges. "We Komsomol-Metrostoy had followed our heat to serve our motherland in the mines and now hoped to ascend into the boundless skies."[6] Anna became a pilot and when the war began she wanted to join just as "many young men and women from the Metrostroy heeded the call."[7] The Soviet Union was successful in uniting its people towards the war effort. "The people and the party gradually banded together in an all-out struggle to defend the country and repulse the German aggressors"[8] or Fascist

[1] Anna Timofeyeva-Yegorova, *Red Sky, Black Death: A Soviet Woman Pilot's Memoir of the Eastern Front* (Bloomington, IN: Slavica Publishers, 2009), 12-14
[2] Timofeyeva-Yegorova, *Red Sky, Black Death*, 12
[3] Timofeyeva-Yegorova, *Red Sky, Black Death*, 13
[4] Timofeyeva-Yegorova, *Red Sky, Black Death*, 18
[5] Timofeyeva-Yegorova, *Red Sky, Black Death*, 19
[6] Timofeyeva-Yegorova, *Red Sky, Black Death*, 30
[7] Timofeyeva-Yegorova, *Red Sky, Black Death*, 42
[8] John M. Thompson, *Russia and the Soviet Union: A Historical Introduction from the Kievan State to the Present,* 7th ed. (Boulder: Westview Press, 2013), 252

rats as Yegorova called them. Many times, Anna shows her patriotism but the Soviet Union would not always reward her for it. Although she volunteered to fly many dangerous missions at the front she was almost not allowed to become a pilot.

Anna's brother Vasya had been accused of being an enemy of the state. He was tried in a tribunal and accused of espionage and ties to British spies. The accusation was derived because an article he had published was copied by British intelligence. Vasya was sentenced to ten years' confinement but it also caused Anna to be expelled from the Ulyanovsk Flying School.[9] She was later admitted because the nation was in desperate need of pilots and because she had to deny her brother. The most severe situation in which Anna's patriotism would be tested came after she was rescued as a prisoner of war. Following her liberation, she was taken to the SMERSH counterintelligence department as a suspicious personage.[10] Anna was questioned, her Party card and awards taken away, and accused of being a Fascist. Eventually she was released but her time as a prisoner of war was never recognized. This was because Joseph Stalin had stated "we have no prisoners of war, we have traitors."[11] Anna would be denied her Communist Party membership card after she was released and would not be able to recover it for many years. She attempted to track it after the war and was denied by a political officer because she had been a prisoner of war. Anna would persist to recover her membership by standing in front of the Party Collegium and the Communist Party of the Soviet Union Central Committee where once again she was accused of being a German spy.[12] She would be reinstated and her patriotism would not be shattered. When conversing with a fellow pilot, Lyova Kabischer, years after the war she still defended the government system even after all she had been accused of.[13] Anna acknowledged how being a German captive would mark you as an enemy to the bureaucrats but it did not matter to her because she was rehabilitated.[14] Anna was not alone when it came to being patriotic. "Soviet patriotism could justifiably boast the Red Army's triumphs and the people's total mobilization for the war effort."[15]

One of the major themes in Anna's memoir is her attempt to overcome discrimination as a woman. During her time working at the Metrostroy the women were not allowed to work in the hermetically sealed chambers because the doctors claimed they would not be able to have babies afterwards. Anna stated, "we girls didn't want to fall behind the boys"[16]. Not only would she faced opposition to work certain jobs at the Metrostroy but also when applying to the aeroclub to train as a pilot. When it came to fighting in the war Anna makes it a point to explain "yes, we women prepared to defend our motherland, too."[17] She explains that the State Defense Committee issued a decree drafting women into the Armed services. Anna would initially be part of the Liaison Corps and later the Air Force.[18] She would have to prove herself as an outstanding Liaison Pilot before she would be allowed to become a Combat Pilot. "We don't draft females for front-line combat." To which Anna replies "Do you really need to be drafted to fight for your country?"[19] Anna would add an entire chapter dedicated to her achievement becoming a combat pilot. When she finally joined her regiment

[9] Timofeyeva-Yegorova, *Red Sky, Black Death*, 50-54
[10] Timofeyeva-Yegorova, *Red Sky, Black Death*, 196
[11] Timofeyeva-Yegorova, *Red Sky, Black Death*, 189
[12] Timofeyeva-Yegorova, *Red Sky, Black Death*, 206
[13] Timofeyeva-Yegorova, *Red Sky, Black Death*, 208
[14] Timofeyeva-Yegorova, *Red Sky, Black Death*, 210
[15] Thompson, *Russia and the Soviet Union*, 252
[16] Timofeyeva-Yegorova, *Red Sky, Black Death*, 19
[17] Timofeyeva-Yegorova, *Red Sky, Black Death*, 42
[18] Timofeyeva-Yegorova, Red Sky, Black Death, 42
[19] Timofeyeva-Yegorova, *Red Sky, Black Death*, 70

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there were some personnel who disapproved of her and the regional navigator stated "It's not a 'woman' who's come to the regiment, but a combat pilot," She would still face opposition when it came to piloting the Shturmovik. Anna's response was "And how, may I ask is anything about this was appropriate for a woman? …it seems to me that now isn't the time to make distinctions between men and women, not until we've purged the motherland of Hitlerites."[20] Anna had to prove herself time and time again she was as capable as any men. Her closing statement in the memoir shows how important it was for her to be a strong woman. "Russian literature boasts of our proud Slavic women, who can 'curb a galloping horse' or 'walk into a burning hut.' Those are big shoes to fill. But I think the war showed the whole world who these 'women in Russian villages' are…but how much sorrow can the Russian woman endure? And why must she? I doubt whether anyone could bear more."[21]

Red Sky, Black Death takes the reader into the World War II eastern front where a young Russian woman fought fearlessly to protect her home. Anna Yegorova is a Komsomol, Liaison and combat pilot, prisoner of war, wife and mother whose life is an example of her courage. As a woman in the Soviet Union she showed her love for her country answering the call to serve on numerous occasions. Her patriotism and that of many others was crucial in winning the war for the Soviet Union. She broke down barriers as a woman who achieved her dream of flying and being one of the few women to become a combat pilot. Anna's memoir is captivating and full of war stories that lets the reader see everything from her eyes.

[20] Timofeyeva-Yegorova, *Red Sky, Black Death*, 118
[21] Timofeyeva-Yegorova, *Red Sky, Black Death*, 213

Of Foxes and Hens: The Stacked Battle for an Illinois Budget

by Jen Beirl

(English 1102)

Nearly everyone in Illinois, and many people across the country, are familiar with the Illinois budget crisis. The state has not passed a budget in nearly two years and is the only U.S. state to not currently have a budget (McKinney, "Far-Reaching"). Furthermore, Republican Governor Bruce Rauner and Democratic House Speaker Michael Madigan have only met once since last December to discuss establishing a budget for the state (BeMiller). With 321.4 billion dollars in debt and a sinking credit rating, the state faces the daunting task of repairing the damage and moving forward with a sound, balanced budget as the law requires ("Illinois"). It is, however, both necessary and right, for the state, the law, and the many people and companies owed for the services they have provided. The purpose of this essay is twofold: To identify and elucidate the forces at work in preventing the passage of the budget, and to introduce the most viable path to a solution. The introduction of a public banking system provides the best solution to the budget crisis, in that it will weaken heavy private banking lobbies, lower taxes, and increase jobs ("Introduction").

To better understand how the State of Illinois reached this point, it is essential to understand the process that has led to the budget dilemma. Prior to the mid-1990's, Illinois had maintained relatively low revenue and expenses, in comparison with the national average (Walstrum 1). In 1995, Illinois had a gross state product of more than 339 billion dollars and was ripe with opportunity for many different business sectors (Gove 3). The rate of growth for the state had slowed, however, during the thirty-year period from the mid-sixties into the mid-nineties, presenting a problem for elected officials who struggled to maintain lofty standards of living amid decreasing revenue (Gove 18). Additionally, the flight of the well-to-do from Chicago and downstate Illinois has increased the value of suburban areas, but not enough to offset the declining value in the poorer areas they left behind (Gove 20). Suburbanization has also caused other issues that further impact the strain on the Illinois budget, such as increased demand on infrastructure due to longer commute times, and greater scrutiny by the EPA due to rapid expansion into undeveloped land (Gove 25). The greatest impact on the ability to maintain a healthy budget for the state, however, has been the unchecked accumulation of pension liabilities (Walstrum 4).

Economist Thomas Walstrum calculated the average of yearly expenditures and a percentage of total revenues in the state of Illinois for fiscal years 1994-2010. He noted that during this time, Illinois spent over ten percent more than the typical state, and the top two categories for this spending were pension liabilities and employee retirement, making pension-related spending three-fourths of the difference between Illinois and typical state spending (Walstrum 4). To compound the problem, the pension system was not well-managed: employee contributions for many retirees constitute only 8-16 percent of what they receive in retirement benefits ("Pensions 101"). The pension funds were also frequently raided by various officials for other purposes and not repaid, for example the 10 year "pension holiday" enacted by Chicago Public Schools and a complicit General Assembly that siphoned 1.5 billion taxpayer dollars from pensions for Chicago public school teachers ("CPS Pensions"). As a result of these kinds of mismanagement, more than 100 billion dollars is owed to former state employees (Walstrum 1). The agreements that were made may well have been short-sighted, but the commitments must stand. While responsible pension reform is vital, it will take more profound changes to truly alleviate the problems in the Illinois economy.

Republican Governor Bruce Rauner is a vocal supporter of pension reform, specifically the

development of a 401k-based retirement system for state employees going forward (Zorn). It is not surprising that Governor Rauner favors this solution as it suits his preference for the privatization of public services (Geiger). Privatization is one of the key tenets of neoliberalism, an economic model emphasizing competitiveness above all else (Monbiot). It sounds fair enough on paper, until one considers the "competitors" are on decreasingly equal footing. The widening gulf between the haves and have-nots has made truly fair competition all but impossible. Unfortunately, the bind in which previous officials of both parties have placed the State have put the Governor in a prime position to argue for privatization of retirement, education, and healthcare, under the guise of a genuine desire and need to fix the budget (Confessore). It is like a doctor grimly informing a patient that he needs an amputation, without revealing that he has been planning the procedure all along. That is not to say that Republicans are the clear or only villains at work in this situation. The foxes in this tale wear red *and* blue, and the Governor's neoliberal goals can only come to pass with the aid of complicit and incompetent politicians on both sides of the aisle.

The strongest opponents of Rauner's agenda are House Speaker Michael Madigan and Senate President John Cullerton, who are hesitant to move forward with pension reforms that could disrupt contributions from organized labor (Pearson). Democrats have instead opted to focus on tax reform, campaign finance adjustments, and corporate incentives that aim to benefit low-income citizens ("The Illinois Comeback Agenda"). They have proposed a bill in the Illinois Senate that will amend the state constitution to allow for income tax variations based on income level (*Illinois General Assembly-SJRCA0001*). A Senate bill has also been proposed to introduce small donor campaign matching, to mitigate the influence of corporate lobbyists (*Illinois General Assembly-SB1424*). The Keep Illinois Business Act was introduced in the House to prevent businesses that move operations out of state from receiving economic development assistance, encouraging the retention of Illinois jobs (*Illinois General Assembly-SB3538*). Democrats in the General Assembly have also prioritized the expansion of state-subsidized child care, mental health counseling, and drug treatment programs ("The Illinois Comeback Agenda"). As the Democrats push toward the expansion and enrichment of public services, Republicans are aiming to reassign these goals to the private sector. With goals that are so diametrically opposed, neither side is likely to give up any ground.

House Speaker Madigan poses a considerable threat to Governor Rauner's plans to change the way the State of Illinois does business. First elected in 1983, Madigan will soon become the longest-serving house speaker in modern U.S. politics (McKinney, "Special Report"). He has successfully blocked Rauner's proposals to weaken collective bargaining and workers' compensation rights, as well as his attempts at imposing legislative term limits and redrawing district boundaries (McKinney, "Special Report.") Madigan has served with seven governors in his tenure and is not above showing them up in a display of his influence, as he did in 1989's "Operation Cobra," passing a substitute bill in less than six hours that undermined the efforts of then-Governor Thompson's two-year attempt at a tax proposal (McKinney, "Special Report").

Michael Madigan's tenacity is matched only by Bruce Rauner digging in his well-heeled shoes. Former private equity executive and friend to billionaire hedge fund founder Kenneth C. Griffin, Rauner estimated his personal wealth at 500 million dollars in 2015 (Confessore). Some of the same wealthy donors who were backing Rauner during his gubernatorial bid also donated money to Chicago Mayor Rahm Emanuel to aid his struggle with the Chicago Teachers' Union, proof that the neoliberal agenda of the upper crust easily crossed party lines (Confessore). Rauner donated millions of his own money to his campaign as well, triggering a state law that was intended to limit the influence of the wealthy, but in his case backfired because he had contributed so much of his own capital (Confessore). Ultimately, Rauner spent more than twice on his campaign as his rival Pat Quinn, whose campaign was heavily funded by unions (Confessore). By the end of the election, the Griffin family alone had donated over 13 million dollars to Bruce Rauner's campaign, more than the combined sum contributed by Quinn's 244 labor unions (Confessore.) This is neoliberal

"competition" at work, a stacked battle where the richest carry hard cash while the rest of us have only Monopoly money.

It would appear that nothing can really be done to solve such an impasse: a Democratic behemoth backed by massive labor unions vying against a cadre of elitists bent on destroying organized labor. There is, however, one tie that binds them both: the banking lobby. According to the Illinois Campaign for Political Reform, huge banking lobbies such as Illinois Bankpac have contributed generous sums to both parties (Reform). The Republican State Senate Campaign Committee received over 190,000 dollars from the Pac in March, and the Senate Democratic Victory Fund received nearly 100,000 dollars from them last September (Reform). The influence of the banking industry is relevant because Illinois currently has an 11-billion-dollar backlog of unpaid bills, with an additional 700 million dollars in interest costs from this year's budget, which has operated on virtual autopilot during the budget impasse (Garcia). A bipartisan plan being pushed in the Senate calls for the State to borrow 7 billion dollars over seven years to pay down the bills and bring the payment cycle within range of avoiding steep interest penalties (Garcia). Illinois already borrowed money in November by selling off 480 million dollars in bonds at an interest rate of just under 4.25 percent (Garcia). The rate is higher in Illinois because the state credit rating is so much lower than other states (Garcia). The rating agencies that determine state credit ratings are private, for-profit organizations, just like the banks that provide the loans. Such organizations stand to benefit from the struggle and failure of state governments in much the same way as they benefit from the struggles of individuals and small businesses.

Public banking, on the other hand, could alleviate some of the pressure on the state government by issuing badly needed credit at low or no cost ("FAQ"). With these funds, infrastructure and state services could be attended to without the damaging interest rates imposed by private banks, which traditionally represent thirty to fifty percent of the cost of public projects ("FAQ"). Proposed legislation has been introduced in nearly half of the states in the country, including Illinois ("FAQ"). Illinois Representative Mary E. Flowers has introduced the Community Bank of Illinois Act, which calls for the formation of a public state bank that would be funded by tax revenue (*Illinois General Assembly-HB0454*). This bank would be the custodian of securities and would be audited annually by an independent public accounting firm (*Illinois General Assembly-HBO454*). Currently, the state of North Dakota is the only state with a public bank, which it established in 1919 ("FAQ"). North Dakota also has one of the lowest rates of federal aid and sported a budget surplus of over 8 billion dollars in 2014 ("North Dakota"). In 2012, North Dakota also had the lowest unemployment rate in the U.S., as their public banking system freed up ample funds for infrastructure projects that created more jobs (Lemov). States without public banks are limited to depositing their tax revenue in private banks, where the money is often reinvested elsewhere and not fed back into the state economy (Lemov.)

While critics of the proposed system are skeptical that the success North Dakota has realized with state banking could be applied to other states with dissimilar demographics, it is quite difficult to find accounts of opposition to state banking that do not originate in the private banking industry (Cuti). As Professor Barbara Dudley points out in an interview on Oregon Public Broadcasting, there are various kinds of banks in the nation and it is the larger, national banks that trade on Wall Street that stand to lose the most from the implementation of state banking because their economic incentives favor large, short-term profits (Cuti). State and local banks gain from a patient, long-term perspective on lending, because it is beneficial to the community when its members are supported and successful (Cuti). It is a classic case of David vs. Goliath: the share of assets controlled by the five largest banks in the country has jumped from 17 percent in 1970 to a staggering 52 percent in 2010 (Matthews). The national banks are swollen with the wealth of citizens and governments alike and, should they crumble under the strain, they will take these governments down with them. Illinois should heed North Dakota's example and work to establish a State bank capable of steering the

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economy toward self-sufficiency and brighter times.

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Muscles and Fishnets: Exploring the Similar Autoerotic Elements within Body Image Expression

by Jack Beutler

(English 1102)

Pursuing happiness is an activity almost anyone can relate to. Personal fulfillment and self-esteem are typically required to accomplish this pursuit. However, the means that may be taken to arrive at these psychic destinations vary wildly. Generally, when the means of the pursuit are neither detrimental to the individual, or to society, they are accepted and supported. However, innate feelings of aversion and fear can generate hate and disgust toward certain activities and the subcultures that take part in them. Two undertakings, similar in their expression and gratification, can be viewed with polar emotional opposites and thusly receive the benefits, or detrimental consequences, according to their level of acceptability and the "set" designations they are accorded. A double standard is applied to these pursuits of happiness, with common belief slipping into the void of ignorance and obscurity. The two activities are viewed as opposites based on the conflicting emotions they inspire, not on empirical analysis of the similarities the two phenomenon[1] share. In specific terms, the process of admiring one's own appearance is common in supporting this pursuit of happiness. Two typically male[2] activities that interact with this self-admiration process are cross-dressing[3] and bodybuilding. In these specific instances, satisfaction is provided by the image or thought of oneself as having a set of desired features, colloquially known as auto-erotic behavior.

Both the discipline needed to maintain the ascetic lifestyle[4] and the muscular proportions held by the bodybuilder are often regarded in a positive light. Achieving muscular proportions can also be "associated with various rewards" societally, such as preferential "social standing" and increased access to "potential sexual partners" (Heath et al. 303). In contrast, cross-dressing is regarded as a disorder, or disease and for the dilettante,[5] is often-time considered a revolting activity reserved for "weirdos" and "perverts." Paraphilia can be generally defined as sexual interest in unusual objects, activities, or individuals. The criteria[6] for an activity to qualify for this list are obscure and arbitrary; at the time of this writing, cross-dressing, or autogynephilia,[7] was still among those on that list. However, bodybuilding, or any similar activity, has not yet qualified for the same categorization. It can be argued that both phenomena share the same interest in the self and that this interest deals with an idealized-self, which has a certain set of desirous features. When attained and viewed, these features cause a form of sexual excitement or "high" for the individual. If this is true, any sort of diagnosis resulting from the process, if applied to one, could certainly be applied to the other. The relationship between the auto-erotic paraphilia experienced by males, within the mediums of bodybuilding and non-homosexual autogynephilia are so similar, that it can be said they are different forms of identical phenomena, directed at the same pursuit of happiness.

Cross-dressing is an activity that can conjure up unique, subjective images in mainstream thought. Even metal professionals and academia have not yet agreed on set designations and definitions for the activity and the various subgroups that take part in it. This paper aims to focus on non-homosexual autogynephilia, which is the process of heterosexual males fetishizing the image of themselves being portrayed as women.[8] It does not extend to any sort of transgender[9] phenomenon or homosexual activity,[10] which may include various forms of cross-dressing. According to Lawrence, characteristics of non-homosexual autogynephilia include primary sexual attraction to females, the absence of living "full-time as women" (191), an explicitly "erotic dimension" (192) associated with the act of cross-dressing, and an intense interaction with an eroticized "feminine self-image" (194). This voyeuristic, auto-erotic viewing of an alternate, "idealized self" (Lawrence 197) has deep ties to

personal identity and inspires a drive to inhabit these spaces of the other-self. It would follow that a person interacting with their "preferred paraphilic stimuli" (Lawrence 196), who also achieves the desired "feminine self-image" (Lawrence 194), attains feelings of "delight, ecstasy and passion" (Lawrence 202). This personal transformation is gratifying and titillating, when it manifests itself in reality. In addition to the erotic elements, emotions pertaining to positive well-being, such as "comfort, and security" (Lawrence 194) are enhanced. When the need to view oneself as this alternate, ideal-self comes to fruition, auspicious personal fulfillment comes flooding in. Attaining this is happiness for the individual gripped by the psychological need to cross-dress, within the non-homosexual autogynephilia phenomenon.

As with cross-dressing, the specifics of bodybuilding can be misunderstood by those without a direct affiliation to it. Within the practice of weight-lifting, bodybuilding is a specific style of training, which is the practice of making the muscles as large and shapely as possible, while maintaining symmetry and a certain aesthetic.[11] Different types of training are required to achieve different anatomical and physiological results, such as extreme size, or strength.

As these training methods affect and mold the body, they also shape the mind. They have the ability to forge neural pathways, resulting in feelings of euphoria and gratification, such as a "runner's high." According to the research by Köteles, et al. taking part in a recurring physical exercise program has been seen to generally increase "subjective well-being, and self-esteem" (39), in addition to improving "mood state" and "body awareness" (40)[12]. A large part of this increase in self-esteem was related to the individual's "satisfaction with body image" (Köteles et al. 45), undoubtedly calculated from the admiration of one's own physical progress. The results went so far as to connect this exercise and increased bodily awareness, to the development of a more "intense sense of self" (Köteles et al. 44). The representations of "one's self-concept" are actualized in reality, being enhanced and inflated as the hypertrophic results pile up and come into alignment with the preferred "body image" (Köteles et al. 40) sought after. This would support the conclusion that bodybuilding is as much a psychological activity, as it is a physical one.

While these positive psychological elements occur when the bodybuilder interacts with the newly-formed self-concepts, conditioning from repeated visual stimuli and repeated reactions to body image begin to take place. According to the research by Heath et al. on the "drive for muscularity" and its relationship to "self-objectification,"[13] these reactions can either lead to positive or negative conditioning[14] in regard to the act of "body surveillance" (298),[15] which can be defined as conscious thought about one's own appearance. The body becomes objectified by the self and is seen as an "aesthetic object" (Heath et al. 303) to be viewed from an "outside perspective" (Heath et al. 301). The manifestation of this process takes the form of an "internalization of [a] mesomorphic[16] ideal" (Heath et al. 303), which is held as a standard for the individual, while they engage in a growing "preoccupation with their own physical appearance" (Heath et al. 298) - a similarity shared with cross-dressing, however in the former case, a hyper-masculine ideal is pursued, rather than a hyper-feminine archetype, as in the latter.

It is possible to partake in physical exercise without achieving the positive psychological elements described. It is also possible, that not all bodybuilders arrive at a destination of self-objectification. However, for the purposes of this paper, it is assumed that a statistically-significant number experience these psychological side-effects. That number will undoubtedly grow, as societal and media influences continue to promote "appearance, particularly a muscular physique, as central to males' sense of self" (Heath et al. 303). The fact remains that self-objectification is a real phenomenon and it is one that bodybuilders are heavily predisposed towards. Attaining this ideal image is important for the bodybuilder that has fallen within the self-objectification model. The chase can become a "pathological pursuit" (Heath et al. 305) when these ideals, that have become intertwined with self-image and the sense of self, rely on the disconnected judgement of the other, outside self. Bodybuilding is, therefore, not only a heavily psychological exploit, but it holds

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significant mental and conceptual gravity for the individual(s) experiencing the obsession.

Thus far, the conditions surrounding the desire to bodybuild and the reasons for its continuance have been explored. However, the relationship between the self-image and act of body surveillance can "elicit selective and self-focused attention" (Heath et al. 304) that also takes a sexual form. The "perceived benefits" (Monaghan 351) of attaining this physique provide pleasure from the thought of oneself in the role of the "everyday pragmatic embodiment" (Monaghan 351) of male sexuality and power. This psycho-sexual endeavor, performed without a partner, would be classified as "masturbatory sexuality," (Richardson 58) or auto-erotic behavior. In this instance, the ego "takes itself as the object of its own libidinal drives" (Richardson 59), which has the potential to qualify as extremely narcissistic. Richardson goes on to classify bodybuilding as a "queerly sexual activity" (58) with erotic excitement being obtained by the image and symbolism of one's body. In the 1977 documentary film *Pumping Iron*, Arnold Schwarzenegger famously describes the feelings of attaining a pump in the gym as follows: "It's as satisfying to me as coming, as having sex with a woman and coming" (Schwarzenegger qtd. in Monaghan 345), which supports the prevalence of sexual undertones within bodybuilding.

Despite the psychological elements, there are very real sensual pleasures derived from the neurological stimuli encountered in the gym. Lee F. Monaghan interviewed several amateur bodybuilders, one of which expressed that bodybuilding was better than drugs; he came out of the gym feeling "high as a kite" (347). Another recounting, provided by a recovering drug addict, added the viewpoint that bodybuilding "gives [him] a buzz, similar to what heroin" (Monaghan 348) use can yield. When viewed from this perspective, the erotic nature of these interactions with "body surveillance" (Heath et al. 298) and the muscular physique can become eerily similar to that of non-homosexual autogynephilia. They relate through satisfaction arising from the self-modified portrayal of gender; an alternate physical form of the self is fetishized, and powerful interactions with an eroticized self-image are provided.

Insofar as attaining sexual excitement and sensual pleasures by one's own level of aesthetic muscularity is not a "usual practice," this process could also be classified as a paraphilia, a designation shared with cross-dressing. The research Bettcher provides on this topic describes the vessel, by which different paraphilia and "erotic fragments" (618)[17] can allow different people, interacting with different mediums, to arrive at a similar mental destination. The manifestations of "erotic content [are] highly variable" (Bettcher 611) and a practice of "recoding" (Bettcher 611) can allow many different psychological needs to be met, in a variety of ways. While she discounts concepts of autogynephilia, Bettcher agrees that an "eroticized self" (618) is an integral part within most forms of sexuality. This erotic-self interacts with a wide variety of "erotic fragments" (Bettcher 618), which "can be found in the fantasy lives of 'normal' people" (Bettcher 618), such as bodybuilders. The surrogate role these fragments play in sexual fantasy allow a common end to be reached by everyone participating in sexual activity. The commonality of this practice can normalize cross-dressing and fetishize bodybuilding, among other activities, to a degree.

However, in contrast to cross-dressing, bodybuilding is a socially-accepted paraphilic activity. When the juxtaposition of the two activities' status as auto-erotic paraphilia and the level of social acceptability they are accorded are viewed, a double standard is implied. In addition, when the similarities in the androgynous qualities of the two activities are observed, the disparity within the contradiction is augmented. Within an activity that supposedly espouses masculinity, the enlarged pectoral growth stands out as strangely feminine. Richardson points out the potential confusion arising from the "curvaceous and voluptuous" (55) nature of the bodybuilder's chest region, which is typically a signifier of female sexuality. The feminine qualities of the pectorals are enhanced by the use of oil and cosmetics applied to the skin, during competitions (Richardson 55). When the context regarding a made up and oiled chest region is considered, conventional male fantasies regarding women are typically aroused. When paired with the objectification process of the bodybuilder's

physique, the "submissive role" (Dutton qtd. in Richardson 56) of being on display, also presents certain androgynous qualities. Finally, the hairlessness and tanned skin of bodybuilders evokes further examples of what might be more seen as typically "female" qualities being represented in a "male" format.

If the blend of gender qualities weren't enough, the fetishization of this androgynous image presents a striking similarity to the fetishized female appearance cross-dressers seek. It is not just a process of taking on these female characteristics that is shared; it is a tenet of the two phenomena that a manipulated self-image is fetishized in the first place. In this sense, both the cross-dresser and the bodybuilder "force the spectator to consider what a supposedly 'normal' body, clearly delineated along the sex-gender-sexuality matrix, actually is" (Richardson 64). The double standard of socially-acceptable androgyny is that bodybuilding "has been assimilated by mainstream" (Richardson 63) culture, which extends to it a level of normality. However, acceptance of the application of more ostentatiously "female" qualities has not yet been granted to the paraphilia of non-homosexual autogynephilia.

In the physical sense, a cross-dresser applying fake breasts in the form of a "chest-plate" would be identical to an exercise regimen devoted to growing the pectoral muscles; the bosom of the individual is enhanced. However, in the psychological and metaphorical aim, the motivations could be said to be different. Despite the potential objections, if the superficial reasoning is disregarded, the main focus of both activities is to "gender-bend." This would even apply to the individual who is focused on muscular growth: The activities are undertaken to adjust the physical self to match an appropriate gendered self-image, whether that be at the masculine or feminine end of the spectrum.

Not only do both activities gender-bend, but they also contain auto-erotic elements. This suggests that there is a level of sexual enjoyment received by both parties, in this androgynous expression. However, the erotic manifestation in a bodybuilder does not cause disgust and shame from the general populace, in the same way cross-dressing can. Only cross-dressing seems to arouse unpalatable sexual connotations of "perversion" and "sexual-deviance," when these ambiguous gender representations are encountered in an auto-erotic format. With differing mediums, but with identical auto-erotic enjoyment, methodological means and psychological ends, one could certainly come to the conclusion that the level of acceptability or disgust could be just as identical.

The open-ended concepts of representation have thus far been explored in this paper. Both bodybuilding and cross-dressing symbolize different things to different parts of the ego and pleasure centers of the brain for the self, while providing a similar sense of fulfillment. In addition, both activities offer themselves up to differing patterns of consumption for spectators of the activities. To the spectator, whether bodybuilding signifies masculinity, pseudo-sexuality, femininity, androgyny or fetishistic paraphilia, it also commonly elicits descriptions such as "alien" and "bizarre." Perhaps it signifies a parody of masculinity, or just seems to be a shocking oddity of nature. It inspires confusion, like a circus sideshow, where one is "both attracted and intrigued by it, yet repelled and nauseated" (Richardson 60) at the same time. The befuddlement arises at the form of spectacle encountered. However, there appears to be a tolerance for the perplexity bodybuilding imposes, even though it seems to "celebrate grotesque, physical freakiness" (Richardson 63). However, when the oddity becomes a man dressed in women's clothes, the ostentatious nature of *this* form of drag is heavily discouraged within society.

The duplicity in the perception can be highlighted by an examination of a thread on a *Bodybuilding.com* forum, where a heterosexual crossdresser self-identifies and extends the offer for questions to be asked. In response, many forum commentators cannot fathom that it is possible for a man to wear a females clothes, without being homosexual. Terms such as "sick demented, twisted, [fucked],[18] piece of shit," "it," "closet homo" and "[faggot]"[19] are used (Crossdresserguy 13-18). It appears to be a commonly held belief among those on the forum that having the desire to wear a woman's clothes is synonymous with "trying to be a chick," which in turn is synonymous with being

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"gay" (Crossdresserguy 18). The ignorance aside, the level of social acceptability is obviously low for cross-dressing within this particular bodybuilding community. However, as another crossdresser on the forum points out, there is a paradox in that this forum, built around males who partake in bodybuilding, who admire the bodies and accolades of other bodybuilding males, find cross-dressing to be a homosexual activity (Crossdresserguy 14). In this instance, it is pointed out to be "absurd" that the admiration of males, as males, is not homosexual, but the admiration of a male, or oneself, dressed as a female is homosexual (Crossdresserguy 14). If it were a sliding scale, males admiring males for their masculinity would seem to be more qualified as a "homosexual" activity, compared to the admiration of female characteristics. It is accurately qualified as a "double standard" (Crossdresserguy 14).

Indeed, the efforts to qualify bodybuilding as a heteronormative representation, may provide some insights into its large-scale acceptance. Richardson brings up the style in which photographic depictions of bodybuilders "strain…to promote a sense of normative" (52) expression. The pictures in these publications always seem to contain a semi-nude female posing with the male, or place a large emphasis on the performance of heavy lifts. The "phallic mastery" (Richardson 53) promoted by images of heterosexuality and extreme strength attempt to "diffuse [the] anxieties" (Richardson 53) that arise when males find themselves admiring and envying the bodies of other males. The "subversive potential" of representation, within bodybuilding, highlights the power of illusion within modern society. It also shows how far the "normalizing" activities reach with a non-existent gestalt.

In concluding this examination, the phenomenon of bodybuilding and cross-dressing share many characteristics in their methodology and psychological destinations. Desired destinations can vary greatly; "what some people find particularly sexy might leave some others totally numb" (Richardson 58). Both activities are largely psychological and provide self-esteem and personal fulfillment to the individuals taking part. Within the two scenarios, an other-self objectifies the body and views it through the lens of an idealization process. In both cases, these idealized forms provide auto-erotic, sexual enjoyment; when they are interacted with. While bodybuilding and cross-dressing should not be regarded as diseases, if the *American Psychiatric Association* insists cross-dressing be designated as a paraphilic disease, then it could be argued that the similar qualities shared in bodybuilding cause it to qualify as a paraphilic disease as well. The psychological vessels described by Bettcher promote the similarities the two phenomenon share, in both their process of eroticization and their means to arrive there. Androgyny and provoking a sense of spectacle also seem to be hallmarks of both activities. However, due to "culturally refined paradigms" (Richardson 53), the level of social acceptability and tolerance differs for the two. Unfortunately, while both bodybuilding and non-homosexual autogynephilia share an ironically-similar process of fetishizing the desired self-image and promote "plasticity of the body" (Richardson 51), the current climate dictates that cross-dressing should be an activity best performed behind closed doors and spoken about in whispers. Awareness and unbiased reasoning are needed to reverse the perception that crossdressers[20] are outcasts and oddities. If "normality" remains a process defined by "cultural systems" (Richardson 51), then the zeitgeist should be awakened to this phenomenon. In doing so, the pursuit of happiness will prove more attainable for those with alternative interests.

[1] An activity, which is not easily defined by the common language and the motives behind it are often obscure, however they are commonly acknowledged as a "thing", typically that happens (somewhat frequently).
[2] Autogynephilia is an almost exclusively male activity. Bodybuilding is more common among males and male bodybuilders were the focus in terms of research.

[3] Within the focus of this paper, defined as a male's sexual arousal achieved by dressing in a women's clothing. The existence of this phenomenon is debated and if it is qualified, those qualifying it typically regard it as a disease or disorder. Alternatively referred to as Autogynephilia.
[4] In addition to the endless repetition and pain experienced in the gym, a high volume of high-protein, low fat food must be consumed on a regular basis.
[5] The uninitiated, a person having a superficial interest in a branch of knowledge.
[6] The criteria and classifications put forth by the American Psychiatric Association are used in this analysis.
[7] Latin, literally meaning "love of oneself as a woman."
[8] Most commonly by dressing in women's clothes, applying makeup and wearing wigs.
[9] Commonly thought of by the idiom "a female trapped in a male's body" or vice versa. This would encompass several different variations and forms of gender identity and gender expression.
[10] While not all drag queens are homosexual, this designation would encapsulate the activity of "performing" as a woman, as well as the act of dressing as a woman, with the aim of engaging in sexual activity with a man.
[11] The aesthetic is subjective and fluctuates (see Dexter Jackson beating Jay Cutler in 2008 Mr. Olympia), but is generally defined by the IFBB and the judges of that year's major competitions. The size and proportions are expected to be accompanied by an extremely low body fat percentage.
[12] "Body awareness is a mental representation of one's own body, based almost exclusively on internal (i.e. proprioceptive and viscероceptive) information. Body awareness is regarded as a core component of self-concept and it is connected with positive affect, wellbeing, and everyday functioning. Although regular physical activity might improve body awareness, the construct is rarely investigated or even mentioned in the context of exercise psychology."
[13] "manifests as persistent body surveillance involving habitual monitoring of one's body for adherence to internalized cultural ideals, and can, in turn, result in feelings of body shame for failing to meet those unrealistic standards."
[14] Negative conditioning was referred to as muscle dysmorphia in the research. Men with this condition are upset with their bodies and would like to have more muscle/less fat than is currently present on their bodies.
[15] "Body surveillance. The 8-item Body Surveillance subscale of the Objectified Body Consciousness Scale (McKinley & Hyde, 1996) measures the extent to which participants view their bodies from an outsider observer's perspective (sample item: "During the day, I think about how I look many times")…Among male bodybuilders, weight trainers, and non-athletes, this subscale was found to yield acceptable internal consistency (.81) and demonstrated validity through positive relations with males' appearance anxiety and body dissatisfaction (Hallsworth et al., 2005)."
[16] A body type; broad shoulders with a narrow waist.
[17] Sexuality is complex and simple traits, practices, or attractions cannot be extrapolated from the convoluted process. An erotic fragment is a motif, within the larger body of complex sexual attraction - i.e. a person with a fetish for leather incorporates the material into sexual activity. Simply being around leather is not enough to constitute a fulfilling sexual interaction.
[18] Spelled phukced to avoid censorship within forum.
[19] Spelled phaggot to avoid forum censorship rules.
[20] among others displaying a gender-queer appearance.

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An Era of Resistance

by Alexa Bowers

(English 1102)

Just as in life, for every problem there is almost always a solution. In the medical field, for every disease there is almost always a cure. The Golden Age of Microbiology took place from 1875-1918. During this time, most pathogenic bacteria had been discovered, and scientists began working to create antibiotics to kill them. Paul Ehrlich was one of the many scientists; he searched for a "magic bullet" that would kill a microbial pathogen without harming the host (J. Malik, personal communication, October 20, 2016).[1] Ernst Chain and Howard Florey used the work of Alexander Fleming[2] to treat a police officer who had been dying from a life-threatening Staph infection (J. Malik, personal communication, October 20, 2016). Eventually, their short supply ran out before they could cure him, and he died (J. Malik, personal communication, October 20, 2016). This failure led to one of the greatest discoveries of all time: Penicillin G, the first antibiotic capable of curing bacterial infections. From this moment on, more antibiotics have been discovered, and today individuals are being vaccinated to prevent these diseases from ever occurring. For those who are unfortunate and do get infected with a bacterial disease, antibiotics are readily available to treat these patients.

Following the eras of pathogenic discovery and antibiotic discovery came a new era, the "postantibiotic era" of microbial resistance (Alqallaf & Winit-Watjana, 2015, p. 24). With the creation of antibiotics came individuals who abused them. By improperly using antibiotics, multiple species of bacteria began to form a resistance to them. Once bacteria become resistant, they gain an ability to "survive and resist exposure" to one or multiple antibiotics (Kandelaki, Lundborg, & Marrone, 2015, p. 2). To better understand antimicrobial resistance, picture evolution. In species of bacteria there are variations within their genetic makeup just as any other species. While most species can be killed with an antibiotic, variations within a few may make them resistant to the drug and develop an immunity towards it. The surviving bacteria can then reproduce future bacteria with the same immunity as their own. This is how resistance grows. The more people who improperly take antibiotics, the more likely a resistance is to form, and if it currently exists, spread. The lesser knowledge of antibiotics found in underdeveloped countries directly correlates to the expansion of microbial resistance and can be prevented by proper education of said antibiotics.

