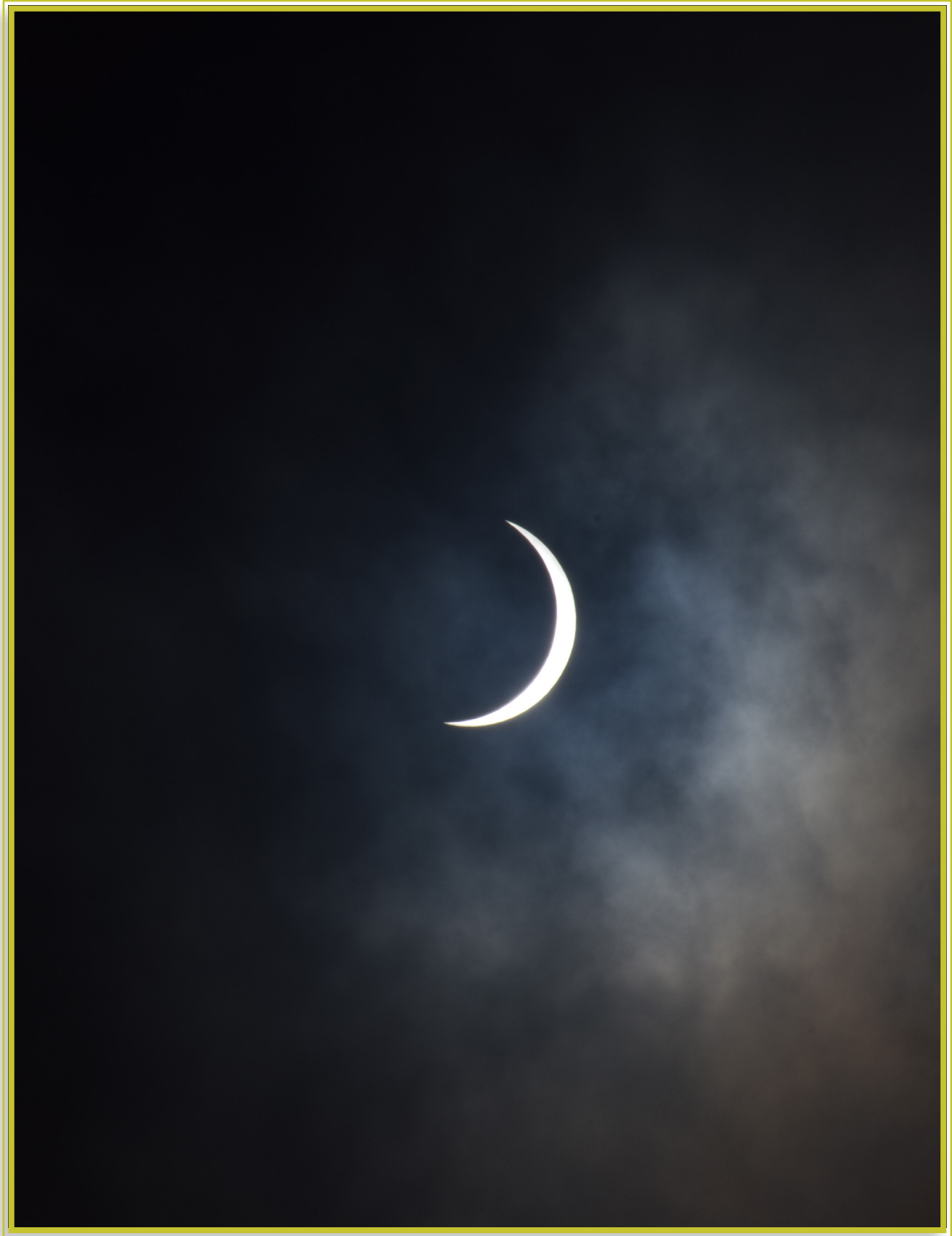




The Gold Star Journal
2018



"2018 Solar Eclipse" by Mason Browder

About the Staff



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John, a senior Accounting major, grew up in Macon, Georgia. John currently serves as the Echo Company Commander. He is a member of both The Citadel Honors Program and The Summerall Guards. Upon graduation, John will commission as an active duty US Army Armor officer. He hopes to pursue an MBA following his service.



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About the Staff



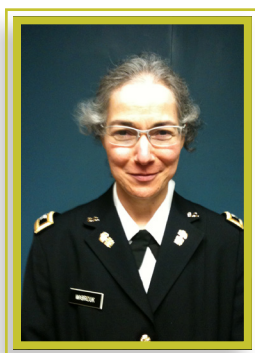
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Dr. Suzanne T. Mabrouk, Advisor

Dr. Mabrouk is a Professor of Chemistry at The Citadel. She teaches organic chemistry, introduction to chemistry for non-science students, and the chemistry of art. She earned her A.B. from Wheaton College and her Ph.D. from the University of Massachusetts at Amherst. Dr. Mabrouk enjoys working with the editors of The Gold Star Journal each year. Her hobbies include making soap and toiletries, using the lathe and scroll saw, cooking, and reading.

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If you would like to support this publication in the future, please make a donation to The Citadel Foundation and specify your contribution to The Gold Star Journal. Thank you.

A Letter From the Editors

We are exceptionally proud to present the twenty-second edition of *The Gold Star Journal*. The journal offers an opportunity to display the brightest minds and most outstanding academic work here at The Citadel. Delving into this year's edition offers a reflection of the time and energy that our authors have invested into their academic works. In addition to the academic talent of these scholars, their papers also reflect a greater intellectual grasp and application of ethics that proves to be a hallmark of the institution.

Todd Truesdale, winner of "Best Overall Paper," dissects democratization in the Kingdom of Morocco. Grant Miller, who won our award for "Best Undergraduate Paper," offers an analysis into Cormac McCarthy's *Blood Meridian*. Dalton Weintraub discusses the current events and issues surrounding Russia and the European Union. Matthew Miller examines aquaponics research in relation to plant tissue. Hunter Ross provides research into the efficiency regarding electrical engines. Kyle Zachwieja discusses the institution of honor in the American South during the 18th and 19th centuries. Finally, Charles Turner offers insight into religious freedoms in the criminal justice system in the United States.

This journal is graced with many beautiful photographs taken by the following Citadel students and faculty: Mason Browder, Austin Chawporn, Stephen Jones, SSgt Isaac Lamberth, Morgan Meredith, Brandon Mitchell, William Rasberry, and Erika Sineath. Morgan Meredith is winner of the "Best Photograph" for the cover picture entitled "Ring and Champagne."

Recognition and appreciation are also due to Karl Mack of the Sun Solutions Company for his continued help printing the journal and to John Whitten of Citadel ITS for his assistance and expertise in developing the design of this year's edition. The generosity and loyalty of our donors has earned our undying gratitude and recognition, without whose help this publication would not be possible. A profound thank you goes out to our readership, whose feedback and support are critical to our success.

Finally, we would like to recognize our faculty advisor Dr. Mabrouk for her tireless patience and invaluable advisement in each year's *Gold Star Journal*. Her dedication to the journal throughout the entirety of its twenty-two year existence is unwavering in the face of any challenge or hardship. We are incredibly appreciative for the support she provides in making sure each year's *Gold Star Journal* best displays the academic quality of The Citadel.

John Clark, Editor-in-Chief

James Quimby, Editor

Hunter Crawley, Editor

Sierra Morris, Editor

Elijah Melendez, Editor

Wesley Snyder, Editor

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The EU and Russia: A Multifaceted Relationship

Dalton Weintraub



Dalton Weintraub is from Fayetteville, North Carolina and currently serves as the Academic Officer for Echo Company. He is a Political Science and Criminal Justice dual major with a minor in Intelligence and Homeland Security. In

May, he will commission as a Military Intelligence Officer with the United States Army. Cadet Weintraub received the Ana Sobol Levy Fellowship and directly after graduation will work towards his Masters in Counter-terrorism at IDC Herzliya in Israel.

ABSTRACT

The multifaceted relationship between the European Union and Russia is interconnected in geopolitical values, economics, and politics. Following the 2008 attack on Georgia and the 2014 annexation of Crimea, NATO has begun bolstering support for the region with the United States offering both joint training in Michigan and the Baltics. This paper discusses the prevalent challenges in the relationship between Russia and the EU while simultaneously exposing the weaknesses in Baltic institutions.

The European Union Enlargement of 2007 assimilated the countries of Lithuania, Latvia, and Estonia and consequently drew these countries away from the Russian sphere of influence. This enlargement would create a larger European Union (EU) with increased power for years to come. Although the EU grew in size, its dependence on Russia would still continue with its interconnected networks of politics, military power, economics, and geopolitical value. The buffer states separating the EU from Russia, Ukraine and Georgia, have seen increased corruption, protests, and violence as a result of this EU enlargement. Russian involvement in these buffer states threatens peace, cooperation, and stability in the European Union. To understand the relationship between Russia and the EU, one must know the history, unique relations between Russia and the Baltics, current issues, and future relationships that have been fostered by international politics.

To recognize the prevalent challenges in relations between Russia and the EU, one must first understand the three phases of Russia's foreign policy. From 1991-2001 the Russian Federation grew drastically from globalization, the unipolar moment, western expansion to the post-communist east, and the formation of the global neoliberal regime. The time period between 2001 and 2008 was the second phase of the new Islamic challenge and the response by President Bush. The third phase began with the attack on Georgia in 2008. From 2008-2012 was the global economic crisis, the crisis of European integration, China's massive expansion, and the return to Cold War relations with the West. The phase from 2008-2012 brought in the 2014 Ukrainian Crisis, the most dangerous geopolitical conflict between Russia and the West since the 1980's. This emergence brought information and economic wars, heightened military preparation, lack

of political dialogue, and the collapse of the four spaces of cooperation with the EU.

The EU is very weak militarily but strong in economics and democratic systems. Russia is the polar opposite in stark contrast with the EU. Russia has weak economic ability due to international sanctions. Russia also has

very strong nationalism, military institutions, and their imperialistic approach to foreign policy. This imperialistic approach is deeply rooted in political and the historical culture of the Russian Federation.

The relationship between the EU and Russia has changed significantly during the past three phases of aggressive Russian Foreign Policy. This relationship between the two has shifted from a peaceful coexistence to now a hostile standoff. Russia now sees the European Union as an invader to its sphere of influence rather than a partner. Although the relationship between the EU and Russia grows increasingly tense, their economic interdependence continues to remain steadfast. Neither benefactor can thrive in open markets without the trade in resources and services they provide to each other. The EU accounts for over one-third of Russia's external trade and this number will continue to rise as the EU expands eastward. Companies from within the EU provide the highest in foreign direct investment to Russia. Countries within the EU are highly dependent on Russian gas and oil,

accounting for roughly 20 percent of the EU's annual use (Johnson and Robinson, 2005). As

the EU continues to push east towards Russia, this number will continue to grow and the European Union will become more reliant on Russia for its resources.

Organized crime within Russia presents a major issue

to countries within the EU due to their close proximity

and relationship with Russia. Dr. Johnson and Robinson write about these multifaceted relations between the two superpowers in the book Perspectives on EU-Russia relations. According to Dr. Johnson and Robinson (2005), "When the EU talk about Russia as a security threat, it is not military aggression it is worried about, but organized crime, money laundering and the trafficking of drugs, people, and weapons. This is why the EU puts cooperation in the fight against crime and cooperation near the tops of its agenda with Russia (pg. 26)." The Russian Federation obviously sees these issues as important but does not like the EU attempting to enter domestic issues.

The challenges that Russia and the EU face are deeply embedded in political and historical culture. Gas disputes, tensions from association agreements, Russian use of intimidation, and attempts of destabilization to member states is common among the political and historical past of EU-Russia relations. Former areas of Soviet control have been targeted by the Russian government in the past



Estonian Soldiers by SSgt Isaac Lamberth

years in order to return them to the Russian sphere of influence. These areas include the annexation of Crimea, the cyberattack on Estonia, or the 2008 attack on Georgia. The Baltic States received Membership Action Plan (MAP), at Washington Summit in 1999. Participating in this program helped the Baltics, Bulgaria, Romanian, Slovakia, and Slovenia join NATO. This led to the Fifth Enlargement of NATO on March 29th, 2004. The European Neighborhood Policy of 2004 saw the EU expand their sphere of influence to some less developed nation states. The EU even offered financial assistance to some of these countries if they could meet strict conditions to government and economic reform. The European Union continues to grow and to develop causing relations with Russia to dissipate at a very quick rate.

After the Baltics gained back their independence, each country had to decide what to do with the current people residing in that respective country. Estonia and Latvia gave citizenship to all those who were citizens before losing their independence and their children. Roughly 28% of the people living in Estonia and 30% in Latvia could not gain this automatic citizenship from the newly formed government. Lithuania decided to give citizenship to everyone within their country after the war. Latvia and Estonia created a new class of “stateless” or “grey passport” holders. This new class was composed of those who had traveled to the Baltics during the Soviet Union era and following the collapse and would be deemed “stateless.” These stateless individuals of ethnic Russian background would present a difficult task for new governments to assimilate them into their civil societies.

The reason many non-state holders exist is that one does not have to be a citizen of a country, but rather can simply live in a member state and travel freely around the European Union. If one gains citizenship from a Baltic State, one will be forced to apply for a Visa to enter Russia and as a grey passport holder, one can travel freely among both borders. As a grey passport holder, you also cannot be conscripted into either the Estonian or Russian Military. Estonia has a current population of 1.3 Million people with 320,000 ethnic Russians. Of this 320,000 ethnic Russians, only 25% have

Estonia passports, 25% have Russian, and 50% have grey passports.