In many underdeveloped countries, it is common to see antibiotics being sold over the counter within pharmacies. The reason for this is that many medical costs are paid out of pocket by the public. To make healthcare more affordable, the government makes drugs available at pharmacies without a prescription. That means the public has easy access to these drugs, and can purchase them at any time. In the Republic of Georgia, all drugs besides "psychotropic medication" can be sold at a pharmacy without an individual needing to go to their doctor to have them prescribed (Kandelaki et al., 2015, p. 2). A study including 250 individuals was done in the Republic of Georgia by Kandelaki et al. (2015). Ketevan Kandelaki is the Secretary-General for the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Tbilisi, Georgia. Cecilia Stålsby Lundborg works for the Department of Public Health Sciences for Karolinska Institutet in Sweden with Gaetano Marrone, who is a statistician. There, almost 95% of the population avoids seeing their doctor, and instead chooses to self-medicate without any knowledge of antibiotics (Kandelaki et al., 2015, p. 2). This poses a threat to people within countries that have no regulation on prescription drugs because they lack knowledge on the drugs themselves, but can still access them without any trouble.

While the Georgia government intends to lower healthcare costs by allowing the public to purchase antibiotics in pharmacies, they are increasing the rate at which antimicrobial resistance forms. In a cross-sectional study done by Kandelaki et al., (2015) over residents in Tbilisi, Republic of Georgia, they found that over 50% had no proper knowledge on what antibiotics were used to treat. This goes to show that too much responsibility regarding the purpose of antibiotics is given to the population by allowing them to purchase these drugs without consulting a physician first.

Although in underdeveloped countries it is easy to purchase antibiotics for treatment, this isn't the case for everyone. Some people cannot even afford to buy these prescription drugs so they resort to using drugs already purchased by friends, family and neighbors. Improper self-medication, which will be discussed later on in this paper, can result in having leftover antibiotics. The owners of these leftovers will either give them away to help someone else, or sell them for money. This can be a huge issue in increasing the already existing microbial resistance within underdeveloped countries.

An experiment was conducted by Oh, Hassali, Al-Haddad, Sulaiman, Shafie, and Awaisu, (2011) in Penang, Malaysia on 408 respondents. The authors are all clinical pharmacists that have previous educations at the school of pharmaceutical studies at the Universiti Sains Malaysia. There, researchers found that 67.7% of their respondents agreed that they would give their medication away to a sick family member if they were ill (Oh et al., 2011, p. 340). This is a behavior seen in a lot of underdeveloped countries due to lack of funds, but globally as well.

Individuals without insurance or money will use anyone close to them to gain access to antibiotics if it can't be done so legally. Also, a lack of time, common in what many call "first-world countries," will result in individuals getting antibiotics from people they know. This form of medication increases the microbial resistance; by not seeing a doctor, one will never know what they're infected with and whether an antibiotic will treat them. Taking the wrong antibiotics, or taking them when they are not needed, is one of the many causes for microbial resistance. Just going off symptoms is not enough to properly diagnose oneself.

The misconceptions regarding antibiotics make self-medication very dangerous for anyone. Self-medication can be defined as "antibiotic use without prescription," despite whether they're obtained legally or illegally (Kandelaki et al., 2015, p. 2). One of the most common misconceptions individuals have is that antibiotics can be used to treat a wide range of infections. This is completely false. Antibiotics can be used *only* to treat a bacterial infection, but many people don't know this. An experiment was done by Alqallaf and Winit-Watjana (2015) involving patients from health centers and community pharmacies in Bahraini. Alqallaf is a graduate of Cardiff University, who currently works as a coordinator for the pharmacy program at the University of Bahrain. He has contributed to seventeen research papers, most focusing on his areas of expertise: diabetes and pharmacology. Winit-Watjana has a Ph.D. in Pharmacy Practice, and has made contributions to fourteen research articles. His area of expertise is in geriatrics and pharmacology. What their results found was that 82% knew antibiotics could be used to treat bacterial infections, but in addition, 69.3% believed they treated viruses, 37.9% believed they treated fungi, and 21.6% believed they treated insects (Alqallaf & Winit-Watjana, 2015, p. 27). Only 19.9% knew that antibiotics could *only* cure a bacterial infection (Alqallaf & Winit-Watjana, 2015, p. 27). Referring to the experiment done in Tbilisi, Republic of Georgia, similar results appeared. From the group of 250 respondents, 55% believed that antibiotics sped up the recovery of a cold, and the same percentage believed they could be used against viruses (Kandelaki et al., 2015, p. 5). This is why it is bad to take antibiotics when they are not necessary: the antibiotic attacks the normal flora in the body, bacteria that are beneficial to the body and live there naturally. The antibiotic doesn't kill the cold or virus like individuals believe. Antibiotic resistance occurs in the normal flora, then can spread to foreign bacteria whenever they enter the body.

Two additional misconceptions that go hand in hand are that antibiotic treatment can be stopped early, and that leftovers can be saved for future use. The problem with ending an antibiotic

course early is that it doesn't ensure that all the foreign bacteria in the body have been killed. What happens next is any surviving bacteria will then be able to mutate and become resistant to the antibiotic, infecting the individual once again and becoming immune to the previously used antibiotic. In the Penang, Malaysia cross-sectional study, 37% said they discontinued their antibiotics once they began feeling better (Oh et al., 2011, p. 344). In the study conducted in Bahraini, 35.6% would stop taking an antibiotic as soon as they began feeling better (Alqallaf & Winit-Watjana, 2015, p. 28). This is over a third of individuals who have the misconception that it is acceptable to discontinue antibiotic treatment once they begin feeling better. *One third* of individuals who are contributing to microbial resistance.

When using leftover antibiotics, resistance becomes a risk because the individual skips seeing a doctor, so they don't truly know if they have a bacterial infection. If the individual does indeed have a bacterial infection, they don't have a full course of antibiotics needed to kill the bacteria. In the experiment done by Oh et al. (2011), 72.5% kept a stock of leftovers at home for emergencies, and in the experiment conducted by Alqallaf and Winit-Watjana (2015), 33.7% believed they can be saved and used again in the future. These are just two examples of populations in undeveloped countries believing there is no harm in saving their antibiotics; a consequence of lack of knowledge.

Education is the number one solution in underdeveloped countries to prevent further microbial resistance. Unexpectedly, education doesn't just begin with the consumers, but with the doctors. It is common to see that due to misconceptions, many patients believe that antibiotics are needed whenever a fever is present, or for a common cold. Those who do go see a doctor, demand antibiotics to treat these, and doctors give in. In Penang, Malaysia, 38% of individuals would receive antibiotics from their doctor to treat a cold (Oh et al., 2011, p. 345). Another common mistake doctors make is the frequent prscribing of antibiotics for viral respiratory infections that go away on their own (Oh et al., 2011, p. 345). This brings back the issue of trying to treat viral infections with antibiotics which are only effective on bacteria.

In undeveloped countries, missing a day of work can be devastating, so many demand an instant recovery. A survey was conducted on teachers in New Delhi, India, by Kotwani, Wattal, Joshi, and Holloway (2016). Anita Kotwani is a professor at the Department of Pharmacology, V.P. Chest Institute in New Delhi. Chand Wattal is a microbiologist who works for the Sir Ganga Ram Hospital in New Delhi. P.C. Joshi works for the Department of Anthropology at the University of Delhi, and Kathleen Holloway is a regional advisor for WHO and works at the Department of Essential Drugs and other Medicines in New Delhi. They found that the teachers would ask their doctors for strong antibiotics to cure them instantly, and doctors would obey (Kotwani et al., 2016, p. 368). The problem here isn't the fact that these doctors don't have the right knowledge, but instead, that they need to be stricter with not giving into the demands of their patients.

Researchers Kotwani et al. (2016) suggested that the most "malleable user group" within underdeveloped communities was students because they spend 7-9 hours a day in school. This can be used to an advantage to teach them amongst their peers and educators about microbial resistance, being "both current and future users of antibiotics" and "influential advisors to parents" (Kotwani et al., 2016, p. 365-366). By adding lessons regarding proper usage of antibiotics and about antimicrobial resistance into current curriculums, high school students could be used as a middleman between generations. Not only can they further educate their parents, grandparents, and any other relative, but they can one day pass down their knowledge to their own kids.

A final source for education in underdeveloped countries is the pharmacists themselves educating the public on the antibiotics they purchase. Alqallaf and Winit-Watjana (2015) believe that pharmacies should play a "vital role in patient counseling" to help inform them of the antibiotics they're taking. Kandelaki et al. (2015) suggest that the government should change the laws on certain prescription medicines and put pharmacists in charge of teaching consumers about proper antibiotic

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use and the growing resistance. This would allow pharmacies to continue to sell antibiotics, but also give them the important task of educating the public.

Antibiotics have become a blessing and a curse, especially for the public in underdeveloped countries. What was once intended to cure people has now become a threat itself. As governments legalize their sale at local pharmacies, their easy accessibility puts the public at risk for increasing the spread of microbial resistance due to misconceptions they carry. Only urgent education within doctors' offices, schools, and pharmacies to name a few, can help to stop this era of resistance from growing anymore. Although the damage cannot be reversed, the war against bacterial resistance can be stopped. With the proper education, the knowledge of antibiotics can be taught to underdeveloped countries who otherwise lack antibiotic lore, thus preventing any further expansion of microbial resistance.

Notes

1. Paul Ehrlich was a German physician who focused mainly on developing a cure for syphilis. It wasn't until the beginning of the 1900s when he developed Salvarsan, the first documented example of a chemical used as an antimicrobial. This drug was used as a treatment for individuals with syphilis.
2. Alexander Fleming's work consisted of incubating cultures of the bacteria, Staphylococcus Aureus. While doing so, he observed that bacteria growing around contaminated mold appeared to be dissolving (J. Malik, personal communication, October 20, 2016). He identified the mold as a species of Penicillium and discovered it was producing a substance that was killing the bacteria. He was unsuccessful in purifying that substance (J. Malik, personal communication, October 20, 2016).

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Enter the Hidden Dimension Behind Your Screen: The Deep Web

by Tessa Burker

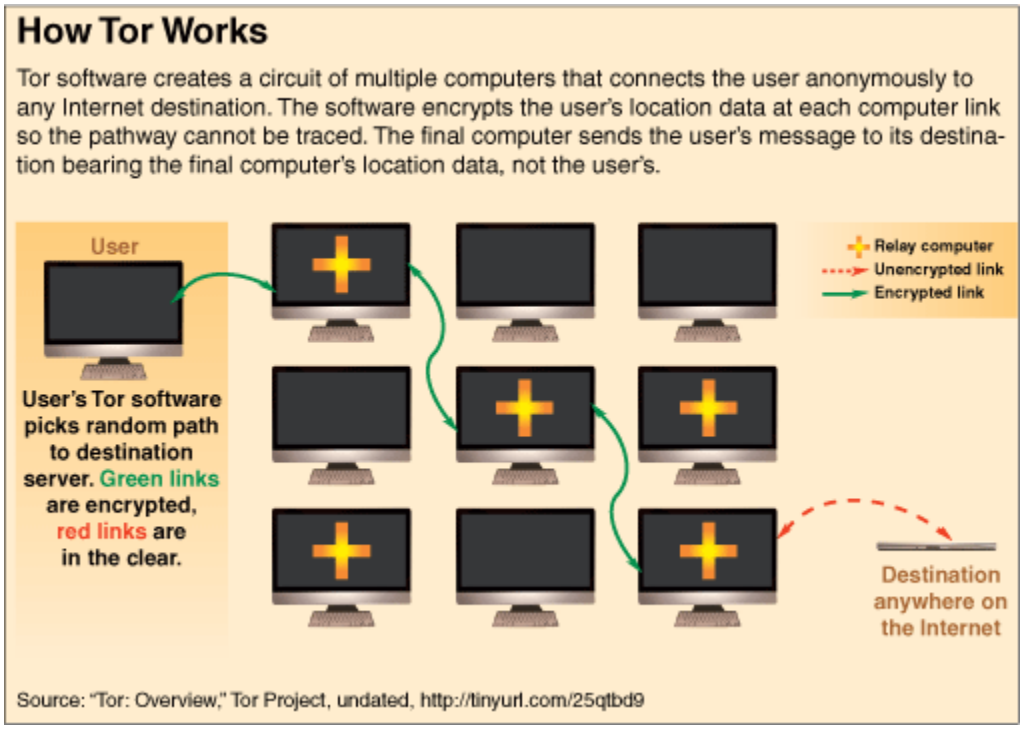
(English 1102)

So many films and works of literature are based on the idea that there are other dimensions--hidden worlds and unexplored land external to the bubble of world with which we surround ourselves. Ordinary characters just like you and me voyage to beautiful, fascinating lands. Often, we wish to ourselves that we were in those characters' shoes, treading on ground untouched by others. What if there was another world, a secret dimension that we know exists and can be explored, within our computer screens? Many of us surf the Google waves with little thought to the fact that our searches are monitored, recorded, and hardly private. But what if there is a way to evade such surveillance and anonymously browse the Internet? Many don't even know that such a thing does exist. This dimension exists within the Deep Web. As it is unfamiliar territory to many, it seems suspicious; having this anonymous way to browse the Web even seems dishonest. Some people argue that this dimension of the Internet is nothing more than a shady breeding ground for crime, producing criminals like a swamp produces mosquitoes. However, restricting the Deep Web or worse, abolishing it, infringes on freedom, violates privacy, and destroys a valid way to expose corruption. While illegal activities indeed happen on the Deep Web, it is necessary to realize that the benefits far outweigh the disadvantages.

The realm of the Deep Web includes anything on the Internet that cannot be accessed by standard search engines. As a whole, it is enormous. Although it is difficult to pinpoint exactly how much of the Internet is the Deep Web, some estimates put it at about 500 times larger than the Surface Web. This means that those thousands of "hits" you get from a simple Google search are only coming from a tiny portion of the Internet that is indexed for search engines. As *The Hidden Web: A Sourcebook* says, "Even the most sophisticated searcher, no matter what search engine they use, is only touching the surface of the information available on the Internet because they are not able to search the Invisible Web" (Scheeren 2). The name "the Deep Web" itself is misleading, as it includes not only things only accessed by special anonymizing browsers (which it is better known for) but also research databases and private company information, which of course make up a much larger portion of it. These databases and myriads of other websites that are simply not indexed are fundamental parts of the virtual infrastructure of libraries and businesses that are most certainly not illicit. At this point in our journey through the Deep Web, we must make a vital and paramount distinction between the land of the Deep Web and the village of the Dark Web that lies within it.

Here we peer over the boundary fence to catch a glimpse of the Dark Web. The Dark Web is a small corner of the Deep Web that requires special software to disguise your personal information and location. Because of this attribute, it is lumped into the total sum of the Deep Web. The Dark Web is where the illegal activities happen on the Deep Web, but this does not encompass everyone's purpose for being there.

Some of the stigma about the Deep Web comes from the way users access it. Journeying from the Surface Web to the Deep Web requires a bridge to cross the chasm; either a special link, a login, or a specific browser. The Dark Web is the section of the Deep Web that requires anonymizing software to disguise the location of the user. Tor is the most commonly used software to achieve this.



(Clemmitt)

Tor promises almost completely private Internet use. Of course, this comes with a downside. Because the users of Tor are anonymous, it is commonly used for criminal activity. Since everything on the Surface Web can be traced, it is much easier to find someone trying to sell marijuana there than in the Deep Web. With IP addresses and cookies, finding someone trying to commit crimes on the surface web may seem to be like peering through a clear pond and seeing straight to the bottom, rather than the suspicious, murky waters of the Deep Web. The waters of the Surface Web, however, are not crystal clear. Imagine how many emails must be sent a day through the Internet. Now suppose that in the masses of emails, a criminal wants to give a partner criminal a location for an illegal exchange of drugs for money. If the police are trying to trace the criminals to make an arrest, they would have to search through myriads of junk mail, party planning, business e-mails, and "Happy Birthday" e-cards from someone's grandma. It doesn't take a smart criminal to know that emails can be traced, so they would also use a code to exchange the necessary information. They are unlikely to be discovered, considering all the work it would take to find the correct e-mail and decipher the code. There are private e-mails on the Deep Web, but there are far, far fewer than on the Surface Web; even criminals who are aware of its existence know that it is much easier and safer to use the Surface Web to exchange information.

Not only is it often safer to hide amongst the millions of Surface Internet users, but also crime on the Internet exists with or without the Deep Web. As far back as 1971, college students with access to the fledgling Internet made the first online drug sale when they sold marijuana to other university students across the country (Clemmitt). Although some argue that these people would not even be criminals without this anonymous path, few are technically savvy enough to successfully use the Dark Web without a trace. Also, the Dark Web is certainly not immune to the law.

Take the classic example of the infamous Silk Road. The Silk Road was the main drug marketplace in the Dark Web village, facilitating about 1.2 million transactions in the two years it was open before it was shut down by the FBI. Ross Ulbricht, who operated the Silk Road under the name "Dread Pirate Roberts," was sentenced to life in prison without parole (Anderson and Farivar).

Using these anonymous Deep Web browsers and websites didn't disguise Ulbricht perfectly enough to allow him to infinitely succeed with his crimes. Even though this all happened on the Deep Web, going under the Surface Web radar does not guarantee successful crimes.

The very existence of the Silk Road makes getting drugs on the Deep Web seem incredibly easy, but there is a price for the convenience of anonymity. "Drugs on the Dark Net" goes into some detail about this:

> The resilience afforded by nodal redundancy does, however, come at a cost. As with any form of commercial enterprise, nodes that operate within an illicit distribution network must be compensated in some way for their participation. One way in which this compensation is achieved is by each node imposing a financial impost or 'mark-up' on an illicit good before it is passed on to a subsequent node. At every point of transaction within a supply chain, some form of price increase is likely to be imposed on the illicit drug which is then retained by each distributing node as profit. In principle, this process is no different from the price increases witnessed across legitimate supply chains, with the exception that there are relatively higher risks associated with illicit drug distribution (e.g. arrest, violence) which add a further premium to each price increase (Martin 53).

Buying drugs on the Dark Net is certainly costlier and riskier for the dealers, discouraging many from using this "easy" route to sell and acquire drugs.

Another argument made against the Deep Web is that it is used for child pornography. Alternatively, an important point is that there are far more other websites on the Deep Web than child pornography. Not only is the Deep Web so much more than the tiny portion that contains child pornography, but also far more child porn websites exist on the Surface Web. It seems that crime on the Internet will exist with or without private Internet browsing. Overall, while the Deep Web inevitably facilitates some crime, it is also heavily patrolled by law enforcement who are fully aware of this. Although it is easier to stay shrouded under the hood of the Deep Web, many have also been caught.

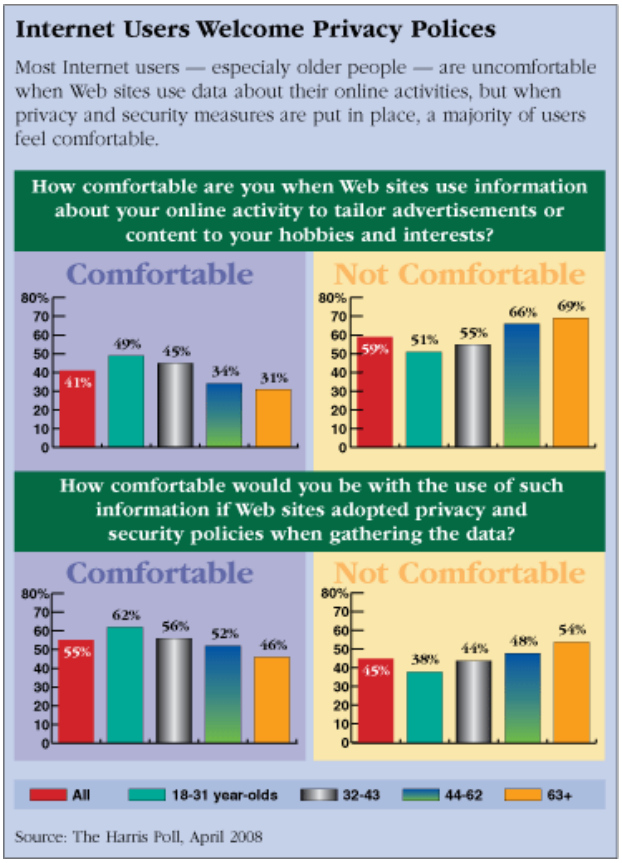
On the flipside, shutting down the Deep Web would destroy the important benefits of it. Deep Web browsers such as Tor allow users to anonymously search the Internet. Even though this way of browsing the Internet seems underhanded, most voyagers through the paths of Tor are merely searching the web anonymously wishing to protect their own privacy. One part of *The Googlization of Everything (And Why We Should Worry)* says, "If you read the privacy policy carefully, it's clear that Google retains the right to make significant decisions about our data without regard for our interests. Google will not share information with other companies without user consent, but it asserts the right to provide such information to law enforcement or government agencies as it sees fit" (Vaidhyanathan 85). Furthermore, in the article "Online Privacy," it says,

> What's more, powerful new technologies are creating unexpected challenges to privacy online. Advertisers, for example, can now track the Web sites you visit, and actions you take on those sites, to analyze how to more effectively sell products to you. And they may sell the information they collect to others. Privacy advocates, and some lawmakers in Congress, say the growing threats to online privacy point to the need for stronger laws to protect users' data. But Republicans in Congress warn that overregulation may cripple the economic foundation of the Internet (Marshall).

Of course, internet privacy advocates are extremely displeased with this and are roused to use an alternative where they feel they will not be tracked and watched. They feel that allowing themselves

to be traced on the Internet gives large companies a certain power, and they prefer to keep their browsing habits private.

Within the lore of the internet lies one landmark case discussed in "Privacy and the Internet." A Spanish man named Mario Costeja Gonzales discovered that Googling his name brought up an old article about how his house was for sale as a result of unpaid taxes, despite this debt having already been settled. When the company refused to remove the article, Gonzales sued Google, arguing that he should be allowed to demand that things defaming his name be removed from the Internet. The EU's highest court ruled in his favor, saying that in the EU an individual's right to privacy overruled any public interest in it (Glazer). Google allowing such a thing to exist simply for commercial purposes is one example of why people are driven to use private browsing over using a standard search engine; a protest against such behavior for moral reasons (not to mention for personal protection). In fact, more people are concerned about this than you may realize, as demonstrated by this chart's organization of how safe people feel on the Internet.



(Glazer)

With the Internet still being a fairly recent entity, it makes perfect sense that the older generations are especially nervous about privacy on the internet. However, it is easy to see that all ages show concern for their safety and privacy on the internet, as they rightfully should. Horror stories of stolen credit cards and identities are as common as words in a dictionary, not to mention the stories of pedophiles and stalkers looking for children and teenagers. Many do not even consider that their simple Google searches are not private to greedy companies.

One of the most well-known supporters of Tor and private Internet browsing is Edward Snowden. The hefty tale of Edward Snowden is a heterogeneous mix of good and bad. He only

worked for the NSA for a month before becoming greatly disturbed by its invasion of privacy. One day, he called in sick to work but instead fled the country. He flew to Hong Kong with a large collection of secrets. He gave a few carefully chosen reporters just a small portion of his collection of stolen information about the NSA. What these reporters revealed about his finding shocked the world. He revealed that the NSA had not only tapped thousands of phone lines, but also hacked into hundreds of thousands of Internet communication systems. Snowden disappeared and then reappeared in Russia, who agreed to grant him sanctuary. From there, he demonized the U.S. government, saying they had deliberately trapped him in Russia by invalidating his passport. The ripples Snowden caused affect the world today, four years later. The largest negative effect was a loss of faith in the government from the general population. It also revealed the government's legitimate attempts to help its citizens through learning about terrorist attacks with surveillance. It exposed the technology the NSA used to intercept communications to other nations. However, Snowden's revelation also did have some benefits. It revealed that the NSA was collecting phone records of hundreds of suspected terrorists. Although the terrorists were foreign and not domestic, their calls into the United States were monitored. Snowden argued that their vast collection of phone records could be used wrongly. He currently remains in Russia. While many of his supporters believe he should be pardoned, this is unlikely due to the massive damage his revelations did to the government (Epstein). An article on newsweek.com goes into great detail about this.

> Whether Snowden's theft was an idealistic attempt to right a wrong, a narcissistic drive to obtain personal recognition, an attempt to weaken the foundations of the surveillance infrastructure in which he worked, or all of the above, by the time he stepped off that Aeroflot jet in Moscow, it had evolved, intentionally or not, into something much simpler and far less admirable. He was disclosing vital national secrets to a foreign power. Conjectures about Snowden's motives matter less than the undeniable fact that he was greatly assisted in his endeavors by powerful enemies of the United States (Epstein).

While Snowden definitely went too far, it reminds us of how little privacy we truly have. Private information can be so easily discovered. Surveillance and hacking goes on all around us and most of the time we forget what's going on behind the scenes. After working with the NSA and CIA for many years, it is little wonder that Snowden is a huge proponent of Tor and private Internet browsing.

Another important use for the Dark Web is to allow for a freer Internet in countries with heavy regulations of the Web. For example, in China, the heavily restricted Internet is referred to as "The Great Firewall of China." It limits freedom of speech on the Internet as well as blocking certain searches and websites from its citizens. In the *New York Times*, one author goes into great detail discussing how censored and controlled the Internet of China is. "The government's firewall technology has become ever more sophisticated, and the cracks in the firewall have gotten smaller. Nearly every day a new V.P.N. provider is shuttered, and it is harder and harder to find a reliable long-term option" (Xuecun). If someone in the United States searches "Tiananmen Square" on the Internet, the first results that appear all discuss the massacre of the citizens demonstrating for democracy, accountability of the government, and freedom of the press. Troops armed with heavy artillery murdered thousands of citizens gathered there. Most people immediately associate the name of the place with this event. However, if you search "Tiananmen Square" or related words on the Internet in China, it either gives an error message, saying the search violates laws and cannot be displayed, or in some cases merely shows a few dates and birthdays (Xuecun). Imagine living in such a place where your government tries to hide its dark past from you; in a country like the United States where freedom and truth are part of our core and our identity as a country, we should be

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shocked at such a thing. The people of China deserve to know their own history. The fact that the government would try to hide its mistakes is deplorable. This is why the Dark Web is so important. In order to be sure that they are learning the uncensored truth, citizens of China must use methods to bypass the Firewall. The only way to sidestep such censorship of knowledge in China is to access the information through the Dark Net.

Here at the end of our journey, we can safely say that the Deep Web is merely a more discreet Internet, nothing to be afraid of. The Dark Web is a much more uncertain territory, and we must take caution before treading on its land. However, both must exist and even have many important uses. Between keeping your information private and preferring to not be monitored and recorded to help big companies, many who are concerned for their own safety online opt for a private browser such as Tor, which also allows access to the Dark Web. Although there is crime on the Dark Web, it is not significantly greater than the amount of crime on the Surface Web and does not allow crime to run free. At the very least, the idea of the government and businesses having such easy access to personal information which they use for their own gain is disturbing; particularly in a country which trumpets freedom like the United States. The amount of Internet surveillance committed in the United States alone is disturbing. Safety online should concern all of us; we must work to ensure it for our fellow citizens. In the meantime, using a browser such as Tor does not indicate that the user is a criminal; most users of Tor are simply those concerned with privacy. While the Dark Net certainly has its shadowy corners, as long as there are those willing to violate our privacy, we must allow it to exist.

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Spirit: Stallion of the Symphony

by Colleen Cavanaugh

(English 1102)

Music has the ability to universally unite people and cultures. The emotions that are linked in music have the ability to cross all boundaries. Composer Hans Zimmer crossed the boundary between humans and animals by creating a score that evoked the emotion of a horse and made it something a human audience could relate to. The instrumental music of the 2002 animated film directed by Kelly Asbury and Lorna Cook *Spirit: Stallion of the Cimarron* not only makes up for lack of dialogue, but also reflects larger themes of freedom, love, brotherhood, and inner strength in repeated musical motifs throughout the story.

"They say the history of the west was written from the saddle of a horse, but it's never been told from the heart of one. Not 'til now," the narrator declares at the opening credits **(**"Spirit: Stallion of the Cimarron"). The movie is a voyage and return story centered on a wild stallion born and raised in the unsettled western plains of what would eventually become known as the Midwest of the United States. While investigating a campsite belonging to a group of cavalry soldiers, Spirit is captured trying to protect his herd. He is brought back to their training camp where he is put through a series of disciplinary actions aimed at "breaking" the horse ("Spirit: Stallion of the Cimarron"). While at the headquarters, a young Lakota named Little Creek is captured as well and is also put through punishment. Neither of them breaks but instead they break out of the camp using teamwork to rescue themselves and all of the other horses at the camp. Just as Spirit thinks he is free to run home, Little Creek ropes and steers him back to his village. Although still captured, Spirit experiences different treatment in the Lakota village, one of respect and brotherhood. He also meets a female horse named Rain there and falls in love, experiencing the feeling of romance for the first time.

If home is where the heart is, Spirit feels very conflicted about where his home is because "for the first time in [his] life, [he] felt [his] heart torn two ways" ("Spirit: Stallion of the Cimarron"). Just as Spirit is allowed to leave, the cavalry comes and raids the Lakota village. Because of the love Spirit has come to gain for the village, he feels obligated to protect them so he charges into the camp to save Rain and Little Creek. He is washed down a waterfall with Rain after saving her but is then captured again by the Cavalry. He is put on the railroad project to pull trains but then escapes by causing a scene that flips a train. Little Creek comes and saves Spirit from the fire the accident causes and they escape to safety with the aid of one another. The Cavalry then comes after them, but again they evade them for the last time. Little Creek then finally lets Spirit free and he takes Rain with him back home.

In order to convey genuine emotions, the directors decided not to incorporate dialogue directly into the horse's character for a more realistic approach. Thus, the thoughts and emotions of Spirit are told only through the score and supported by minimal narration. This unique story-telling method challenged composer Hans Zimmer to make music not just to fill the sound but also to express the emotion and even the dialogue of the characters. "For the first time on an animated film, I am a voice," says Zimmer as he describes the challenging yet fulfilling task of taking on this unprecedented project (Zimmer). In this sense, the music has to be like a translator, expressing the inner workings of a horse's mind in a way that would be received and understood by a human audience.

Zimmer uses repeated melodies to capitalize on Spirit's emotions each scene of the plot. For example, whenever anything posed a threat to Spirit, Zimmer would employ the use of a dogfight melody. In other words, a distressed call-and-response between the brass and woodwinds creates tension as if the brass and woodwinds were fighting each other, reflecting how Spirit is fighting with his threat. This is used in multiple scenes when Spirit encounters danger, like in the beginning of the story when he fights off a cougar to protect his herd (8:42-9:00) or multiple times after when he has to maneuver around his captors in order to evade the multiple attacks from the cavalry (16:21-17:17, 1:06:21-1:09:24).

The musical motifs intertwined in the plot of *Spirit* reflect deeper connections to emotions by representing specific themes. The tone in which a specific motif is played represents the emotion behind the correlating theme in a specific situation. The most prevalent theme in the movie is freedom, represented by the melody in the motif found in the main title track, "Homeland." This song consists primarily of strong brass and a steady bass line of string instruments that creates a powerful, forward moving melody that amplifies the feeling of freedom because it is played only in scenes when Spirit feels at home. For example, "Homeland" is the opening song, which plays in the background when Spirit is running with his herd in the western plains. This motif emphasizes that freedom is synonymous with home to Spirit because he is most free when he is at home with ones he loves. The song also has a constant bass line that plays long and strong chords that emulate an everlasting power, signifying that the horse's spirit is undying in the pursuit of freedom.

Another motif played throughout the movie is titled "Nothing I Have Ever Known" and represents the love between Spirit and Rain. The melody played in this song consists of four repeated notes, emphasizing the simple relationship of love between animals. The motif is played several times over the development of their love story, but it varies in instrumentation and tone each time it is played to differentiate the emotions within the romantic theme. For example, it is played first when the horses are roped together when they first meet and they are both being stubborn about which way to travel. The melody in this scene is played with violins in a tango-like fashion to display a back-and-forth dance between the playing-hard-to-get horses, creating an undertone of romantic tension. Later, however, the melody is played with a heavy brass ensemble, when Spirit is trying to save Rain from drowning in the river (48:50-50:08). The powerful brass emphasizes the intensity of their love and Spirit's willingness to sacrifice himself to save her. This version of "Nothing I Have Ever Known" displays how the love story has grown from the horses feeling infatuation to recognizing each other as family, one of Spirit's strongest values.

Furthermore, the theme of brotherhood is portrayed by the motif in the melody, "Brothers Under the Sun." The motif is played whenever Spirit and Little Creek are working together to fight for their freedom. The majority of times this melody plays, the main instruments used are the Native American flute and the keyboard. They harmonize together to form a beautiful melody that would be incomplete without the other. In the same way the flute and keyboard play together, Spirit and Little Creek need each other on multiple occasions to escape the cavalry. For example, this melody plays when Little Creek takes off Spirit's reigns after they escape from the training camp (35:56-36:04) and again when they escape the train accident (1:03:53-1:04:19). The camaraderie of the Spirit and Little Creek is reflected in the music as the Native American flute represented Little Creek and the keyboard represents Spirit. Through this relationship, Spirit's love stretches not just beyond his herd but beyond his species and "Brothers Under the Sun" emphasizes that respect.

Hans Zimmer's original score for *Spirit: Stallion of the Cimarron* plays a vital role in the story, representing the thoughts and emotions of the horse and indicating important themes through repeating motifs. The music makes up for lack of dialogue that has been left out in order to convey more realistic emotions. It also reflects themes deeper than the surface of the plot by repeating

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motifs throughout the movie and changing the tone and instrumentation to correlate different emotions with those themes. In this way, Hans Zimmer translates the thoughts and emotions of a horse in order to make a connection with human emotion and experience.

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Ethos, Pathos, and Logos in a Leader

by Megan DalSanto

(English 2820)

Leadership is not always glorious and successful. Rather than having one concrete definition, it is a combination of many actions and qualities, including focus, inspiration, discipline, communication, and friendship. There are different types of leadership ranging from being responsible for a division in the military, to managing a small company or restaurant, to leading a child by the hand across a street. However we commonly measure leaders by success and task completion. A leader must first win over the trust of those following them and be consistent with that trust. Examples from a whaling novel, a history article, and a memoir show how leaders can use ethos, pathos, and logos appeals to gain trust and be effective in accomplishing goals, and also show the negative results of not doing so.

Aristotle's three principles for persuasion each have a specific definition. First, ethos is credibility of the leader earned from respect or having a position of authority. Author Tamar Mshvenieradze states in the article "Logos, Ethos, and Pathos in Political Discourse" that "we tend to believe people whom we respect, someone who is likable and worthy [of respect]. Ethos is composed of correct attitudes, respect, favor, and which is very important, ethics" (Mshvenieradze 84). By having ethos and good character, a leader will find it easier to gain attention and approval of listeners. Second, pathos focuses on audience members. Mshvenieradze defines pathos as "the power with which the speaker's message moves the audience to his or her desirable emotional action" (Mshvenieradze 84). A leader needs emotion and energy in their speech and body language. Emotion is a natural instinct and targeting it increases the chances that listeners will be moved to action on a battlefield, in a vote, or whatever the persuasive circumstance is. Finally there is logos, which Mshvenieradze states is "persuading by the use of reasoning which includes critical cognition, analytical skills, good memory, and purposeful behavior, which is the most important argumentation" (Mshvenieradze 84). When asked to do something, a person will want to know *why* before doing it. Leaders who explain tactics, use facts, and communicate openly about what is being done will quickly earn trust and respect, two qualities mentioned earlier when talking about ethos. These three appeals are all necessary for leaders who are looking to persuade and unite a group of individuals.

Beginning with an example of good leadership, Captain Ahab from *Moby Dick* showed his ethos, pathos, and logos in Chapter 36, "The Quarter Deck". His authority comes from being the captain of the vessel and being liked by his crew. In the beginning of the chapter, Ahab summons the entire crew "aft". He speaks to them enthusiastically about his plan to hunt the white whale, and he holds their attention for quite some time. Later, Starbuck, Stubb, and Flask, three officers onboard the boat, "quailed before his strong, sustained, and mystic aspect" (Melville 9). This description of Ahab shows who he is as a character, which is a strong man, and it confirms his ethos. He also displays pathos. "More and more strangely and fiercely glad and approving, grew the countenance of the old man at every shout; while the mariners began to gaze curiously at each other, as if marvelling how it was that they themselves became so excited at such seemingly purposeless questions" (Melville 3). This quote shows the building excitement and curiosity of the crew as Ahab spoke. His crew felt something inside in their hearts and it motivated them to join Ahab in finding Moby Dick. Ahab calls to his crew's bravery, testing to see if they will be cowards or step up to the challenge. No man wants to be seen as a coward, so this is effective in stirring up emotions. Finally, Ahab uses pathos when he appeals to the defeat of the enemy, a classic goal amongst armies, teams, and other

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groups. Who would not be excited to defeat the enemy! Ahab is a smart leader to have ethos and use pathos, but he also uses logos to address his crew. He explains that hunting Moby Dick is worthwhile because "my vengeance will fetch a great premium here!" (Melville 6). The white whale is so large that killing it will earn money in the market. They are whalers, so his logic aligns with their overall goal. When questioned why Ahab wants to find Moby Dick so badly, Ahab gives an analogy. "How can the prisoner reach outside except by thrusting through the wall? To me, the white whale is that wall, shoved near to me" (Melville 6). The whale dominates Ahab's thoughts, closing in on him like four walls. He must find him and exact revenge, and he explains it as a universal challenge to his men. Whaling takes teamwork and Ahab will only kill Moby Dick with his men's help. After all, it is their profession and they should be able to handle it, so Ahab's logic is correct, even if this seems like a personal undertaking.

Next is a leadership example from a memoir. One very well-known president and general is Ulysses S. Grant. His leadership came on a grander and truer scale than Ahab's, who was fictional. Grant is a well-known war hero, commanding the Union Army to victory during the Civil War. He went to West Point, was a personally honest man, and had a family and four children. His ethos and credibility were established over time as he succeeded as a leader. John Eggers, Ph.D., wrote in the article "Credibility, Commitment and Dialogue: Cornerstones of Leadership" that "One must demonstrate values that prospective followers admire and which motivate them to trust the leader. Because they are being asked to undertake a difficult journey, followers need to believe that the leader is the sort of person who is honest, forward-looking, inspiring, and competent" (Eggers 84). General Grant was just that. His simple qualities of common sense, decision making, self-control, and confidence made him likeable and easy to trust. Soldiers wanted to hear what he had to say. The book *Leadership Lessons from General Ulysses S. Grant* by Al Kaltman provides examples of his pathos and logos. He used pathos to muster up superior performances from ordinary citizen soldiers. He was considerate and fair to soldiers as well as someone who acted ethically, two lessons learned from Kaltman's book. "A pragmatist who learned from his own and others' successes and failures, he brought new dimensions to strategic planning" (Kaltman XI). Grant's logos came from learning from others' mistakes and applying what he learned to his orders to his men. He was well known for his planning and setting of priorities, which no doubt made his men feel more comfortable, although they were at war. Clearly defined goals and explanations from a leader make great logos when addressing soldiers.

Captain Ahab and General Grant are two examples of good leadership by using ethos, pathos, and logos in persuading their crew and troops. However, not everyone is as successful. Isaiah Stillman was quickly named a general in the Illinois militia in 1832. In Scott Dyar's essay "Stillman's Run", he comments on how "this rapid advancement was not uncommon in the militia systems in Jacksonian America, and had more to do with a person's social position and oratory than an understanding of military tactics or leadership qualities" (Dyar 2). Major Stillman was not appointed for great leadership qualities, which makes his ethos questionable. He had not built up respect with his troops and could not provide inspiration for why they should listen to him. This led to many problems. He also lacked pathos, because "the whereabouts of Major Stillman during this critical moment are still very much a mystery" (Dyar 5). He was not with his troops to muster them up! They felt many emotions and concerns of being leaderless which went unanswered. He lacked logos, too. His soldiers had no facts or knowledge on what they were doing. "275 untrained men who had no proper interpreter and little formal military discipline… some were intoxicated, and all were eager to get into action against the Indians" (Dyar 4). His troops wanted to fight some Indians. They had no goals, no orders, and what happened was chaos. The white-flag bearing Indians were disregarded, chased after by some of Stillman's men, who then turned around and rode for their lives in the opposite direction when the Indians came back, and finally his men were embarrassed as they scurried across Old Man's Creek. These events show the lack of leadership from Major Stillman.