Many independent non-governmental agencies want to protect the rights of these grey passport holders and have highly criticized the governments

in both Estonia and Latvia for discrimination against their rights. In the early 2000’s, many western news agencies constantly made claims of discrimination and harsh treatment of non-citizens in the Baltics. What NGO’s and Western media fail to realize is that the existence of grey passport holders and the mistreatment of these ethnic speaking Russians in EU countries could be used by the Russian government. In 2008, Russia attacked Georgia and the Annexation of Crimean in 2014 were all through the use of ethnic Russian minorities. Information wars between the Baltic States and Russia have been evident for years. In the early 2000’s, the Russians claimed that the Baltics were ethnically discriminating against ethnic Russians and practicing apartheid methods. In 2007, the Bronze soldier incident occurred and allegations of historical revisionism were used by the Russian Government. The existence of

“Although the relationship between the EU and Russia grows increasingly tense, their economic interdependence continues to remain steadfast.”

Russian minorities in the Baltics can be a huge security threat for the Baltic governments. The handling of them is critical to prevent Russians use of disinformation or even a “green soldier” style invasion. Having such a large population of ethnic Russians continues to be a difficult issue for the Baltic States. Even after these Baltic countries’ declarations of independence, ethnic Russians within these countries did not disavow their loyalty to Soviet values and ideals.

A significant problem that Baltic countries faced after gaining independence was how to restructure the mindset in government institutions. Many of the older generations had a Soviet era mindset that new government leaders did not want. Lennart Meri was elected president of Estonia in the first elections in 1992. Meri picked young adults to fill many government positions in an attempt to bring about new ideas in government. This also would bring back many Estonians from around the world, some being Ivy League graduates who would begin to rejuvenate the country.

NATO’s involvement in the region from 1993 to 2014 was crucial in shaping relations between the EU and Russia. The international realm would see change to flexible response and a huge cut down in free riding. NATO’s primary functions and responsibilities in the region now included Crisis Management, cooperative security such as the Partnership for Peace, and

collective defense. In 2002, NATO established the NATO- Russia Council, which only gives Russia consulting privilege, not actual power. NATO reappeared as a vital organization for many developing and developed former Soviet occupied nation states because it offers protection and security. This necessity for NATO has strengthened the alliance between the EU and NATO. Dr. Raik and Jarvenpaa from the International Centre for Defense and

Security published the report A New Era of EU-NATO Cooperation in order to explain this new formation of the “marriage of necessity.” According to Dr. Raik and Jarvenpaa (2017), “To conclude, a shared understanding among the EU

and NATO member states emerging

about the need for active countermeasures is gradually emerging about the need for active countermeasures and improved resilience to malicious influence by external actors (pg. 16).” The need for a strong alliance between the EU and NATO is critical to security and peace with Russia looking to push the alliance further away.

The greatest challenge that the EU and the Baltics currently face is member states reliance of the Russian Federation for natural resources. The Baltic States are very cut off from EU Energy and are forced to be reliant on Russia for Gas. This gives the Kremlin a small hold over the Baltics. This dependence on the Russian Federation creates vulnerabilities not



Russian castle from Estonian border by SSgt Isaac Lamberth

only for the Baltics for NATO and the EU. This type of dependence could create disruptions in logistics created from an array of political, infrastructure, or corporate disputes. The Baltics have common infrastructure but are extremely different in how they approach the conservation, use, and purchase of natural gases. Although the Baltics have a shared Soviet history and infrastructure they still have different resource endowments with different post-1991 policy choices.

Lithuania went from a significant electricity exporter to electricity importer virtually overnight with the shutting down of Ignalina Power Plant. The tow-unit RMBK-1500 nuclear power station in Visaginas municipality, Lithuania was forced to be shut down for its similarities to Chernobyl Nuclear Power Plant. Lithuania only agreed to shut down this plant in order to satisfy an accession agreement with the European Union. The complete closure of the plant in 2009 accounted for 25% of the country's electricity generating capacity and 70% of the total electrical demand. There was early reconstructing with a unilateral decision to build the LNG Terminal. On December 3rd, 2014 Lithuania became the fifth country in the world to use liquefied natural gas (LNG). The success of this program has far exceeded the predictions of many critics while bringing in about 50% of imports.

According to the U.S. Department of Energy (2011), "Estonia accounts for about 70% of the world's oil shale production (pg. 2)." The Observatory of Economic Complexity (OEC) found that Estonia imports over 1.85 billion

dollars' worth of goods from Russia which accounts for twelve percent of all imports. The OEC also found that Latvia imports around 11 percent from Russia and brings 1.53 billion dollars annually. The Baltics rely heavily upon the Russian Federation for imports especially when it comes to the energy sector. This is extremely dangerous not only for the Baltics but for the European Union, as it only further cements the interdependence among these countries.

The EU spends more than 1 billion dollars per day on imported natural resources. This large spending forced the EU to create a new Energy Security Strategy to make it less dependent on other countries outside of the EU. In May 2014, the European Commission released its Energy Security Strategy that aims to ensure stable energy for the EU and its people. The EU conducted short term stress tests in 2014 that looked at two scenarios and the outcomes of each. The first would be a complete hold of Russian

“Although the Baltics have a shared Soviet history and infrastructure they still have different resource endowments with different post-1991 policy choices.”

gas imports and the second test was a disruption in the Ukrainian transit route, similar to the 2009 gas dispute between Russia and Ukraine. According to the European Commission (2014), "The tests showed that a prolonged supply disruption would have a substantial impact on the EU. Eastern EU countries and Energy Community countries would be particularly affected (pg. 1)." The strategy focused on five areas for promoting a stable future. These areas include increasing energy efficiency, increasing energy production, new infrastructure to support supply disruptions, unification in external energy policy among the EU, and creating strong mechanisms for

emergencies. Dr. Zeng from the Lithuanian Institute of Agrarian Economics published the Review of and comparative assessment of energy security in Baltic States to explain the trends in energy security across the Baltics. According to Zeng (2017), “The most important EU policy document – strategy Europe 2020 – also emphasizes security of energy supply because energy is crucial for economic growth. Europe 2020 is the EU’s growth strategy for the coming decade. In a changing world, the EU seeks to become a smart, sustainable and inclusive economy (pg. 186).” The EU must be strategic moving forward to have stable clean energy.

The EU’s energy package provides three options with the future of energy security. They will fully unbundle, independent transmission operator model, or independent system operator model. This means that member states will need to enact necessary regular infrastructure through processes like ownership unbundling. Member states must build and enhance a new physical interconnected network of projects across Europe that work in cohesion to provide clean sustainable energy. Using this approach will promote open markets with transparent prices that can effectively rid the reliance on Russian sources. This requires the EU to set up a new low-carbon economy, and to resist the Russian sphere of influence. Russia will use political maneuvers to prevent EU member states from challenging their current hold over energy security.

The greatest future threat and challenge to Russia’s relations with the EU and the Baltic States will be countering hybrid threats. The European Union defines hybrid threats as “a mixture of coercive and subversive activity, conventional and nonconventional methods (i.e. diplomatic, military, economic, technological), which can

be used in a coordinated manner by state or non-state actors to achieve specific objectives while remaining below the threshold or formally declared warfare (Dr. Raik and Jarvenpaa, 2017, as cited in European Commission, 2016).” When it comes to hybrid warfare there are really four areas of hybrid warfare that are generally agreed upon across states. They are conventional capabilities, irregular tactics, terrorist attacks, and criminal disorder. The Russian use of hybrid warfare presents the biggest threat to severing relations between Russia and the EU. The attacks on Estonia in 2001 were both irregular tactics and criminal disorder. The attacks on Georgia in 2008 and Ukraine in 2014 were conventional, irregular, and criminal. Russian agencies can now have the ability to target countries with cyber attacks. Cyber attacks can be in support of conventional capabilities, individual cyber attacks, and exploitation of cyberspace. Cyber attacks are against the integrity, confidentiality, and availability of information that someone has. The concept of cyber warfare will change the concept of total war and with Russia leading the way the international realm could struggle immensely.

The European Union will continue to grow and to develop, and to push back against the Russian Federation. This enlargement will only grow stronger as the EU uses fewer resources from Russia, creating a strengthened energy security sector. The interconnection in politics, economics, and the geopolitical value will continue to cause problems in the multifaceted relationship between the European Union and the Russian government. The prevalent challenges that Russia and the EU face are deeply rooted in political and historical culture. The unique challenge that the Baltics States face must be addressed with support from the EU and NATO in order to prevent Russia from taking back

or influencing these areas. The complexity of relations between the EU and Russia spans generations; therefore, it is critical for one to understand these underlying historical issues in order to grasp future events in the region. If the European Union wants to continue to thrive in Europe they must push back swiftly against any Russian involvement in their new sphere of influence.

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"Sacred Blue over Pristine White" by Stephen Jones

Aquaponics Research: Plant Tissue Nutrient Analysis

Matthew Miller



Matthew Miller, from Victor Company, is a Biology major. He has received Gold Stars and Dean's List for the past six semesters. Matthew works on the Citadel Sustainability Project while also leading the campus's biology club, BioCid. After graduation, Matthew hopes to go into environmental law.

ABSTRACT

With a changing climate and a shortage of land for agriculture, it is imperative that humans find sustainable solutions to ensure the quantity of produce keeps up with population growth. Emerging farming techniques are being utilized to grow in urban settings and reduce emissions. Research conducted by Cadet Miller analyzed aquaponically grown romaine nutrient levels to those of local alternatives. Aquaponics is a soilless system that uses fish waste to supply nutrients to plant root systems suspended in water. It was found that more nutrient levels fell within sufficiency levels when compared to the store bought samples.

INTRODUCTION

During the summer of 2017, members of the aquaponics research team for Western Michigan University's Office for Sustainability (WMU OfS) analyzed the nutritional benefits of romaine lettuce (*Lactuca sativa longifolia*) cultivated through their aquaponics system. Aquaponics is a sustainable agriculture method that integrates aquaculture, the use of fish waste to supply water with nutrients for plant growth, and hydroponics, soilless plant cultivation. Results were given in dry weight values of macronutrients and micronutrients. We compared the data from aquaponics lettuce to that of equivalent supermarket and locally grown heads. This research was conducted in effort to compare nutritional benefits of a sustainably grown lettuce and consumer alternatives.

For reference, aquaponics affords farmers the opportunity to use 90% less water, requiring no fertilizers or chemicals, and when combined with a vertical setup, can reduce land use when compared to traditional farming practices. If placed in an indoor facility, farmers have the ability to control the climate and to optimize plant growth. With the ability to produce quality plants with fewer resources and utilization of climate control, users have the potential to grow plants all across the globe.

PROCESS/PROCEDURE

To find romaine samples that would be comparable with the aquaponics lettuce, we went to stores that are generally and frequently visited by consumers: (1) a large supermarket, and (2) a local food co-op which obtained produce from organic community sources. We bought a head of romaine from Meijer, Inc. (Meijer), one of the main supermarkets in southwest Michigan. We purchased the only romaine lettuce option available in the store

and this represented a supermarket-quality romaine choice for consumers.

The second source came from People's Food Co-op of Kalamazoo (PFC). Similarly to Meijer's, we bought the only romaine option available. This source represents the common alternative consumers may purchase if they prefer locally grown organic produce. Often these sources are considered healthier and provide support for the local economy.

Our aquaponically grown romaine represents another option for consumers, quality heads of lettuce produced in a local system that aims to minimize its carbon footprint and to provide fresh produce. The aquaponics system implements two distinct styles of growing lettuce: WMU aquaponics deep water beds (WMU DWC), and WMU aquaponics towers (WMU Towers) (Figure 1). Both systems use the same nutrient-rich water but differ in how it is supplied to the roots. The nutrients come from a tank of koi fish (Figure 2). The WMU DWC suspends the root system in water while the actual head of lettuce is



Figure 1. Above shows the vertical growth towers on the far left and right, along with the deep-water beds on the bottom. Purple tint is due to color spectrum of growing lights

floating above (bottom of Figure 1). The WMU Towers orient plants vertically (left and right sides of Figure 1) while water trickles down from a hose to supply water to the root system. Both the WMU DWC and WMU Towers use identical LED spectrum lights to promote plant growth.

After consultation with the University of Connecticut's Soil Nutrient Analysis Lab (UConn SNAL) we prepared four total samples to be tested. Each sample contained 12 healthy leaves from the same source: Meijer, PFC, WMU Towers, or WMU DWC. The samples from Meijer and PFC were taken from one healthy head of lettuce we purchased from each store. Both the WMU DWC and WMU Tower samples comprised of 12 healthy leaves from their respective harvest beds.

Every leaf was picked from the base of its stem and any external moisture was dried off with a paper towel. Each sample of 12 leaves was placed in a separate paper bag and stapled shut. The four samples were collectively placed in a cardboard box and taped shut. These samples were



Figure 2. The blue tank above holds koi fish that provide the waste necessary to supply water with nutrients that aid in plant growth

shipped to UConn SNAL by standard FedEx shipping, taking less than 48 hours to arrive.

The Dry Ash test used by UConn SNAL provided total percent nitrogen, phosphorus, potassium, calcium and magnesium along with the parts per million (on dry weight basis) of boron, copper, iron, manganese, molybdenum, zinc, sodium, aluminum, and lead. These details allowed us to compare nutrient levels across all four samples. The University of Connecticut’s lab used prior research to formulate their sufficiency ranges and categorizes them for specific growth stages of the plants. The samples we submitted were labeled as “mature”.

RESULTS

Aggregate data based on the 12 lettuce leaves from each source are shown in Table 1. This data was provided by UCONN SNAL.