"Stillman's Run stands as a textbook example of why training, discipline, and good leadership are all essential to a unit in the field" (Dyar 6). Stillman's unit definitely lacked those aspects and failed in a battle situation. For the short time that Major Stillman was around he was a poor leader compared to General Grant or Captain Ahab.

After looking at two good examples and one bad example of how a leader can use ethos, pathos, and logos to persuade, it is obvious that everyone benefits from a respected, passionate, and logical leader. Ahab favored heavily on pathos and evoking emotion in his crew, but still had logos in explaining why he wanted to chase Moby Dick, and had ethos as a respected captain. General Grant established ethos early on as a man and his pathos and logos came naturally with it. Major Stillman's ethos was farfetched. Instead of working on building it up and training his men, he chose to become unreliable and therefore failed in pathos, logos, and overall leadership. One mode of persuasion is not enough to gain the favor and following that a leader seeks. They need to appeal to their listeners using some ethos, some logos, and also pathos to be successful. A common theme from all three texts is being a leader takes commitment. Yet, when a leader puts forth that effort, others will be able to trust them, resulting in teamwork and a successful mission.

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Lovely Weather for A Wedding
Marriage in Shakespeare Plays

by Nicole Dominguez

(English 2228)

In nearly all of Shakespeare's plays, there is a marriage. Whether it's the presence of a married couple or two people who will be wed, it is a common theme in his works, especially in his comedies. Yet, the playwright adopts individualized approaches to each of the marriages in *As You Like It*, *Midsummer Night's Dream*, and *Hamlet*, highlighting defining points of the characters, while revealing his own understanding of the concept.

Marriage is as a central theme that propels the action in most of Shakespeare's comedies. In terms of *Midsummer Night's Dream* the action is propelled by the *avoidance* of a marriage. Hermia is denied the right to marry the one she loves by her father, Egeus, and Theseus, the Duke of Athens, resulting in Hermia and her lover, Lysander, running away, with Helena and Demetrius following, creating chaos. The subplot of the play is also driven by this, with Oberon and Titania's tumultuous marriage, spurring Oberon to meddle with the couples, and tricking Titania to fall in love with Bottom. Without the presence of marriage, either through conflict within it or through its avoidance, the plot of the play would not exist. In terms of the play *As You Like it,* the plot is not driven by a marriage or the need for a wedding, but the central and minor conflicts are all rectified by the marriage of the opposing characters.

As an example, Oliver and Orlando in *As You Like It* give proof of their reconciliation by both getting married, along with Phoebe and Silvius, and Touchstone and Audrey. In the same way, the conflict in *Midsummer Night's Dream* is resolved with the triple wedding of Hermia and Lysander, Helena and Demetrius, and Theseus and Hippolyta, and with Oberon and Titania making amends. Through how it's represented in its comedies, Shakespeare sees marriage as a tool for healing and the promise of a brighter future.

In contrast, just as he uses marriage as resolution in his comedies, Shakespeare presents marriage as the catalyst for conflict in his tragedies (Hopkins). A prime example of this is in *Hamlet.* Following the death of Hamlet's father, and his removal from the line of succession, the marriage of his mother Gertrude to his uncle Claudius is Hamlet's breaking point, arguably the final act that sends him spiralling into madness. In Act 3 Scene 4, Hamlet condemns his mother for her hasty marriage, saying: "Such an act|That blurs the grace and blush of modesty,| Calls virtue hypocrite, takes off the rose| From the fair forehead of an innocent love| And sets a blister there, makes marriage vows| As false as dicers' oaths" (OpenSourceShakespeare.org). In this speech Hamlet accuses his mother of violating the sanctity of marriage, and love itself, by marrying so quickly after the death of her husband, not only to her brother in law, but to the man Hamlet suspects murdered his father. In his comedies, Shakespeare uses marriage as an easy, even flippant, means to resolve conflict and arguably sees it as a disposable remedy without depth or meaning. On the surface, Shakespeare's tragedies use marriage as a means of political or emotional manipulation such as in *Hamlet* and *Macbeth,* but through dialogue like Hamlet's speech above, we see the playwright cautioning the audience against violating the sanctity of marriage.

Shakespeare reveals the complexity of his opinions on marriage, not only through the action, but through the characters themselves. The reasons for Gertrude's second marriage is left up to interpretation: She could have married Claudius out of fear of being a widow, out of lust, or out of a

desire to maintaining her title of Queen, either way, Gertrude married by choice. She later acknowledges that "I doubt it is no other but the main:| His father's death and our o'erhasty marriage." (Act 2 Scene 2). Gertrude knows her decision to marry was the final straw for Hamlet, thus causing his madness. Though this choice is hardly the main point of the play, the effects of it have impact on a major theme: Hamlet's supposed insanity. Were Gertrude forced into marriage by Claudius, she would have admitted it in the famous "closet scene" giving Hamlet, and the audience, greater insight, perhaps even allowing Gertrude forgiveness for the marriage; however, the text gives no indication that her marriage was anything but a conscious choice, doubling Hamlet's feelings of betrayal. Queen Gertrude's decision provides repercussions that expose Hamlet's character, and propel the plot.

The concept of the female character choosing a husband based on love is more positively represented in Shakespeare's comedies. Arranged marriage is a common sub-theme within Shakespearian plays, with the parents of the female characters trying to persuade their daughters to marry a particular man; yet, these female characters rarely wed the man chosen for them. In terms of *Midsummer Night's Dream*, Egeus tries to push Hermia into marrying Demetrius, in an attempt to take her away from her lover Lysander, however Hermia refuses, saying "So will I grow, so live, so die, my lord, | Ere I will my virgin patent up |Unto his lordship, whose unwished yoke | My soul consents not to give sovereignty." (Act 1 Scene 1). In the end, Hermia marries the man she loves, defying her father's expectations and her role as a "form in wax | By him imprinted and within his power |To leave the figure or disfigure..." (Act 1 Scene 1). Because of the high expectations of parents and society, Hermia and Lysander's, as well as Demetrius and Helena's, choice to marry out of love and not arrangement is perceived as defiance.

In contrast, Rosalind and Orlando's courtship and marriage is seen as a pleasant event which provides romance and entertainment. Rosalind and Orlando's choice to marry one another does not cause the same reaction of defiance because of the lack of expectations placed on them. Due to their high positions in the royal court, it would be expected that they would be promised in marriage to people of equal or similar birth, however no such arrangements are indicated in the text, allowing relationships to be made without the restriction of parental or societal expectation. Because of this, Rosalind and Orlando's wedlock exalts marriage of love, not as a declaration of independence, but the happy result of a humorous (if unconventional) courtship. *As You Like It* has many subplots that are focused on a couple's walk towards marriage, such as Touchstone and Audrey, and Phebe and Silvius, each of which showing unique perceptions of marriage. Ironically, it is the male characters in these subplots that are eager for marriage, with Touchstone saying in Act 3 Scene 3 "... as a wall'd town is more worthier than a village, so| is the forehead of a married man more honourable than the bare |brow of a bachelor", presenting marriage, through comical exaggeration, as a privilege. In the end, the couples all marry through choice and dramatic love: "To you I give myself, for I am yours" (Act 5, Scene 4).

For every marriage there is a courtship. As with most of his comedies, Shakespeare revolves the plot of *As You Like It* around the bazaar courtships of Touchstone and Audrey, Phebe and Silvius, and most importantly, Rosalind and Orlando. With the dramatic readings and songs the characters themselves mock, Silvius' exalted ideas of marriage, exaggerated descriptions of one's lover, and Rosalind's condemnation of artificiality, the play acts as a parody to the extreme drama of chivalry and romanticism, breaking the fourth wall through its blatant address of courtly love.

Courtly love saw its height during the Middle Ages when it originated through troubadours of Provence, creating the idea of a "love service" of the knights of the crusade. The idea was "the expression of the knightly worship of a refining ideal embodied in the person of the beloved." (Brooklyn College), such expressions were done under elaborate sets of rules and codes that regarded acts of chivalry, grand gestures of romance, and upholding moral dignity. By the time it reached England, the idea of courtly love had circulated through Europe, becoming more and more

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gentrified in its representation providing "a refined and elevated language with which to describe the phenomenology of love" (Brooklyn College). When the Renaissance was born, courtly love was still used as the main language of romantic love, however now the elaborate expressions of love and chivalry had begun to become an ideal of a bygone era. As much as Shakespeare satirizes it in *As You Like It*, his representation of courtly love in *Midsummer Night's Dream* is much more respectful, if mildly playful, of the theme, pairing the common presence of faeries and magic in medieval literature, with courtly love to create an enchanted atmosphere. "No serious issue mars the comic atmosphere as we see the humorous side of love in. [this] play" (Cherry). In *Hamlet*, the courtship of Gertrude and Claudius is never mentioned or even referred to, further highlighting the unconventionality of their marriage and perhaps even implying that the lack of a necessary courtship is a major component in its suspicious dysfunctionality. Shakespeare presents that after every courtship is a happy marriage, and the lack of the proper use of courtly love foreshadows tragedy and darker secrets.

Shakespeare is enigmatic at best and self-contradictory at worst in his representations of marriage. Yet under close observation, we see that perhaps his presentation of it is closer to life than we think. Just as the stability of the marriage is dependent on the people within it, so his characters and the atmosphere of their world dictate the state of the marriage. Shakespeare's representations, enigmatic though they seem, do have a common thread. Despite his custom of using marriage as comedic closure, he represents it as an institution for healing and reconciliation. Even within the toxic confines of a tragic marriage, Shakespeare uses that dysfunction as an example of what happens when the sanctity of marriage is violated and the importance of courtship is disregarded.

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The Drone: The Impact on Civil and Criminal Concern

by Ross Failla

(English 1102)

By definition the "drone" is an unmanned aircraft or ship guided by remote control or onboard computers (*Merriam-Webster*). A defining feature in war is the ability to make remote killings and targeted strikes on enemies, and in the modern area, the use of drones has provided the U.S. military with that ability. With modern technology and the ever-growing need for specialized warfare, drones have the ability to conduct surveillance, provide facial recognition, read license plates, and launch missiles from hundreds or thousands of miles away. In the 21st century, drones have progressed from military use to the law enforcement community; they are now readily available to citizens and hobbyists. The citizen drone has features similar to those of military or law enforcement drones, in that they can travel far distances while taking still or video images. The abilities of these machines raises both ethical and legal concerns.

Drones date back to as early as World War I, when they were intended to be used for aerial surveillance (Aquino-Segarra, 2016, p. 336). It wasn't until World War II that remote-controlled B-24s were used in bombing missions. In the Vietnam War, United States Armed Forces had remote-controlled drones with still cameras that were used for surveillance (Aquino-Segarra, 2016, p. 336f.) In the mid-90s, a video camera was added to these drones, and this started the rapid evolution of their development into modern day.

The current domestic use of drones by police and civilians has raised public concern in both privacy issues and government overreach. Drone use among law enforcement agencies include, but are not limited to, conducting surveillance, surveying traffic or road conditions, searching for missing persons, or tracking criminals. With this advanced technology, legislative review has become a priority among states to enact laws and regulations to govern police use with drones, to prevent privacy violations and Fourth Amendment violations of citizens.[1]

Currently, drone use is only regulated by the Federal Aviation Administration (FAA) (Aquino-Segarra, 2016, p. 335).[2] The concern is that the federal regulation only addresses the "safety" portion of the law, which only describes how and where people can safely operate drones. It does not necessarily address privacy issues or police misuse. For this reason, it has been the responsibility of each respective state to enact its own laws governing the use of drones by police.

Joseph J. Vacek, J.D., wrote an article in 2014 titled "Remote Sensing of Private Data by Drones Is Mostly Unregulated: Reasonable Expectations of Privacy Are at Risk Absent Comprehensive Federal Legislation," that addresses tort law and tort liability associated with drones.[3] Joseph Vacek is a tenured associate professor at the University of North Dakota School of Aerospace Sciences. He specializes in various topics including space law and Fourth Amendment search and seizure law.

Vacek's article focuses on the laws regulating remote sensing of data under tort laws from which the general right of privacy is developed. He identifies three areas of tort law relating to drone use: tort of nuisance, trespass, and invasion of privacy (Vacek, 2014, p. 466). Nuisance refers to questions of whether people should be compensated for not only personal injuries, but also injuries to a person's property. The law of nuisance has developed the idea of zoning when referring to property. As it relates to drones invading personal property, it may give way to litigation to the drone operator. The second class of tort is trespass, which is much more clearly defined as "wrongful interference with another's possessory rights in real property" (Vacek, 2014, p. 468f.) In addition,

possessory rights of property also extend upwards in air space and air rights of the land owner. The flying of drones may potentially unlawfully trespass on people's personal property, or air space, which could lead to litigation. The third tort Vacek acknowledges is invasion of privacy, which refers to a civil tort action of "intrusion upon seclusion." A *Harvard Law Review* article in 1890 foreshadowed that technology would develop faster than the law.[4] This is a classic example of how technology has progressed before any concrete laws have been established. The Harvard article concluded that, at the time of the article, the federal and state laws have provided only limited protection to people based on their protection under the Fourth Amendment and civil tort laws.

To further expand on civil tort law and liability of drone operations by civilian and hobbyists, Benjamin D. Mathews, J.D., discusses these issues in an article called "Potential Tort Liability for Personal Use of Drone Aircraft." The article was published in 2015, and at the time, Mathews was a staff writer for the *St. Mary's Law Journal,* and as a staff writer was responsible for conducting extensive legal research and citation-checking of articles in preparation for publication.

Mathews' article addresses potential tort liability associated with the private use of drone aircrafts. In short, it presents issues that arise when the rights of one private individual to own and fly a drone conflict with another private individual's right to be safe from trespass and invasion of privacy. Similar to the above article, Mathews agrees on three main topics of civil tort for the private citizen: nuisance, trespass, and invasion of privacy.

A new concept that is addressed is "strict liability" to private citizens when operating drones. Strict liability means, "the exercise of due care does not absolve the actor of accountability" (Mathews, 2015, p. 597). Strict liability cases are used in activities that the courts have deemed as abnormally dangerous activities. Blasting, releasing poisonous gas, and storing explosives have all been classified as activities that are abnormally dangerous (Mathews, 2015, p. 597). Courts will need to interpret drone use and see if it falls in the scope of abnormally dangerous activities, in the event for example an operator crashes a drone into private property or a person, resulting in injury or damage. This means, even if the operator used their best due care and best intentions not to crash a drone onto their land or person, engaging in an act that may be classified as abnormally dangerous may still hold the operator liable to litigation.

Mathews concludes that the law is least equipped to address private use of drones and trespass to property. He points out that in previous times people's ability to spy on their neighbor was limited. To spy on a neighbor who is sunbathing, one would have to peek over the fence. Now with drones one has have the ability to fly over someone's yard with a machine that is capable of capturing imagines in high definition quality, and zoom in further than the naked eye. Legislators will have to decide the height at which these drones can be operated at, proximity to private land, and time of day, to name of few.

In addition to the personal liability among private citizen use, another crucial matter is the use of drones by police. Michael L. Smith J.D., discusses the drone use among law enforcement in a 2015 article titled, "Regulating Law Enforcement's Use of Drones: The Need for State Legislation," which was published in the *Harvard Journal on Legislation*. Smith is a J.D. graduate from UCLA School of Law and is currently an associate at the Los Angeles office of Lewis Brisbois. An interesting statistic the article points out is that the FAA projects that 30,000 private drones may be flying in the United States airspace by the year 2020 (Smith, 2015, p. 423f.) To put that in perspective, a 2014 statistic said the United States had 7,064 commercial planes in inventory (*Aeroweb*). Although that number of 30,000 is high, it should be noted that not all drones are the size of commercial aircrafts. Many of them can be the size of a human palm, or an arm's length.

Smith's article is twofold: its calls attention to those states that have passed regulations of drones, and compares the differences between those regulations. For purposes of this paper, I will focus on Illinois law and regulations. At the time Smith's article was published in 2015, only thirteen states had successfully passed legislation regulating government drone use, Illinois being one of

them. Police practice is modeled around the Fourth Amendment, which in short, states that people have the right to be secure in their persons, houses, papers and effects without unreasonable searches by the government without warrant. Smith breaks down the thirteen states' drone laws into three broad categories: those that allow broad judicial exceptions to warrant requirement; those that explicitly provide statutory exceptions; and those that contain moratoriums on government drone use (Smith, 2015, p. 427).

Illinois falls under Smith's category of states that have explicit statutory exceptions to the warrant restriction. This means that Illinois has a law spelling out that police shall obtain a warrant prior to its use; however, it has some clear exceptions allowing police to use a drone without first obtaining a warrant.[5] Some of those exceptions in the Illinois law state that a warrantless search by drones may be used to locate missing persons, survey a crime scene, or survey a traffic collision (Smith, 2015, p. 430). In addition, warrantless searches of drones may be used to counter a terrorist attack from which credible information was obtained or during a natural disaster to public health.

Smith concludes that states that have yet to enact laws regarding police drone use must update their laws, and current states that have enacted laws must closely monitor them for updates as technology expands.

Orlando Aquino-Segarra investigates further, similar ideas of drone use by the police in a 2016 article titled "Drones: The Need for More Regulations." Aquino-Segarra is a third-year law school student at Pontifical Catholic University of Puerto Rico, School of Law. As mentioned previously, the FAA is in charge of enacting all drone regulations at the federal level. Aquino-Segarra agrees with other findings, that the FAA regulation is only to promote air safety and is not to speak upon the privacy and government overreach issues. Currently, twenty states have passed laws relating to drone use by police (Aquino-Segarra, 2016, p. 342). Several other states have considered legislation involving drone laws, but have yet to enact them.

Aquino-Segarra points out two different ideas of drone laws with the police. First, the technology impact on privacy, and second, safety concerns involving crashes. He suggests that with technology advancing, these drones now are able to be equipped with night vision cameras, thermal imaging cameras, or GPS tracking. Typically, what can be seen by the naked eye in a public setting does not constitute a search by police; however, when using sensitive technology such as thermal imaging or night vision, drones may go beyond the scope of what the human eye could naturally see. Most state laws, thus far, do not have a clear outline addressing drones equipped with such sensitive technology. Aquino-Segarra then points out the safety concern of flying an unmanned aircraft. In 2014, there were reportedly 238 interactions with drones and pilots, and 780 through August of 2015 (Aquino-Segarra, 2016, p. 3350). It is suggested that if vehicles are required to have license plates and insurance, perhaps drones should as well.

As the articles discussed above indicate, it is clear that drones have developed many concerns in both the private citizen and governmental use. The research suggests that states need not only to enact laws governing their use, but also to closely monitor them as the rapid change in technology further advances these machines' abilities.

Notes

1. The Fourth Amendment of the Constitution reads: "The right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized."

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2. For hobbyist or civilian, the FAA states that the owner should be 13 years or older, the drone must weigh more than 0.55 pounds and fewer than 55 pounds, fly below 400 feet and remain clear of surrounding obstacles, keep the aircraft within visual line of sight at all times, and remain well clear of manned aircraft operations and cannot not operate the device carelessly or reckless.
3. Tort laws are civil theories generally referring to civil conduct. They are simply used in civil lawsuits or litigation, where one person sues another for money.
4. The article was written by a Louis D. Brandeis and Samuel V. Warren who both addressed privacy issues long before the Supreme Court had addressed them. It is said to be a defining piece of work in law history, which defined the word privacy in many aspects and which protected individuals from intrusion by others. It can be found in the *Harvard Law Review* December of 1890, Vol. 4 Issue 5, pp. 193-220.
5. See Illinois Compiled Statute Chapter 725 ILCS 167/1, "Freedom from Drone Surveillance Act," for further and complete description of Illinois State Law regarding police drone use.

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Unsocial Media

by Bill Gill

(English 1101)

From the advent of agriculture to the scientific and industrial revolutions, inventions were few and far between but each invention was needed and practical; in other words, they were good things. Inventions like Alexander Graham Bell's telephone or Thomas Edison's light bulb made life better and easier for millions of people. Fast forward to today and we are drowning in technology. Maps have turned into GPS units. The record player, the telephone, and the television have slowly morphed into the iPhone. Virtually anything can be digitized in today's modern world. Even something as human as socializing is currently undergoing the process of being digitized through social media.

Many, including the author of "Social Networking, Social Good," Rebecca Thompson, claim that overall, the invention of social media was a good thing because it provides many services including offering "comfort" to those cannot find it in their real lives, eradicating the "distance between far flung friends," and contributing "to the creation of new knowledge" (254). However, despite the potential for these positive events to happen, overall, social media is more detrimental than beneficial because it encourages egocentrism, is taking place of actual real human conversations and interaction, and, most importantly of all, is a hotbed for clickbait articles.

Social media websites feed on narcissism. Twitter encourages users to share every thought or feeling they have, making them feel important or special. Facebook's timeline system operates in a way so that users will only see things they like most of the time. A 2012 study from Western Illinois University found that most narcissists are attracted to the amassing friends aspect of Facebook (Parker-Pope 16). The more recent Instagram, a social media company owned by Facebook, now provides a service solely based on users posting pictures, usually of themselves, for other people to like them and comment below. All of these aspects of social media are creating a false image that everything in the small world of the user is acceptable and most people care about the user, when that often could not be further from the truth. The most recent social media company that feeds on narcissism is Snapchat. In defense of the app, journalist Joel Stein claims in his 2017 *Time* magazine article, "What's It Worth to be Yourself Online? The Genius of Snapchat" that "Snapchat is the only [real] social media company" (32) because it focuses on the private interactions between friends, accompanied by pictures that can only be viewed for up to ten seconds before disappearing forever. He even refers to Snapchat as "a utility company for visual texting" (28). However, one aspect of the app Snapchat, called stories, requires the user to post a video or picture that any person added to a friend's list can see. But if Snapchat is just "visual texting" (Stein 28), a very private act, then what is the purpose of having a feature that operates exclusively in the public?

Most millennials (including myself) love music and attend concerts. The last time I went to a concert was when I saw Tame Impala at the University of Illinois at Chicago in the summer of 2016. As I stood there next to my friend Saul, basking in the sounds of Kevin Parker's psychedelic rock tunes and the overwhelming smell of illegal substances, I noticed that many members of the audience were standing with their phones in the air, making sure to film the entire concert and put it on their Snapchat story for all to see. I watched Saul do it. As much as I hate to admit it, even I committed this wicked sin. Were we recording it to save for later? Probably not. Was it to give our friends some insight to their experiences? Probably not (our real friends were probably next to us at the concert).

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So why then? The only answer left is we did it to show off, to say with pictures and videos that we got to go to this concert and others did not. In short, to enlarge our (probably already oversized) egos.

Stories are not the only aspect of Snapchat that feed off narcissism. Evan Spiegel, co-founder and CEO of Snapchat claimed in a 2013 interview "we're trying to create a place that is cognizant of that [the illusion of perfection created by other social media sites], where you can be in sweatpants, sitting eating cereal on a Friday night and that's O.K" (Stein 30). So if the goal of Snapchat is to show the reality, to be the countermovement to sites like Facebook that show only the ideal version of the user, why do filters exist? One of the more popular filters is the dog filter, which basically gives the person in the photo a cute dog nose accompanied by an even cuter pair of dog ears. It cannot be a coincidence that a filter that covers the nose and has a tongue that stretches to cover the chin, two parts of the face many feel self-conscious about, is one of the most popular filters on Snapchat. Other filters distort other areas of the face and some, such as the 'Butterfly Princess' filter, make the user appear more beautiful and almost angelic. These filters, much like the catalog of perfect photos of a "vacation in Maui" (Stein 30) on Facebook, only serve to further imbed a false image of beauty, and thus, further enlarge the ego of the user.

Social media may get rid of "the distance between far-flung friends" (Thompson 254), but it also creates vast chasms between people who are in the same neighborhood, same class in school, or even right next to each other. I am currently a college student at my local community college. Since I have been in college, instead of talking to the people around me and building relationships, I spend most of my time with my nose buried deep in my phone, focused on Twitter or Instagram memes (internet jokes that go viral), especially when I have time to kill during classes. I also make sure to bring my headphones in order to bury any outside noise with the smooth sound of music, probably Lou Reed of the Velvet Underground belching lyrics about his quests to find heroin on the bustling streets of New York City. But, even if I do want to talk, I look up from my phone and see fifteen other faces buried in their screens. I swear sometimes it feels like I am surrounded by zombies, deathly afraid to look away from their phone screen in case they miss a second of whatever is happening anywhere but here. They are physically present but their consciousness is at Coachella, their eyes locked in on their surgically prepared celebrity hero, their pupils as wide dinner plates, their heart pumping like a punk rock drum beat as they begin to scream "Oh my god! It's Kylie!"

But my generation, those born in the late 90's (I was born in 1998), has only been exposed to social media for a short period of time; social media was not around during the early to mid 2000's, our peak years of childhood socialization. The next generation's social tendencies may prefer texting to talking, liking to compliments, and Facebook friends to real friends, and the distance online interaction provides because socializing is easier that way. Conversations have awkward pauses in them; they require thinking in the moment, and dealing with whatever judgments other people might have. Being a person is hard. Being a wall of text is easy.

Social media websites, especially Facebook, are hotbeds for clickbait articles. Clickbait travels on Facebook by sharing. Sometimes a user's friend will share an article with an enticing but meaningless headline such as "Which Disney Character Are You?" ("*Which*") or "6 Terrible Games Released in 2016 That Were Supposed to be Amazing" (Lyles). The user will click on the article, read whatever useless information it contains, and move on. Facebook will then assume the user liked the content of the article and show the user more of it. The point of clickbait (besides entertainment) is, according to Anna Escher and Anthony Ha of Techcrunch.com, to bring in "page views. Most sites use traffic numbers like page views or unique visitors to bill advertisers and measure their general success" (screen 2). The point of a clickbait article is to draw readers in with a catchy headline and then bombard them with ads. Companies (or scams) will then buy up those ad spots like cheap stock in order to increase their visibility as a product. For the content, just hire some young, aspiring author fresh out of some state university somewhere that can write inoffensive and

broad content, such as listicles, in order to retain readers and keep them coming back, thereby accumulating those precious page views.

This clickbait problem would be absolutely fine if it existed in a vacuum, but clickbait is all but destroying newspaper companies and professional, reliable journalism. "Increasingly, content isn't created by journalists once employed by legacy media. It comes from freelancers, citizen journalists, bloggers, and vloggers. Freelancers are being hired while experienced, older journalists are laid off" (screen 2) claims Jeffrey Dvorkin, a professor of journalism at the University of Toronto, in a 2016 article for PBS. Afraid for their job security, many journalists turn to writing clickbait articles that play it safe and attract views. In "Why Click-Bait Will Be the Death of Journalism," Dvorkin concludes that "one of the best qualities in the journalistic culture is skepticism. But when it comes to digital, skepticism has been replaced with unquestioning enthusiasm" (screen 4). Mindless amusement makes money, asking questions does not; in other words, clickbait makes money, real journalism does not. This trend towards entertainment and clickbait over real journalism is detrimental because it deprives the public of real and pertinent news that they may not want, but they need. For all its benefits social media is cancerous in that its narcissism can metastasize, making it harder for people to actually talk to one another, creating an expressway where misinformation can commute.

I hate social media and yet, I still use it every day. I criticize the zombies around me, but like them, I am caught in the vice of social media. And, eventually, we zombies will take over. According to Nielsen, Snapchat "is used by roughly half of 18-to-34-year-olds" and "those who use it daily open the app 18 times a day for a total of nearly 30 minutes" (Stein 28). Social media apps, such as Snapchat, can be more addicting than heroin. I would wager there are more brain cells left in Keith Richards' brain than there are teens without Twitter accounts. Good, bad, or evil, social media is like a Japanese bullet train that cannot be stopped and something we will all have to deal with in the post millennium world, whether we like it or not.

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What is the Value of Creative Works of Art to a Society?

by Ashley Gonzalez

(Philosophy 1100)

Van Gogh. Monet. Beethoven. Shakespeare. Art has left an imprint throughout the history of society. Just as art inhabits many forms, so does the essence of creativity inhabit any number of us. Some may resonate more with theatre, film, literature, visual arts, or lyrical voices and a steady beat, while others still appreciate art as a canvas on a museum wall. Yet the most defining attribute of art is its ability to unite people across the spectrum of humanity. Above anything, art is significant to society in that it serves to fulfill our sense of beauty and wonder about the world, and provides an outlet for creative expression and documentation of history.

Too often art might be hastily generalized as something experienced only with the senses. After all, the first ideas that may come to be associated as art are drawings and visual works. In order to understand why creative arts are important to society, one must understand in depth what art is. According to the *Stanford Encyclopedia of Philosophy*, art can be described in a group of overlapping terms such as:

> (1) possessing positive aesthetic properties; (2) being expressive of emotion; (3) being intellectually challenging; (4) being formally complex and coherent; (5) having the capacity to convey complex meanings; (6) exhibiting an individual point of view; (7) being original; (8) being an artifact or performance which is the product of a high degree of skill; (9) belonging to an established artistic form; (10) being the product of an intention to make a work of art.

Still others refuse to define art at all because they believe that any description would set up a barrier of what art can and cannot be. For the purpose of clarity, art will be defined in the terms recited above, in forms that include, but is not limited to: visual arts; performing arts such as drama and dance; music, literature, architecture, sculpting, film, photography, fashion, and graphic design.

One of the primary reasons that creative arts are valued in society is for the sake of beauty. Aesthetics is the branch of philosophy involved with the nature of art and the judgments of beauty. Just as debate lingers over the exact definition of art, the same can be applied to the definition of beauty. Some might believe the pursuit of it to be a materialistic, selfish concept – however, the opposite is true. In *Beauty: A Very Short Introduction* by Roger Scruton, the concept of beauty is traced back to Plato. He believed that beauty was an ultimate value, "something that we pursue for its own sake, and for the pursuit of which no further reason need be given" (2). Beauty, Plato affirmed, was held on par with truth and goodness, "ultimate values which justify our rational inclinations" (2). In simpler terms, beauty isn't appreciated as a means to an end – it is an end within itself. One should not seek out beauty because it makes them feel good, but because it is beautiful, and that's that! Expanding on this concept is St. Aquinas, a philosopher who held that beauty was a transcendental value: a feature of reality "possessed by all things, since they are aspects of being." (3). If Aquinas is correct everything has a beauty value to it, regardless of whether our tastes in beauty may differ. Plato believed similarly in this idea of beauty as a permanent, universal attribute of all things. In his *Symposium,* he even went as far as to describe the pursuit of beauty as a ladder, in which our materialistic appreciation of looks inhabited the lowest, primitive rung, and through study and enlightenment humans could aspire to reach the highest rung. Here beauty became an abstract idea

and a form of virtue, unimpeded by flimsy judgments. It is at this highest rung that beauty is described as "an everlasting loveliness which neither comes nor goes, which neither flowers nor fades". It is this indescribable form of beauty that has likely led many to try to apply it into a form of art.

The relationship between creative arts and beauty thus becomes one of mutual balance. Just as artists may be driven to interpret this eternal form of beauty and contribute to it with their own style, society also benefits with the appreciation of the beauty that results. Ideally, this appreciation is one of "disinterested interest," a term coined by the German philosopher Immanuel Kant. We observe beauty not because it does something for us, but because it is by its own means beautiful.

Of course, as humans, we are affected by our tastes which have been shaped throughout our life. As such, we may decide we appreciate a play because it is a comedy, or listen to a song because it evokes a nostalgic sense of sadness. Scruton expands on this inner indulgence by describing a more meaning-driven appreciation of art. Works of art have a dominant function as objects of aesthetic interest. He states that they may fulfill this function in "a rewarding way, offering food for thought and spiritual uplift, winning for themselves a loyal public that returns to them to be consoled or inspired" (84). At this level, art becomes something that we can consume to nourish our spirits. Furthermore, as people assign meaning to art, the art in turn becomes "moving and tragic, melancholy or joyous, balanced, melodious, elegant, and exciting" (106) and carries the viewer through a wide range of emotions and thoughts. In some cases, this can mean foregoing the fittingness of aesthetics and making the work's effect its focus. Scruton writes, "although beauty and meaning are connected in art, some of the most meaningful works of recent times have been downright ugly and even offensive in their raw-nerve impact." Picasso's *Guernico,* is an example of such impact. Scruton argues that in calling it beautiful, we may be diminishing the root of the art's message. However, to do so would be to reduce beauty only to the subjective physical plane of the artwork and ignore the meaningful abstract beauty of its meaning. Indeed, ultimately, this is where the magic of art lies, in its ability to serve not only an aesthetic beauty that we find satisfying, but to offer a meaningful truth to the observer, both to be each appreciated inherently for what they are. At its core, we admire the arts as a means within itself, because it is pleasing, and it is inherently beautiful.

Perhaps the most significant reason for art being valuable is that it allows freedom of creative expression. The real world, as varied and full of possibilities as it may be, also contains structures which many consider limiting. We cannot make our fancies a reality, all the time! Society structures us. Physics restricts us. The way things are already set up holds us back. For instance, no matter how much your favorite color might be maroon, or brown, the sky cannot instantaneously become that color. Nor can one rein in clouds from the sky to become one's bed, or breed fantasy creatures, or even fly. Within the world of creativity, there are no rules and anything is possible.

Art is also used as dedication for something that holds great meaning to a person. Countless famous artworks exist celebrating Christianity, and beautifully designed churches hold worship services. A common practice has recently sprouted with the growth of digital art where artists draw portraits and scenes of favored fictional characters from media and literature. Or, as is often the case, the meaning may be more complex or nonexistent to some observers. For example on viewing Van Gogh's painting of *The Yellow Chair*, one might be inclined to say there is no meaning to it – Van Gogh simply painted what he saw, a scene that appealed to him. Scruton suggests, however, that "the real meaning of the painting is *bound up with, inseparable* from, the image – that it resides in the very shapes and colors of the chair" (93). To attempt to pick apart meaning from artwork is to deconstruct the meaning and the work itself. Meaning is inherently tied to the creative expression, seen and understood rather than explained.

Outside of the abstract, the concept of creative expression also allows for new, innovative ideas to take place. On such case is the architecture behind the famous Cathedral of Florence: the

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Santa Maria Del Fiore, built during the Italian Renaissance. For decades after construction began, the roofing to the chapel of the church remained incomplete. After submitting his own architectural designs for implementing a domed roof, the architect Filippo Brunelleschi received the commission. What was shocking, however, is how he intended to construct the dome without the use of any support beams to hold the dome in place. Instead, he came up with a complex method of laying down the brickwork for the dome, such that vertically placed bricks would intersect and hold in place the horizontally placed bricks to counteract the pull of gravity. According to Ross King, author of *Brunelleschi's Dome,* his designs faced much opposition and skepticism, since "so astonishing was the plan that many of Filippo's contemporaries considered him a lunatic" (41). Yet, today it remains the biggest dome ever built. With the power to bring forth new and revolutionary ideas borne from creative minds comes true ingenuity. Both of these points often undergo heavy opposition by those who feel the world needs more structure, and choose to rely on logic and facts and assert, "it is what it is" or "it's the way things are" and dismiss anything art-related as an otherwise fruitless pursuit. This is not to say that those who find solace in creativity cannot share these qualities. STEM fields and labor typically take high precedence within academic institutions and society itself, with the technologic and scientific boom fueling its growth. However, creativity arguably links with invention, which has always been a crucial factor in human excellence. Leonardo da Vinci, for instance, while widely known for his artistic works like the Mona Lisa, was also involved extensively in scientific observation and sketched detailed human anatomical models and physiological diagrams. As an engineer, he also proposed designs for mechanical inventions.

Moreover, to denounce the creative arts is to denounce human expression itself. In creating art, one is creating something that they can identify with, that they can take pleasure in and fill their life with objects of both beauty and passion. It is perhaps the root of human nature to make meaning of life, with art being one of the many key forms of doing so. Furthermore, dissuading others from pursuing or admiring arts has long been juggled as a subject in dystopian ideas when suggesting the erasure of creativity from society and opting for a more systematic way of life, in order to contemplate its effects. Such systemization then ties in as a form of oppression of society. For instance, during the World War II era, many works of art such as paintings, ceramics, and books were seized by the Nazis – either to be put in Hitler's newly proposed museum, hidden, or destroyed. Though the above example may be considered extreme, the reality we face in a world commanded solely by function and neglectful of the arts is bleak and stunted. Prosperity cannot exist without creativity. When problems arise, we look to creative solutions to solve them, and the arts have always encouraged creativity to thrive.

In conjunction to art providing methods for creative expression is its function as emotional expression. Apart from beauty, creative arts best utilize symbolism in order to illustrate abstract concepts, like feelings and moods, and can even elicit a certain thought or reaction from the viewer. In Scruton's *Beauty*, "True artists control their subject matter, in order that our response to it should be their doing, not ours" (90). In this case, artists, or true artists as Scruton dubs it, take care to evoke a response in their art that doesn't stem from our own impulses, but rather exists because the artist wants us to acknowledge and realize it. Similarly, Scruton observes specifically of the art form of fashion that, "it permits people to play with appearances, to send recognizable messages to the society of strangers" (78). Such messages often include cues, such as the color yellow eliciting a sense of cheer. After all, art is often intended to be performed or seen, and great lengths are taken to ensure that others may see and recognize exactly what the artist envisioned, and feel exactly as they felt creating it.

Art can also be valued as a source of emotional healing. Artists and art observers look upon art as a form of catharsis – that by indulging in art that reflects our emotions, such as listening to sad music when depressed, some of the emotional tension is released, providing relief. Picasso made heavy use of such methods in his paintings, primarily using blue colors in his art while he was

depressed; the resulting collection was called the Blue Period. Different fields such as art therapy and music therapy exist from this concept of catharsis as well, providing emotional and physical healing with self-expression through these facets. Aside from cathartic means, art also provides a source of comfort. One who might feel trapped by routine may draw a self-portrait running through the fields, or write a script about a traveler exploring new worlds, or design a house abundant with windows. One might also, rather than create these art pieces, choose to partake in them, and observe art that makes them feel more open and free. This is in, many cases, the primary value behind all creative art – they give us something to admire, and they allow us to feel something meaningful.

Lastly, another significance of creative works to a society is in how art illustrates history. Just as humans have existed for a tremendous period of time, so has art, and as humanity has evolved over the centuries, art grew to reflect the current times and changes taking place. Rather than keeping history confined to written literature, where it mainly remains impersonal and factual, imbedding history within the spectrum of the arts allows for the depiction of historical events to still carry emotion over to later generations. Since the early ages of cave paintings, humans have been compelled to record evidence of their existence, to celebrate and illustrate the happenstances of their own lives. Even Renaissance art was mostly dominated by events in spiritual history, with countless paintings dedicated to Christian faith and the divine. One famous historical painting in particular is *Liberty Leading the People* by Eugene Delacroix. In this work a woman meant to symbolize liberty and freedom leads forth a group of people while clutching a musket and the French flag – a painting commemorating the French Revolution. We may understand by reading how the Revolution came about and how it was experienced by those living through it, but through art pieces like these we are able to understand the rallying power of the pursuit of liberty in uniting the French people, with Liberty itself taking a patriotic stance as she marches forward.