DISCUSSION

The above data shows that our aquaponics lettuce had an overabundance in total percent nitrogen for both the WMU DWC and WMU Towers. The deep-water beds deviated from the recommended maximum level for sufficiency by .34% dry weight and the towers were .19% over. An excess amount of nitrogen may lead to excessive growth which stresses internal organs of plants, leaving them weak and susceptible to disease (Rodriquez). UConn’s lab notes that, “the sufficiency range of an essential element would be wider for nutrients needed in large amounts, like nitrogen,” so it is possible that nitrogen is not a source of issue for our plants with the values being close to the sufficiency ranges (Pettinelli). The sample from Meijer is noticeably low in nitrogen percent dry weight at 1.67% (1.83% lower than the recommended minimum) and this was evident upon purchase. The romaine was significantly less dark in green coloration. With deficient nitrogen levels, chlorophyll

Table 1. Aggregate Data from UCONN SNAL Analysis of Aquaponics Tissue Samples

Aquaponics Tissue Sampling					
	Date:	8/11/2017			
Nutrient	Meijer	PFC	DWC Apon	Tower Apon	Sufficiency Range
Essential Elements					
Nitrogen (N) % Dry Weight	1.67	5.1	4.84	4.69	3.50 - 4.5
Phosphorus (P) % Dry Weight	0.29	0.55	0.77	0.71	0.45-0.8
Potassium (K) % Dry Weight	5.89	6.49	5.33	3.88	5.50-6.20
Calcium (Ca) % Dry Weight	1.18	1.52	2.07	2.52	2.00-2.80
Magnesium (Mg) % Dry Weight	0.21	0.36	0.85	1.16	0.60-0.80
Boron (B) PPM Dry Weight	22.7	20.2	28.2	34.8	25-60
Copper (Cu) PPM Dry Weight	8.4	6.3	13.4	13.1	5-20
Iron (Fe) PPM Dry Weight	61.6	67.9	61.6	84.9	40-100
Manganese (Mn) PPM Dry Weight	34.8	11.2	30.6	24.9	11-250
Molybdenum (Mo) PPM Dry Weight	0	0	0	0.1	0.00-0.05
Zinc (Zn) PPM Dry Weight	53.8	48.6	39.7	73.1	20-250
Non-Essential Elements					
Sodium (Na) % Dry Weight	0.17	0.19	0.74	0.72	No data
Aluminum (Al) PPM Dry Weight	22.2	5.5	1.5	4.6	No data
Lead (Pb) PPM Dry Weight	0	0	0	0	No data

abundance and related proteins can similarly be depleted that are indicative of reduced plant growth (Buresh). At a consumer level, darker-green plants are often associated as healthier, which WMU aquaponics lettuce showed to have when compared to the Meijer alternative.

A similar study by Pallasz Ath ne University, "Effect Of Magnesium Treatment On Hydroponic Lettuce," provides insight into our potassium and magnesium levels. In their research, an increase in the levels of magnesium, with all other levels equal, the amount of potassium decreased. Our levels of magnesium (.85% DWC, 1.16% Tower) were much higher than the alternative samples (.21% Meijer, .36% PFC) and slightly higher than the sufficiency range maximum at .80%. Coincidentally, our potassium dry weights (5.33% DWC, 3.66%

Tower) were much lower than the alternatives (5.89% Meijer, 6.48% PFC) and the sufficiency minimum of 5.50%. Deficiencies of potassium in plants

can be noted with yellowing on the edges of leaves and scorching, the browning of plant tissues which can lead to wilting and curling (Dimsey, Kaiser). Our aquaponics plants have dealt with excessive tip-burn, the singeing on the tips of plant leaves, and the high ratio of magnesium to potassium may help explain that. The Meijer brand lettuce also had tip-burn, variably less though, while the PFC sample did not have any.

Lastly, it was quite surprising how different the values were between the aquaponics deep-water beds and towers. Not only are some variations large, there is no correlation between one system having consistently more or less dry weight

values compared to the other. Excluding molybdenum, it was split 5-5 on which had a smaller elemental dry weight value for a specific element. Although there was no visual manifestation of more tip-burn in either the tower or deep-water beds, the difference in their magnesium/potassium ratio was striking. The tower system had .31% more dry weight magnesium than the DWC system, and 1.45% less potassium.

CONCLUSIONS AND FUTURE STUDIES

Overall, the two alternative samples from Meijer and PFC had five sufficiency ranges that their values did not fall between while WMU DWC had three and the WMU Tower had four. Although further research will be necessary to strengthen a conclusion, the

less insufficiencies of nutrient levels, the better the quality of lettuce.

Meijer Inc.'s sample was noticeably less dark-green in color when compared to

the aquaponics samples and PFC's. When considering the color and noticeable tip-burn, it is possible their romaine had malnutrition during cultivation. To further understand the handling of lettuce by a supermarket, we would like to compare what chemicals are introduced to the romaine lettuce by Meijer and compare that to what the aquaponics lettuce receives from city water and koi fish waste. Also, more information is needed from where Meijer purchases its lettuce and the associated carbon footprint required to bring it to the customer will provide a stronger case for why sustainable alternatives are necessary.

The difference in our aquaponics system is another point of interest. With several

"With the ability to produce quality plants with fewer resources and utilization of climate control, users have the potential to grow plants all across the globe."

sufficiency ranges having very different levels between the towers and DWC beds, we think the structure of the system may have played a part, especially when considering both receive nutrient-rich water from the same source. The DWC beds have to be siphoned regularly due to accumulation of organic waste in its reservoir. This build-up results in the presence of anaerobic zones which leads to the mineralization of waste, meaning higher concentrations of elements are present

when their associated compounds are broken down in the zones. Oxygen is more available to the towers, and their vertical setup further reduces any exposure to the anaerobic zones. These differences would shelter the tower's plants from the mineralization of certain nutrients seen in the DWC. Further research by the team will investigate which nutrient differences can be attributed to contrasting structure, and how each can be improved to produce higher quality lettuce.



"American Alligator" by William Rasberry

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- *This article was reviewed by Joshua Shultz, WMU Office for Sustainability Permaculture Program Coordinator.

The Enduring Reality of Violence as seen in McCarthy's *Blood Meridian*

Grant Miller



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ABSTRACT

*Mankind has an enduring fascination with death, violence, and pondering its role in our lives here on earth, not to mention the role we play in a broader sense of life as a whole. This paper examines the significance of faith, morality, and pragmatism in their relation to violence, particularly within the despondency in the western setting of Cormac McCarthy's masterpiece *Blood Meridian*. Violence as a problem, a solution, and a reality are questioned, and will force readers to engage the topic of violence from a newer perspective than the one which they held beforehand.*

There's a particularly thrilling sensation that comes with the shock we experience when we see blood. The intrigue, the mystique, the color—it all compounds to feed our imagination, oftentimes with more questions than answers. There's a kind of attractive quality to it that we don't wish to consciously acknowledge. The color red itself is a color that is recognized as being warm and powerful, one associated with our physical necessities of survival. There's a certain masculine energy that it exudes, and it certainly appears to legitimize how even the sight of blood causes our pupils to widen, and our imaginations to come to life. Fascination with the macabre is perhaps just as human a reaction as our revulsion to it. Renowned author Cormac McCarthy illustrates this concept and charts man's grim hypnosis with it throughout his literary career, and isolates it with disturbing precision in *Blood Meridian*, or *The Evening Redness in the West*. *Blood Meridian* lends us insight into the chilling fixation man has with violence, proceeding to tie it into the deist ambivalence of the world we occupy.

TRANSFORMED BY VIOLENCE

Blood Meridian, or *The Evening Redness in the West* seeps with the blood that permeates the pages where McCarthy's gruesome scenes come alive. Recollections of war-weary warriors after a battle evoke images of ground entirely drenched with blood, carnage, and confusion. At times the scenes of *Blood Meridian* do not read much differently. This inescapable existence of violence becomes such a part of the consciousness and world that its characters experience that we as readers are progressively desensitized to the abhorrences with which McCarthy leaves his mark. A story which wanders across the United States, beginning in Tennessee in the 1830s and ending in Texas in the 1880s, *Blood Meridian*

follows the nameless character “the kid” and the appalling, murderous rampage that he embarks on as part of a scalping expedition known as “Glanton’s Gang”. As he progresses through his adolescence, the kid’s proclivities for violence become more gruesome and less reserved, to the point where the reader is forced to ask themselves if someone like him is redeemable at all.

The violence that becomes a trademark to the novel begins in the opening pages of the book, when the shortcomings of early medicine caused the kid’s mother to die in childbirth. Within the first lines of his tale, it is already made clear that “in [the kid] broods already a taste for mindless violence” (3). This no doubt alludes to the kid’s future exposure with violence, quite literally manifesting itself within his being from birth. The father, distraught and helpless at the death of his spouse, turns to drinking and reciting poetry, but McCarthy’s distinct lack of punctuation confounds us as to what the father means when he states “night of your birth[...]”, and to whom this is directed towards (3). Just as the kid is left to his own devices when he runs away into the night, the reader is left to their own devices to discern the order and direction of dialogue and meaning for the duration of the novel.

The chaotic, ambiguous nature of the novel’s syntax in many ways parallels the violence and concerns of the universe in the novel: a cruel, numb, untampered churn forward, completely unheeding to the greater concerns which lie in its path. The American west of the early through mid-nineteenth century encapsulated the ambivalence and

anonymity which gave it the rugged, at times harsh, allure that attracted settlers and adventure seekers alike. With this, however, came the gun-slinger stories of old, the violent weather, and the titillating possibilities of encounters with Indians, with outlaws, and with endless possibility. The kid, who was practically brought up in violence in the novel’s beginnings, is nonetheless portrayed as a coldhearted character with the potential for compassion, such as his extension of aid to a comrade, Sproule, following a Comanche attack, or his balking shock at the attack of the peaceful Tiguas tribe (58, 216). The society the kid is engulfed in “appears to be held together solely through the bonds of violence” (Russell Hillier 71).

This preservation of some of his humanity is lost over time, however, under the inevitable influences of villainous characters such as the Judge, a harsh life of survival out in the west, and the numerous first-hand experiences he encounters with bloodshed, all of which serve to strip away the kid’s humanity as he advances through

adolescence and into a cynical manhood. As the kid’s reluctance to be merciful compounds and his penchant for murder increases, it becomes apparent that violence itself dehumanizes man; the blood the characters bathe in substituting as a baptismal for their unholy transformation from man into beast. French social scientist and philosopher René Girard expounds upon this notion in *Violence and the Sacred*, stating “once aroused, the urges of violence trigger certain physical changes that prepare the body for battle. This set toward violence lingers on; it should not be regarded as a simple reflex that ceases with the removal

“Just as the kid is left to his own devices when he runs away into the night, the reader is left to their own devices...”

of the initial stimulus... it is more difficult to quell an impulse toward violence than to rouse it, especially within a typical framework of behavior (Girard 2 – 3). As the characters are baptized through blood throughout the novel’s progression, their cynicism and



Cowboy⁷

weariness of this world appear to grow as well, and the indelible hold, if not euphoria, that violence has over them appears to turn them into something other than man, into creatures transformed by violence.

TRANSFIXED BY VIOLENCE

Numerous violent, rather jarring encounters with the darker side of humanity begin when the kid enters a religious revival, where he encounters the sinister yet charismatic Judge Holden. Upon entering the tent, “the reverend stop[s] his sermon altogether” and “there was not a sound in the tent”, as the judge steals the attention of all those present, and begins to confidently proclaim his assertion to the entire crowd that the minister is a rapist and a liar (6). The audience plays into the judge’s hands entirely, and within moments their attentive gazes transform into a frothing, violent stampede as they pursue and presumably malevolently

assault the reverend. When questioned a short time later as to where exactly he procured such knowledge on the reverend, the judge, a smile crossing his lips and a drink in hand, replies with a chilling haughtiness that he never met or heard of the reverend in his life. This elicits laughter and even revelry from the assembled members of the mob inside the bar, and a tone is instantaneously set establishing Judge Holden as a cunning, Machiavellian, and above all, sociopathic character for the duration of the novel.

This cunning, likely pre-conceived attack on the character of the reverend stands in stark contrast to the gut-wrenching massacre which takes place later in the novel, when a horde of Comanche warriors ambushes and slaughters many of the men traveling in Captain White’s irregulars, a ragtag force bent on ravaging the Mexican countryside. The Comanches, or, as McCarthy describes them, “a legion of horribles, hundreds in number... half naked or clad in costumes or biblical attire or coats of slain dragoons... like a company of mounted clowns, death hilarious, all howling in barbarous tongues and riding down upon them like a horde from hell”, wreak violent havoc with the irregulars (55). The ensuing scene and description McCarthy employs evokes a grotesque and stomach-turning series of images and descriptions that degrades the aforementioned episodes of violence up to this point to a previously inconceivable level of outlandishness. The aftermath, with the scalped heads, the “maimed and dying [lying] in the bloodslaked dust” combined with the ubiquitous “groaning and screaming” which litters the scene causes one to question, what was the purpose for all this carnage, and how on earth could something so revolting warrant such detailed description (57)? The description of the combatants as comporting themselves “like creatures driven to alien

form... stripping the dead and seizing them up by the hair and passing their blades about the skulls of the living and the dead alike... ripping off limbs, heads, gutting the torsos and holding up great handfuls of viscera, genitals, some of the savages so slathered up with gore they might have rolled in it like dogs” is meant to terrify (56) and burn an unforgettable image in one’s memory of the carnage, the inhumanity, and the satanic glee with which the Comanche and the irregulars alike reveled in the bloodshed of their engagement, some of whom “fell upon the dying and sodomized them with loud cries to their fellows” (57).