Within such historical contexts, art also manages to document the human experience. That is, rather than shedding light on a historical event itself, it sheds a deeper, personal light on a person existing within that time period. Thus, rather than observing the aftermath, we view history through the lens of a person caught in the whirlwind of events. For instance, such as in the poem *I, Too, Sing America* by Langston Hughes, he lamented on the unequal treatment and racism he faced before the Civil Rights Movement, but envisioned a future where he will one day join whites 'at the table' and be regarded as beautiful and part of America. Hughes had no idea at the time of writing the poem that the Civil Rights Movement would come about soon afterwards, which amplifies the impact of his poetry since we are getting a personal glimpse into a shaky society only reminisced from history books and documentaries. It is creative works like these that manage to bridge the gap between history and human experience, that allow us to briefly step into the shoes and mind of someone who not only learned history, but lived it.

Through creating a sense of beauty and wonder, acting as a means of creative expression, and documenting the history of humanity, creative works of art hold a high value within our society. Humans are, and always have been, creative – forever finding new ways to mark our existence in the form of beauty and identity. Art also allows us to create innovation and change. As long as humanity continues to grow, we will always have creativity and artwork there to guide us and grow along with us.

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The Effect of Tallgrass Prairie Burning on Soil Chemistry and *Raphanus sativus* Germination

by Vanessa Hadweh-Smith

(Biology 1152)

ABSTRACT

This research paper investigated the differences in soil chemistries between prescribed burnings in the late fall season (*Site A*) as opposed to the early spring season (*Site B*) and the correlation between these two burnings and the germination rate of the cherry belle radish (*Raphanus sativus*). These prescribed burnings were held at the Russell R. Kirt Prairie located at College of DuPage in northern Illinois. From each site, three samples of soil were collected and then tested for pH, nitrogen, potassium, and phosphorous for analysis of soil chemistry. Additional soil samples were collected from each site to plant four hundred cherry belle radish seeds (two hundred per site). Subsequently, from the data gathered from each site's soil chemistry and germination rate, it was determined that there was no significant difference between the soil chemistries of *Site A* and *Site B*, while there appeared to be a significant difference between the germination rate between *Site A* and *Site B* that was most probably influenced by environmental factors. Hence, it was deduced that the results supported our hypothesis, in part, which expressed that there would be no significant differences in neither the soil chemistries nor in the seed germination rates between *Site A* and *Site B*.

Keywords: Prescribed burning, Raphanus sativus*, tallgrass prairie, soil, soil chemistry, seasonal fires, germination rate, nitrogen, potassium, phosphorous, pH*

INTRODUCTION

In this research paper, we investigated the following: the differences in soil chemistries between prescribed burnings in the late fall season (*Site A*) versus the early spring season (*Site B*) of a tallgrass prairie in northern Illinois and the correlation between the aforementioned prescribed seasonal burnings and the plant germination rate of *Raphanus sativus*, the cherry belle radish.

In the *Germination Analysis* part of this study, the germination of *Raphanus sativus*—the cherry belle radish—was tested on the soil burned on late fall (*Site A*) and the soil burned in early spring (*Site B*). *Raphanus sativus* is in the family of *Brassicaceae*, which includes the species of broccoli, cabbage, cauliflower, and black mustard (Shirasawa et al. 2011). Originating from the coastal regions of the Mediterranean and Black Seas, this radish is typically used as a vegetable crop, most popularly in Japan (Shirasawa et al. 2011) and planted in spring due to its low tolerance for colder temperatures (George 2011). Therefore, because the cherry belle radishes grow in springtime, temperate environments—much like the tallgrass prairie used in this study—and germinate in a relatively short period of time, *Raphanus sativus* was chosen to simulate the germinating plants of the tallgrass prairie (George 2011).

Secondly, the *Soil Chemical Analysis* section of our investigation specifically applied to the chemistry of soil and how said composition changed after seasonal prescribed burnings.
Kline (1997) described prescribed burning as a positive feedback system in which the prairie grass was the fuel for the fire and the fire as the growth stimulant for the prairie grass—hence, prescribed burning could be defined as the usage of fire to stimulate plant growth. Originally,

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prescribed burning was begun by the Native Americans, who used this frequently as a means to manage their habitat (Kline 1997). Eventually, prescribed burnings have come to the modern age due to relatively low cost in comparison to other habitat management techniques: mowing, herbicides, and chain-saw work, to name a few (Pauly 1997). Moreover, through this low-cost method, the combustion of organic matter on soil surface—such as plants and other organisms—released forthwith nutrients that would otherwise not be readily available to be uptaken by germinating plants (DeBano 1990). These nutrients are, among many others, nitrogen, phosphorous, and potassium. The nitrogen (in the form of nitrate and nitrite), phosphorous, and potassium were the soil chemicals that were tested in this study. DeBano (1990) determined the relationship between these nutrients and plant growth as follows:

Both nitrogen and phosphorous acted as limiting agents to plant growth. Phosphorous, in particular, however, was highly dependent on symbiotic relationships with mycorrhizae. Unfortunately, some mycorrhizae, especially those that were intolerant to heat, would have been destroyed in a prescribed burning, therefore hindering the available phosphorous for plant uptake. On the other hand, unlike nitrogen, phosphorous was not readily lost because of the prescribed burning—after a fire, it could be readily found in substantial amounts in ash and the topmost layer of soil. And, lastly, potassium—along with some other elements like calcium and magnesium—was found to have a direct role in controlling soil pH: The potassium concentrations—and, subsequently, the pH levels—that remained at a relatively constant level where the soil pH was kept at a range of 6 to 8 showed more plant growth.

Furthermore, prescribed burnings have been found to be both detrimental and beneficial, depending on the time of year. During times of drought, the fires increased the temperature of the soil to the extent that little to no plant growth occurred and soil erosion was heightened (Collins and Gibson 1990). However, particularly when the climate was moderately moist, prescribed burnings had been found to increase plant growth and nutrient content in the soil (Collins and Gibson 1990). Nonetheless, Collins and Gibson (1990) reported that—as found in studies held in mesic tallgrass prairies in Oklahoma, Kansas, and Iowa—prescribed burnings during different seasons of the year have shown no discernible effect on plant growth.

Hence, because previous research found no discernible patterns between prescribed burnings done in different seasons, it was hypothesized that the soil chemistry of the site burned in late fall (*Site A*) would present no significant difference to the soil chemistry of the site burned in early spring (*Site B*). Consequently, because of this predicted lack of difference between the soil chemistries of *Site A* and *Site B*, it was also hypothesized that there would be no correlation between the prescribed seasonal burnings and the biomass germination success of *Raphanus sativus*—in other words, it was predicted that *Site A* would not yield a significantly different number of germinated radishes than *Site B*.

METHODS

Field Methods

The study was held on the Russell R. Kirt Prairie located at the College of DuPage main campus. This prairie is a 7.3-hectare, restored tallgrass prairie located in northern Illinois. The sections of the prairie in which the study was conducted were planted between the mid-1980s to late-1990s. Generally, this location has a temperate climate with moderate humidity and rainfall and experiences cool to cold winters and hot, humid summers.

Recently, two areas of the Russell R. Kirt Prairie experienced prescribed burnings: one on November 12th, 2016 (*Site A*) and the other on March 3rd, 2017 (*Site B*). On March 21st , 2017,

three samples of the top 4 to 5 centimeters of soil, approximately 0.7 kilograms, were collected from each site.

Soil Chemical Analysis

Each of the three soil samples taken from *Site A* and the other three taken from *Site B* were mixed with an acetic acid extract solution and chemically analyzed for pH and the following key nutrient elements: nitrite, nitrate, phosphorous, and potassium. The samples were analyzed using the LaMotte Company Soil Micronutrients and Macronutrients Test Kits.

Germination Analysis

The remaining soil not used for the *Soil Chemical Analysis* was used for a planting substrate. Two trays (each tray having a dimension of ca. 51 cm by 25 cm) were filled with soil from *Site A*, and another two were filled with soil from *Site B*. The soils were watered and subsequently planted with 100 seeds of *Raphanus sativus* in each tray (400 seeds total). Each seed was planted at a depth of 1 centimeter and spaced along each tray in rows of 20 by 5 seeds. The trays were covered with clear plastic wraps to prevent the soil from drying out. Subsequently, for seven days, the trays were placed within an environmental chamber, which was kept at 23 degrees celsius with 12 hours of light (10,000 lux) and 12 hours of darkness. The trays were watered accordingly once every 1-2 days in order to prevent the soil from drying out. After the seven-day period, the number of germinated plants were counted as a measure of germination success.

Statistical Analysis

Chi-square analysis, with Yate's continuity correction, was used to compare germination rates of seeds planted in soil from *Site A* to *Site B*, and a two-sample, two-tailed Student's t-test was used to analyze the differences in soil chemistry between *Site A* and *Site B*. Significance was determined at $\alpha = 0.05$. Means are reported as mean ± 1. S.E.

RESULTS

Observational Data

At the time when soil samples were collected at the Russell R. Kirt Prairie located at the College of DuPage on March 21, 2017, the temperature was at 10.6 degrees celsius and the soil was still moist from the previous day's precipitation. Soil was dark-colored and appeared to consist of a heavy clay-loam. There was little, if any, vegetation cover.

Soil Chemistry

The amounts of potassium, nitrate, and nitrite, as well as the pH levels between both burn sites were fairly, if not equally, similar to each other (Table 1). The most variability was observed for phosphorous (Table 1) with slightly higher average amounts in the site burned in late fall as compared to early spring (Site A: 117. 69 ± 47.88 kg/ha; Site B: 104.61 ± 15.29 kg/ha) although they were not statistically different ($t = 0.4139$, $df = 3$, $P = 0.7067$).

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Table 1. Soil chemistry analysis for Site A (late Fall prescribed Burning) and Site B (early Spring prescribed Burning).

Site A	*Site B*
Nitrite	Nitrite
1.12085	1.12085
1.12085	1.12085
1.12085	1.12085
Nitrate	Nitrate
11.2085	22.417
11.2085	11.2085
11.2085	22.417
Phosphorous	Phosphorous
168.128	95.2723
72.8553	84.0638
112.085	134.502
Potassium	Potassium
112.085	112.085
156.919	112.085
112.085	112.085
pH	pH
7.5	7.5
7.0	7.5
7.0	7.5

Notes:. Data presented as kilogram per hectare (kg/ha) for Nitrite, Nitrate, Phosphorous, and Potassium. Three samples were taken from each site for each category. Samples were analyzed using the LaMotte Company Soil Micronutrients and Macronutrients Test Kits.

Seed Germination Rate

Site A had 163 out of 200 radishes that successfully germinated, while *Site B* had 120 out of 200 radishes that successfully germinated. After performing a chi-square analysis, it was determined that there was a significant difference in the radish germination rate ($X^2 = 6.2332$, $df = 1$, $P = 0.01254$) between the soils that were burned in November (*Site A*) and in March (*Site B*). It is important to note that during the course of the experiment, soils from *Site B* tended to dry more quickly than soils from *Site A.*

DISCUSSION

Our hypotheses stated that the prairie areas with prescribed burning in late fall (*Site A*) and prescribed burning in early spring (*Site B*) would not present a significant difference between their soil chemistries and, consequently, in the germination rate of *Raphanus sativus*, the cherry belle radish. This was supported partially by our results as there was no significant difference in the soil

chemistries between sites. This finding correlated with another study that had found that, although prescribed fires do in fact stimulate soil chemistry changes—as previously described by DeBano (1990)—there was no discernable differences in the soil chemistry among prescribed burnings done in different seasons (Seastedt and Ramundo 1990).

Contrary to our hypothesis, there was a significantly higher radish germination rate in soils of the late fall as compared to early spring prescribed burnings. Considering that the soil chemistries of both sites were statistically similar, the significant difference seen in the germination rates between *Site A* and *Site B* could be potentially attributed to the fact that the soil of *Site B* repeatedly dried out more quickly than *Site A*'s soil within the environmental chamber. In other words, the significant difference seen in the germination rates was not due to the soil chemistries of *Site A* and *Site B* but other factors influencing the soil moisture and, subsequently, the germination rates. Collins and Gibson (1990) found that plant germination had more to do with climatic conditions than the season of a prescribed burning. Given that the temperature, light, and watering schedules were equivalent among trays, variations in soil texture and compaction—possibly attributed to differences in clay content, which has a direct relationship with water retention (Easton and Bock 2016) may have contributed to observed differences in soil moisture and germination success. Evaluation of soil texture, density, and moisture content should be included in future comparable studies.

Although prescribed fires in different seasons appeared to not produce significant differences in either soil chemistries or seed germination rates, previous studies have found that the burning of tallgrass prairies was determined to be necessary in order to maintain the grass species and to stimulate plant germination (Seastedt and Ramundo 1990). Hence, for future studies, the effect of frequent, periodic prescribed burning of a tallgrass prairie on seed germination and soil chemistry can be determined versus the seed germination and soil chemistry of an unburned or infrequently burned tallgrass prairie. In this manner, the effects of fire can be truly established and, subsequently, whether these effects have a significant benefit for tallgrass prairies.

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This is I, Hamlet the Dane

by Jack Hayward

(English 1153)

I have recently been cast as the titular role in a new production of Shakespeare's *Hamlet.* In order to better understand this character and shape my portrayal of him, I turn to the play itself, along with some previous iterations of the character. My main areas of focus when it comes to shaping my portrayal of Hamlet are his appearance and behavior, delivery of lines, and physical mannerisms. Through these areas of focus I aim to form an interpretation of Hamlet that matches my interpretation of the play: living a double life will inevitably lead to one's destruction.

The first aspect of the character I will consider is his appearance and behavior. Not much is stated about Hamlet's appearance in the play, but one can reasonably infer that his appearance becomes more and more haggard as the play goes on. For example, in Act II Scene i, Ophelia describes Hamlet "with his doublet all unbraced,/ No hat upon his head, his stockings fouled,/ Ungartered, and down-gyvéd to his ankle" (II.i.88-90). Later on, in Act III Scene iv, Gertrude tells Hamlet that "[his] eyes [his] spirits wildly peep,/ And, as the sleeping soldiers in th' alarm,/ [His] bedded hair, like life in excrements,/ Start up and stand an end" (III.iv.136-139). Thus my Hamlet will become gradually haggard as the show goes on. Over time I will stop tucking in my shirt, make my hair messier, and make the clothes look dirtier in order to make it appear that Hamlet has not changed clothes in a while. One idea for Hamlet's appearance which I find apropos is David Tennant's choice to eventually go barefoot in the Royal Shakespeare Company film *Hamlet.* To me, this little detail creatively and effectively conveys Hamlet's disregard for his appearance due to his obsession with revenge. Going barefoot forgoes not just a sense of royalty, but civility as well, creating an almost less-than-human aspect to Hamlet; indeed, I believe that Hamlet loses himself to his cause figuratively as much as literally. In my interpretation of the play, Hamlet is only pretending to be mad. However, this charade does have a negative effect on him, causing him to become increasingly depressed, as seen in the famous "To be or not to be" speech (III.i.64). In my portrayal of the character, both Hamlet's false madness and hidden sadness would lend to his disheveled appearance.

These two facets of Hamlet's psyche will also influence how I portray his behavior. When acting mad, I prefer the more wacky and senseless interpretations, along with sudden starkness in order to evoke a sense of something bipolar. My Hamlet is very unpredictable; one never knows whether he will respond seriously or sarcastically, loudly or softly, calmly or enraged. I will use varying inflections and different voices for the scenes where Hamlet appears mad. My goal is to make it appear that Hamlet is almost having fun playing mad; he is happy with himself that he can so easily convince all of Elsinore that he is mad, and this giddiness only adds to his apparent insanity. In stark contrast to this, my Hamlet is very serious and depressed in the appropriate scenes. It is in these moments that I believe Hamlet drops the charade and is genuine with himself. This real side of him also comes out when someone he truly cares about is threatened or afraid. For example, in Act III Scene iv, Hamlet states to Gertrude that "[i]t is not madness/That [he] has uttered" (III.iv.162-163), in reference to his allusion that Claudius killed King Hamlet, and thus Gertrude has done a terrible sin in marrying Claudius. "Bring [him] to the test," Hamlet insists, "and the matter will reword, which madness/Would gambol from" (III.iv.163-165). When he realizes that Gertrude is paying more attention to his display of madness than his message, Hamlet drops the act and seriously implores her to hear him out; his ultimate goal is not to convince people that he is mad, it is to get revenge for his

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father and cleanse his family. This motivation is the driving force of my Hamlet, and whether or not he plays mad or decides to be straightforward depends on which path will get him closer to this goal.

The delivery methods of my Hamlet are also dependent on whether he is being serious or insane. As I stated earlier, when playing mad I plan to use a wide variation of inflection, and multiple voices to match whatever emotion Hamlet is trying to evoke or poke fun at. Hamlet's words when playing crazy will be more eloquent than when he is serious, however. Polonius says about Hamlet's dialogue that "[t]hough this be madness, yet there is/method in 't" (II.ii.223-224); it is a charade that is carefully played out in order to achieve a goal. When Hamlet is serious, however, such as when talking to his mother in Act III Scene iv, or the "To be or not to be" monologue earlier in the Act, or when confronting Laertes over Ophelia's grave in Act V, he is fuelled by raw emotion, not a scheme, and thus my delivery will reflect that. Words will be sharper yet simplistic, and very to-the-point. Hamlet will speak a little faster and more passionately in these scenes.

Physical mannerisms are my last area of focus for shaping my interpretation of Hamlet. When playing mad, he is very quick and light on his feet. I will be very animated when speaking, with lots of hand gestures and various facial expressions to match the varying inflections and voices that I use. I will also come up with a few ticks for when playing mad, such as itches, scratches, sniffing and licking things, etc. In more serious and somber moments, Hamlet is more slow and heavy to convey the weight of the burden of revenge he carries. He is very reserved and notably still for the most part, in order to create a sharp visual contrast between the two sides of himself.

My interpretation of Hamlet is key to my interpretation of the play as a whole. To me, Hamlet is only pretending to be mad, as Polonius states in Act II, and Hamlet himself alludes to when he says that "[he] essentially [is] not in madness,/ but mad in craft" (III.iv.209-210) and "I am but mad north-northwest. When the wind is southerly, I know a hawk from a handsaw" (II.ii.402-403). However, his charade causes him to become increasingly conflicted and depressed, ultimately tearing him in two and resulting in his death. To me, this is the central theme of the play: living a double life will inevitably lead to one's destruction. This can be seen in Hamlet's life, as his feigned madness and bottled up emotions cause his uncle to plot his murder and Laertes to carry it out. In the life of Claudius, his hidden sin and outward royalty cause his own internal conflict, as evidenced by Act III Scene iii, where he states that "pray can [he] not,/Though inclination be as sharp as will./[His] stronger guilt defeats [his] strong intent" (III.iii.42-44); it is the combination of both Claudius' hidden sin and outward righteousness that spur Hamlet to pursue revenge. For Gertrude, it is her shame at the realization of what Claudius has done, and what she has done, which contradict her public image; she proclaims in Act III Scene iv that Hamlet "turn'st [her] eyes into [her] very soul,/And there [she sees] such black and grained spots/As will not leave their tinct" (III.iv.100-102). I believe in the last scene when Gertrude takes the poisoned wine meant for Hamlet, she does so fully knowing that it will kill her. Despite believing in a just cause, Hamlet ends up going down the same road as his uncle-father and aunt-mother in the end. My interpretation of Hamlet as a character strives to embody the conflicting sides of him and clearly portray a man becoming, in a twisted way, the very man he vowed to destroy. The parallels between Hamlet and Claudius are too clear to ignore. Claudius killed Hamlet's father and married his mother; Hamlet killed Laertes' father and wanted to marry his sister. Laertes' desire to get revenge on Hamlet is no different than Hamlet's desire to get revenge on Claudius. Through my interpretation of Hamlet, I endeavor to exemplify this, which I believe to be the central arc of the play.

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Representing Ruth: An Actress's Plan for *A Raisin in the Sun*

by Rachel Hillebrand

(English 1153)

Being selected to play the character Ruth Younger in Lorraine Hansberry's *A Raisin in the Sun* is the greatest honor of my acting career. Because I believe her role is crucial to the play, I want to do the best job I can to represent Ruth accurately. Ruth is one of the most hard-working, perseverant, and stout-hearted characters I have ever discovered. Through my portrayal of Ruth's mannerisms, appearance, and interactions with the other characters, I hope to transform myself into a faithful, forgiving wife; a weary but reliable mother; and a simple, good-hearted woman who is faced with hardship and heartbreak but truly *endures*.

My interpretation of *A Raisin in the Sun* shows Ruth as a fighter who has grown tired of fighting, a strong but worn-out woman. She appears as an African American woman in her thirties, with a face that once was quite pretty, but shows the wear and tear of her difficult life. In a way, Ruth's appearance is similar to the family's apartment in that "weariness has...won" (487). Ruth should dress simply, in a plain dress of dark blue or gray, with her hair in an orderly bun. She is a thin, small woman, and her disappointment with the world must be portrayed on stage with a kind of tired pride, keeping her chin up but allowing her shoulders to slump with despair. Through her posture and way of speaking, Ruth should at times display despair and discouragement, such as heavy, tired steps after she has found out she is with child (519), weary expressions and a subdued posture when arguing with Walter, and absolute defeat when the money has vanished (569).

When Ruth decides to fight, her mannerisms should change, revealing her deep-rooted strength and her determination to *choose* happiness. There should be a lightness in her step and an erectness to her posture, so that she almost looks "real young again" (490). Her gestures should be a hint carefree and girlish when she is falling back in love with Walter (550). Her effort to be positive and cheerful during the packing and planning for the house should be portrayed through facial expressions, a change in her laughter, and how she treats the other characters.

Communication and character interplay is complicated for Ruth, since she is a mother, a wife, a daughter, and a sister, all at the same time. In the beginning, Ruth seems to harbor hostility and displeasure toward her husband, for she is tired of his talking and his dreams (490). The audience must catch the sense that Ruth and Walter were in love once, but that their marriage is in trouble because of their difficult lives, and that the two are starting to lose hope. Ruth's discouragement with her husband should be expressed in her dejection when she shares her feelings with Mama that Walter "needs something I can't give him any more" (508). But after the house is purchased, when the couple's interactions begin to change in scene III, Ruth must transform into a blushing bride, looking at her husband with bright eyes and fresh love (549). Then, when Walter loses the money, Ruth's happiness must dissolve into cold, unforgiving anger toward her husband (570).

Regarding Travis, Ruth seems to sometimes overlook or ignore her son, treating him as a child and not trusting him with real family matters. She is always telling him to go play outside or "go downstairs" (574), but now and then, the audience must catch a glimpse of the loving mother Ruth truly is. When she gently teases Travis before sending him to school, Ruth must emanate warmth, caring, and teasing, and a hint of the mockery of a mother who is truly fond of her son. Her pent-up love and tenderness must be clear when Ruth asks Travis, "Now whose little old angry man are you?" (492). Through these interactions, Ruth shows that she loves and cares for her son, but she is so overwhelmed by her trials that she doesn't always make time for him.

With Beneatha, Ruth should have a kind of indifference. Now and then she might roll her eyes at Beneatha's unusual actions, but overall, she should seem disinterested in what her sister-in-law is doing. During Beneatha's African dance scene, Ruth should do some housework in the background, shaking her head a little at Beneatha's antics and scolding Walter to "stop acting like a fool" (526). Ruth doesn't care for the deep questions or adventures of the times; she focuses only on work that needs to be done and how to do it.

With Mama, Ruth should be courteous and respectful. Ruth seems to be able to relate to Mama, especially when Walter is concerned. Even Walter senses this, telling Ruth, "You know she [Mama] listen to you more than...me and Bennie" (494). Ruth also appears to want Mama's respect and trust in return, telling Travis to "stop asking your grandmother for money" (491). In a way, the two should appear as kindred spirits, two weary women who married Younger men, fostered dreams and plans, but later experienced disappointment and sadness as life unfolded.

Perhaps the most important line that Ruth must deliver is in Act III, when Walter has lost the money and it looks as if the family will stay in the apartment after all. This is when Ruth protests against Mama's calm decision, insisting, "We got to get OUT OF HERE!!!" (569). This emotional line should be delivered with a mix of determination and desperation. This is when Ruth's world is falling apart, when her hope is running out. Her raw emotions must be conveyed in her wild eyes, her unwavering tone, and her powerful, erect posture. She knows the family's only hope is leaving the apartment, and this is her final fight.

I hope that my interpretation of Ruth reveals how important Ruth is to the play. I believe Ruth is the most vital character in the story, since she is the one the audience must understand. In some ways, Ruth represents the average person, who was dealt a challenging hand in life but chooses to persevere through it anyway. Her discouragement, her breakdown, and finally her rise back to confidence must be clearly portrayed, so that her emotions can be felt by the crowd and stir them within. They must understand how Ruth fights through her suffering with bravery and courage; maintains her honor and dignity; keeps her family together; and stands up for what she believes. Ruth is a model for every woman who hopes to overcome the challenges of life and emerge with joy and success.

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A Book Review of *Six Modern Plagues and How We Are Causing Them* - Mark J. Walters

by Jennifer Kunstman

(Microbiology 1420)

Mark Jerome Walters provides some disturbing evidence in his book, *Six Modern Plagues and How We Are Causing Them*, by showing that the human race is ultimately responsible for six emerging diseases that have become major health threats. He writes of each disease separately, going into detail of the human action and it's resulting cascade effect that leads to the proliferation of each epidemic. Walters cites over and over, and not so subtly, that unless people can learn to live as a part of the ecosystem instead of trying to dominate, control, or modify it, that these diseases are just the beginning of our health problems.

The setting for the first disease is West Sussex, England, where a dairy farmer noticed his cows behaving strangely and violently (Walters, 2003). Of the cows that eventually died or were put down, autopsies showed that the cows had BSE, bovine spongiform encephalopathy, or Mad Cow Disease. The brains of the cows were spongy in appearance and looked very much like the brains of sheep who would sometimes succumb to a virus called scrapie. By 1995 there were a handful of cases of CJD, Creutzfeldt-Jakob disease, which is the spongy encephalopathy disease in humans and it was determined that the cause was a prion. Ultimately the source of the BSE in the cows was traced back to the feed the farmers were buying for their cows because companies had started using the by-products of killed livestock to add filler to their feed in a process called rendering. By doing this, the feed was much cheaper to produce, the extra protein in the feed was making the cows grow faster and bigger, so the companies made a bigger profit. The problem was, the prion that is responsible for scrapie is not killed during the rendering process which makes it then possible that the cows were infected with sheep byproducts of sheep infected with scrapie. This disease could have been prevented if human beings, with increasing profits as their motivation, had not tried to modify the cow's diet. Since the digestive system of the cow has evolved to a plant eater, to digest plants, it is unimaginable that people would think that feeding animal products, would not have dangerous consequences.

It is customary for the people of Gabon, Africa to eat bushmeat, and it is most often their only source of protein (Walters, 2003). French timber companies began logging practices through the area in the late 1980s and early 1990s which added to the demand for bushmeat to feed the loggers. HIV, the virus that causes AIDS, has been studied for over 30 years and there's strong evidence that the HIV-1 virus jumped from non-human primates to human beings. Not only has the virus jumped once but there's research that shows it could have jumped twice and that there is a potential for it to jump again. The people who slaughter these animals are at a very high risk of contracting the virus from an infected animal through blood and open wounds. Interestingly, the animals do not seem to be affected by the virus but they hold the information about the evolution of the virus itself, and the mechanisms for controlling it. Because these animals are being slaughtered almost to extinction, Walters stated, "AIDS is not only a medical issue but also an ecological one" (p. 49).

One of the most frightening epidemics the human race is now facing is the bacterial resistance to antibiotic drugs used to treat life threatening infections (Walters, 2003). Walters writes specifically about Salmonella DT104, which has become resistant to a multitude of current antibiotics. Walters suggests a cascade effect that starts with antibiotics given to farm animals in their feed. The reason is greed; in order to have enough cows to turn a big profit it is cheaper to cram them into small, confined spaces and give them antibiotics in their feed so they don't get sick from the

deplorable living conditions they are forced to endure. The bacteria in these animals is flooded with these antibiotics, and those bacteria that survive this onslaught become stronger against those same antibiotics. Humans, if they undercook their meat or contaminate parts of their kitchen with the juices from meat, can risk becoming infected with the resistant bacteria. Even more alarming, bacteria can travel, are very good at sharing genes, and Salmonella DT104 specifically can live in and infect many different species. As an example, Walters uses the case of a bird carrying a fish that is carrying antibiotic resistant bacteria from a fish farm and having it end up in a stockyard. There the bacteria can live in the cattle, pass on its genes for resistance, and end up on someone's kitchen counter. Walters reminds us once again, "Humans are connected not only to one another but also to the myriad other species, seen and unseen, with which we share the earth" (p. 87). There has been evidence of antibiotics ending up in soil and water also as the drugs get passed through the animals, end up in waste lagoons, get spread on crops as fertilizer, ultimately ending up in the groundwater and getting into the soil.

The most common vector borne-illness in the United States is lyme disease caused by a bacterium that could be as old or older than the forests of the United States (Walters, 2003). Lyme disease is carried by mice and other small rodents, but does not cause disease in these small animals. Ticks feed on these mammals but eventually will multiply and live on deer for years. The more mice and deer in a certain area, the more cases of lyme disease can be found in humans in that same area. In the Northeastern part of the United States, the woodlands of Hutcheson Memorial Forest have been cut up into sections to accommodate the building of homes and roads. In doing so, more light was let in on the sides of the forest, and the forest floor began to grow leafy green plants that deer love to eat. The deer population has exploded because of this lush new food source, but they harbor the ticks that carry lyme disease. Humans are now in very close contact with the forests and the deer having built their homes right on the edges of these pieces of forest, making them easy targets to be bitten by a lyme disease carrying tick. Walters added that people's homes have also become sanctuaries for deer since hunting deer is not allowed within 450 feet of a residence without their permission. Walters also surmises that the building of homes and roads have evicted predators of the deer and has forced many of the species that have lived in the forest to move elsewhere upsetting the biodiversity of the forest. Because of this decrease in biodiversity, mice and chipmunks have begun to thrive and they are responsible for 90% of the transmission of Lyme disease to the ticks. Once again the human race has tried to modify nature. By dicing up these ancient forests into little plots of woods and setting up homes next to them, the balance of the diversity of the forest has been altered. Walters states, "The ecology of Lyme disease reminds us that the connections between the earth and human health are ancient" (p. 110).

Our climate is changing and the evidence points to global warming due to reckless practices and behaviors of the human race. One result of this climate change is that excessive rain from El Nino has poured so much water on the Colorado Plateau that there's increased soil moisture, which makes the juniper and pinons woodlands trees make more nuts, downy chess grass seeds germinate, and snake weed grow (Walters, 2003). According to Walters, this increase in vegetation and food has caused a dramatic increase in the number of mice, many of which carry hantavirus. Hantavirus can be transmitted to humans from the urine of these mice, and the resulting HPS, or hantavirus pulmonary syndrome, can often be fatal.

Walters continues with another effect of global warming; severe drought and excessive heat. In 1990 birds migrating from Europe to Africa had to stop in Israel because the temperatures were so high the birds became exhausted and could not fly any longer. These storks, who were carriers of a flavivirus, or West Nile virus, were bitten by the local mosquitos who in turn, bit the local geese. West Nile virus ended up in Queens New York just one year after it killed the geese in Israel and draught and international travel are to blame. Millions of people and other animals come through JFK international airport every year with documented (and undocumented) animals. Mosquitos can

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stow away in the aircraft, and birds can be bitten by mosquitos then migrate from all over the world. The summer of 1991 was so hot in Queens, NY, that the mosquitos were able to multiply at an alarming rate in the sewer drains before flying out with the eventual rains. Many people were infected that hot summer and some died.

Walters traveled next to Southern China, where people were becoming sick with SARS, severe acute respiratory syndrome. SARS is caused by coronavirus, which is very common in animals, and is thought to have jumped to humans from a species like a cow or a cat. Because space is a premium in China, people often share their homes with their animals like pigs and chickens and many times chicken coops are situated above the pigsties so that when the chicken defecates it ends up in the intestines of the pig. The pig waste then runs off and drains into shrimp ponds where ducks who swim on the ponds eat the food. This intermingling of species gives these viruses a way to swap their genes, allowing them to survive from species to species. The interesting point Walters makes with respect to SARS is how human action was able to control the spreading of the virus and make the virus change to a milder version. Walters believes that because infected people were quarantined, the virus stopped spreading. The thinking is if the virus wants to survive, then, it would have to make a modified version of itself so that its host can be up walking around to spread it from person to person. This epidemic is really a question of space and international travel. Walters believes how closely we co- habitat with nature will have an effect on the microbes that can infect different species and how they can swap their genetic information.

Mark Jerome Walters makes the reader take a deeper look at how people live and interact with the world. The reader is taken on a journey throughout the world, and if survival is in the human race's future, Walters encourages everyone to be more responsible and make smarter decisions on how animals are treated, how life saving medicines are used, how our environment is protected, and how to deal with an increasing population. None of these epidemics has a simple root cause, but it is very evident after reading *Six Human Plagues and How We Have Caused Them,* that the human race is partly or mostly responsible for every one of them. Walters recalls his discussion with the Navajo Indian healers concerning the hantavirus and HPS infections, "Each healer spoke about how humans are not the dominant force in nature but instead are dependent upon other forms of life for existence. The outbreak had resulted from disharmony in the environment, they claimed, and now ceremonies were needed to reestablish harmony between patients and the universe" (p. 121).

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Stanley Kubrick – Auteur

by Adriana Magda

(Motion Picture Television 1113)

Stanley Kubrick is considered one of the greatest and most influential filmmakers in history. Many important directors credit Kubrick as an important influence in their career and inspiration for their vision as filmmaker.

Kubrick's artistry and cinematographic achievements are undeniable, his body of work being a must watch for anybody who loves and is interested in the art of film. However what piqued my interest even more was finding out about his origins, as "Kubrick's paternal grandmother had come from Romania and his paternal grandfather from the old Austro-Hungarian Empire" (Walker, Taylor, & Ruchti, 1999).

Stanley Kubrick was born on July 26th 1928 in New York City to Jaques Kubrick, a doctor, and Sadie Kubrick. He grew up in the Bronx, New York, together with his younger sister, Barbara. Kubrick never did well in school, "seeking creative endeavors rather than to focus on his academic status" (Biography.com, 2014). While formal education didn't seem to interest him, his two passions – chess and photography – were key in shaping the way his mind worked. His father was the one who exposed him from a young age to chess, in an attempt to find something that would interest his son. "Chess in particular offers a clue to the elements that constitute Kubrick and helps to explain why he made certain films and not others – and why he made them in certain ways and not in others" (Walker, Taylor, & Ruchti, 1999). Kubrick recognized later on the importance of chess in his attitude and approach to cinematography: "If chess has any relationship to filmmaking, it would be in the way it helps you develop patience and discipline in choosing between alternatives at a time when impulsive decision seems very attractive." His father also introduced him to photography, when he bought him a camera for his thirteenth birthday. As it turns out, this was an even more inspired attempt as Kubrick had an eye for photography. He started taking pictures for the school paper and "at age 16, began selling his photos to *Look* magazine. A year later, he was hired for the staff of the magazine." (Biography.com, 2014). Working for the magazine allowed him to travel and expand his photography skills, while also saving the money that financed his first filmmaking effort, the short movie called *Day of the Fight (1951)*. His short was bought by RKO, one of the Big Five studios of Hollywood's Golden Age, and played at the Paramount Theatre in New York. At only twenty-one, Kubrick's success with his first attempt at filmmaking and his youth resulted in him quitting his job at the magazine and set in motion a new trajectory for his career. This change and his curiosity about the world turned him into a voracious reader and film watcher, especially at the Museum of Modern Art. "But his early curiosity was mainly about technique, not content" (Walker, Taylor, & Ruchti, 1999).

After another short movie commissioned by RKO, "Kubrick raised about $10,000 from his father and an uncle to direct his first feature, *Fear and Desire (1953)*" (Walker, Taylor, & Ruchti, 1999), which he later referred to as "undramatic and embarrassingly pretentious." His second attempt at a feature, *The Killer's Kiss (1955),* was also financed by friends and relatives. This movie demonstrated he was an original new voice in the field of cinematography. Although he wasn't particularly proud of these two films, they were important because they helped him develop his sensibilities and gain more real world experience. Nevertheless, maybe the most important consequence was that his second movie created the opportunity to meet James B. Harris and create the producer-director partnership that allowed Kubrick to start making professional films.

Kubrick's early work demonstrated that he was an original new talent, but it was his first film in partnership with Harris that put him on Hollywood's radar. *The Killing (1956),* a movie about a gang of petty criminals who plan and execute a daring race-track robbery, was well received and "critics praised it chiefly for the brilliance of its construction, the precise working out of the racetrack robbery in it, and the way in which events that overlap in time are integrated into the suspense by audacious and ingenious flashback techniques" (Walker, Taylor, & Ruchti, 1999). This movie was also the starting point for a unique voice and vision that would distinguish itself from all others and would become a heavy influence for so many other great filmmakers. Kubrick's "auteur" methods and critical status began to take shape starting with *The Killing.* From this point forward he would take more and more control over his films, from writing to directing, the only exception being *Spartacus.*

Stanley Kubrick is part of the New Hollywood film wave and he is frequently cited as a source of inspiration and one of the most influential directors by many contemporary filmmakers including Martin Scorsese[1], Christopher Nolan (Jensen, 2013) and Frank Darabont (Monahan, 2002). On the DVD of *Eyes Wide Shut*, Steven Spielberg comments that the way Kubrick "tells a story is antithetical to the way we are accustomed to receiving stories" and that "nobody could shoot a picture better in history." (Spielberg, 1999)

Kubrick's artistry stands out in the remarkable beauty of his pictures, their aesthetics and intensity that at the same time entice and unsettle the audience. The careful use of space, shape, line, tone, color, rhythm and movement convey emotions and has a lasting impact, as a magnetic force mysteriously lures the audience in the universe he creates. Think of the boy riding his little bike through the endless corridors of the hotel and his encounter with the twins in *The Shining*; the striking vastness and monumental silence of outer space in *2001: A Space Odyssey*; the magnificence of the War Room in *Dr. Strangelove*. The use of classical music as well as silence, the editing, the techniques used to show the outer space and the magnificent cinematography in *2001: A Space Odyssey* ensure that Stanley Kubrick will always have a special place reserved in the history of film. In addition, he also contributed from a technical perspective, being one of the pioneers of steadicam as The Shining was one of the first films to use the technology (Tiffen, 2016).

Trying to answer the question of what is it that made Kubrick the director that he was and what made his style recognizable is definitely not an easy task due to the complexity and diversity of his work. In an interview with French film critic Michael Ciment about *A Clockwork Orange*, Kubrick said: "There is no deliberate pattern to the stories that I have chosen to make into films. About the only factor at work each time is that I try not to repeat myself." While his films are always different, a recurring characteristic is that he was constantly trying to push boundaries, look for new concepts and explore possibilities.

Themes in Kubrick's work include the dehumanizing effects of violence and war, the human psyche, society and norms, evolution, man vs. machine. Although his movies are in essence thematically different, there are recurring elements that he seeks to explore from different angles.

Paths of Glory (1957), featuring Kirk Douglas, was his first studio film with a major star. It is a film about the dehumanizing effects of war and a criticism of military misconduct, themes he would also explore in his later movies. *Paths of Glory* confirmed his talent and further shaped his status of up-and-coming auteur. Douglas then brought in Kubrick as a last-minute replacement for director Anthony Mann on his epic *Spartacus* several years later. However, Kubrick was unhappy with the production process and the lack of control he had, making him take further steps into having autonomy and implicitly becoming an auteur.

[1] Martin Scorsese talks about Stanley Kubrick on "Charlie Rose" – June 15th, 2001

One memorable element is the chateau, a place of order and elegance, with mirrored walls, baroque furnishing and palatial staircases that somehow has an eerie vibe. Kubrick creates a striking contrast through its juxtaposition with the trench world, cutting from the elegance of the military establishment to the reality of war. Through the use of lighting and space he defines the physical reality of the world portrayed. An interesting approach is the use of the binoculars view to emphasize war as a sport for those high up the chain of command.

A particular characteristic of Kubrick's work is the way he uses the camera to increase dramatic tension and to draw the viewer in the middle of the action. He does so by taking advantage of the mobility of the camera and carefully planning shooting angles to increase visual intensity. The horizontal advance of the camera and the use of zooming on the battleground or the lateral movements in the court-martial are ways of visually dramatizing the action. This type of camera work is extensively used in *2001: A Space Odyssey* with the same purpose in mind. Through the use of space, light and shadows Kubrick creates an environment that reflects the characters' internal emotional state. For example the agony of the men awaiting execution is emphasized in their environment that suggests that they are trapped, there is no way out, creating a claustrophobic feeling. A similar approach is evident in Kubrick's subsequent films, *Dr. Strangelove* and *2001*. The sets have an important role as part of the total concept, creating an environment that contains, defines and dominates the protagonists, as exemplified by the chateau in *Paths of Glory*, the War Room in *Dr. Strangelove*, and the Wheel in *2001*. Similarly, in *The Shining* the hotel is a character in its own right, determining the fate of its inhabitants.

Kubrick moved to England to shoot his highly controversial *Lolita* (1962), the tragicomic story of a middle-aged professor who becomes infatuated with a fourteen-year-old nymphet. This was the film that further affirmed his status of auteur.

He went on to further explore the comedic territory with a humorous take on the Cold War in his satire *Dr. Strangelove, or: How I Learned to Stop Worrying and Love the Bomb (1964).* It was a success right away as it was striking a nerve for much of his audience, due to the very real threat of global nuclear annihilation. Again the story is Kubrick's basic ingredient in filmmaking that is brilliantly developed through the use of satire and elevated by the actors' performances. Time and space are central elements to the construction of the film, as the action is confined to a few hours and three settings, each being sealed off from the others. Kubrick emphasizes the feeling of helplessness that results from being locked in by certain physical circumstances or emotional situations. Kubrick's interest in the idea of man vs. machine becomes apparent, as the crew of the bomber plane are not aware of the machinery they have created, a theme Kubrick is to develop further in 2001. The machinery takes over and the spinning counters, revolving numbers and clicking codes seal in the crew's fate and ultimately the world's as the bomber heads to Russia. This idea is reiterated in *2001*, as HAL 9000 turns against his masters.

Dr. Strangelove was followed by Kubrick's first science-fiction film, considered a very influential benchmark effort for the genre as well as cinema in general. It is worth mentioning that it was the first time he used color. Probably his most famous film and the one cited most frequently as being influential in many filmmakers' work is *2001: A Space Odyssey (1968).* The film explores the theme of evolution, entertaining the idea of extraterrestrial intervention in each step of man's evolution from 'The Dawn of Man' to twenty-first century human to astral being. Kubrick wanted the audience to interpret the film their way and it is filled with metaphors, open to interpretation. However, Kubrick described it as "a mythological documentary" (Walker, Taylor, & Ruchti, 1999). He dared to break from the traditional telling of the story through words, and there is no dialogue in the first half hour of the film. He used a narrative structure different from most movies at the time, creating something that falls in between experimental non-narrative film and the traditional plot-driven film. The structure, thought-provoking imagery, and open-ended conclusion of *2001* invites us to actively interpret and question what we see as well as our senses and perceptions.

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Stylistically, *2001* reasserts over and over Kubrick's fascination with visual symmetry, a trait apparent starting with his early work. Again, he uses depth and camera movement to allow the viewer to step into space, similar to the use of camera movement in *Paths of Glory*.

HAL 9000, the infallible machine designed to control the mission and built to reason logically, takes on a sinister higher purpose, following his own agenda, therefore dramatizing again the conflict between man and machine. A striking moment is when the two astronauts retreat into the pod to discuss HAL's irrational behavior, without him being able to overhear them. Kubrick uses symmetry to signal the crisis, framing the two astronauts facing each other inside the oval window of the space pod. We see their lips moving, from HAL's point of view and we realize that he is able to read lips. Another recurring theme is the dehumanization of death, as HAL shuts off the power maintaining the crew alive. Kubrick creates intensity and tension through the use of close ups and color of the crew's electronic charts that eventually flat line. Another element that stands out is the way Kubrick uses silence, sound and speed for their dramatic purposes. Probably the most obvious moment is when Bowman is trapped outside the ship, as there is no sound until he reaches the safety of breathable space.

The end sequence shows again his ability to create contrast through the use of space. As opposed to the spaceship, the bedroom suite at the end is elegant, with period mirrors, side tables, vases and a quilted bed. The carefully created sets are a trademark in all of Kubrick's movies.

A Clockwork Orange (1971) is another example of Kubrick pushing film boundaries, with its dark humor, disturbingly graphic imagery, visual style and synth-classical score. It is the story of a vicious teenage gang leader whose violent free will is stripped from him by an authoritarian society attempting his rehabilitation. Like in *2001,* Kubrick creates a complex relationship between music and emotion, as well as music and movement. He also pays close attention to the lighting in each scene, using only the illumination one would expect to find in the actual environment. An example would be the scene where Alex's brainwashing begins or the War Room in *Dr. Strangelove*.

The Shining (1980) opens with a wide shot conveying the impression of man dwarfed by the vastness of its environment. The importance of the set is evident again, the cursed Overlook Hotel having an ominous feel and dominating the protagonists. *The Shining* explores the decay of the human psyche, dealing "with a violent personal conflict in the life of its central character, a self-tortured, reclusive writer named Jack Torrance whose creative juices simply won't start flowing" (Walker, Taylor, & Ruchti, 1999). The Overlook Hotel provides the perfect setting to see Kubrick's favorite framing devices at work. The corridors in the hotel become passageways to another world and we see again and again his predilection towards symmetry which suggests impending doom. Wendy discovers Jack's secret, his mania being exposed in the repetition of an old-fashioned schoolbook's maxim. Danny, the son, encounters the former caretaker's murdered daughters, the identical twins at the end of the long hallway who stand very still but invite Danny to join them, creating a very creepy apparition. Kubrick also plays with angles, framing and points of view to increase the dramatic tension when Wendy confronts her husband. As the dramatic tension increases and despite her being higher on the staircase indicating she has the upper hand, as the framing gets tighter, Jack appears to gain control and dominate the situation.

Stanley Kubrick was a genius who shaped cinematography as an art form and had a lasting impact on many future generations of film makers. His legacy was concluded after a long search for a new subject by his thirteenth and final film, *Eyes Wide Shut (1999).*

I believe nobody can describe Kubrick's work better than Martin Scorsese: "Watching a Kubrick film is like gazing up at a mountaintop. You look up and wonder, how could anyone have climbed that high?" (The Criterion Collection, 2013).

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The Fight for Black Gold: How Foreign Interference Sparked the Iranian Revolution

by Emily Malchow

(History 2235)

In *Persepolis: The Story of a Childhood*, Marjane Satrapi presents a narrative of her life as a young girl growing up during the Iranian Revolution. Satrapi's experiences reflect, in part, what many other Iranians were also witnessing in the 1980's: a domino effect of events that involved religious control, government turmoil, violent civil war, international war, and interference from foreign regimes; primarily, Britain and the United States. When assessing the interests of Britain and the United States, it is evident that the Western desire for oil served as a powerful motivating factor for foreign interference in Iran. We see an example of this desire for oil in the D'Arcy Concession, famously named after William Knox D'Arcy, an English investor.[1]

In 1901, Iran granted D'Arcy a concession that allowed him to explore over 480,000 square miles of Iranian land for petroleum; in 1908, D'Arcy was successful, and discovered a large oilfield in Southwestern Iran.[2] D'Arcy's finding of the coveted black gold led to the creation of the Anglo-Persian Oil Company, which was eventually renamed as British Petroleum (BP Oil).[3] The British quest for oil was, in large part, due to the fact that Britain itself could not produce this fossil fuel; this was a problem, as world war was rapidly approaching in the early twentieth century, and oil would be necessary for the British to power their ships.[4] In addition to the D'Arcy Concession, another form of foreign interference was the British regime's manipulation of the Iranian government. Satrapi addresses the West's manipulation of Iran when she depicts the British as taking advantage of Reza Shah Pahlavi, a young soldier who was attempting to overthrow the Iranian government:

> He [Reza Shah] was an illiterate low-ranking officer. A blessing for the very influential British who soon learned of his projects. [British:] "What's that officer's name again?" — "Reza! We should go meet with him." — "Immediately! Persia is full of oil!" [Reza:] "What do I have to do?" [British:] "Nothing! You just give us the oil and we'll take care of the rest."[5]

Shah, who had an inferior position in the military, was undoubtedly easily led astray by the British with promises of fame, fortune, and power. While Shah ultimately was able to come to power and rule Iran, he became a pawn of the British government, and was eventually succeeded by his son, Mohammed Reza Shah, in 1941.[6] Reza Shah, also known simply as the Shah, ruled from 1941 until the Iranian Revolution in 1979.[7] The Shah, like his father before him, was also a pawn of the British

[1] David Carment, "D'Arcy, William Knox (1849-1917)." *National Centre of Biography* 8:1-2. Accessed November 18, 2016. http://adb.anu.edu.au.
[2] Ibid., 2.
[3] Ibid., 2.
[4] Stephen Kinzer, *All The Shah's Men: An American Coup and the Roots of Middle East Terror* (New Jersey: John Wiley & Sons, 2003), 49.
[5] Marjane Satrapi, *Persepolis: The Story of a Childhood* (New York: Pantheon, 2003), 20-21.
[6] "Reza Shah Pahlavi." *Iran Chamber Society,* 3-4. Accessed November 18 2016. Iranchamber.com.
[7] "Mohammed Reza Shah Pahlavi." *Iran Chamber Society,* 1-2. Accessed November 18 2016. Iranchamber.com.

Government—however, during the Shah's rule, opposing democratic politician Mohammed Mossadegh became increasingly popular with the Iranian public, and was elected Prime Minister from 1951-1953.[8] Mossadegh's political views and methods of leadership were in stark contrast to the Shah's: believing the Anglo-Persian Oil Company to be dominating Iran, and insisting on an economically free country, Mossadegh fought—and succeeded—in nationalizing Iran's oil in 1951.[9]

This seizure of the precious fossil fuel from the British sparked a rage in the West. Britain retaliated by enforcing a worldwide embargo on the purchase of Iranian petroleum: oil production came to a halt, and exports and goods were banned from being transported to Iran.[10] Eventually, Britain turned to the United States for assistance in retrieving Iranian oil. U.S. President Eisenhower was quickly convinced by the British that Mossadegh was a communist, and, fearing a rise of communism in the Middle East as well as American loss of oil, Eisenhower agreed to assist the British and arrange a coup d'etat.[11] In 1953, the coup d'etat, organized by the United States' Central Intelligence Agency, was successful: Mossadegh was arrested, found guilty of treason, and removed from his position of Iranian Prime Minister.[12] With Mossadegh removed, Britain resumed control of the Anglo-Persian Oil Company; however, over time, Iran's economy continued to crumble and civil unrest became paramount.

This civil unrest was due, in part, to the amount of Iranian petroleum being extracted by Britain and the United States, because it left the people of Iran poor. Civilians lived in poverty while the pro-American Shah enjoyed a lavish lifestyle: spending in excess, not following Islamic law, and taking from his own people, soon resulted in the Shah being loathed by the majority of Iranians. Public protesters, religious rioters, and demonstrators began to emerge in large numbers. Violence became prevalent with daily executions, torture, and rape; students and even young children made a movement against the Shah.[13] Satrapi gives an example of the ongoing violence when she reflects on a scene that she witnessed:

> In spite of everything, the spirit of revolution was still in the air. There were some opposition demonstrations. [Satrapi's mother:] "Tomorrow there's going to be a meeting against fundamentalism." [Satrapi:] "I'm coming too!" So I went with them. I passed out flyers…when suddenly things got nasty. [Men beating women with clubs; a young woman stabbed in the leg] For the first time in my life, I saw violence with my own eyes. That was our last demonstration.[14]

Part of the reason for the day-to-day violence throughout the Iranian Revolution was because the majority of the public was pushing for a stricter theocracy, as well as making it known that their hatred and resentment was growing stronger against the West. This paved the way for Anti-Americanism, as Iranians soon realized the U.S. and Britain supported the Shah: the very person that was inflicting so many problems on their country.

Originally, Iranians never had a resentment or dislike towards the United States: Iran had

[8] "Dr. Mohammed Mossadegh Biography." *Mohammed Mossadegh,* 1. Accessed Novemeber 19 2016. Mohammedmossadegh.com.
[9] Ibid., 4.
[10] "Oil Nationalization." *Iran Chamber Society,* 1-2. Accessed November 19 2016. Iranchamber.com.
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[12] "History of Iran." *Iran Chamber Society,* 3. Accessed November 20 2016. Iranchamber.com.
[13] Satrapi, *Persepolis,* 50-76.
[14] Satrapi, *Persepolis,* 76.

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more respect for America above any other foreign country. . . this is partly due to the fact that other international powers, such as Britain and Russia, had dominated Iran for years, while typically, America did not.[15] During this rocky time period in Iranian history though, the people did not want to have another Mossadegh, who was nationalizing the country's petroleum and crippling the economy; or another Shah who was a pawn and promoter of Western power, and allowed Britain and the U.S. to conduct complete domination over Iran. While the public protested against the Shah for many reasons, the majority made it known that the Shah's method of leadership was not synonymous with their country's religion. Ultimately, because of this, Iran emerged from the Revolution as a theocratic state.

As for the petroleum, the 2015 re-opening of the British Embassy in Tehran as well as Iran's receiving of economic and sanction relief in January of 2016 provides both Britain and Iran with hope for a more peaceful, amicable relationship between the two countries.[16] For historians, scholars, and the general public overall, the Iranian Revolution serves as an example of the dangers that arise when government greed and manipulation are placed at a higher value than positive foreign relations and a country's right to their own products. For U.S. diplomats and bureaucrats, however, the Iranian Revolution serves as an example that foreign interference with governments other than our own, as well as physical and political manipulation of people, property, and petroleum…is not in alignment with our moral standards and virtue in the United States.

[15] Kinzer, *All The Shah's Men,* 85-86.

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The Ancient Land of Living

by Michael Miklinski

(English 1102)

Fourteen thousand years is a large amount of time to grasp and while it is nothing more than a small sliver of time in the scope of total history, there are vast, unimaginable differences between the life and landscapes of then and today. The region known as North America was a completely different landscape; glaciers that measured nearly 3,000 feet high covered much of the land mass. These sheets of ice had formed around 1 million years ago and only started to fully disappear from the landscape 10,000 years ago (Gregory 2). For millions of years on the North American continent, nature had run its course unopposed by humans. Earth had cooled greatly one million years ago and subsequently, went through a major ice age. Nearing the end of this period the glaciers had started to recede which allowed animals and plants that were living in the south to migrate north into these newly reformed lands (Gregory 3). As new land was exposed, different species of both plants and animals started to occupy the same areas of the environment where they formed new food chains. The rapidly changing climate that caused the glaciers to recede had fundamentally altered the landscape which created new, unique ecosystems that would thrive and flourish for thousands of years (Page 21). This untouched, natural state continued for thousands of years until intelligent creatures arose within East Asia and migrated east by way of the Bering Land Bridge around 15,000 B.C. While the earth's water was frozen within the glaciers that covered the Earth, the global sea level at that time was lowered by nearly 350 feet, exposing the continental shelf in a shallow area allowing early humans to enter North America (Morgan 19). The introduction of early humans caused rapid and significant changes to the new, untouched continent when they arrived, writing a new chapter between man and nature, influencing the dynamics of the ecosystems and impacting the landscape.

Early Man that came from the initial migration across the land bridge made a huge impact on the unsuspecting species that lived on the American continent. They "had the stone-point technology to kill the grazing mammoth and browsing mastodon, the ground sloth and long-nosed peccary, huge bison and prehistoric beavers" (Morgan 24). Untouched lands gave precious opportunities for the spread and diversification of the new inhabitants as they took advantage of the ample resources. The Paleo-Indians carried with them thousands of generations of knowledge from their ancestors in Asia which gave them novel skills and the creativity to survive and prosper within an unexplored, harsh environment (Bonnicksen 56). This new group would bring their ancient traditions and knowledge into the new landscape that they explored and would have to adapt to survive in the new wilderness.

The Paleoindians quickly learned that to survive, they had to be opportunistic and take advantage of the natural environment. One group of migrants arrived at an extensive cave in Alabama around 13,000 B.C. which provided for their many needs, such as shelter, a natural spring and an east facing entrance so the sun could warm them in the morning (Morgan 29-30). Paleo-Indians at this time relied heavily on what was available in their environment the same as their ancestors had for thousands of years. From here on the Paleo-Indians would live their lives in this new world with no influence from any other cultures, disconnected from the old lands from which they came. It was here that they developed unique lifestyles to fit their environment; they would eat wild plants, hunt game or catch fish to sustain their small social groups for thousands of years (Morgan 32). A recent discovery near one of these ancient communities had found a naturally mummified carcass of a woman in an underwater cave; "the divers called her Naia… she had been

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there for more than 12,000 years, along with the bones of dozens of extinct ice age beasts" (Morin 1). Death was unavoidable for these isolated, fragile lives as they faced the unrelenting, cruel environment of the new world.

The Paleo-Indians had many generations pass by without fundamental changes in their communities which was most likely caused by the overbearing force of nature. From 8,500 to 4,000 B.C. changes were minor within these groups, there was little increase within sizes of their populations and there was little conflict between other groups. They had short lifespans as a result of high disease rates with death from disease far outnumbering deaths due to old age. Skeletons were often found exhibiting signs of tuberculosis, arthritis and birth deformities. This most likely contributed to their limited societal advancement as poor health kept generations short (Morgan 32). Paleo-Indians would soon learn to adapt and utilize resources to their advantage as they sought to expand their communities and their populations started to grow. One major new feature of their villages was the construction of a shaman healing center which would become a highly valuable asset for the struggling communities. We know that they had experimented with early medicinal techniques to treat different ailments. In recent archaeological findings, thirty-five plants found within these healing centers are still in use today (Page 26). With advancements in health care in their societies, an opportunity emerged to control and dominate the once wild and unexpected beast that is mother nature. With improvements in health, they could now advance as the dominant force on the continent.

Paleo-Indians had emerged as the top of the food chain in North America as they managed to fight off diseases, allowing them to take advantage of the land they inhabited. Paleo-Indian communities started to grow and as a consequence these communities had to obtain larger amounts of food to sustain their families. Evidence of bison hunting was apparent as revealed by the discovery of a piece of flint "in perfect contact with a bison rib... proof that Early Man had coexisted with a species of Ice Age bison known to have become extinct by 6000 B.C." (Morgan 27). These early Paleo-Indians had complete domination over these helpless animals as they cleverly lured and stampeded hundreds of bison off of cliffs where nearly 100 dead bison would sometimes be found, ready to be slaughtered and brought home to feed their growing communities (Morgan 31). These massive hunts would unfortunately have far reaching consequences as some species of bison filled very specific niches within their respective regions. A vital relationship between grazing animals, grass and moss was affected by the mass hunting of the Paleo-Indians where the grazing animals would reduce moss allowing grasses to grow. As the number of bison were reduced, there was more competition between grasses and moss for resources. Also at this time, the global climate was growing warmer as the Earth was leaving the previous ice age giving the moss an advantage. Moss became the dominant species in many regions, reducing the grass which was the food supply for the bison, sending both bison and grass towards mass extinction in certain regions (Bonnicksen 58). With the loss of a critical food supply for the communities, Paleo-Indians were ultimately forced to either adapt or forever be lost to the sands of time as they fought against the powerful force of mother nature once again.

A novel invention came into existence that would save many of these ancient cultures and change history forever; farming had revolutionized the very idea of what a civilization could do and it became the center-point of many new cultures and villages. The psychological change within groups would be very different from the many generations of hunters and foragers before, as farmers did not need to rely on what was merely available in the land anymore, instead taking control into their own hands. Whereas before the forager was thankful for what mother nature offered, the farmer was fundamentally different, as he enjoyed the fruits of his own labor and he took pride in his work. With pride, one would ultimately become territorial to protect his creation. Land became a powerful commodity and this would create great conflict between the growing groups of Paleo-Indians (Morgan 35). Nature was no longer something the Indians had to rely on as they became self

sufficient and could live within much more stationary societies than what was required when they had to follow their sources of food from one location to another. Now they had to rise up and band together within tribes to protect not only their families but the very resources that they depended on to survive. These tribes clashed, yet they would also band together allowing them to build a culture and expand their societies into something that had never been seen before.

Many generations passed, engrossed in the new dominant Native American lifestyle where bigger communities arose as many were able to sustain their tribes in a mostly sedentary lifestyle supplemented by nomadic movements across the continent of North America. Nature was no longer a massive threat that Native Americans had to abide by and new cultures rose to prominence. One prominent tribe that arose around 100 B.C. was the Hopewell which created vast trading routes throughout the continent from their home in the Ohio River Valley to places such as the Rockies and the Gulf Coast. As they traded, they spread their ideas and techniques of mound-building to many different tribes (Keenan 5). These constructions were examples of early advances in scientific understanding as they exhibited their understanding of astronomy at that time. The effigies that they built were expertly designed so they would align with astronomical events allowing them to have an early iteration of an agricultural calendar (Keenan 3). Native Americans would dominate much of the continent for many generations until the arrival of foreign exploration parties from distant civilizations. These eager explorers would find the vast new world a very enticing endeavor and pushed to expand into the area, competing directly with the Native Americans for resources. In their early meetings, they had sought to work together with the natives at first, but things quickly deteriorated as relations with the new explorers became violent. While the natives fought to protect their lands that they had inhabited for thousands of years, it was a losing battle against the far greater, advanced societies that opposed them. The native tribes were greatly reduced and forced onto small reservations as the rise of the United States of America saw the natives as an archaic, uncivilized society that was incompatible with the new country. This would mark the end of the reign of Native Americans, who were the dominant force in the continent for thousands of years.

The environment that was in direct competition with the Paleo-Indians did not fare any better against the new explorers. The settlers had a thirst for control and domination of the landscape as they quickly expanded across the continent to farm and take advantage of the untamed lands. The new inhabitants thrived and grew immensely as they started to quickly amass new power from industry while having no regard for how it may affect the environment. Pollution and resource usage essentially went unregulated for many years as profit and power surpassed the need for a healthy environment. We are only starting to realize as a society the problems that we face in the near future such as climate change due to wild disinterest in our effects on the environment. Just like the Native Americans, we too may be affected by the environment as climate change threatens to pose vast problems such as major changes to habitats and ecosystems which ravage the environment while increased natural disasters such as floods pose risks to developed cities. We have made progress working towards a healthier future as awareness for our global footprint is spreading and we better understand how our lives impact the environment around us. Recent efforts between major superpowers of the world have taken steps in regulating and reducing pollution and unsustainable practices. It is disconcerting however that the very industries these regulations were made to curtail have worked to gain ground in politics and seek to undo the progress that has been made towards a more sustainable society. We need to more than ever be aware of the problems we are creating lest we destroy ourselves as we did the Native Americans.

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Command and Control: A Moral Framework for the Development of Artificial Intelligence

by Tiffany Montgomery

(Philosophy 1840)

I. Introduction

Militaries around the world currently depend on robotics to give them an advantage on the battlefield. On the border of North and South Korea robots are used to maintain and defend against the extreme conflict between the two countries. One South Korean company, DoDAAM, has taken advantage of the near constant fighting on the border to manufacture the Super aEgis 2, an automated gun turret capable of locking onto and engaging targets from nearly two miles away (Blain). China, Russia, and Israel are also key players in robotic warfare, with all three countries suspected to be developing robotic weapons of their own (Muller 4). The United States Department of Defense (DoD) believes that robotics will be a key piece in the war of the future stating "autonomy in unmanned systems will be critical to future conflicts that will be fought and won with technology" in their Unmanned Systems Integrated Roadmap (US Department of Defense). This roadmap also mentions the use of autonomous systems and software to make use of the vast amounts of data that robots collect through sensors and other electronics on the battlefield.

Autonomous systems are also being integrated into other parts of society, including the development of autonomous cars, the algorithms that control the news people get on their social media timelines, and the robots that clean their floors. For example, algorithmic trading is very attractive to Wall Street due to its speed, but it has some associated drawbacks. One day in 2010, the stock market dropped 9% on account of a breakdown in algorithmic trading. In his talk, "How Algorithms Shape Our World", Kevin Slavin discusses the implications of Black Box or Algo (Algorithmic) Trading. The Flash Crash of 2010 lasted approximately 36 minutes but it will take years before there will be a consensus on what happened that day. Because much of the stock market consists of algorithms that order trades without any human supervision or any ability to adapt to turmoil, our economy has become vulnerable to dramatic price swings as algorithms fight over how to deal with the sudden change.

Humans increasingly rely on autonomous systems that do not require any conscious effort from an operator. The prospect of losing control have even more frightening consequences in a physical space. For example, Section 1.4.3 of the U.S DoD "Unmanned Systems Integrated Roadmap" provides an operational vignette to illustrate the DoD's vision for the use of unmanned systems in the year 2020. The vignette involves ground, aerial, and underwater unmanned systems working together to investigate and report activity regarding the possible creation of a weapon of mass destruction in the fictional country of Norachi. The unmanned systems in this story are networked together to allow them to quickly make decisions about how to execute a mission independent of a human operator. What happens when these systems have their own flash crash? How can people engineer a stop button for robots falling out of the sky? How can people prevent a bullet from shooting once an automated gun turret has already pulled the trigger?

II. Thesis

The more reliant human beings are on autonomous systems, the more vulnerable they become to the systems shaping our world without their consent. The advancement of autonomous

systems jeopardizes human autonomy by replacing conscious thought and fostering an overreliance on autonomous systems. The novelty of the threat that autonomous systems pose to humanity's current way of life requires a new way to think about how and why humans create autonomous systems. In this paper I argue that the development of autonomous systems require that a moral framework include control as a value. Developers of autonomous systems ought to create solutions to maintaining control over autonomous systems in parallel to efforts to increase the degree of autonomy a system has. While many of the current moral frameworks that surround the use of technology revolve solely around their technological capability and any physical harm they may cause, this moral framework seeks to place value on human consciousness and moral judgement over pure calculations. Currently, there is no evidence that it is possible to create a human-level artificial intelligence. Regardless, any creation of a human-level artificial intelligence would still not be human and would not be able to parallel the moral judgements of a human. An autonomous system that is capable of making true moral judgements risks losing its utility should the actions of such an artificial intelligence not align with the original goals that its creators has for its behavior.

III. Elements of a Possible Framework

Much of the fear associated with automated systems comes from a lack of understanding of the varying degrees of control that an autonomous system has over its assigned task. The effects that an autonomous system has on the ability of a human to control a situation depends on both the level of autonomy and how the autonomous system is used. ALFUS, a framework for Autonomy Levels for Unmanned Systems attempts to unify various definitions, classifies autonomous systems, and provides a method of modelling the risk associated with the rise of an autonomous system. In its first workshop, held on July 18, 2003 at National Institute of Standards and Technology (NIST), the Ad Hoc ALFUS Working Group determined that its objectives were to define metrics for autonomy and to develop a framework for autonomy levels for unmanned systems (ALFUS). ALFUS defines the level of autonomy as the ability of an unmanned system to sense, perceive, analyze, communicate, plan, make decisions, and act to achieve its goals as assigned independent of any human interaction. ALFUS then defines three markers of an unmanned systems' autonomous capabilities: human independence, mission complexity, and environmental complexity. The ALFUS framework uses these metrics to then allow an operator to evaluate the risk in using an autonomous system for any given task, stating that "When the unmanned system's contextual autonomous capability is equal to or higher than the required levels, lowered risk can be anticipated, although risk may exist even when all the requirements are all fulfilled." (ALFUS) The use of this framework then not only requires a knowledge of the capabilities of the unmanned system but an assessment of the complexity of the task at hand and clear requirements from which you can evaluate the potential performance of the task by an automated system.

As the requirements of a task become more complex, an autonomous system will be required to have more generalized knowledge and autonomy over itself. Ezio Di Nucci and Fillippo Santoni de Sio claim in *Who's Afraid of Robots: Fear of Automation and Direct Control* that an AI having control over itself, another agent, or the task presented to it is not the cause for concern. In fact according to Nucci and de Sio, delegation of tasks is a marker of progress for humanity. Di Nucci and de Sio, make a distinction between the capacity to control and the activity of controlling. The act of controlling is having any direct influence on some task. As a human becomes more proficient in a task, they do not have to make an effort to execute the task, such as riding a bike or reading a paper. Di Nucci and de Sio argue that this proficiency extends beyond the body. When autonomous systems are used as an extension of humans, they exemplify our ability to not only understand a task but "teach" another agent how to do it. Whereas the capacity to control reflects one's ability to have control over itself and its motive, consciousness is not required for *controlling*, only proficiency of

the task at hand. Having the capacity to control however requires a moral judgement of what tasks are valuable enough to be made. For example, when a soldier is in control of a non-automated weapon it is because they are conscious of what they are doing and have the ability to stop the weapon. They execute the activity of controlling a bullet when they fire the weapon. A soldier does not have the capacity to control the war however, since one soldier cannot begin or end a war.

There is no guarantee that a high-level artificial intelligence will continue to abide by the wishes of the operator. An autonomous system does not have to be conscious in order for disobedience to occur. The more complex the tasks we allow AI to complete become, the more general their programming must become. Human beings must trust a high-level AI to make complex decisions on its own while upholding any values associated with the task at hand.

In *The Human Condition*, philosopher Hannah Arendt concerns herself with how humanity's growing ability to control itself and our environment through scientific instrumentation could have an adverse effect on how we view our world. Galileo Galilei, famed astronomer, played a major role in the scientific revolution of the seventeenth century by using the telescope to observe the planets and confirm that the Earth gravitates around the Sun. Usually the acceptance of the heliocentric view of the solar system gains attention, but it is the use of the telescope that captures the mind of Arendt. Using the telescope, Galilei was able to take on the Archimedean perspective—or at least a point similar to it—a point Archimedes hoped would allow human beings to view the world in relation to all other things, while simultaneously untethering ourselves from the Earth in an effort to not obscure our view of the world. The telescope proved that the desire to reach for the Archimedean point comes at a cost. The failure of our senses to accurately perceive the world and our ability to view the world from the Archimedean point go hand-in-hand. Arendt claims that exploration in physics from this point on requires taking the perspective of the Archimedean point (263). We are still bound to the Earth, however, and any changes that we make to the Earth from the Archimedean Point will still affect our well-being. Just as Arendt is concerned with the use of data gathered through scientific instrumentation, this paper concerns itself with the "data" gathered through and manipulated by *artificially* intelligent machines. The discovery of the Archimedean point was a source of great despair or part of the scientists and mathematicians during the 17th century, the paradox of being able to fully observe the world without being consciously present still affects how we think about technology today. When we begin using artificial intelligence as a tool we alienate ourselves not only from all sense experience, but also conscious thought. In summary, taking Arendt, Di Nucci and de Sio, and ALFUS into account, it is important to be aware of an autonomous system's purpose, make sure that it can be trusted to perform its own task and not have control over itself or any influence on the larger goal. It is required that a human being's sense experience is incorporated into these decisions of how the autonomous system is used and that we are constantly monitoring it.

IV. Case Study: Warfare

Much of the debate around whether we can trust robots in warfare has revolved around the use of lethal autonomous weapons systems (LAWS), robots that can identify and attack targets without any direct human supervision. The DoD has listed three driving factors for producing unmanned systems (including LAWS): 1) the success of unmanned systems during combat operations in Southwest Asia, 2) the need for cost effectiveness caused by a predicted reduction in the military budget, and 3) a shift of national security to the Asia-Pacific theater of war many require that unmanned systems replace human soldiers where freedom to operate is contested. Other advantages of LAWS include the reduction of risk to human soldiers, increase in the ability to prosecute war crimes, increase in accuracy, precision, and speed, and the ability to operate in places that are dangerous for soldiers to fight in.

As of April 15th, 2016, there have been three informal meetings of artificial intelligence,

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ethics, and policy experts on LAWS hosted by the United Nations Convention on Certain Conventional Weapons (CCCW) (The United Nations). The meetings have consisted of a discussion on whether fully autonomous weapons systems truly exist, a need for a clear definition of LAWS, and the ethical concerns that the presence of such systems present. While there is doubt whether fully autonomous weapons systems exist, semi-autonomous weapons systems currently are in use and in development. The super aEgis 2 is currently being used in many locations in the Middle East, including three airbases in the United Arab Emirates, the Royal Palace in Abu Dhabi, an armory in Qatar and numerous other unspecified airports, power plants, pipelines and military air bases elsewhere in the world (Parkin). According to DoDAAM's CEO Myung Kwang Chang, "Need is the mother of invention," and it is expected that both North and South Korea will want to use similar gun turrets in the demilitarized zone on the border of both countries. The United States Joint Forces Command's Project Alpha has been working on the development of Tactical Autonomous Combatants, robots that are meant to be largely autonomous with little human supervision. Gordon Johnson, the Unmanned Effects Team leader for Project Alpha, claims that these robots will be able to save human soldiers from having to go into chemically, biologically, or radiologically contaminated environments. Semi-autonomous LAWS have even been used for domestic conflict. Texas police officers have also made use of an autonomous robot sniper after the shooting of Dallas police officers took advantage of the opportunity in 2015. Dallas police Chief David Brown said, "the robot was used in the building where Johnson was still sniping, intent on continuing to kill." (CNN).

Despite all these advantages, the development of these systems has not gone without opposition. The majority of the ethical debates surrounding military robotics have been in favor of a preemptive ban on the development and wartime use of LAWS. More than one-thousand leaders and experts in the field of Artificial Intelligence signed an open letter urging the United Nations to ban the development and use of autonomous weapons to be announced at the opening of the International Joint Conference on Artificial Intelligence in Buenos Aires, Argentina, July 28, 2015 (Del Prado). AI researchers fear that the proliferation of LAWS could discourage research in the field and inhibit the benefits that could come from developing non-lethal artificially intelligent systems. The letter also warns that LAWS have the potential to become the "Kalashnikovs of tomorrow"—in reference to the designer of the popular AK machine gun—and notes that LAWS have been described as the third revolution in warfare after gunpowder and nuclear arms. The writers of the letter fear that the lost-cost of materials required to mass-produce these weapons will lead to an international arms race. The Stop Killer Robots Campaign shares the same fear of such a slippery-slope. The organization consists of five international NGOs, a regional NGO Network, and four national NGOs, that believe that the ease of robot warfare could lead to a lack of constraint by army officials and could make the decision to go to war more feasible, putting a greater number of civilians at risk in the long term. People supporting the Stop Killer Robots Campaign also argue that the inability of LAWS to reason and make decisions like humans do presents an ethical concern in itself (Stop Killer Robots).

V. Analysis

In asking whether or not the use of LAWS is morally permissible, we utilize the elements of a possible moral framework outlined in the former half of this paper to evaluate the trustworthiness of LAWS. First we must define the task, by definition LAWS are created to be used as lethal weapons. The weapons under the scope of this paper are meant to be used during battles of war. As a weapon to be used during war, LAWS must follow the rules laid out by International Humanitarian Law (IHL). A large part of IHL is contained in the four Geneva Conventions of 1949. Since then there have been other conventions called to prohibit the use of weapons such as chemical weapons or land mines and to extend protections of noncombatants. The restrictions placed on weapons of war

mirror the principles of just war. Just war theory aims to provide an ethical framework for deciding when to go to war (*jus ad bellum*) and how to fight during war (*jus in bello*). The use of LAWS can be evaluated under "*jus in bello*" according to three principles: necessity (whether it is appropriate to take an action), proportionality (making sure that the action taken is suited to the reason), and discrimination (being able to distinguish between combatants and noncombatants). After defining the task, we answer the question of whether we can trust LAWS to uphold the principles of IHL. In *Robots, Trust, and War*, Muller defines predictive trust as reliance on an agent to do some job like a mountaineer trusting a rope not to break.

So far much of the effort of those who want to support a ban on the development of LAWS has centered around forming arguments against LAWS' technological capabilities to uphold the principles of just war and IHL. These analyses can be used to determine if LAWS are deserving of predictive trust. Noel E. Sharkey a professor of Artificial Intelligence and Robotics and a professor of Public Engagement in the Department of Computer Science at the University of Sheffield, UK, addresses the principles of proportionality and distinction in his paper "The evitability of autonomous robot warfare". First, Sharkey notes that there are not currently LAWS in use that can separate civilians from combatants (especially in insurgent warfare) or that can recognize combatants that are wounded or surrendering, thereby unsatisfying the principle of distinction. Sharkey explains that current sensing technologies can not can tell humans from one another, nor can a programmer ever be able to give the robot the proper instructions on how to tell civilians apart since there is no clear definition of what a civilian is (787-99).
Machine learning, can be defined as follows:

> "A computer program is said to learn from experience E with respect to some class of tasks T and performance measure P, if its performance at tasks in T, as measured by P improves with experience E." (Mitchell 2)

In other words, if a program is fed a lot of data, and asked to do a task with that data, one can tell that it "learned" if it gets better at that task. The data that is fed through the algorithm is broken down into features and labels that describe what the data means. In a visual recognition system, an image is treated as one example of a solution to the task of recognizing something in the image. Its features consist of all the values of each pixel it contains. After "learning" about the pixel representations of visual data a computer vision algorithm can then predict if any of the visuals it has learned about will be in another image. Because the number of features of an image are very large, it is common to use neural networks, a network of the usual calculations that would be made in a machine learning problem, to compute on this data. This software becomes even more complicated when developers use deep learning (the layering of many neural networks) to train their software to complete a task. (Knight). Despite its efficiency, the mathematical complexity of computer vision algorithms makes it difficult to work backwards and understand why an algorithm made the prediction it did. As machine learning algorithms become more common, programmers must be able to design software that can provide many different reasoning metrics about itself, instead of just the amount of confidence an algorithm has in its prediction. (Knight)

Because of the nature of machine learning algorithms, LAWS will also have a hard time understanding context and being able to associate any meaning with the calculations it makes. While a human can easily tell whether an object in the road is a piece of trash or an animal, LAWS might not have such an easy time telling the difference if they learn that small animals and trash are around the same size and color. Even when the algorithms work correctly, issues can arise if they are applied poorly. In *Morality and Machines: Perspectives on Computer Ethics*, Stacey Edgar highlights three types of human error: syntax error (a programmer's code does not follow the rules of the language that they are using), logic errors (when there are no syntax errors but the code still

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doesn't perform the task you want it to), and application errors (when there are no syntax or logic errors, but your code still outputs incorrect results because your program model was not being used in the correct way). Edgar notes that these errors can be remedied by using program verification and extensive testing. In the case of autonomous vehicles which use similar technology as LAWS, according to Fortune, thorough testing of computer vision systems could take hundreds of years. The RAND research project notes that for at least fatalities and injuries during car accidents, it is impossible for autonomous vehicles to provide enough information through test driving (Knight). There is no reason to believe that a similar implementation on LAWS would yield different results.