The presence of sodomization testifies to the underlying sexuality of violence that is embedded in the actions of these men. The sexual nature of violence as an extension of a power struggle for dominance is evident in the aforementioned passage, with a historical frame of reference being both medieval and contemporary Islamic society. Bruce Dunne, the former editor of the Middle East Report, states that in medieval Islamic societies, as understood “through their (male-authored) literature of morals, manners, medicine and dream interpretation, sexual relations were organized in conformity to principles of social and political hierarchy (Dunne 10). He further expounds on this point, observing that “what was at stake was not mutuality between partners, but the adult male’s achievement of pleasure through domination” (10). Khalid Hosseini’s award-winning bestseller Kite Runner further reflects this motif of homosexual sodomy not as an agent of pleasure, but of domination; even when

“This cunning, likely pre-conceived attack on the character of the reverend stands in stark contrast to the gut-wrenching massacre which takes place later in the novel...”

it’s mention of the startling cultural practice appears more at home in the fourteenth-century than the twenty-first. The merciless, horrific sodomization White’s Irregulars undergo is an instrument for domination on the Comanche’s part, and further distances them from the few vestiges of humanity they have remaining. The violent rape and brutality with which the Comanche descend upon the outmatched irregulars demonstrates just how primal the elements of conflict have become up to this point. The fight, the chaos, they are a mechanism for the euphoria and the senseless release of combat which they descend into as

demons of another world.

While the fight was merely the result of a chance encounter of the Comanche raiding party and the Captain’s irregulars, the relish with which they engaged

is not only disturbing, but stands in eerie contrast to the deliberateness with which the Judge calculates his murders, be them the attack on the reverend, or the sodomization and killing of young children throughout the text. The violence of a calculated, possibly omniscient figure such as the Judge, is in a sense natural to the plot; the necessity for a villainous antagonist is fulfilled in his cruelty and deceptions. But the randomness of so much of the violence throughout the novel, be it the attacks on the Apaches, or the scalping of innocent Mexican civilians, or even the killing of the dancing bear, all pain the sensibilities as the reader grasps for a motive, a meaning, for something behind the senselessness of it all. With no clear motive for violence and the increasing pervasiveness of it as the story

further unfolds, it becomes apparent that violence itself dehumanizes man, and yet even as we observe their dehumanization, we cannot force ourselves to look away. In some cases, we appear to bask in a titillating rush as we read of their viciousness and the mercilessness of their exploits. The fact that we as an audience are transfixed by violence, that we are revolted but simultaneously cannot bring ourselves to look away, exemplifies the very message that McCarthy wishes for us to take from his western: that humanity actually enjoys violence on some subconscious level, and that we only overcome the barbarism that we (and the kid) were born into through the forced and learned social conventions to which we ascribe. “Paradoxically attracting while repulsing” us, the violence that is witnessed in various acts of Blood Meridian captivates our imaginations, if not always for the right reasons (Barclay Owens 14).

DEISM AMONGST THE BLEAKNESS

There exists no shortage of religious references and biblical allusions within the breadth of Blood Meridian. It is commonly perceived, as the intimations become more and more glaring, that Judge Holden may very well be Satan, or some other creature not of this world. The Judge makes comments throughout the course of the gang’s misadventures that intimates that he may not be human, and that he may even hold a deified status in this universe. One such instance occurs when the company begins to notice that he carries with him a leather ledger,

where he meticulously documents everything he encounters, from flora and fauna, to even possibly men, both living and deceased. When the party begin discussing this eccentricity and state that “no man can put all the world in a book”, the Judge curtly replies, “whatever in creation exists without my knowledge exists without my consent”, a chilling, matter-of-fact statement that makes the troupe begin to truly reflect beyond their original impressions of the Judge, and warily regard him as a creature whose existence may in fact verge on the supernatural (61).

Sparking the discussion of existence and one’s place in the universe with his ledger, the Judge states “in this world more things exist without our knowledge than with it and the order of creation is what you put there, like a string in a maze, so that you shall not lose your way. For existence has its own order which no man’s mind can compass, that mind itself being a fact among others” (245). This speculation which questions the Judge’s connection with the supernatural - presumably as Satan or a similarly demonic, evil figure - pits his witticisms and intellect against that of Tobin, a former priest who serves as a mentor for the kid, and a foil for the Judge. In one interaction, the Judge tells Tobin to “weigh your counsel, priest. Yonder sun is like the eye of God and we will cook impartially upon this great siliceous griddle I do assure you” (69). His observation, that the deity above looks down upon them all with equal impartiality, is one that the two men can agree upon, irrespective of their religious loyalties or preconceptions.

“The fact that we as an audience are transfixed by violence... exemplifies the very message that McCarthy wishes for us to take from his western: that humanity actually enjoys violence...”

In a similar vein, Tobin states “the gifts of the Almighty are weighed and parceled out in a scale peculiar to himself. It’s no fair accountin and I don’t doubt but what he’d be the first to admit it” (69). Tobin is essentially stating that he believes that there is no enduring truth or logic to the way God brings pain or promise to his creation, and that he recognizes an inherent unfairness in God’s decision making, a plausible explanation for why he left the priesthood. This overlap in the seemingly paradoxical viewpoints of Tobin and the Judge is concerning, in that they both appear to encourage a deist worldview of the already harsh, lonesome wilderness of a society they subsist within. Their assertion of a deism amongst the bleakness of their brutal, unpredictable lives conjures up periphery questions of our meaning on earth, the relativity of the morals the gang ignore and act upon, and whether or not there is an eternal reward or consequence for the actions they take and the lives they lead within the evening redness in the west.

UNWILLING TO INTERFERE

The deist sentiments with which Tobin and the Judge guide their trajectories through the chaos of the west molds themselves with the pessimism of Judge Holden’s observations into mankind’s inherent indifference and cruelty, providing a sobering perspective on the state

of mankind. In another pontification with the kid, the Judge makes a rhetorical exercise out of asking “if God meant to interfere in the degeneracy of mankind would he not have done so by now? Wolves cull themselves, man. What other creature could? And is the race of man not more predacious yet? The way of the world is to bloom and to flower and die but in the affairs of men there is no waning and the noon of

his expression signals the onset of night. His spirit is exhausted at the peak of its achievement. His meridian is at once his darkening and the evening of his day” (96 – 7). This proposes a dark and cynical glimpse into the nature of man and our relations as a species with the rest of creation.