Even if LAWS had the ability to discern between different actors in the theater of war, the robots themselves still lack the common sense needed to make decisions about what actions to take after they have made such a distinction. The second conflict with international humanitarian law is that of "situational awareness or agency to make proportionality decisions". Sharkey concedes that LAWS might be better at solving the easy proportionality decisions of choosing and deploying munitions that minimize collateral damage, but LAWS cannot solve the hard proportionality problem of being able to decide whether it is necessary to apply force in the first place. This decision is a moral one that requires intuition that inanimate object do not possess. While a human soldier's intuition is of course not always reliable, it is the understanding of the soldiers' actions and our ability to communicate that warrants one's forgiveness of any wrongdoing. Knowing that one will be able to understand and communicate changes to any potential wrongdoings instills normative trust. Overreliance on learning algorithms may cause soldiers to forget that examples of human behavior are needed to guide the program in the first place. Where current artificial intelligence lacks in judgement, it is the experience of a human being that will fill in any moral gap.

Muller also argues against Sharkey in claiming that there are LAWS that can also satisfy the principle of proportionality, by targeting other weapons systems and not human beings (6). Muller adds to this claim by noting that there are situations in which a robot could determine that no collateral damage was likely. Then under the principles of IHL, it would be morally permissible for LAWS to act. Muller also defines normative trust as reliance on an agent after they have taken the needs of trustor into account. Muller spends the latter half of his paper analyzing the ability of LAWS to be trustworthy to civilian conflict during asymmetric war. While not every war LAWS can be used for will be asymmetric, it is useful to apply Muller's arguments to trust between soldiers, commanding officers and LAWS. This paper has established that there is reason to believe that current LAWS are not reliable. Even if LAWS were advanced enough to become reliable weapons and earn the predictive trust of their fellow combatants, it is impossible for LAWS to have any human in mind, because it has no mind at all—just calculations. The responsibility of acknowledging how one's actions may affect those around them before taking the action may be shifted to any human being that is responsible for the operation of the LAWS, there is debate on who or what that may be.

In *"Killer Robots"*, Robert Sparrow, Professor of Philosophy at Monash University in Australia, considers three possible parties that could be held responsible for war crimes: the programmer of the LAWS, the commanding officer or operator of the LAWS, and the LAWS itself. First, he rules out the programmer since any error in the system can put in a warning by the manufacturer, shifting the blame to the commanding officer that chose to use the system despite its faults. A programmer also should not be held responsible for any transgressions on behalf of the LAWS because a successful automation engineer would be required to create an entity that can adapt to the unpredictable theaters of war in a way that was unpredictable to both the programmer and the commanding officer. Not designing LAWS to this level of automation forgoes many of the utilities of having a robot fill in for human soldiers in more dangerous environments. Sparrow defines full autonomy and moral responsibility as going hand in hand. Sparrow writes, "to say of an agent that they are autonomous is to say that their actions originate in them and reflect their ends" (Sparrow

65). Because such an agent would be the only one capable of foreseeing and preventing its own actions, it would be the only one that could fairly be held responsible for itself. Sparrow extends this reasoning to the commanding officer as well. Even if the commanding officer was aware of all the risks of deploying such an agent as told by the manufacturer beforehand, there are still risks that the manufacturer and therefore the commanding officer could not foresee. Finally, Sparrow rules out the robot itself, because it does not have the capability to be punished or held accountable for its actions since it, by Sparrow's definition, is not capable of feeling emotions and responding to pain like humans do (69-73).

Sparrow creates an analogy between the robot and child soldiers. A child soldier possesses a similar autonomy to the type of LAWS that Sparrow describes since they can make unpredictable choices that satisfy ends that begin and end in themselves, but they are still not mature enough for anyone to reasonably trust them with the task of choosing when to take another human's life. Sparrow writes, "It is the prospect of intelligent actors without any moral responsibility that makes child soldiers especially terrifying." (74) Sparrow argues that no one ought to be held responsible in the case of the child soldier since their parents, their commanding officer, nor themselves held enough prior knowledge to stay in control of the child soldier. In *Just War and Killer Robots, Simpson and Muller* offer a counter argument by extending this analogy to the example of Joseph Kony's use of child soldiers in the 'Lord's Resistance Army' operating in northern Uganda, the D. R. Congo and South Sudan. Simpson and Muller argue that it is Joseph Kony who is clearly responsible for the actions of the child soldiers in the Lord's Resistance Army. Simpson and Muller claim that Kony is, in fact, responsible for any war crime committed by these child soldiers because the incapability of children to understand the complicated ethics of war is common knowledge. It is the decision to use child soldiers violates the principles of just war, not the actions of the child soldiers themselves. (5)

If we accept child soldiers to exemplify Simpson and Muller's idea of near-autonomous robots, then we can also say that the robot would not be able to make decisions about who to target during a war because "they lack the technical and moral competence" to use their artillery appropriately. Therefore, it is possible to hold commanding officers responsible for using weapons that are known to violate the principles of just war and international humanitarian law. While the previous analogy ignores that LAWS can have varying degrees of autonomy, much of the reasoning still applies to a wide variety of LAWS. Regardless of autonomy level if a combatant chooses to wrongfully use LAWS then any harm caused by the weapon would be a direct result of their action, rendering them responsible. This line of reasoning, however, still supports that LAWS cannot gain predictive trust and should not be used exclusively lest soldiers lose control of our ability to operate on the battlefield.

Any attempts to create a LAWS capable of executing actions that reflect their own ends would be in vain. The advantages of using LAWS in place of human beings on the battlefield is the likelihood of having fewer of one's own soldiers die. A robot that was "conscious" enough to be acceptable to the public would require either the robot itself to mimic human emotion or have human beings feel emotion toward it as well as flexibility to adopt to potentially unpredictable complex contexts. Going back to the example of child soldiers, creating children for the sake of doing labor is slavery. The existence of LAWS of any autonomous system that was worthy of being compared to a child or animal, would prompt more discussion on the rights of such machine, including the right to freedom from the control of a human operator. Such machines might have their own rights to control, jeopardizing the current control humans have over our own autonomy. Such an intelligence would also challenge our control over ourselves and the planet seeing as our superiority over other animals allows us to "rule the Earth" now.

While it is important to consider the presence of a fully autonomous machine, the possibility of humans wrongfully assigning anthropomorphic qualities to LAWS or autonomous systems, is

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more realistic than the creation of a sentient artificial intelligence. It is a popular belief that a human's brain works like a computer: the senses collecting data and the brain operating on that data and saving memories on a sort of "wet drive", opposed to a computer's hard drive. However, the notion that our brains are complex computers could not be any less true. Research in artificial intelligence began as a way to understand the brain through reverse engineering, however we do not yet understand how many of our brain functions work, let alone having the ability to recreate them with electronics. (Aeon) The result of such a project has only product a reduction of reality: a true *artificial* intelligence lacking context and consciousness. Since the 1940s, artificial intelligence research has shifted from creating a general purpose intelligence to creating algorithms to do very complicated, yet specific tasks. Some of the most infamous examples of this include: the defeat of Chess Grand Master Garry Kasparov by IBMs DeepBlue in 1997 (Wired), the success of IBMs Watson on Jeopardy in 2011 (NYTimes), and the defeat of legendary Go player Lee Se-dol by AlphaGo, a program developed by Google's Deep Mind (The Verge). As AI continues to surpass humans in activities once thought to require human intelligence, the technology continues to gain a significant amount of hype regarding is true abilities.

According to Sharkey, soldiers have already begun to treat robots like animals. Soldiers have been reported taking the robots they work with fishing and letting them hold the fishing rod in their hand. One researcher had to stop testing on a mine clearing robot because he thought letting the robot's legs get blown off after detecting a mine was inhumane. Repeated use of autonomous systems can also cause humans to over trust them. During testing of a driver's capability to stop an autonomous car from getting in an accident most of the drivers weren't paying attention to the road or what the car was doing (Borowsky, Oron-Gilad). Despite the lack of understanding of the capabilities of autonomous vehicles, drivers were still willing to relinquish control.

VI. Conclusion

In conclusion, LAWS are not able to gain predictive or normative trust because there is no weapon currently in existence that its technologically capable of upholding the principles of IHL. Even if we could build such a weapon, combatants risk the weapon losing its utility because the qualities that are required to uphold IHL involve the robot being able to have a significant amount of control over its own functions, increasing the possibility that it can disobey commands from a human operator. By allowing LAWS that cannot uphold IHL, humans risk allowing ourselves to trust LAWS regardless of their technological capability. In the case of LAWS being used during times of war, developers ought to stay away from the creation of LAWS that can select and attack targets without a command from a human. This conclusion does not mean that autonomous systems are not useful in the battlefield. There are still numerous research opportunities in creating LAWS and other autonomous systems that emphasize human-robot interaction and assist a soldier in executing some task. An example includes robots created to gather intel during reconnaissance missions. The need for trustworthiness under the moral framework outlined in this paper creates an opportunity for researchers to focus on robots that can not only gather intel but explain why their intel is important as well.

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Implicit Bias and the School to Prison Pipeline

by Thomas Morris

(English 1102)

One afternoon, while walking from my downtown Chicago office building to the train station, a somewhat disheveled man approached me from across the street. "Excuse me, sir!" he shouted as he got closer. "Could you please help me get something to eat?" "Sure," I replied. As I was handing him some change, I said to him, "You look awfully familiar to me!" After talking for a few minutes, we discovered that we were in fact high school classmates. I remembered him as a shy, quiet and somewhat awkward kid, never really having very much to say. I also remembered that in the middle of our sophomore year, all of a sudden, he was gone. I figured he'd moved and transferred to a different school. During our talk, he began to share the reason for his sudden disappearance. He explained that the school's administration had him expelled and arrested for fighting. He ended up being convicted and sent to a juvenile detention center in Lake County. He went on to explain how after his release, his only option for finishing high school was an alternative school for boys with disciplinary challenges. He shared in vivid detail the horrors of that experience. In his words, "…that one fight put me on a downward spiral, from which I've never recovered." I was struck by his story. I was pained by the fact that something like this could happen to someone so easily! When tasked with choosing a topic for this research essay, his story immediately came to mind. So, the focus of this essay will be to show that within the American educational system, African American male students are disproportionately represented in the number of cases where disciplinary practices are deemed necessary, thereby exacerbating the phenomenon known as the School to Prison Pipeline.

The School to Prison Pipeline is not an isolated social anomaly. A close examination of contributing (historical) factors would uncover an all-too-common theme. In a broad sense, it is the manifestation of a much deeper issue, an issue that has been woven into the very fabric of the American social construct. It's another chapter in a very telling saga chronicling the history of America's acrimonious relationship with her black and brown citizens. In order to fully understand this, a much wider look at the historical factors that have contributed to the shaping of America's default perspectives on issues dealing with race is needed.

The biases around race that we see today have their origins in early American history. These dark and ugly manifestations are part of the residue left over from a time in history when the American paradigm on race carried with it the notion that people of African descent were considered property, items to be bought and sold by their owners (Alexander 17-18). Despite all of the social progress made over the years, the horrific legacy of racial bias still persists.

In 1903 (some 40 years after emancipation), noted sociologist and historian Dr. W.E.B. DuBois, Ph.D., put forth a premise that has relevance even for today. In his incomparable work *The Souls of Black Folk: Essays and Sketches*, Dr. DuBois provides a finely-focused lens through which the African American experience in American society can be viewed. Addressing the issue of racial bias, Dr. DuBois poignantly and prophetically posits, "…for the problem of the Twentieth Century, is the problem of the color line" (vii). Now, even though more than a century has passed since the original penning of that statement, a compelling argument in favor of its pertinence can still be made. Even the most cursory of examinations would uncover evidence showing how implicit, race-based biases pervade some of America's most important social institutions – housing, (un)employment, education, criminal justice – just to name a few. For the purposes of this essay, the focus will be its

impact on what are considered to be two of American society's most critical institutions – education and criminal justice (government).

Modern sociology suggests, crucial to the efforts of achieving and maintaining societal stability is the strength of its institutions' inter-twining relationships (Kendall 105). The relationship between education and government has evolved over the years. Studies have shown this evolution to have had a disproportionately negative impact on communities of color, specifically, that of African Americans (Rodríguez 828).

In taking a look at school disciplinary practices from the past, it was observed that student behavioral issues requiring discipline were, by and large, handled internally. According to an article in the *Child and Adolescent Social Work Journal,* research has uncovered that from as early as the 1800's, up through the latter part of the 20th century, schools would sometimes implement corporal methods of discipline as a means to manage student behavior. Over this same time period, the number of students attending school grew substantially, rendering these methods ineffective. As a result, students requiring disciplinary actions were either suspended or outright expelled from the school. Inevitably, these methods also proved to be problematic, as issues around due-process began to surface. The article continues to point out that beginning in the 1960's, up through the late 1980's, schools incorporated in-house suspensions as a means of mitigating disruptive classroom behavior. This practice involved isolating the offending student(s) by having them removed from the classroom, but allowing them to remain in school so as to not lose valuable instruction time (Mallett 10-18). The data seems to support this approach as being somewhat productive; however, as the student population continued to increase, issues around resource allocation – such as classroom space and availability – started to become more prevalent.

In a research paper submitted to the American Sociological Association titled "Institutional Racism and the School-To-Prison Pipeline," Professor Madeleine Cousineau puts forth that the 1990's brought with it a shift in school disciplinary practices. The crack-down on crime in schools coincided with the implementation of federal and state laws that focused on curbing the rising number of gang and drug-related crimes (1-6). As societal views on crime and violence began to harden, school disciplinary policies followed suit and gradually moved from a restorative approach to a more punitive one. Professor Cousineau goes on to say that while lawmakers were busy implementing new "tough on crime" legislation, school districts across the country were in constant pursuit of new ways to effectively address what was perceived as the growing issue of crime and violence inside the schools (7-11). The result was the wholesale adoption of a new and controversial disciplinary practice called Zero Tolerance.

Referring again to an aforementioned article in the *Child and Adolescent Social Work Journal*, author Christopher Mallett provides important information on the origins of the phrase "Zero Tolerance." According to Mallett, the phrase came on the scene in the early/mid 1980's during the Regan Administration's highly publicized war on drugs. It was used to describe the enforcement of ultra-strict, non-forgiving policies aimed at addressing the nation's growing drug problem. By the late 1980's - early 1990's, school districts in various parts of the country had decided to mimic the actions of the government by adopting and implementing their own version of zero tolerance. This was done in order to address what school administrations referred to as "intolerable" behavior (14-20). By the mid 1990's, zero tolerance had become the default disciplinary philosophy for school districts all across the country. As a result, the school districts experienced an exponential increase in the overall number of suspensions and expulsions (Cousineau 20).

Today, in conjunction with local law enforcement agencies stationing police and private security personnel inside the actual school facility to serve in the role of "School Resource Officer" (SRO), school administrations continue to implement zero tolerance procedures and practices as a means of control in an attempt to manage student behaviors inside the classroom, as well as on the school grounds. If either the faculty or administration considers a student to be in violation of school

policy, or if the student is generally considered a "problem", the SRO could be called in to remove the student. Depending upon the committed offense, the student could be subjected to disciplinary actions ranging anywhere from suspension, up to and including incarceration (McClellan 5-7).

Notwithstanding its originally stated intent – which was to improve school safety– Zero Tolerance as practiced by the U.S. educational system has resulted in a number of consequences, largely unintended. These unintended consequences have given sufficient rise to some very legitimate questions around its efficacy. More importantly, there is an abundance of research providing evidence of implicit bias when determining how and against whom zero tolerance policies are enacted. Stetson University Law Professor Judith A.M. Scully provides the following analysis in her research on this topic:

> The unequal use of zero tolerance policies can easily be attributed to conscious and/or unconscious racial bias. Teachers, administrators, and other school personnel who are prone to embracing stereotypes of Black children as unruly, out of-control, or dangerous "may react more quickly to relatively minor threats to authority." In addition, administrators and other authority figures who stereotype children of color as being "beyond help" may rationalize that it is appropriate to dispose of Black and Brown children by pushing them out of schools, eventually leading to their detention. The rationale following this stereotype is simple—if a child is beyond help, why should the teacher care whether the child is in or out of school? And it is not a huge leap to imagine that, if the child is deemed to be "beyond help," they are also probably deemed to be dangerous, and therefore the rationalizer believes that locking the child up will ensure public safety (975).

In an article written by University of Florida Associate Law Professor Dr. Jason P. Nance, a clear and concise explanation is given to describe how overly- harsh disciplinary practices – such as those brought about by the implementation of Zero Tolerance policies – can have a profoundly negative effect on the overall educational success of the student. When examining the impact on schools that were primarily comprised of students of color, Dr. Nance points out a number of very disconcerting facts:

> It is also important to emphasize that over-disciplining students often does not create a more orderly environment conducive to learning. While removing a disruptive student from the classroom or school may temporarily improve the learning climate, empirical evidence demonstrates that over-disciplining students and creating a punitive environment often alienates students, generates mistrust, and impedes the learning environment even more. In fact, punitive environments often lead to additional violence and disorder and lower academic achievement for all students. (14)

According to recent research, the nationwide population of African American and Latino students (K-12) is slightly below twenty percent. However, this same demographic comprises twenty-seven percent of the students that have been referred to law enforcement for discipline and thirty-one percent of the students who have experienced school-based arrests (Nance 1066). While there has been no credible evidence found in support of any supposition suggesting that African American and Latino school-age children are more prone to commit punishable offenses, they are, however, six times more likely to face disciplinary actions than their non-minority counterparts. These statistics seem to point out an obvious and disturbing pattern. Black and brown (primarily male) students are far more frequently exposed to severe disciplinary practices. They also tend

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experience the effects of Zero Tolerance far more than any other racial group (Rodríguez 813). The question now becomes, "Why?" An objective analysis of the data uncovered during this research would strongly support "Implicit Bias" as one of several influential and contributing factors (Nance 1067).

As was pointed out earlier, implicit, race-based biases are built into the American sociological construct. These ingrained beliefs are embedded in the psyche and often work without specific intention. This is the primary point made by the adroit analysis offered by Dr. Jason P. Nance when discussing the inner working of implicit bias:

> Implicit biases, on the other hand, are behavioral propensities that result from implicit attitudes and stereotypes. They originate from the deep influence of the immediate environment and the broader culture on internalized preferences and beliefs. They function independently of an individual's awareness of having these attitudes and stereotypes. Rather, implicit biases function automatically, including in manners that might be consistent with a person's explicit set of personal values if that person were consciously aware of those biases. This is because implicit biases operate in an alternative cognitive processing system, often termed "System One," that is quick, contextualized, automatic, associative, independent of cognitive ability, and operating mostly outside of our conscious awareness (365).

In addition to Dr. Nance's work, a group of sociologists and psychologists from around the world collaborated on a research project that focused on examining the long term effects of "unstated and unexamined" racialized biases. The group was called "The Discipline Disparities Collaborative." The group was led by Dr. Prudence Carter. The results of the research were shared in an article written for a publication called *Urban Education*. In it, the group provides some very valuable insights on the pervasiveness of implicit bias in school environments comprised primarily of African American and Latino children:

> Today, brains still "hold" old biases and preferences for various groups (positive or negative); such associations are mostly involuntary. These biases do not necessarily lead to explicitly biased decisions or behaviors in schools, but they can certainly undergird discriminatory behaviors—especially when such biases remain unstated and unexamined. In the school discipline realm, some research suggests that White and Black students may receive differential treatment in terms of opportunities to participate in learning settings, or different teacher reactions to misbehavior of students of color for the same or similar behavior. (4)

This was an attempt at an unbiased examination of the data. I couldn't, however, escape feeling a sense of fear and heaviness as each statistic was uncovered. Given the considerable amount of influence implicit bias has when disciplinary practices within the school system are carried out, it is fairly easy to recognize the role it plays in the perpetuation of a very destructive narrative. Experts agree on the grim narrative: starting as early as elementary school, the treatment of black and brown children is vastly different from other groups. By the time a black male enters high school, he is six times more likely to be labeled as a disciplinary problem than a white male of the same age. He is three times more likely to have been arrested or have had some kind of serious involvement with the criminal justice system; nearly four times more likely to be suspended; three times more likely to drop out of school (Cousineau, Mallett). These statistics are absolutely staggering! After many hours of mining through the data, a sobering fact dawned on me: How does one get an accurate measurement of the dreadful toll this must take on the lives of those who have been directly affected,

those who have been the victims of this brutal and unfair process? How would someone rebound and pick up the pieces? Where would they go for help? I reflect back on my conversation with my friend from high school. The despair with which he spoke was palpable.

The prism through which America views the African American male is flawed. This is a daunting reality with which I grapple and work to change. As a father to an absolutely brilliant black boy, full of promise and hope, my life's primary objective is to continue the grueling work of making sure he will never have to face such obstacles. Despite all of America's greatness, still so many of our children are being redirected from the classroom to the jail cell. This is an untenable proposition. I do not have the luxury of idly sitting. I will continue the work of dismantling the School to Prison Pipeline. This assignment has been an illumination. So, it is with a reasonable amount of certainty one can surmise that this research essay is suggesting strong support for the following conclusion: The extent to which any effort toward dismantling the School to Prison Pipeline is effective, efforts toward addressing the issue of implicit bias must be commensurate. It is imperative that the stakeholders recognize the severity of this problem; and also, recognize their role in its solution.

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Discussions with Dike

by Phoebe Parker

(English 1159)

SUMMARY: Recent investigations have revealed some startling new details about the famed Odysseus's epic journey home. A survivor of his crew was discovered on the beaches of Pylos. The man, believed to be Eurylochus, told the city's king, Nestor, about the events that took place on the journey. His accounts of the events, however, reveal a side of Odysseus that may threaten his heroic title. Eurylochus has accused Odysseus of deceitful behavior, and of being the cause of his crewmen's death. We have invited Odysseus to our studios, so we may discover the truth behind these accusations.

DIKE: Welcome to Discussions with Dike. I am your host Dike, goddess of justice, and moral order ("Dike"). Tonight we have a very special guest. He is an acclaimed hero and beloved king, who served overseas for ten years during the Trojan War, but what he is most famous for, is his epic journey home. Please welcome our guest, Odysseus.

ODYSSEUS: Thank you for having me!

DIKE: Now Odysseus, I believe we are all very familiar with the tales of adventure and woe that you have shared, over the years, since your return. They have become quite popular throughout all of Greece, don't you agree?

ODYSSEUS: Yes, they seem to have spread like wildfire. I am proud to hear that my stories are being told in the many halls of great kingdoms. It is the legacy any man hopes to leave behind.
DIKE: There have been some questions raised that could discredit your legacy, does that concern you?

ODYSSEUS: No, absolutely not. I have revealed my tale, and I stand by my actions. I am prepared to defend my name at all costs. I am the great Odysseus.
DIKE: I would first like to discuss the message Circes, the nymph, shared with you before your departure. Her message carried many warnings did it not?

ODYSSEUS: Yes, Circe was very helpful. She shared with me the steps of my journey home, and how to survive the hardships to come.
DIKE: And you shared these with your crew?

ODYSSEUS: Yes, "I informed my shipmates point by point" (12.180). I said to my crew, "It's wrong for only one or two/ to know the revelations that lovely Circe/ made to me alone" (12.167-169). I wanted my crewmen to be informed of what was to come, so that we could be united in the fight against what awaited us.

DIKE: Your crewman, Eurylochus, recently came out and said that you did not fully disclose all that Circe had predicted. He claims you said, "She warns, we must steer clear of the Sirens, /… I

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alone was to hear their voices" (12.172-174). You claim that Circe told you that you alone are to hear the Siren song. We know this not to be true.
Circe, in truth, told you not to listen unless you absolutely could not resist. You, Odysseus, singled yourself out. Why did you feel the need to alter the truth when discussing the Sirens with your crew?

ODYSSEUS: No one has heard the Sirens song and lived to tell the tale. I wanted to be the first. If I did not declare myself the chosen one, my crew would have fought over who should listen. I did not want to create conflict where it was not needed. I therefore, altered the truth to save the crewmen from a disagreement.

DIKE: Eurylochus also claims that you did not warn the crewmen about the crags.

There was a choice offered to you, by Circe, between which crag you should choose to face. Scylla, the six-headed monster, "an immortal devastation, / terrible, savage, wild" (12.128-129), or Charybdis, the whirlpool, who "not even the earthquake god could save you from" (12.118). Why did you make the decision to face Scylla without consulting with your crew?

ODYSSEUS: There was no other option. Circe told me that Scylla, the six-headed monster, was the crag to face. She said to me, "Better by far to lose six men, and keep your ship/ than lose your entire crew" (12.120-121). Scylla was the lesser of two evils. She would only cause the death of six crewmen. I made the decision for my crew, to save them. Telling them my options would have caused an argument, one that may never have been solved. We would have lost precious time. I stand by my decision. Everything I did was to save my crew, the best way I could.
DIKE: You and Eurylochus are the only survivors. Eurylochus blames you for the deaths of his fellow crewmen. Do you blame yourself?

ODYSSEUS: It brings me sorrow that my crew was unable to return home with me. I do not, however, blame myself for their deaths. My crewmen where a mutinous group, of ungrateful savages, who held no trust in me. When we cleared the crags and approached the island of Thrinacia, I warned my crewmen not to feast on the cattle of the sun. I said to them, "swear me a binding oath, all here, that if/ we come on a herd of cattle or fine flock of sheep, / not one man among us…/ will slaughter an ox or ram" (12.323- 326). Eurylochus and the crewmen chose to disobey my orders. They feasted on the cattle of the sun for days on end, and they paid the price for it. I was lucky to escape Zeus's wrath with my life. May their tales serve as a lesson to all; the God's are not to be trifled with. Any man who dares to test their commands will learn just how powerful they truly are.

DIKE: Indeed, your tale can serve as a lesson to all. Thank you for sharing your side of the story. I believe there is much else to be said about the truth behind Eurylochus's accusations, but I think we all can side with you in knowing that you were not the cause of your crewmen's untimely demise, due to the representation of character you so clearly recount. You have shared that your crew was quite disloyal and took any chance they had to undermine your authority. As we all know, a ship cannot run without its captain. I sympathize with your struggles and hope we can resolve this matter.

ODYSSEUS: Thank you Dike for allowing me to share my side of the story. I believe it is important to clear up these false accusations, so that my tales can live on, for they have so much to teach the world.

DIKE: Thank you, Odysseus, for joining us tonight. Tune in next week as I interview Eurylochus to get to the bottom of this story. This has been, Discussions with Dike. Have a goodnight.

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The industrial revolution was the force behind the New Imperialism

by Deyna Parvanova

(Honors History 1120)

New Imperialism is a period of colonial expansion by European powers, the United Sates, and the Empire of Japan during the late 19th and early 20th centuries. Europe had colonies scattered all over the world before that, but at that time the amount of influence Europe had on these regions was minimal. Things changed at the end of the 19th century to a more aggressive and extensive form of imperialism. In this 'New Imperialism,' European countries took over most of the rest of the world between the years 1870 and 1914, and had formal political, economic and social control over the new territories.

What was the force behind this New Imperialism?

The industrial revolution was the force behind this New Imperialism, as it created not only the need for Europe to expand, but the power to successfully take and profitably maintain so many colonies overseas.

The industrial revolution created the need for Europe to take over colonies around the world. An empire always wants to add colonies as a measure of national greatness, but now there was an additional push to conquer new territories. Because the Industrial Revolution increased the production capacity of Western states astronomically, there was an enormous hunger for raw materials to satisfy demands. Thus, the Western powers sought colonies where raw materials were abundant and where they could be appropriated at little to no cost. Of course, their eyes were on Africa, which was rich in oil, ivory, rubber, wood, cotton, cocoa beans, copper, gold, iron, cobalt, diamonds, etc.

The American Civil War created a shortage of cotton supply. This prompted the main purchasers of cotton, Britain and France, to turn to Egyptian cotton. With the ending of slavery in 1865, there was not enough labor to plow, seed, prune, and harvest the cotton in the South. *With hundreds of thousands of workers finding employment in textile mills, these supplies and outlets were crucial to securing the social stability of European and North American societies. To maintain an industry so important required a global reconstruction of the empire of cotton; a search for innovative combination of land, labor, capital, and state power* (Empire of Cotton). The cotton industry needed a new source of raw material supply and labor. The Western countries looked at western Africa, India, and China for that.

Additionally, the colonies gave the Western powers a ready-made market for their goods, as the colonized people were left with little to no legal recourse to produce their own finished products. Asia's textile markets were vast, and winning them was the grand prize for European imperialism. India, in particular, became a huge market. It was the most important customer for British manufacturers. Africa too was seen as a place to sell products. *There are 40,000,000 of naked people beyond that gateway, and the cotton spinners of Manchester are waiting to clothe them* (King Leopold's Ghost), said Henry Stanley to the Manchester Chamber of Commerce in 1884 on behalf of Belgian King Leopold's International Association of the Congo.

The Industrial Revolution increased production capacity drastically. A bigger demand for these products had to be generated. Controlling the rest of the world gave the option to suppress their capability of producing goods and created a market outlet for their own products. The stirring race and hunger for colonization is best described in a diamond magnate Cecil Rhodes' words *I would annex the planets if I could* (King's Leopold Ghost).

The industrial revolution gave Europe the capability to take over so much of the world very quickly. The Western powers used their superior weapons and powerful iron warships to conquer much of the world, especially lands in Africa and Asia. In 1800, Europe controlled 35 percent of the world's land surface; by 1914, they controlled 84 percent. Western imperialism placed millions of black and brown people under the control of white people. *The tools were critical, for they would soon allow a few thousand white men working for the king to dominate some twenty million Africans* (King Leopold's Ghost). Thanks to the Industrial Revolution, Europeans had an advantage in the quality of their weapons and military training, and took advantage of the decline of the great empires in Asia and Africa. The Maxim gun, an early edition of the machine gun, was far superior to the native tribes' muskets or spears. *As the poet Hilaire Belloc wrote: Whatever happens, we have got the Maxim gun, and they have not* (King Leopold's Ghost).

The heavily armed ships with hulls of iron and steam-powered engines could navigate the non-tidal sections of rivers, allowing access inland. *The steamboat was an instrument of colonization throughout the nineteenth century, serving everyone from British on the Ganges in India to the Russians on the Ob and Irtysh in Siberia* (King Leopold's Ghost) and on the Missouri River in the United States.

There were also new advancements in medicine, allowing (to an extent) Europeans to better survive malaria and yellow fever. Africa, especially the western regions, was known as the 'White Man's Grave' and years earlier only one in ten men could survive. With the new medicine to combat malaria, European explorers could venture much deeper into Africa, and therefore make more accurate maps for future Europeans arriving on the continent. Also, armies now suffered much less attrition damage when moving through the African land. Therefore, larger armies could arrive in Africa to effectively dominate the local cultures and peoples.

Also, tonic went well with gin! It was discovered that quinine (made from a cinchona bark) is a powerful medicine that not only treats malaria but also prevents it. Quinine was so bitter, though, that British officials stationed in India and other tropical posts took to mixing the powder with soda and sugar. "Tonic water," of a sort, was born. Schweppes' introduced in 1870 "Indian Quinine Tonic," a product specifically aimed for the British who were overseas and had to take a preventative dose of quinine daily (Schweppes.eu). It was only natural that at some point during this time someone would combine his daily dose of protective quinine tonic with a shot (or two) of gin. Rather than knock back a bitter glass of tonic in the morning, why not enjoy it in the afternoon with a healthy gin ration? The gin and tonic was born - and started saving lives.

Without the innovations of the Industrial Revolution, the Imperialistic powers would not be able to penetrate deeply in the colonial countries. Their access would be limited to the ports.

The industrial revolution gave Europe the power to efficiently maintain and profit from so many colonies around the world. Humans had never gone faster than horses could carry them, but now steam-powered trains and ships moved people and goods faster and cheaper than ever before. The impact of infrastructure projects was staggering. *A journey on a steamer from Bombay to Liverpool was accomplished in twenty-one days thanks to the newly opened Suez Canal* (Empire of Cotton). Railroads were built and penetrated rural areas. In Asia and Africa, the "great transformation" reached, for the first time, into areas remote from port cities. Thanks to the telegraph, orders could be wired and received over great distances in a short amount of time.

Industrial capitalism brought a new form of global economic integration. The rising power of manufacturers, and the particular form of capital they controlled, created a relationship between capital and territory as well as the people who dwelled on it, and allowed for new ways to mobilize their labor. *New form of labor, including new forms of coercion, violence, and expropriation, spread over the globe* (Empire of Cotton). At the Berlin Conference of 1884 and again at the Brussels Conference of 1889-1890, the European powers set out rules for claiming territory in Africa and agreed on the duties of a colonizing power: preventing Africans from trading in slaves, arms, or

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liquor. Africans were perceived as disorderly and incapable of self-control or economic progress, and Europeans were viewed as responsible and disciplined.

Because of growing racism, or the belief that one race was superior to another because they were more technologically advanced, many Europeans and Americans felt they had the right to dominate people of other races. *To Europeans, Africans were inferior beings: lazy, uncivilized, little better than animals* (King Leopold's Ghost). In fact, they were treated and put to work like animals. Some were brought to fair exhibitions and displayed as animals in zoos along with monkeys. Many of the natives were illiterate and like the Congo case, the Congolese had no written language. The only way to hear their stories is from notes written by colonizers and settlers or missionaries like the Swedish missioner C.N. Borrison. An imprisoned woman told him about the soldiers' attitude: *Whether they cut off our heads or that of a chicken it is all the same to them . . .* (King Leopold's Ghost). The rage of racism and brutality were constantly there.

Despotism is a legitimate mode of government in dealing with barbarians, provided the end be their improvement wrote John Stuart Mill, the great philosopher of human freedom in *On Liberty* (King Leopold's Ghost). The colonial powers used various administrative systems (direct and indirect) to facilitate control and economic exploitation, but no matter the system they were all alien, authoritative, and bureaucratic, and distorted the local political and social organizations. Along with this, they undermined their moral authority and political legitimacy as governing structures.

The most frightful and terrifying story is probably of the Congo, where the framework of control was from the military. *After all, without armed forces, you cannot make man leave their homes and families and carry sixty-five-pound loads for weeks or months* (King Leopold's Ghost). Massive amounts of deaths happened as a result of the forced labor system. Leopold's army mutilated or killed any African who did not produce enough of the coveted, profitable resources. The Europeans burned African villages, farmland, and rainforest, and held women as hostages until rubber and mineral quotas were met. Due to this brutality and European diseases, the native population dwindled by approximately ten million people in the Congo alone.

In cotton producing countries, as the prices of cotton were going down but food prices up, starvation and famine were widely spread. In India alone, *the British medical journal The Lancet estimated that famine death during 1890 totaled 19 million, . . . people died like flies* (Empire of Cotton). The situation was no different within the rest of the colonies.

Europe grew rich thanks to the Industrial Revolution and diverged from the rest of the world by stemming their development and natural evolution. Imperialistic powers collected large fortunes from their colonies, all obtained from low paid or free labor and natural resources, but left the local population without any means of support. The subsistence agriculture in the colonized countries was destroyed. When the European powers stepped up their colonization of Africa in the 19th century, they caused tremendous harm to traditional farming and herding practices. For centuries, local farmers had adapted to changing environmental conditions. The Europeans considered such farming techniques wasteful and unsuited to the export crops they hoped to cultivate. Throughout the African continent, the imperialists grabbed the chosen lands and reoriented production towards cash crops for export: like cotton, coffee, sugar cane, and cocoa. One immediate result was that food production for the poor majority was neglected.

At the same time, large-scale export agriculture led to massive environmental degradation. Western commercial interests cleared millions of acres of brush and trees for plantation agriculture. This removed a source of organic replenishment. In addition, intensive commercial farming of cotton, peanuts, tobacco, and other crops leached nutrients from the soil. Soil erosion, deforestation, and the expansion of desert resulted. Farmers were pushed on to more marginal lands that became overgrazed and overexploited.

The industrial revolution increased production capacity and efficiency in western countries. The greater power to produce more created their need for raw materials which resulted in the

necessity of a bigger market to sell their products. Industrial Revolution innovations such as the steam-powered ships and trains along with the staggering infrastructure projects like the Suez Canal and railroads allowed for fast and cheap transportation of products and people around the world. This technological improvement gave them an ever-increasing advantage over the rest of the world. New sophisticated weapons gave their army the opportunity to conquer less developed countries at a faster rate. The Telegraph facilitated communications between the motherland and colonies. New medical advancements also helped European travelers and armies survive otherwise deadly diseases. Without the industrial revolution, such atrocities committed by the Europeans would not have occurred the same way and the world would not be what it is today. The technical advantages of the Industrial Revolution gave the Europeans the belief that they are above the other races. Thus, this transformed into racism. As a consequence of this superiority, unremitting despotism came as a natural (or no compunction) form of control by the colonizers, which allowed them to profitably maintain so many colonies overseas. The industrial revolution helped the European countries accumulate more capital and become wealthier while subjugating the rest of the world under their control. Having this slave-master relationship, vital resources were snatched away from them making their society crumble for life.

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Fiction and Reality: Serial Killers as a Product of Postmodern Fiction

by Lauren Phegley

(English 1102)

According to Philip Jenkins, professor and researcher, there is evidence that actual serial killers pattern themselves after fictional serial killers (Jenkins 15). Since the emersion of the ghostly persona 'Jack the Ripper', serial killers have grown in popular culture. Slasher films, true crime novels, and serial killer mysteries reflect the world's growing curiosity with some of the worst criminals. These fictional accounts though have a deeper impact on the actions of actual serial killers. Scholars have argued amongst themselves for years about a definitive definition of 'serial murder' and this has caused issues collecting research and has created a lack of unity among law enforcement and scholars. Serial killers are a reflection of their fictional counter parts, which then influences fictional representations. This paper will use postmodernism as a lens to view serial killers and consider how their identities are created through fictional examples.

Postmodernism is the theory that people are not built on what they choose to be, but are in fact a reflection of the noise, variables, and environments that surround them. It is the idea that the 'self' is not created through choice but that it is a reflection of what is around them. Mark Seltzer, author of *Death and Life in America's Wound Culture*, wrote "By this view, the notion of the 'self' as a delimited agent, immune foreign bodies and 'bounded by the skin' is simply nonsense" (Seltzer 90). Simply put, serial killers do not naturally develop into serial killers, but create a persona reflecting what is outside them. The topic of postmodernity is not the focus of this paper, but rather uses it as a lens to view serial killers, their 'self', and their reflection of fictional serial killers. Looking at the history of terms and definitions surrounding serial murder allows people to understand the complex origin of where such a confusing subject came from.

Mark Seltzer states that the origin of the term 'serial killer' comes from Robert Ressler, a FBI Special Agent in the mid-1970's who created the psychological profiling technique that is still used today. The term was given this name for two reasons: because the crimes are in a series that continue in a repetitive way, and the tension after every kill increases to only make the killer want to murder again (Seltzer 64). Ressler describes the real meaning of 'serial killer' as an internal competition between the repetition of killing and representation of what they think killing should be experienced as (Seltzer 64). The article "The Scene of the Crime: Inventing the Serial Killer" by Alexandra Warwick, develops on the idea that serial killers are put into boxes and definitions by the scholar and mass audiences to help us understand them, but that these are social constructions. Deborah Cameron stated, "[serial killing] is not a natural kind but a discursive construct through which certain acts are made intelligible and meaningful to us" (Warwick 554). When discussing different proposed definitions, it should be remembered that these are artificial containers put on serial killers by people trying to make the concept fathomable. Putting labels on serial killers is important because it allows scholars the ability to understand and study serial killers, but academia should rely on reputable definitions of serial murder.

The term serial killer is relatively new and scholars have been arguing from the time it surfaced exactly what the definition of 'serial killer' is. One of the issues is that it can be viewed from many angles, as described in "The Controversy of Defining Serial Murder" by Samuel Andjorlolo and Heng Choon (Oliver) Chan. Some of the more popularly used definitions have been used since around the early 1990's but have not been updated to reflect the increasingly complex contemporary serial killer. In their Crime Classification Manuel, authors and scholars Douglas,

Burgess, Burgess and Ressler (1992) define serial homicide as "three or more separate events in three or more separate locations with an emotional cooling-off period in between homicides" (Adjorlolo 486). Egger's (1998) definition proposes a more encompassing criteria which has the categories of "(1) number of murder, (2) gender of the offender, (3) no previous relationship between offender and the victim, (4) murder occurring in different geographical locations and (5) the motive being purely power or dominance over the victim" (Adjorlolo 487). These are only two of the proposed definitions that criminologists have been using to conduct research and collect data. These definitions used by early criminologists are a reflection of the opinionated and biased outlook scholars had that affected definitions of serial murder.

Definitions of serial murder are often reflections of the biases that researchers held. Though not intentional, misogynistic definitions that limit serial killers to only males ignore the evidence of the few, yet real female serial killers (Adjorlolo 487). James Alan Fox and Jack Levin, authors of "Multiple Homicide: Patterns of Serial and Mass Murder", state that female serial killers can also be cut out because of definitions that limit motivations to only sexual, as males are usually motivated by sexual fantasy but females overwhelmingly kill people they have a relationship with or are dependent on (Fox and Levin 414). This evidence also refutes the criteria that there should be no previous relationship between offender and victim. In 1997, Hickey reported that 61% of 388 serial killers reported killing only strangers, which leaves 39% of serial killers who killed people they knew such as spouses, children, or patients (Adjorlolo 488). While biases can limit definitions of serial murder, some phrases can make definitions difficult to measure

Some proposed definitions use phrases that are hard to quantify in data. One of these phrases is the 'cooling off period' which had been a staple phrase in early proposed definitions (Adjorlolo 488). An example is the previously given definition from Douglas, Burgess, Burgess and Ressler (1992) which states that a serial killer must have 'an emotional cooling off period in between homicides.' When collecting data or interviewing serial killers, it is almost impossible to designate if they were emotionally calm from the past murder. The reason it has been removed from most current definitions because it cannot be quantified. Homant & Kennedy (2014) argue that "the main point is that the first killing has temporarily satisfied whatever motives are driving the killer, and the subsequent killings are part of a separate sequence of behaviors" (Adjorlolo 488). Although the main point of the phrase 'cooling off period' has merit, without the ability to quantify the unit it doesn't benefit definitions. As definitions change to better accommodate what a serial killer is, the sheer mass of definitions can be confusing.

One of the issues that comes with the multitude of definitions is that there is no uniform outline of what a serial killer is, since researchers pick a certain definition to abide by, which can throw off data sets. There are three paths that researchers can choose when using a definition. The first path is to not propose a definition, and ignore the issue as if it were insignificant (Adjorlolo 487). These studies do not contribute highly to the subject of criminology without a definition, and the sample is less concrete as the researcher did not abide by a single stringent definition throughout the research. The second path is researchers who choose to utilize current proposed definitions (Adjorlolo 487). This seems to be the best path, except there is no universally accepted definition, causing data to vary from set to set. The third path is where researchers create their own definitions to suit their focus and interest (Adjorlolo 487). This is a dangerous choice as the definition may only be created to fit their thesis and findings. The three paths scholars can take differentiates not only how their data will appear, but picking an inadequate definition can make cooperation between agencies difficult.

Another problem that shows the necessity for a unifying definition is the lack of understanding between law enforcement professionals and researchers. Researchers get data collected from law enforcement, who in turn study scholarship as a way to improve their understanding and abilities (Adjorlolo 487). This interdependence makes it crucial for a proper

definition that applies to both the law enforcement side and the scholarly side (Adjorlolo 487). Without one, data sets may over or under include serial killers because of the confusion with categorization, and prevalence rates of serial killers could be grossly miscalculated (Adjorlolo 487).

As a result of the previously stated issues with some proposed definitions, the research in this paper will abide by the definition put forth by James Alan Fox and Jack Levin for serial murder, "Serial murder involves a string of four or more homicides committed by one or a few perpetrators that spans a period of days, weeks, months, or even years" (Fox and Levin 410). This definition can be used for both law enforcement officers, and researchers, as the number of murders and time periods are quantifiable. There is no biased influence of gender issues, confusing phrases, or mentions of false criteria. A solid definition categorizing serial murder allows for the studying of serial murderers in a scholarly way, even all the way back to the debut of the original serial killer.

Beginning on April 3rd 1888 in Whitechapel, England the reign of terror by the Whitechapel murderer began by the killing of Emma Smith. The murderer continued to kill five more women until November 9th 1888, where Mary Kelly was mutilated in her hotel room. The killer was never caught and has been the focus of many investigations and conspiracy theories. These are revered as the first identifiable serial killer attacks in the modern age. Along with these murders is the emergence of Jack the Ripper, the famous persona taking credit for the killings through letters signed 'Dear Boss' (Warwick & Willis xv). Compared to how terrifying it must have been in 1888 onward, now Jack the Ripper is the focus of many tourist attractions, books, and hobbies of 'Ripperologists'. As the legend of Jack the Ripper has continued to be an interesting tourist trap in England, the notable impact Jack has left on society is what they reveal about the development of serial killers. Serial killers rely on Jack the Ripper as an origin point to learn how to properly develop into a glorified villain.

Serial killers are widely believed to have developed after the emergence of the Whitechapel murderer and Jack the Ripper (Warwick 554). What is often misunderstood is that the Whitechapel murderer and Jack the Ripper are two completely different beings or personas. "The Whitechapel murderer is simply the person who committed the crimes, whereas Jack the Ripper is the title of a far more complicated accretion: the discursive construct arising from those killings" (Warwick 554). It is understood that serial murderers have existed long before 1888, but the emergence of Jack the Ripper signified a new age in killers. Although Jack has not been proven to have also been the Whitechapel murderer, the way they played with the media, used mind games, and even possibly were responsible for sending a liver to the Chairman of the Whitechapel Vigilance Committee with a note saying 'From Hell' is the beginning of creating a persona around them (Warwick & Willis xvi). Serial killers now create the persona they want people to see them as, they act as performance artists. The murder is only part of the production, as they are developing into the inventions of what they want to be. While developing their acts, they attempt to be unique but end up being just another serial killer desperate to be noticed.

The emergence of Jack the Ripper began the theory of 'extraordinarily ordinary'. The case of the Whitechapel murders has an interestingly large amount of historical record, especially containing letters from concerned citizens (Warwick 564). Citizens viewed the murderer as an 'other': someone from out of town, a Jewish immigrant, or a poor peasant. They also viewed the murderer as someone who was one of them, which caused unease in the public because the murderer's ability to appear and disappear indicated he was local. Serial killers are either highly skilled enough to evade detection, or have the ability to blend right in to the background of modern life, being invisible (Warwick 564). Most serial killers can hardly be called extraordinary, except for extraordinarily disturbed. The theory of extraordinarily ordinary began with Jack the Ripper and continues to be part of modern serial killer studies. Victorian news wrote about Jack the Ripper not only because of the civilian interest, but because of the Jack's inability to be identified, which they used to twist the narrative anyway they wanted.

Since the beginning of the Whitechapel murders, media and news compared the killer to different understandings of evil from fiction, such as Dr. Jekyll and Mr. Hyde (Warwick 559). To keep peoples interest, and to sell papers, the news world connected familiar faces to the murderer creating ludicrous theories that started creating a narrative for Jack the Ripper. Serial killers have actually used the fictional characters of Jekyll and Hyde as an example of themselves and as a way to describe their crimes (Warwick 559). It is clear that Gothic literature and Romanticism from the nineteenth century has a deep impact on serial killer's ideas of what 'evil' is, how they identify themselves, and how they create a narrative of their crimes (Warwick 559). Literature affects people's actions, but serial killers also affect the creation of literature.

As previously stated in the beginning of this analysis, serial killers often copy the actions and personas of their fictional counterparts and vice versa (Jenkins 15). The difference between fact and fiction in the serial killer sphere has been blurred since the Whitechapel murders. Nicholas Rance, author of "Jonathan's great knife': *Dracula* meets Jack the Ripper" an article in Alexandra Warwick & Martin Willis's *Jack the Ripper: Media, Culture, and History*, argues the case that the character Dracula was actually influenced by Jack the Ripper and the Whitechapel murders. It states, "On a more forthright note, however, the ensuing argument will be that the Jack the Ripper case was preoccupying Stoker as he contemplated writing *Dracula*, which is then duly permeated by impressions or fantasies devolving from the case" (Warwick & Willis 124). *Dracula* was published in 1897, but the beginning of the book's existence began in 1890. Gothic fiction from the late – nineteenth century saw the creation of detective novels and mythical monsters, such as Sherlock Holmes, Dr. Jekyll, Dracula, which without a doubt were influenced by Jack the Ripper (Warwick 563). The East London Advertiser wrote in 1888: "It is so impossible to account…. for these revolting acts of blood, that the mind turns as it were instinctively to some theory of the occult force, and the myths of the Dark Ages rise before the imagination. Ghouls, vampires, bloodsuckers, and all the ghastly array of fables which have been accumulated throughout the course of centuries take form, and seize hold of the excited fancy" (Warwick & Willis 126). Not only did emerging authors see the relationship of serial killers to fictional monsters, but mass audiences understood the importance and relationship of them also. The relationship of serial killers identifying themselves in fictional monsters is a postmodern approach to viewing people as a product of outside influence.

Anthony King, author of "Serial Killing and the Postmodern Self" analyzes the idea of how serial killers establish their self in a postmodern world. Regular people institute routine in order to create a self that forms a super-ego around a set of practices associated with themselves. Serial killers are threatened by routine, the threat of becoming just like everyone else. "The mass threatens to consume them, sweeping away their individuality as they become part of the anonymous, routinized crowd. The very process which constituted the modern self now threatened the serial killer. Consequently, the serial killer's self is in crisis" (King 112). The very process of routinization is what threatens serial killers, as they are afraid of becoming just like the masses. This stands out because while serial killers are afraid of becoming like others, and attempt to become unique, they also use routines established by fictional and past serial killers because they themselves have no personal identity to hold on to (King 112). A fictional example of the 'mass in person' is Patrick Bateman, the serial killer from Bret Easton Ellis's *American Psycho*. Ellis highlights Batemans shallow existence through which he is threatened by anonymity (King 116). "For, instance, in describing the eventual murder of Elizabeth, Bateman notes that the blood which moments before has been sprayed in his eyes is now 'splattered against the tempered glass and the laminated oak panels in the kitchen" (King 116). The consumer comforts are correlative to Batemans shallow existence based on items that had been hiding his secret desire to kill. Using the consumer comforts to feel superior and unique backfired as the satisfaction was temporary. No matter how many or how nice the product, Bateman was still invisible. Bateman fights the threat of anonymity by giving in to his internal drives and killing in horribly graphic ways. Bateman's self was built by this violence, not

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threatened by it (King 116).

For serial murderers, killing is a way to distance themselves from the general public, allowing them the illusion of significance. King compares it to soldiers, who follow a strict regimentation and kill in order to blend in with their troop (King 112). Standing out is a sign of weakness and failure for soldiers, but for serial killers it is the opposite. Serial killers kill to be noticed in the whirling mass of people. The act of killing is self-affirmation, and recognition that the killer is unique and special. Serial killers are built from the violence and blood of their victims, because by taking the life of another, it allows the killer to overcome the anonymity of an institutionalized society (King 112). While trying to be individual by killing, serial killers also attempt to fit into the society of serial killers by reading and studying themselves and others.

Serial killers not only read, but they specifically read biographies of past serial killers, fiction, and scholarly opinions on criminology and psychology (Warwick 558). The issue is that there is no clear division between fact and fiction for serial killers. Serial killers not only learn about perceptions of serial killers, but they internalize the ideas and reflect them (Seltzer 107). They reflect the mass audiences and academic notions of what serial killers are and create themselves to become more like it. Although some may do it knowingly, many don't understand they are doing so, and assume that they are naturally becoming an authentic 'serial killer' (Seltzer 107). What is and is not authentic for serial killers is not a matter of intended purpose, but separating fact from fiction, which is almost impossible to do. One example is Colin Ireland, a British murderer who wrote in solitary confinement: "I decided it would be fun to carry out something I labelled 'reinforcing the stereotype'. I had my radio with me… on hearing [the staff] I would leap up and change the station to a classical one. I would be on my bed before the door opened, my book or paper open, and as the door opened I would glance in a superior fashion around the edge of the reading material. 'Yes officers?' I would enquire in my best Hannibal Lector cold, distant, but polite voice" (Warwick 558). Ireland is an example of someone who is knowledgeably reinforcing the stereotype of serial killers, but he chose a fictional one, once again backing up the point that fictional serial killers are accepted as reality.

Not only do serial killers reflect fiction but they reflect specifically fictional works made for commodity consumption (King 117). The serial killers acts are continually changing into more gruesome ways because they reflect works such as *Red Dragon* and *The Silence of the Lambs* both by Thomas Harris (Jenkins 89). Serial killers increase in violence not because it pleases them, but to mirror villains for mass audiences. When real serial killers become like the horrifyingly gruesome fictional characters, their value is reaffirmed because they have lived up to the delusional standard of a 'real' serial killer. Another place where the line between fiction and fact is blurred is in true crime literature where case studies of serial killers refer to fictional serial killers, especially the works of Thomas Harris, as real entities (Jenkins 89). Hannibal Lector has been cited in journals, completely ignoring that he is a character, and has become one of the most popular references of serial killers (Jenkins 89). On a 1992 book studying Randy Craft, the comment "the true story of a real life Hannibal Lector" was posted. Serial killers are reflections of fictional characters from mass produced works, but people then begin to confuse the two because they are so intertwined.

Academics are confused on what is actual serial killer behavior, as a result of the continual winding between fact and fiction. Holmes and Holmes state about academics who decry fiction as a lie, "Some works of fiction, such as Thomas Harris' *Red Dragon* and *The Silence of the Lambs* are often more realistic – and more accurate – than true-crime books. Many academics decry the themes in Harris' two books, but these are the same academics who have neither spoken to nor interviewed a murderer, much less a serial killer" (Warwick 559). Serial killers read fictional interpretations, and manifest those personas as an attempt to mirror them. The mirroring causes academics to confuse what is natural 'serial killer' behavior and a representation of fiction murderers. In current times, there would need to be a qualitative longitudinal study analyzing a variety of serial killers, and even

then it would be difficult to decipher their persona. Warwick commented that Holmes and Holmes "Also fail to consider that murderers can, and do, read, and that the reflection of the novels in the interviews is not necessarily proof of the truth of either, but possibly the infinite reflection of fiction" (Warwick 559).

As previously shown serial killers are reflections of fiction, but the interaction between fiction and fact in serial killers results in a 'looping effect' (Seltzer 107). As the media reports on serial killer crimes and fiction are produced out of this inspiration, they in fact are glorifying the killer and sensationalizing the act of murder. The serial killer then reads these portrayals and tries to follow the outline of how to be a serial killer. "The killer's experience of his own identity is directly absorbed in an identification with the personality type called 'serial killer': absorbing in the case-likeness of his own case" (Seltzer 107). As the cycle continues, the issue is that people get bored of monotony, and serial killer fiction has to become increasingly attention grabbing, containing outrageously violent and intense representations of evil. Real serial killers will read these portrayals and attempt to reflect what a 'true' serial killer does. "The discourse is a circular set of citations, dominated by seriality and repetition, and participated in by killers and profilers, writers and readers" (Warwick 558). The cycle of real serial killers and fictional representations will continue to increase in violence as long as mass audiences continue to demand more exciting entertainment and the glorification of violence. This cycle is not because serial killers are necessarily mindfully copying fiction, but processing their place in society.

Instead of producing original crimes, serial killers are processing and converting fictional accounts and others peoples interpretations of themselves. Although people like to assume that all actions are a result of choice, people are subconsciously processing the environment, information, and experiences through their actions. Seltzer states "One effect of such a collapsing of the distinction between production and processing is a collapsing of the distinction between the life process and the machine process" (Seltzer 76). Life process is using data collected from experiences and making an individual choice, while the machine process is reflecting the data that has been inserted and acting on it. Humans act on a mix of machine process and life process, depending on the prescribed to theory, and so serial killers are subject to reflecting their inserted data. As previously explained, the looping effect is a result of serial killers responding to representations of themselves. While responding, serial killers are also processing the information into actions, instead of producing an original choice. Serial killing is not wholly an original crime, producing a subconscious persona to reflect fictional expectations. The erosion of the difference between productions of actions and processing is connected to the mixing of fact and fiction, especially for serial killers.

Serial killing is a rare crime, yet the topic has a high percentage of representation in fictional and documentary media (Warwick 555). Historically criminologists have suggested that during the late 1960's there was a dramatic increase in the production of serial killers (King 113). Although this has been analyzed and found to have many shortcomings, as when a murder was counted more than once on the record (Jenkins 22-31). The increase in serial killer statistics was a result of competing bureaucratic agencies, looking to appear the most 'hard on crime' and advocacy groups supporting victim's rights (Jenkins 49). Even if there wasn't a rise in the number of serial killers during the 1960's, the idea of serial killers became more noticeable in popular culture (King 113). The idea of serial killers actually became so prominent that people began to think that there were hundreds of serial killers operating at a time (Jenkins 49). This combined with the inflated statistics succeeded in creating what seemed to be an enormous social threat, one that gained the attention of the government.

Fiction has not only affected real serial killers, but it has also affected the bureaucratic policy made about serial murderers (Jenkins 81). In the 1970's the Behavioral Science Unit (BSU) was founded within the FBI National Academy in Quantico, Virginia (Jenkins 55). The BSU characterized the terms such as 'serial crimes' and 'serial murder', and began exploring the popular

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topic of profiling violent offenders (Jenkins 55). Only ten years after the emergence of the BSU, the topic of multiple murder was the theme of more American films in 1980 and 1981 than the previous two decades combined (Jenkins 55). Jenkins states, "It is difficult to know whether the bureaucratic law enforcement attitudes toward serial murder preceded or followed changes in popular culture" (Jenkins 81). Serial murder was taking hold of Americans entertainment interests, which in turn affected policies.

Government policies are created because of the opinions of citizens and cultural attitudes towards an idea or issue. One of the reasons that the FBI created a functional department almost completely dedicated to serial killers and multiple murderers is that people were focused on them and they were an important part of popular media. "Constructionist studies often place major emphasis on the interpretation and dissemination of problems through the new media, but fictional and popular works also play a decisive role in determining cultural attitudes in an area like serial murder, and relevant works include novels, films, comics, true-crime books, and even trading cards" (Jenkins 15). Without these works increasing the public's interest in serial killers, there would not be nearly as big of a force behind studying them and stopping them.

The confusing cocktail of fact and fiction has even managed to saturate the highest levels of scholars, as professional criminologists and FBI profilers often refer back to fiction instead of actual cases when making arguments (Warwick 556). It is as if the FBI are fighting mythical beasts, as FBI profiler John Douglas discusses his "storytelling ability" and wrote "our antecedents actually do go back to crime fiction more than crime fact" (Warwick 556). When scholars cannot even separate fictional accounts or choose not to, this is an indication into why regular citizens think Hannibal Lector was real or that Jack the Ripper was from an old Victorian novel.

When academics not only choose to ignore reality, and knowledgeably mix fiction and fact within scholarly work, it undermines the integrity of the field. David Canter is such an example, who stated "there is something to be learned from fiction. That it is possible to set up a detective process that seeks to unfold a criminal's story… not driven solely by the need to establish what can be presented as fact in court" (Warwick 556). Although these are just books and statements, it has been shown the influence of words on people, as Canter and Douglas travel to train and teach law enforcement officers on their methods. Teaching off of fictional examples undermines the goal of the academics as they seem to be basing their learning off of fiction, making them no better than people at home pondering theories about *Criminal Minds*.

Serial killers have captured America's attention, from the books and movies, to government policies. It has been shown that real serial killers produce a reflection of fictional serial killers in order to fit the mold of what is expected of a serial killer. This in turn inspires fiction in order to glorify and sensationalize serial killing for entertainment of the masses. Fact and fiction are blurred because real serial killers read and learn from fictional and past serial killers. Government policies and academic studies are often based on fictional ideas of how serial killers behave. The fiction created for American entertainment purposes has a deeper impact on the way serial killers identify, murder, and behave. A postmodern analysis of the identity development of serial killers through literature and film allows for larger assumptions to be drawn about people, namely that we are only in partial control of creating our 'self'.

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Station to Freedom or Illegal Secrecy

by Heidi Scheleski

(English 1102)

Now in modern day, Illinois is often thought of as cornfields that contain only one place worthy of mention: Chicago. But back when it became a state in 1818, there was a hint of promise to the air. Fast forward even a few decades, the middle of the century, and Illinois was viewed as one more step closer to freedom. Or rather, one more station closer to freedom would be a little more appropriate. It is not often mentioned, but this state was a strikingly accurate example of the country's state of mind at that point in history: the upheaval of old society, the conflict that arose between them and those moving toward a new one. Part of this conflict resulted in the Underground Railroad, which had stations in Illinois. That is right, Harriet Tubman was not the only person involved. The danger of participating, the dirty conscience of those who believed in anti-slavery life who did not, the joy that resulted from finally abolishing bondage: this all truly happened in Illinois too. If the old society of southern Illinois had won, if these hidden pathways had not been successful, the country too would be socially unacceptable due to its separation in clinging to the past and not embracing an all-encompassing future.

Just like many other bordering states between the north and the south in the United States of America during the early to mid-19th century, Illinois faced contradictions in both its state and its nation in terms of politics and social climate. Multitudes of farmers in surrounding southern states such as Missouri and Kentucky migrated to Illinois for its fertile land (Harris 227). They brought with them their pro-slavery ideology. Thus, the Illinois residents eventually split into two distinctive ideals: Confederacy empathizers and abolitionists. Geographically, this is simple. Those who favored the ideals of the south were mostly concentrated below Springfield and those who gradually grew towards the ideals of abolitionism were above. This is a matter that it not to be seen in black and white, nor necessarily in terms of geography. The Underground Railroad that made its path in the state shows how this is an unclean cut. For it to work, there were undoubtedly abolitionists in the south.

To understand this concept, it must be understood that few accounts may be deemed truly accurate. For eventually, when the Union would win the war, people who may not have sided with them prior wanted credit and recognition in its glory. The Underground Railroad was covered up throughout the years so as to not leave a traceable trail, and thus there are seldom any verified accounts of the experience in Illinois. In historian Glennette Tilley Turner's *The Underground Railroad in DuPage County, Illinois,* she offers created trails and some accounts that have led to whatever evidence that can be assessed as the most accurate, but she also details these exact sentiments of authentication (7).

With historical accounts and the analysis by these historians, the atmosphere of the time can be collectively explained. In the *History of Negro Servitude in Illinois* by Norman Dwight Harris, it is explained that the presence of [any person of color] had continually been a source of discomfort to those in Illinois, particularly those below Springfield (228). Of course, being farmers and traders with their Southern neighbors was imperative business (Harris 241). In the eyes of these people, the social climate was irrelevant to their society. Whether slavery was abolished or not was irrelevant to their existence. If anything, these folks were pro-slavery, and the most that came of this was irritation. The non-Illinois southern slave owners that would

travel up north attempting to retrieve their “property”, as well as the "free Negros" who caused friction in the economy, were the bane of their existence.

Actually these slave owners who traveled into Illinois primarily on the hunt for their “property” became a nuisance to both Confederacy empathizers and abolitionists in Illinois. Author of *The Valley of Shadows,* Francis Grierson, was just a boy living in the Illinois prairie when his parents were participating in the Underground Railroad themselves. They were more of an emergency stop if needed, but they always assisted local stations and neighbors in their efforts regardless. Grierson accounts, in meticulous detail, a night in which thick-accented southerners were hunting down their slaves, a few in a large group that the Griersons had momentarily assisted in moving on to the next stations for safety (Grierson 98-105). Luckily for the slaves, Grierson's father was an intimidating man with a shotgun, but the overarching issue is the intense amount of violence and terror these laws and ideals had imposed on people throughout Illinois, and the rest of the country.

Unfortunately for the southerners in Illinois, all of those in the area of Naperville and above were gradually convinced of abolitionism. Norman Dwight Harris also acknowledged that there were "strong abolition centers in the North," (232-233). Over the course of the Civil War there had been this reinforcing mindset and the interest of dissolving slavery, but these centers are coincidentally also about the known Underground Railroad stations in the north. As stated prior, the abolitionists were sneaky in avoiding a noticeable trail. In fact, very few artifacts or evidence have been left so that even experienced historians, such as Glennette Tilley Turner, can only speculate on most of their original locations. She discusses the stops that follow the Illinois River and most lines which were aimed to reach Chicago to head further north (Turner 14-22).

Of course, as far as many of the southerners of Illinois were concerned, there was no such thing as the Underground Railroad in their state. They wanted no ties with this secret railroad system due to its consequences. In the Compromise of 1850, there was a Fugitive Slave Act passed, which was quite controversial for its time. It resulted in large fines of one thousand dollars, a significant amount at that time, if involved and that involvement could result in paying the entire value of the slave. Those assisting the slaves could have also been imprisoned for six months. And these were just the terms that involved the "federal agent(s)" who assisted; the slaves were given no representation, no defense, no trial by jury, and returned immediately to their owners (Turner 10-11). There was too much to risk in the minds of much of these southerners: their livelihood, reputation, business. It was easier to sympathize with the Confederacy.

In *Escape Betwixt Two Suns* by Carol Pirtle, there is mention of more legalities passed that changed lives for slaves. Early in Illinois history, Black Code happened to be one that did nothing of the sort. It was implemented in 1819, which was put in place to see that fairer accommodations were given to slaves. It was never truly enforced (Pirtle 8). Just as the southerners chose, northerners at the time did not want to metaphorically rock the boat when on the verge of a civil war. They allowed this treatment, but eventually retaliated in form of participation in the Underground Railroad. The Fugitive Slave Act of 1850 encouraged the urgency of such an endeavor to continue (Turner 11). Things became a little tricky in later years for those conducting, as representative John A. Logan pushed for the Act of 1853, which led to fined crime if any person of color was brought into the state (Pirtle 109). As Norman Dwight Harris also pointed out, this act was soon deemed unconstitutional (Harris 236). Still, southern Illinois was no place safe for any person of color, and even near and in Chicago was a difficult situation.

Matt McCall of the *Chicago Tribune* does discuss and account for more of the situation in Chicago, at least with how the abolitionist's point of view goes. The account is that of both John Ton and Cornelius Kuyper, recorded by historian George Brennan in 1923. These "new"

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Americans were settled in the south-side of Chicago, and were two stops on the railroad leading to Detroit. Kuyper would be first, hiding slaves in his cellar and barn, denying any known whereabouts if the master(s) would come looking, and would even feed the refugees if he could. He would conceal them under corn in his wagon and swiftly bring them over to the Ton farm, the next stop on the railroad, in which Ton would take them three blocks to the Hohman Bridge in Hammond where another man would take them to the stop in the Indiana Dunes. These men and their families knew the risks, but they "believed in absolute freedom for all," (McCall).

This was a common belief for abolitionists. They saw slaves as people, whereas those who sided with the Confederacy mainly understood the view of slaves as property. Others simply concerned it with a legal matter, something that was not to be toyed with due to its repercussions. It was accepted that there were stations in Illinois, primarily those in Chicago and up north. For well over 30 years, this Underground Railroad in the Midwest was alive until it no longer required service: The Union had won in 1865 and slavery was, well, history so to speak. Another *Chicago Tribune* writer, Ron Grossman, in "Exodus to Freedom", brings the modern irony of moving north after the war to life. There was the Great Migration-in which 5 million blacks moved north to start anew between 1940 and 1970, but well before then they had been coming to Chicago for opportunity. Spurts of a past prejudice had continued throughout the years. The riot in 1919 distinguished the "imaginary but deadly real boundaries" of the social classes and races, the Great Depression slowing migration that picked up again with World War II, and from then on leaving these migraters in the lowest fields of employment and opportunity that could be offered. To this day, there is an imbalance in these classes and these races, perhaps not as prominently as it had been less than a century after the Civil War (Grossman).

Although the Underground Railroad was an illegal task, it was an honorable one. Although the social climate in Illinois in the 19th century has only changed minimally and gradually, it is on a positive path. People are people, they are not property. Even those in southern Illinois had come to terms with this perspective eventually. Change may be slow, but the steps to endorse it are imperative, which is why the Underground Railroad was necessary in Illinois. Even today, it is clear that Chicago is still facing the racial inequality that had plagued the state before. It is in this awareness that the people of the city need to begin more steps yet again to overcome them. Part of this inequality was seen in the American Civil War, where there was a major issue with unity versus separation, just as Illinois had branched off into two mindsets. Inevitably, they had come to the same conclusion: that unity is the primary goal. As Carol Pirtle states in her book about the history of slavery and its effects after the war, "It is a legacy of shame that haunts men and women of conscience" (110). The American people have to live with the ugly pieces of their country's history, but for what it is worth, perhaps some of those who have unrecorded accounts on their participation in the Illinois Underground Railroad can sleep soundly in their graves yet.

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Alfred Hitchcock: An Auteur Director

by Anisa Selenica

(Motion Picture Television 1113)

Lights, camera, and action! The audience never realizes how much thinking can go into a film and wonder how it is considered a classic. More specifically, film directors give an incredible amount of effort and thought through theme and style that can be seen in almost every one of their films. In particular, the master of suspense, Alfred Hitchcock, would come to be one of the most noble auteur directors that film history has to offer. He has displayed themes such as voyeurism, birds, and identity mistake and distinctive technical styles through the camera, actors, and lighting. Hitchcock's masterpieces have been a symbol of art form and his unique style has inspired and transitioned into other films today.

Alfred Joseph Hitchcock was born in London on August 13, 1899. He went to Jesuits Saint Ignatius college, which had sparked his interests in engineering and navigation. At the age of 19, he manufactured electric cables at the Henley Telegraph company. At night, he began studying art at the University of London and was transferred to design ads for Henley's advertising department. Hitchcock became interested in cinema when he submitted a portfolio of title designs to accompany the silent films of Famous Players-Lasky. He married screenwriter and editor, Alma Reville, in 1926 and they stayed together until his death in 1980. They had one daughter together named Patricia Hitchcock (Spoto 3). Starting in the Silent film era, Hitchcock was exploring the elements of movie making and creating classic silent films. In 1939, Alfred Hitchcock left England for Hollywood. A year later he made his first Hollywood film, *Rebecca* (1940), and won an Academy Award for Best Picture ("Alfred Hitchcock"). As the years went on, came out with great classics such as *Vertigo* (1958), *North by Northwest* (1959), *Psycho* (1960), and *The Birds* (1963).

The motion picture industry was just starting up and creative cinematic geniuses were just beginning to expand their minds to create memorable films. Most innovations and film movements played a big part in the director's life. He was influenced by the traits of German Expressionism, worked with the elements of film noir, and witnessed the creation of sound in films (Huaco 60). According to the article, Alfred Hitchcock and the Making of a Film Culture, Hitchcock started directing and co-directing about a dozen silent films in England. *The Lodger* (1926) would be considered the first real Hitchcock film. He introduces the theme of an innocent man caught up in events beyond his control and the use of beautiful icy blondes. In fact, the invention of sound opened up the opportunity of dialogue and sound effects. In 1929, Hitchcock produced the first British sound film titled *Blackmail.* The beginning is completely silent because it was a way to get the audience to follow the story before the characters start to speak. He took it a step further by adding sound effects such as a knife stab and car horns honking throughout the movie. During the 1930s, Alfred Hitchcock was producing well-constructed films such as *The Man Who Knew Too Much* (1934), *Sabotage* (1936), *The Lady Vanishes* (1938), and *The 39 Steps* (1935). This gave him a good reputation for being one of the greatest British directors during his time (Sinyard 26). After winning an Academy Award for *Rebecca (1940)*, Hitchcock produced films using the noir style. The films were *Shadow of a Doubt* (1943), *Notorious* (1946), and *Strangers on a Train* (1951); however, they were not really considered to be a true film noir style (Sinyard 66). The early 1930s and 1940s were just the start for Hitchcock and it wasn't until a decade later that he would be coming out with many iconic films.

There is one term that makes us look at films in a different way: auteur theory was developed in the 1940's by French critics, Andre Bazin and Roger Leenhardt. The word auteur means author in French. Auteur theory means that the director is the most important person involved in the creation of a film (Dixon 187). Directors have a very distinctive visual signature like how they work the camera, edit the film, and demonstrate thematic motifs. Hitchcock is nobley known to be one of the greatest auteurs of all time having strong themes and stylistic devices that makes the audience enjoy the film even more (Spoto 85). Author Neil Sinyard, in his book, *The Films of Alfred Hitchcock,* explained one of Hitchcock's recurring themes of identity mistake. In *North by Northwest,* the protagonist, Roger Thornhill, is mistaken for a CIA agent named George Kaplan who is working against foreign spies named George Kaplin. Identity mistake was the center of the film and showed an 'average joe' can be put into situations beyond belief. This theme is played out in *Vertigo*, involving Scottie Ferguson's investigation of the fake Madeleine Elster and the woman who impersonated her. In his earlier film, *Shadow of a Doubt*, Uncle Charlie is the real 'merry widow' murderer, but the police ended up blaming a man in another state.

Because Hitchcock's goal is to make the audience grasp emotion from the characters, the theme voyeurism plays a crucial role in his films. For instance, in the beginning of *Psycho* we peek into Marion's rendezvous with her boyfriend, Sam. While later in the film, we see Norman Bates looking through a peephole as Marion is undressing in the hotel room (Spoto 335). The audience is playing the role as the intruder in the character's lives which can determine how we feel, what we assume about the character, and what might their occupation may be. For example, in *Rear Window*, we see Jeff, the protagonist, with his broken leg and a camera surrounded with photos. The viewers can assume he's a photographer and continue to look into the character's life (Spoto 237). Just by using visuals, Hitchcock helps tell the story and makes an interesting situation so the audience can look for trivial details.

The motifs in his films are a major detail in his work. More specifically, we will usually see stairways, mothers, and birds. First, stairways were influenced by German Expressionism because they give an uneasy feeling and it was a way for Hitchcock to create suspense (Huaco 60). Neil Sinyard goes on to explain that in *Vertigo*; the stairs in the church bell tower are crucial to the plot. As for the movie in *Shadow of a Doubt*, Uncle Charlie tries to kill his niece by removing one step causing the staircase to collapse. In *Psycho*, inside the Bates' mansion, the staircase leading to Mrs. Bates room is where Detective Arbogast was murdered.

Next, mothers are protrayed as domineering and intrusive rather than loving and caring. The film *Notorious*, shows Nazi conspirator, Alexander Sebastian, in fear of his mother who forces him to slowly poison his wife, Alicia Huberman. Alicia is an anti-Nazi spy for the United States and as a result, he does almost kill her. Similarly, *Psycho* revolves around this theme of 'mama's boy'. In this case, Norman Bates loves his mother; he listens to her, sometimes argues with her, and eventually becomes her. Mothers play a key role in Hitchcock films and set a driving force for male characters.

Lastly, birds are frequently used throughout almost all of his films. They have been a symbol of bad luck since the Middle Ages. Victorian art and poetry have made them symbols of disharmony. For instance, in *Psycho,* the protagonist, Marion Crane, is named after a bird and lives in an area also named after a bird (Phoenix, Arizona). At the Bates motel, Norman and Marion are conversing during dinner and Norman mentions his fetish about birds he comments that she eats like one (Sinyard 113). In the film, *The Birds*, the plot revolves around birds attacking everyone (Sinyard 117). Another example, is the film *Sabotage*, the bomb is made in the bird shop and the instructions for the bomb are on the base of the bird cage (Spoto 55). These motifs are also for the audience to interpret them in any way they want, but ideally, they mean something to the director and his films.

Gifted with great storytelling, Hitchcock's style was very influential and had noticeable trademarks in his films. According to the book, *The Art of Alfred Hitchcock: Fifty Years of His Motion Pictures,* the author, Donald Spoto, states that one of Hitchcock's screenwriters, Angus

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MacPhail, created the term MacGuffin which stands for a detail or an object that is a desire and motivates the actions of characters within the story. However, the object alone is not important to the viewer of the film. This idea of a MacGuffin can be seen in *North by Northwest* with the art statue that contains the government secret microfilm, in *Psycho* with the $400,000 in the envelope, in *Notorious* with the radioactive material found in the wine bottles, and in *Blackmail* with the woman's gloves found at the crime scene. The style was used as a way to move the story along.

Hitchcock creates this ultra-realism to heighten emotion, especially through a musical score. Spoto says Hitchcock hired composer Bernard Herrmann for his movies. Herrmann created iconic scores for classics like *Vertigo*, *North by Northwest*, *The Man Who Knew Too Much,* and *Psycho*. The way he composes his music is very memorable because of the fast pace and intense instrumentations. His musical score has the intention to make you recall the scene in which the music was playing. For instance, the famous shower scene in *Psycho*. Hitchcock loved using beautiful icy blonde heroines like Tippi Hedren, Janet Leigh, Grace Kelly, Eva Marie Saint, and Kim Novak. The characters they have portrayed are very likable with a hidden red-hot inner fire personality. Similarly, an auteur usually uses some of the same actors and actresses in multiple films. For example, Cary Grant, James Stewart, Leo G. Carroll, Grace Kelly, Ingrid Bergman, and Clare Greet. Hitchcock himself makes appearances in all his films. He is usually in the beginning of the film because he did not want to distract the audience from the story.

The camera is the director's biggest priority. It becomes like a person roaming around a room looking for suspicious stuff. The director uses all different types of camera shots and angles. High angles usually mean danger and shock is about to occur. For instance, *North by Northwest*, the camera shows the dangerous situation the character is in, as it shares the view from a great height. Like when Roger Thornhill is running to a cab after Mr. Townsend was killed in the U.N. building (Sinyard 103). Hitchcock also uses the unique birds eye view as the scene is being viewed through the eyes of a bird which relates to his theme of birds that represent bad luck. *Psycho* used it when Mrs. Bates bolts out of the room with her knife and kills Detective Arbogast as he was walking up the stairs (Sinyard 115). The position of Hitchcock's camera transfers the audience in the scene and shares new perspectives.

Another technique that Hitchcock uses to exemplify his style and theme is lighting. The lighting in his films is extremely crucial because it represents themes such as good vs evil. In *North by Northwest*, Roger meets a spy named, Phillip Vandamm, and as he's talking to Roger, he is placed in the dark shadows of a room and Roger is positioned in the lighter part. This element foreshadows the theme and style used in his films. In *The Bird*s, the birds eye view drives the ferocious intensity of bird attacks after the gas station explosion. We watch the fire unfold as the birds swoop in from off-camera to celebrate victory (Sinyard 104). His editing in films show a different point of view shot when he cuts back and forth from the main character to an object repeatedly. For example, in *Rear Window*, he will show an objective shot of Jeff when he looks out the window at one of his neighbors. Then, he will switch to the subjective point-of-view shot, showing us the character's perception of what he sees out the window. Lastly, Hitchcock will switch back to an objective view of the character, so that we may see their reaction to what they have just witnessed. He has a bold and effective montage editing from his famous *Psycho* shower scene where Marion gets stabbed by Mrs. Bates. However, the knife never enters her body, but the way it is edited in rapid clips makes it unbearable to watch and fools the audience into believing that she was stabbed (Sinyard 114). Similarly, in *The Birds*, when Melanie Daniels is in the attic, birds swarm in to attack her (Sinyard 121). It is daunting and frightful for the viewers to see, but it is a key style to his magnificent movies.

In conclusion, Alfred Hitchcock had created many suspenseful masterpieces, sometimes within one year. He has combined early film elements with his new form of style and theme. The symbolistic films have been held to high standard among film artists. Throughout his films, he shows this idea of auteur theory and created a wonderful meaning in film history. This theory helped inspire

recent filmmakers to learn to create their own unique style and theme.

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A field investigation on vegetation cover, density, and soil chemistry differences of Spring- and Fall- prescribed burnings

by Jomhar Solis

(Biology 1152)

Abstract

Prescribed burning, a type of vegetation management tool, controls native plant and weed growth by eliminating entire plots of vegetation, in turn providing a better growing environment for the next generation while also keeping foreign vegetation at bay. Seasonal differences in temperature play an important role in controlling plant growth. Cooler temperatures, for example, that arrive come fall signal plants to reduce growth and energy usage, and as temperatures get warmer, plants are then signaled to grow again. Two different sites that underwent prescribed burning at different seasonal times, one on November 2016, and the other on March 2017, were studied. Both sites were observed for differences in % vegetation cover and density using twelve, 3-cm PVC tube-constructed quadrats. Further soil analysis from both burn sites was done to note differences in soil chemistry, including soil pH, potassium, and phosphorous concentrations in kg/ha. This study demonstrated higher % vegetation cover and density averages for the March burn site, but also highlighted minimal differences in soil chemistry between both sites. One recommendation for future experiments would be to plant identical vegetation into both sites and conduct a prescribed burn, with one site burned in the fall and the other in the spring. By doing so, differences in vegetation cover and soil characteristics would be more easily identifiable.

Keywords: Prairie, Prescribed burning, Vegetation cover, Soil characteristics, Seasonal difference

Introduction

Prescribed burning is considered one of the best management tools for continued invasive plant control, and is used for a variety of reasons. Initially, prescribed burning of plant vegetation was introduced in Europe to induce a controlled fire regime, which counteracted the then disappearance of biomass-consuming land management practices (Alcaniz et al. 2006). The primary benefit of burning was then noted to maintain the health of an existing area containing native plants by providing more nutrients, while also managing weeds and other growth (Matthews 2015). Likewise, in a study conducted on a Louisiana prairie that underwent prescribed burnings, averaged data of extractable calcium, magnesium, sodium, and phosphorus concentrations were significantly higher than if they were clipped or not burned at all (Jariel et al. 2004). One factor affecting the impact of prescribed burning on plant life is fire intensity. Low to moderate intensity fires promote rejuvenation of the dominant vegetation by eliminating an undesired increase of pH, and leading to more available nutrients. Fire intensity, moreover, may not have strong effects on plants during the dormant season because dormant seeds do not have to rely on outside minerals and nutrients, which can be lost through burning. Environmental factors that strongly control the fire intensity include moisture of the soil, air temperature and humidity, wind speed, and topography, which can all weaken the intensity of the fire and affect the combustion process (Certini 2005). Furthermore, natural heat treatments through burning could reduce seed dormancy in a way like artificial heat treatments: by breaking down the seed coat and increasing imbibition. Similar observations note that

natural heat treatments become more effective in reducing the seed-coat dormancy of older seeds with weaker seed-coats than new seeds with hard seed-coats (Round et al. 1988).

Along with prescribed fires, seasonal changes have strong effects on plant growth. Cooler temperatures in fall will trigger a variety of plants to reduce growth and store energy, and as the temperature approaches freezing, growth stops and the plant could become dormant (Matthews 2014). Not only does cold temperatures affect a plant's development, but precipitation changes in spring and summer factor in as well. Studies have shown that extreme precipitation, which occurs mainly in spring and summer, decrease the above-ground production of plants in sites containing a moderate amount of moisture. Thus, if plants that are optimized for moderately moistened soil are introduced to an over-abundant amount of water, they tend to be negatively affected in growth (Zeppel et al. 2013).

Initial research on the association between prescribed burning and the effects of seasonal changes on plant growth has noted a relationship between plant development when burning is closer to spring, and soil chemistry in plants burned in both fall and spring. During the spring season, prescribed burning in lowland sites have been shown to produce significantly higher grass biomass than autumn and winter burnings (Gene Towne et al. 2003). A higher grass biomass could indicate higher vegetation count; thus, it is possible spring burning can produce more vegetation than autumn burnings. Not to mention, having optimal soil moisture can have a positive effect on seed germination and plant growth when xylem tissue is operable. As a vascular tissue of many plants, xylem tissue conducts most water and minerals, thus it provides better benefits when soil moisture is optimally abundant. According to a study of xylem water potential in perennial grasses in a North American fescue prairie, leaf xylem water potential and stomatal conductance were lower in plants the year after being burned in the fall in comparison to spring burning, with declines over the growing season. Soil moisture generally was greater in plots burned in the spring than those burned in fall (Grilz et al. 1994). Based on these facts, having a higher xylem water potential would lead to a more efficient transport system in the vegetation, connecting to better benefits of spring burning because the increase in both soil moisture and xylem water potential will create an optimized environment for more seeds to grow. In turn, as more seeds grow, population of the native plant will further increase. More so, immediately after a prescribed fire, research has shown that total Carbon, Nitrogen, Phosphorous, Potassium, and other essential plant nutrients significantly increased, highlighting the benefits for the next generation of vegetation (Alcaniz et al. 2006). In fact, prescribed burns on plant life has been correlated with increased soil inorganic Nitrogen availability throughout the growing season, which is associated with increased soil temperature and reduction in above-ground Nitrogen (Augustine et al. 2014). Thus, an investigation was conducted to test for differences in % vegetation cover, density, and soil chemistry between sites that underwent prescribed burning during the dormant season on November and March. We predicted that by burning plant vegetation closer to spring-time, the % cover and total density per m^2 will be higher than if it is burned closer to fall. Furthermore, we also hypothesized that through prescribed burning, nutrients along with soil chemistry in both fall and spring burnings will positively increase with little difference between each other.

Methods

Our experiment was conducted on the Russel R. Kirt prairie site on the College of DuPage campus, which occupies about 7 ha of land and has been burned every 1-2 years for the past 20-30 years. Two sites of interest were analyzed within this prairie. The first site was burned on November 12, 2016, while the second site was burned on March 3, 2017. Data was collected on the % cover and total density of varying plots in both sites on April 4th, 2017. Data collection was done by creating a 1-m^2 quadrat using 3-cm PVC tubes and meter sticks, which added to a total of 12 quadrats per site

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due to 6 groups creating 2 quadrats each. Each of these quadrats were randomly sampled at least 2 meters apart. Within each quadrat, % cover was calculated by estimating the percent of vegetation covering each quarter of a quadrat, which was then averaged together to create a total % cover for the entire quadrat. Similarly, plant density was ascertained by counting all newly emerged plants within quarters of a quadrat. Then, each value was summed to find the total density per 1-m^2 quadrat. Additionally, 2-3 soil samples from both November and March burn sites were collected and analyzed on the date of March 23, 2017. Using the LaMotte® soil macronutrient test kits, soil samples were mixed with acetic acid extract solution, in which extracts were analyzed for relative concentrations of Phosphorous, Nitrite, Nitrogen, and Potassium. Soil pH levels were tested directly mixing soil with a pH indicator and comparing to color charts.

To test for significance in % vegetation cover, density, and soil chemistry, a 2-sample Student's t-test assuming unequal variances was conducted. Significance was further determined at $\alpha = 0.05$.

Results

Observational data:

At the time of data collection for % cover and total density per m^2, the forecast was cloudy with a temperature of 11.7ºC. The vegetation of the November burn site had a higher number of seed sprouts than the March burn site, but did appear smaller in height. The soil of the November burn site was littered with numerous dead twigs, wood pieces and small rocks, in addition to being moderately dry. On the other hand, the vegetation of the March burn was observed to have much more seed sprouts in addition to some appearing taller than those at the November burn site. The soil of the March burn site contained more moisture due its soft and adhesive characteristics. More so, the March burn site contained dead twigs, wood pieces and small rocks, but not as numerous or extensive as the November site.

In accordance to observed data, the mean average and standard deviation of the vegetation cover for the November burn site was 4.76 +/- 2.8935, while having a mean average and standard deviation of 68.67 +/- 36.104 for its density. More so, the mean average and standard deviation of the vegetation cover for the March burn site was calculated at 6.78 +/- 11.434, in addition to a mean average and standard deviation of calculated density at 279.83 +/- 167.648.

Table 1. Data from conducted t-test assuming unequal variances among the % vegetation cover for both November and March burn sites

	November burn % cover	***March burn % cover***
Mean	4.755416667	6.78125
Variance	8.472425947	30.88103693
Observations	12	12
Pooled Variance	19.67673144	
Hypothesized Mean Difference	0	
df	22	
t Stat	-1.118672234	
P(T<=t) two-tail	0.275346436	
t Critical two-tail	2.073873068	

Comparing the vegetation cover for the November and March burn sites (***Table. 1)***, I conclude that there was not a significant difference in the means between both groups (t= 1.119, df= 22, P= 0.275). In contrast, in terms of the densities of both November and March burn sites, there was a significant difference in the means between both groups (t= 4.266, df= 12, P= 0.0011)

Table 2. Soil Chemistry and pH of November and March burn sites in kg/ha

	November Average Values	***March Average values***
NO2	1.12	1.12
NO3	11.21	12.68
P	117.69	104.61
K	127.03	112.09
pH	7.167	7.5

Additionally, individual ions and pH were tested for significance from three soil samples of both November and March burn sites (***Table 2***). Results of the conducted 2-sample t-test led to the conclusion that there was no significant difference between the P concentrations in kg/ha of the two burn sites (t= 0.414, df= 3, P= 0.707).

Discussion

Primarily, data taken on the vegetation cover for both sites demonstrated that the November burn site yielded a reduced average value of 4.76, while the March burn site yielded a value of 6.78. Not only did the March burn site yield a higher value in its vegetation cover, but its data collected on quadrat density from all 12 quadrats yielded an average value of 279.83, while the November burn site yielded an average value of 68.67. These findings thus supported my first hypothesis by highlighting the increased value output for both % vegetation cover and densities from the March burn site in comparison to the November burn site. One factor attributing to the March burn site providing higher average values could be that the native plants are warm-season plants (C4 plants). These plants mainly grow in warmer temperatures, and since burning provides needed nutrients for the next generation of plants, prescribing a spring burn on warm-season plants would in theory provide seeds nutrients at the time when they will start growing. By doing so, nutrients would be fully utilized. If warm-season plants had undergone prescribed burning in cooler temperatures, as done on the November burn site, then by the time vegetation begins to grow, necessary nutrients provided from the burning might have been lost due to the time difference between regular plant growth and burning. Another factor that positively affected the March burn site more than the November burn site was that some native plants of the March burn site were dormant for a shorter time due to the prescribed burn. As stated before, fire treatments may break down the seed coat and reduce dormancy, such that these plants may have perceived the environment to be optimal to begin germination. Along with the fact these native plants were nearing the end of their dormancy, prescribing a burn during the spring season would allow native plants to shorten the length of the dormant stage.

Although both burn sites differed in % vegetation cover and density, there was no significant difference in soil chemistry, supporting my second hypothesis. In comparison, November and March sites were very similar, but both did slightly differ in some chemical compounds, as shown in **Table 2**. A factor keeping the soil chemistry of both sites similar could have been the decomposer diversity. If both sites contained similar decomposers that functioned at the same speed within their respective soil, then the November burn site should have had lower concentrations of all soil nutrients while the March burn site concentrations would be higher. Due to the November burn site being similar in

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most soil characteristics, its decomposers optimally would work slower as to not take away most soil nutrients necessary for vegetation to grow, in turn displaying similar soil characteristics as the March site at the time of data collection.

One recommendation for further exploration into the differences of prescribed spring- and fall- burning would be to plant the same vegetation into both sites, and then conducting the burn. By doing so, plant vegetation would act as the controlled variable, possibly allowing for better indications of soil chemistry changes and more prominent differences in plant height, % vegetation cover and density. Within this experiment, little knowledge was known about the different plant vegetation native to these sites, therefore by using known vegetation, differences would be more easily noticeable.

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The Best Medium for Relationships

by Corrie True

(English 1101)

I have one hundred and fifty-six friends. Well, that is what Facebook says. On Facebook, a "friend" is someone who can see anything one posts about his or her life. Some people "friend" everyone who wants to be a friend and some people only "friend" people they know. To a confirmed Facebook user, my number of friends might seem a little low, but if I were talking about real friendships, no one would believe me. I would probably only consider about fifteen people on that list to be my real friends, and the rest acquaintances or friends of friends. Some people say they do make real friends, people they have never met in person, through social media platforms, but these relationships are questionable. They might fulfill a person's social needs, but they cannot replace and may even hinder face-to-face friendships.

In "How Digital Era is Damaging Our Relationships," Hope Reese, a free-lance writer for the *Chicago Tribune*, argues that social media can be detrimental to people's relationships. Citing Sherry Turkle, founder and director of the Massachusetts Institute of Technology Initiative on Technology and Self, Reese claims that "almost everything" (11) is at stake with frequent use of social media. Those who use it to avoid human interaction by seeking seclusion on their phones are negatively affected. On social media, emotions can be masked effortlessly, language subtlety is lost, and the sensitivity of the person on the other side of the computer can be forgotten. In contrast, face-to-face conversation builds intimacy, fosters creativity, and develops empathy, something far more difficult to achieve with online connections.

It is no surprise that people are participating in more and more online communication since the reward centers of the human brain light up as this quick communication is implemented. Besides, adds Reese, using Facebook helps to calm the innate fears of being unheard, bored, or lonely. However, this constant connection hurts other relationships by limiting the time for self-reflection and giving full attention to friends and family. As social media becomes more prevalent, users will become increasingly anxious and isolated, especially the younger generation who will actually engage less and less in face-to-face relationships. She sums up these warnings with the "plea to bring consciousness into the way we use our devices" (12). The problem is not the media itself, but rather how it is being used. An adult who is being introduced to social media will most likely consider it a useful tool for keeping up with friends or expanding his or her circle of influence. On the other hand, a teen who is still somewhat immature may deem it to be a replacement for or a good distraction from in-person social interaction. This incorrect assumption could lead to that adolescent developing substandard social skills and becoming more anxious in the world beyond his or her phone screen.

When I was a child, every day after school my friends and I played outside, swinging, sliding, making up games, and exploring. A few friends of mine went through phases of only wanting to watch television or play on the computer during playdates, but after a while their parents sent us outside to "go get some fresh air," allowing us to disconnect and interact with each other. The difference between a smart phone and a television is that one must stay plugged into an electrical outlet, but the other can go anywhere. More and more often, inside and outside, I see five to twelve-year-olds who, while they are together, eventually huddle up to watch one kid play *Angry Birds* or *Mine Craft*. If they know me and do not have their own device, they ask if I have any games on my phone. It is not that children overall prefer the company of a device to a real person, but that it is hard to break away from the constant, easy stimulation and gratification which is keeping them from more

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constructive play. Though adults may be subject to the same pull, they are better at self-limiting and monitoring than the typical seven-year old. A person raised with free rein on social media accounts and smartphones will not generally have the finesse and stamina for the roller coaster of a real-world relationship.

In "Digital 'Friends' No Substitute," Jessica Reynolds also warns of the effects of social media on relationships. Though the number of "friends" on Facebook may be rising, the quality of friendships is often falling. Only a week ago, I was upset about the death of a fellow student. I told a friend about it on Facebook and she sent back a sad emoji and left the conversation. When I saw my sister later that day, she could tell that I was upset and asked me about it. She listened to me and even let me cry about it. She shared with me "Turn! Turn! Turn!" a song by *The Byrds* about everything having a time and a season. She shared the story of how it helped her through her friend's death, and we cried together. Somehow being with my sister, who is also one of my best friends, was much more comforting than chatting with that friend online.

There are a few things social media cannot simulate: a touch, a hug, or a physical shoulder on which to cry. Those dependent on it may find themselves affection-starved physically and emotionally. "We end up glorifying the trivial" (Reynolds F4) while the essential and meaningful details of our lives are brushed under the rug. Citing Kory Floyd, a professor of communication at the University of Arizona and writer of *The Loneliness Cure: Six Strategies for Finding Real Connections in Your Life*, Reynolds writes, "we know the minute details of what we're doing moment to moment in the day, but that comes at the expense of being able to invest in each other in longer-term and more intimate ways'" (F4). The more communication is restrained, the more compassion and patience dwindle, and deep emotional connections with others fade.

When shielded by a screen, it is so easy to remain ungenuine and invulnerable; it feels much safer emotionally than an in-person relationship. People can present the best versions of themselves which seems great to self-conscious teens who might fail to recognize that everyone else is doing the same thing. Consequently, as a 154-person study in the *Journal of Social and Clinical Psychology* found, "the more time people spent comparing themselves to others on Facebook, the more depressive symptoms they exhibited (Steers, et.al 723). It did not matter if they were comparing themselves to people they perceived as more or less successful than themselves, the same effect still occurred. In this, "Smartphones are the ultimate adult pacifier" (Reynolds F5) because they create an easy escape into the depths of the internet. This pacifier extends all the way to five-year olds who may have just given up on sucking their thumbs. There are so many social media platforms to choose from that any and every awkward or uncomfortable situation in a real life can be avoided by simply picking up a smart phone and scrolling through newsfeeds, dashboards, or stories.

Yet, despite the temptation, it is very important to spend tech-free time with loved ones according to clinical psychologist, Ben Michaelis who has written "Your Next Big Thing: Ten Small Steps to Get Moving and Get Healthy" (Reynolds F5), a guide to unplugging from the overuse of online friends. Face-to-face communication enables individuals to pick up on nuances, body language, expressions, and context which text just cannot replicate. His warning is not only about phones, but also about the technology which distracts people from fully focusing on each other. Social interaction is more than just nice; it is necessary to one's well-being. Reynolds ends by adjuring smartphone social media users to "put your phone down" (F5) and to give and seek out more affection.

In short, a few close, in-person friends can be more valuable than thousands of connections online. Real-world friends have an advantage over online friends not only with the comfort their physical presence can give, but also with the vulnerability, both of which are hard to achieve through text. For this reason, children should be taught to value the friends they have right there in front of them before trying to socialize through technology. And adults, knowing better, should carefully use their time online and be cognizant of how much they rely on online relationships, letting friendships

slip away just because Facebook or texting is easier. Social media is a good thing when it helps one keep in touch with friends, but it is a detriment when it replaces those real people, real friends.

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Nihilist Girl

by Charlie Ulch

(History 2225)

The book, *Nihilist Girl*, was originally written by Sofya Kovelevskay who lived from 1850 to 1891. This also coincided with the with the Reign of Alexander the II who brought some of the greatest change to Russia. At this time Russia was undergoing some of the biggest change it has seen in its history at the hands of Alexander II who took the throne just five years after Kovalevskaya's birth. Also during this Kovalevskaya's time some of the most notorious acts of terrorism took place which she was certainly not oblivious too. By studying the key events in the lives of Vera Barontsova and two main characters lives we can see that this book is not just any fictional short story. It can actually be used as a profile for the lives of revolutionary nihilists of the time.

When we look at the time period in which they were living which shows how the path to revolution started. The character of Vera Barantsova was growing up in a time known as "The Era of Great Reforms" during which we see a series of events that allow for the development of a revolutionary population.

The first examples of this in the book can be found when the serfs were freed in 1861. Barantsova's family started to lose money and had to fire their servants, one of which was her tutor leaving her without a whole lot of education and a lot of free time. In *Nihilist Girl* it says that "Vera was left entirely to her own devices… Vera spent entire days in the park on the estate... Or she ran around the neighboring fields and forests."[1]

This can be viewed as an allegory for the freedom that came along with Nicholas the II's reforms. These reforms gave the Russian press leeway that they had never had before which they used to write essays critical of the monarchy. With this newfound voice the left was able to lay the groundwork for dissent. To demonstrate just how much reach that these papers had, by the 1870s and 80s they became the most widely read pieces of writing amongst the Russian elite; who were the only ones literate at the time"[2]

And just like the educated at the time Vera began to become drawn to the revolutionary mentality as a result of her new found freedom. It started slowly though with her becoming obsessed with religion and the idea of the idea of martyrdom.

Those around Vera seemed unable to cope with the freedom and were left with nothing to do. According to Vera "It seemed as if people were only living to torment and nag one another. In order to escape the boredom and hostility she turned to the bible."[3] From there she soon began reading many religious textbooks. The most influential one was called *The Lives of Forty Martyred Men And Thirty Martyred Women*. After that she read a book about missionaries being burned at the stake in China "and from that day forward fate was decided in her own eyes. All her dreams acquired a specific shape and direction."[4] She became focused on the idea of dying for a greater good.

[1] Sofya Kovalevskaya, *Nihilist Girl* (New York: Modern Language Association, 2001), 35.
[2] Randall D. Law, Terrorism: A History (Cambridge: Polity, 2009), 75.
[3] Kovalevskaya, *Nihilist Girl*, 36-37.
[4] Kovalevskaya, *Nihilist Girl*, 38-39.

This obsession with religion and the idea of martyrdom that Vera has draws a striking resemblance to the life of an actual Nihilist radical of the time named Vera Zasulich. In 1878 she attempted to assassinate the governor of St. Petersburg.[5] In the proceeding trial, Zasulich "Recounted her early conversion experience as a young girl" where Christ's "martyrdom became entwined with her own." This mindset was not unique to Zasulich. Most radicals at the time shared a similar idea rooted in their orthodox upbringing.[6] However this is just one of many building blocks for revolutionaries.

The second element that helped shape these revolutionaries is exemplified in Vasiltsev's background as a liberal professor who challenged the system of aristocracy. As a result, he was banished by the government to his estate.[7] He was now out of step with typical Russian nobility that wealthy individuals like him would have traditionally associated with. He was also unable to gain any intellectual stimulation from the population around his estate. This is reflected by the fact that at this time ninety percent of the peasants at this time were "uneducated and burdened."[8] leaving him with a profound sense of disenfranchisement which is a key component in the birth of any radical.

The third element is illustrated by Vasilitsev teaching Barantsova about English philosophers Herbert Spencer who was considered "controversial" by Russian intellectuals at the time.[9] This shows that the Russian elite were starting looking at the rest of victorian Europe only to see that they were far behind in terms of common social belief and technology.

Vasiltsev also represents Russian thinkers of the time such as Mikhail Bakunin who laid the ideological groundwork for younger radicals who would adopt those principles and use them as a way to validate their more violent acts. This is observed in a letter from Vailtsev that Barantsova receives after his death that says the following, "And now, as I lay dying, I think only that you will be a continuation of me... I know, I feel that you will be called to do something fine and exalted. What I only dreamed of, you will carry out; what I only had a vague presentiment of you will accomplish."[10]

Barantsova then takes these words to heart. In the final chapters of the book a group of political prisoners is put on trial. Fortunately, this gives them the opportunity to publicly state their case and In *Nihilist Girl* the narrator says "Political trials were a fine instrument for propaganda."[11] This again mirrors the trial of Vera Zasulich which had been used as an opportunity to further a political cause. Both Barontsova and Zasulich demonstrate that they were willing to become martyrs for a cause based on their childhood background.[12] Barantsova becomes one in the sense that she gives up her life by marrying one of the one of the convicts thus saving him from one of the worst prisons in Russia, Alekseev Revlin.[13] While Zasulich did not receive the same fate and was instead found innocent during her trial she went in fully expecting to die.

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[5] Ana Siljak, "The Trial of Vera Zasulich," in *Russian and Soviet History: From the Time of Troubles to the Collapse of the Soviet Union*, eds., Steven A. Usitalo and William Benton Whisenhunt (Lanham, MD: Rowman and Littlefield, 2008), 147.
[6] Ana Siljak, "The Trial of Vera Zasulich,"152.
[7] Kovalevskaya, *Nihilist Girl*, 41-42.
[8] John M. Thompson, *Russia and the Soviet Union: A Historical Introduction from the Kievan State to the Present*, 7th ed. (Boulder: Westview Press, 2013), 157.
[9] Kovalevskaya, *Nihilist Girl*, 78.
[10] Kovalevskaya, *Nihilist Girl*, 92.
[11] Kovalevskaya, *Nihilist Girl*, 103.
[12] Ana Siljak, "The Trial of Vera Zasulich," 149.
[13] Kovalevskaya, *Nihilist Girl*, 120.

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Because Barantsova chose to marry this man his punishment is lightened to being banished to Siberia and Barantsova travels with him to Siberia thus taking the journey to radical nihilism to the very end and essentially ending her life as she knows it. In doing so she fulfills the requirements laid out by radical philosopher Sergey Nechaev in his work titled *The Catechism Of The Revolutionist* which stated that says "He is a doomed man" and "Must be prepared both to die himself and to destroy…"[14]

These writings were published when Kovalevskaya was nineteen years old. Which means she was old enough to obtain and understand them. It is quite possible that she could have used the guide on how to become a revolutionary as a guide for the character Vera while writing this book.

Through our examination of these subjects we observe that both Barantsova and Vasiltsev follow a path toward nihilism that in fact reflects the road that many real life, well-educated Russians of this time took to become leftist radicals. We come to this conclusion based on the fact that key plot points in the book are mirrored by the actual occurrences in late nineteenth century Russia. Barantsova's freedom is representative of the freedom granted to the people which in turn allowed them to discover new ideas and question the tzar. This is illustrated through her tutor Vasiletsev who is symbolic of thinkers such as Nacheav, Bakunin, and others who provided the ideological groundwork and directive for the younger generation. This is demonstrated because both the character and the actual thinkers were well educated and spread their message the youth and urged that action be taken in order to change the system. We can see that this directive is followed because Vera Barantsova gets involved with the nihilists and becomes willing to give up her life as she knows it for the purpose of the revolution in the same way that real life revolutionary Vera Zasulich did.

Now that we see how closely this book parallels real life events we see that it is much more than a short story. It is a piece of social commentary and the world that is created within it can actually be seen as a microcosm for Russia at this time. It allows those not directly involved in the nihilist movement to understand how individuals become involved. It helps humanize radicals which allows the reader to step inside their shoes and see what led them down this path allowing the reader to make the journey with them.

[14] Laqueur, Walter. *Voices of terror: manifestos, writings, and manuals of Al Qaeda, Hamas and other terrorists from around the world and throughout the ages*. New York, NY: Reed Press, 2004, 71-72

Climate Change and the Rise of Terrorism in Northeastern Syria

by Samantha Wilson

(Biology 1110)

When analyzing the rise of terrorism in Syria, foreign governments, political commentators, and journalists often overlook the devastating effects climate change has had in Syria's already fragile biomes. The biomes of Syria mostly consist of warm and cold desert, except in the agriculturally vital northeastern region, where the waters from the Euphrates and Tigris River support a warm, semi-arid shrubland necessary for pasteurization and agriculture. In 2007, a five-year drought struck the country, severely devastating the lives of herders and farmers, and caused mass migration from the rural areas to the urban cities in hopes of finding employment and food. Since Bashar al-Assad's rise to power in 2000, those living in Syria have suffered from a shift in its economy from the socialist policies of the Ba'ath Party to a more market-based economy with unequal monetary distribution, a lack of social safety networks, and an increase in prices for oil and agricultural fertilizers. The Assad government did little to acknowledge the plight of the farmers remaining in the region, leaving a power vacuum for ISIS to fill in the northeastern region of Syria, seizing control of scarce resources such as water and oil and using them as a weapon to control the populations of rural areas and populous cities such as Raqqa.

Increasing Temperatures and Drought Leads to Diminishing Resources and Migration

There are four distinct biomes in Syria; the eastern Mediterranean, the cold and warm deserts that blanket a majority of the country, and the vital warm semi-arid northeastern region that borders with Turkey, which produces much of the country's agriculture (Nett & Ruttinger, 2016). This area is dependent on the Euphrates river basin, as it provides "65 percent of surface water supply in Syria and accounts for 27 percent of total land resources" (Kibaroglu & Schuemann, 2013). The countries surrounding the Euphrates River, Turkey, Iran, and Syria, have been competing for its resources for decades, creating irrigation programs in each country that began to overextend their reach (Kibaroglu & Schuemann, 2013). In Syria, this initiative was headed by President Hafez al-Assad and his military regime in order to make Syria agriculturally self-sufficient (Wendle, 2016, 52). However, as the years went on, and the temperatures began to increase, Syrian farmers grew to rely more heavily on well-digging for ground water. Kemal Ali, a Syrian who ran a well-digging company for 30 years explains, "Before the drought, I would have to dig 60 or 70 meters to find water…then I had to dig 100 to 200 meters…then when the drought hit very strongly, I had to dig 500 meters. The water kept dropping and dropping" (Wendle, 2016). As the groundwater in Syria was dramatically declining, in 2006, the northeastern was hit with a terrible five-year drought, spelling disaster for a region that was already over-farmed, over-worked, and lacked sustainable resources. The 2007-8 crop season was the most damaging, as levels of rainfall declined by 66 percent. Crop yields in state-irrigated areas declined by 32 percent, while areas dependent on rainfall for watering fell a dramatic 79 percent (Lister, 2015). Herders that depend on the regions dry grasslands for grazing, with 10,700 herders in Hasakah, 11,500 herders in Raqa, and 12,245 herders in Hama losing their source of income (Nett & Ruttinger, 2016).

Without the ability to develop and sustain farmland or herd livestock, Syria experienced a mass rural-to-urban migration, with the most dramatic shifts seen in the north-eastern regions of al-Hasakan, al-Raqqa, and Deir ez Zour with 60 to 70 percent of region abandoned in favor of southern

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cities such as Damascus (Lister, 2015). As thousands flocked south, the Assad regimes did little and less to alleviate the economic conditions for both the farmers that remained in the northeastern regions, and those who were displaced searching for employment in the large cities. The urban areas of Syria were marked with illegal suburban settlements, and were rife with "overcrowding, poor infrastructure, unemployment and crime", and were "neglected by the Assad government and became the heart of the developing unrest" (Wendle, 2016, 54). These climate refugees would either join the Free Syrian Army and rebel factions, continue on a harrowing journey to flee the nation, or become caught in the crossfires of civil war. Those who remained in the drought-stricken regions of the northeast would join forces with the Syrian Kurds, organize militias, or succumb to the newest power in the region, ISIS, which claimed much of the northeastern territory abandoned by the Syrian government and population alike.

Political Instability and Civil War Allows ISIS to Expand into Syria, Capturing Remaining Resources

As the families who remained in the northeastern regions in Syria struggled to survive during the drought, political unrest in major cities such as Damascus and Deraa in the south began to surge. Referred to as the Arab Spring, in the spring of 2011, pro-democracy protestors took to the streets to demonstrate their disapproval with the Assad regime's lack of economic action to help those in the drought regions and those suffering in the urban areas looking for employment. Prior to the drought, the economic policies of the Assad government began to shift from the social safety networks of the prior socialist Ba'ath governments to a more capitalistic, market economy, with returns in the economy favoring those at the top (Lister, 2015). The Assad government cut subsidies to farmers, increasing the price of oil and fertilizer in 2008 and 2009, increasing the loss of livelihoods. (Lister, 2015). These policies coupled with a corrupt, one party state, and extreme drought led to civil unrest, and eventually civil war in the Southern regions of Syria, and the populous city of Aleppo. By 2014, conditions had broken down enough in Syria for ISIS to make their move into northeastern Syria. Due to the lack of population, active resistance efforts, and state infrastructure and regulation of Syria's northeastern water sources, ISIS took this opportunity to seize control of the water, and establish social services, providing some relief to disaffected local populations (Nett & Ruttinger, 2016). As geographer and author Harm de Blij states, "terrorist cells find refuge in remote, rugged, rural environs where they can blend in with the local population while operating their cells and preparing their attacks, especially when those environs adjoin suitable targets" (2012, 207).

One of these targets was the city of Raqqa, which fell to ISIS in November 2013 after months of rebel and state military fighting. Establishing Raqqa as the de facto capital of the caliphate, ISIS began to carve out supply-line routes along the extremely important Euphrates and Tigris Rivers, claiming water resources, oil fields, energy resources, and remaining agriculture in their wake. A 2016 report entitled "Insurgency, Terrorism, and Organised Crime in a Warming Climate" explains, "With resources gained from the seizure of oil fields, extortion and foreign support, the terrorist group financed infrastructure and state-like institutions such as the 'Islamic Administration for Public Services'" which provided electricity in Aleppo (Nett & Ruttinger, 2016, 32). ISIS also established services for education, health services, and resource allocation to attempt to gain legitimacy in the northeastern regions of Syria.

ISIS is Using Water as Weapon

The regions held by ISIS since mid-2015 along the Euphrates and Tigris Rivers are crucial in their fight against the Syrian Kurds, warring rebel and terrorist factions, and the Assad military. By establishing a chokehold on the water supply, ISIS can bend surrounding populations to their will

through extortion. In Raqqa, the "former Credit Bank has been turned into the tax authority that collects payments from business for electricity, water, and security" (DuBois King, 2016, 155). Currently, ISIS controls two dams that are essential for sustaining life in the northeastern regions of Syria, the Tabqa Dam, which provides water to 5 million people and is crucial for crop irrigation, and the Ramadi Dam, which was purposefully closed in order to more easily attack regime forces downstream (Nett & Ruttinger, 2016). ISIS is one the most efficient organizations in using water as a weapon effectively. Using methods developed in Iraq, ISIS can use dams to flood local neighborhoods in order to move in a gain control, can cut off water supplies used for electricity, or tax water supplies at high rates in order to financially control a population while providing them with life giving resources.

Access to water and other resources is also a main motivator in ISIS recruitment. Often targeting young men who harbor deep rooted anti-Assad sentiments, ISIS offers a life of stability in exchange for fighting for the Caliphate. With access to the badly needed resources such as water and oil that ISIS controls in Syria, and the going rate of $400 a month to fight, about 5 times the wages in the region, it provides the necessary economic and geographic incentives for Syrians who were once simple farmers, to arm themselves for the extremist Islamic group (Nett & Ruttinger, 2016). Water is the difference between life and death in desert laden Syria, and as temperature rise, droughts increase, and terrorism and war wage throughout the country, it will become the key resource to fight over in years and decades to come.

Looking to the Future – What will Become of Syria after the War?

While the wars in Syria will one day come to an end, the impact of the 2006-2011 drought has changed the world as we know it. The Syrian refugee crisis has affected many countries throughout the world, mainly in the Middle East, Greece, and Germany. The mass migration, beginning with those fleeing from drought and continuing with those fleeing from war, has led to large parts of Syria to be completely unoccupied. Many countries harboring refugees have hope that one day their migrants might return to Syria, however, this remains highly unlikely. A study by the United Nations Economic and Social Commission for Western Asia, predicts an increase in temperature by 1.1 to 3.4 degrees Celsius, and an average monthly reduction in precipitation reaching 8-10mm mainly around the west and upper Euphrates and Tigris river basins in the East by 2100 (United Nations, 2015). Syria falls under the category of a water scarce nation, which occurs when the demand for water exceeds the available amount (Cunningham & Cunningham, 2017, 382). Since much of Syria is covered in cold or warm desert, the remaining grasslands in the northeastern regions may be prone to desertification with continued droughts, increased temperatures, and its close proximity to the Hadley cells, which distribute winds that would carry the dry desert soils into the more temperate biomes. Soil degradation due to drought, overgrazing, over-farming, and improper water management over the past 40 years in Syria severely diminishes the crop yield and quality of crops raised.

The UN study also shows that while rises temperatures will lead to more drought, it will also lead to more extreme weather conditions such as heat waves, sandstorms, and flash floods, which are just as devastating (2015). With correct water management and farming techniques, those who remain in Syria's northeastern regions may be able to adapt to more localized sustainable farms. However, with the occurrence of sand storms or flash floods, an entire crop yield can be demolished within a matter of hours. The United Nation also reports that while the Arab region is responsible for less carbon dioxide emissions than the average developed nation, the Mediterranean Sea is more vulnerable to greenhouse gases. Columbia University's Richard Seager states, "There's something

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specific about the Mediteranean that is making it hydrologically very sensitive to rising greenhouse gases" (Wendle, 2016, 55). Even with the eradication of war, Syria has many more climate issues to face as a nation, and will not be able to do so in its current political climate.

Combatting Climate Change in Syria: Effective Solutions that May Never be Implemented

As the war in Syria enters its sixth year, and the absence of an effective state government permeates, it is up to the rest of the world to take on the charge of curbing climate change. One of the main factors in producing carbon dioxide emissions in the Middle East is their dependence on oil production to move their economies. While Syria has historically been an agricultural country, since the 1980s, they have become more reliant on oil extraction to gain economic ground. Inorganic pollutants accumulating in the Mediterranean Sea, which leads directly into the Euphrates River combine with the agricultural runoff of the vital northeastern regions, produces a toxic mix in the water which transfers into the area's soil. One of the major factors in restoring the ecosystem of the semi-arid northeast is to ensure the cleanliness of the water coming through the Euphrates and Tigris Rivers. This would require the Syrian government to create water management facilities that do not extend their boundaries like those created in the 1970s, and create legislation similar to that of the Clean Water Act of 1972, which aimed to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (Cunningham & Cunningham, 2016, 420).

The need for sustainable energy will also be a major problem for the people of Syria. With the Assad government ending subsidies for oil for farmers, the dependence on oil throughout the entire Arab nation will need to shift as we reach the global oil peak. Since water is scarce, transitioning to wind or solar energy in the dry deserts of Syria might be the best way to obtain energy in the future. However, once again, this takes government participation and action to even consider. Syria is currently one of three nations not signed on to the Paris Climate Accord, along with Nicaragua and most recently the United States, which pledges to curb manmade greenhouse gases such as carbon dioxide and methane in an effort to stop the climate changing by 2 degrees Celsius. Unless major emissions producers such as the United States, Europe, and the Arab States make the switch to sustainable energy, emissions will continue to rise, the Mediterranean will continue to capture those emissions, and, without the right leadership in the government, countries like Syria will continue to suffer from the effects of climate change.

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Their dedicated and inspired teaching has contributed to
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