The Judge in this instance views humankind as a natural force for the carnal, the destructive, and the selfish. His analogy of wolf and mankind as especially powerful, yet equally ignorant of their self-destruction, rings true to the violence that characterizes the west and the United States as a whole (i.e. man) in an era marked by bloody wars between the states, slavery, exterminations of native American nations, infringement and usurpation upon the Mexican people, and a merciless expansion westward. His reference to “culling” denotes the selectivity within a species of choosing who survives and who warrants extermination due to perceived weakness, just as the men of



“Dead End Sound” by Brandon James Mitchell

White's irregulars, Glanton's Gang, and the men of the world in general see fit to kill and choose who lives and who dies indiscriminately. The essence of the Judge's message is that all outside influences (i.e. the way of the world, rationality, nature, even God) are unable or uncaring in the plights of humanity; similar to the wolf, man culls and administers itself, if left largely to its own devices. Gazing at the stone monuments of a long-lost pueblo people, the Judge observes that man exhausts his energy "at the peak of his achievement", almost in a death wish of tempting the most dazzling and destructive way to die, to tempt fate, rather than to resign to the mundanity of cyclicity and routine, as the "ways of the world" and "flowers" (i.e. nature) do (97). The Judge then proceeds to ask, "do you think this won't happen again?", bringing it back to his central point that the only cycle man knows is no cycle at all, but its natural, unlearned progression of its own achievement, followed by the inevitability of its own violent end, destruction, and rebirth (97). Unlearned, unreasoning, the children of a God unwilling to interfere in the degeneracy, the Judge's observations paint an image of mankind not dominated by evil and its tendencies, but inconsequentially and unthinkingly engaged in the violence, pursuit, and rebirth of an existence where the only true meaning is the one they make for themselves.

WHAT IT ALL MEANS

The universe that McCarthy portrays through the trajectory of the kid's travels, coupled with the philosophical observations of characters such as the ex-priest, Tobin, and the seemingly supernatural statements of Judge Holden, presents the prospect of a largely deist reality where the creator has left the world to fend for itself, and where the carnal instincts of survival and violence seem to flourish in absence of a higher authority.

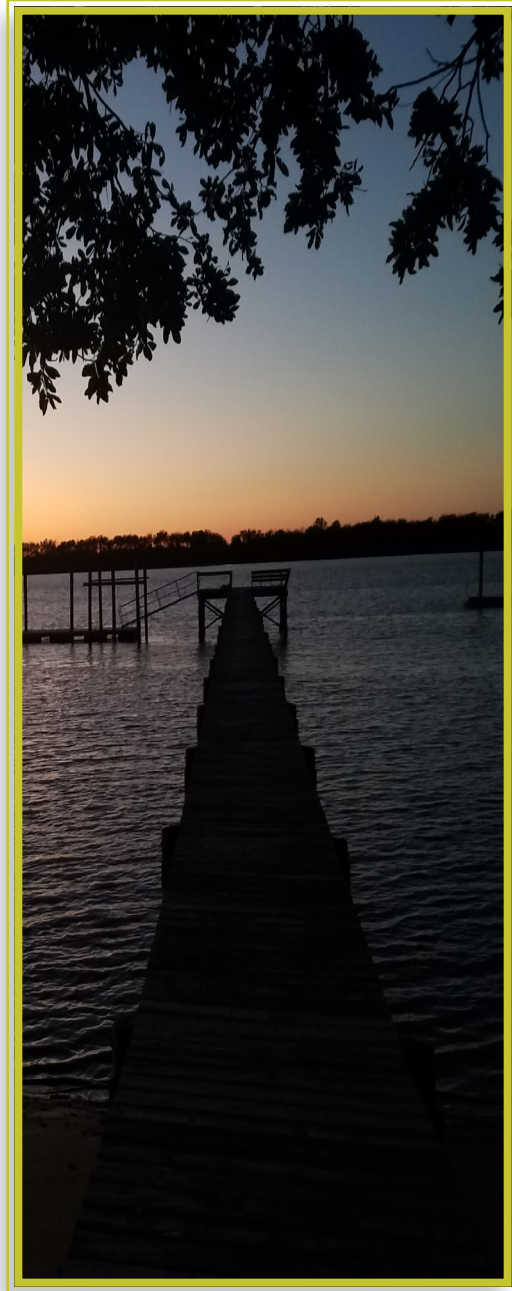
In the absence of a higher arbitrator, a just decider who equally doles out punishment and favor, the only law of the land that men seem to understand is violence. In this sense, violence becomes a tool utilized in the absence of a god to determine fates, forge destinies, and ensure each actors' sense of justice or survival is seen through. Mark Eaton's "Dis(re)membered Bodies: Cormac McCarthy's Border Fiction", touches upon a motif that McCarthy's *Blood Meridian* brings to light repeatedly, violence and its utility in domination. Violence, Eaton states, "is presented simply as one of the hard facts of frontier life... one which needs to be viewed in the new paradigm of political domination and power" (Eaton 3). Violence as a means of controlling the seemingly uncontrollable, of affecting one's own wills and desires with the power of life and death, appears to be the mechanism with which humanity resorts to making civilizations, settling scores, carving out a countryside, and coping with being forgotten.

The cryptic messages from the Judge, the misadventures into clashes that end in massacres, the senseless killings, the unseen, bloody redness in the west, what it all means is that we as men are forcing ourselves to acknowledge the unacknowledgeable: that we not only engage in violence as a tool, but we revel in it as we have and will continue to for time eternal. Faced with the unanswerable questions of our lives, such as if a god exists and what he/she wants from us, whether or not living justly is worthwhile, whether or not we will continue into the next day, we resort to the animalistic tendency for violence as our chisel to make the marks on the world in a vain effort to discern a greater meaning. When we cannot enact violence on life in some form, we derive a vicarious satisfaction from reading about it and seeing it in third person, such as our inability (or unwillingness) to turn

away when reading the Comanche massacre scene, or witnessing a particularly brutal car accident. McCarthy does not go as far to condemn, or to espouse, violence as a solution or a dilemma, but rather brings it into focus as a reality and an enduring truth that we must engage in our lifetimes, lest we ignore it to our detriment.

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"Mount Pleasant Sunset" by Erika Sineath

Electrical Engines: An Efficiency Debate

Huntor Ross



Huntor Ross, a Sophomore in Golf Company, is a Mechanical Engineering Major. He comes from Hampstead, Maryland. He served as first semester Battalion Clerk in 2nd Battalion and is contracted with the Army National Guard. He aspires to one

day own his own aerospace contracting company. He has earned Gold Stars and Deans List, and is on the club lacrosse team. Huntor hopes to attend medical school upon graduation from the Citadel.

ABSTRACT

This paper presents the advantages and disadvantages of electrical powered engines versus gasoline powered engines. It explains the fuel sources and their importance as well as the mechanics of each individual engine. Finally, it debates the importance of how electrical powered engines need to replace the gasoline powered engines in daily used vehicles.

1. INTRODUCTION

Electricity has been debated in the use of engines since the building of the first engine. Humans have known about electricity and started building the first electric devices as early as the eighteenth century. [6] However, the use of electricity in vehicles has become a major topic once again due to the discussion of global warming and fuel efficiency. This paper is a report comparing electrical engines to gas engines and assessing their benefits. In addition, it breaks down an electric engine in two parts. First lithium batteries and gasoline, the two main fuel sources for modern day engines, are discussed. Also, the advantages and disadvantages of each fuel type will be examined. The operational differences between electrical and gas engines are discussed as well as their advantages and disadvantages. In addition, there is a second debate over the total cost of ownership and green house emissions over a period of twenty years between the electrical engine versus the gas engine. An overview of leading research design in NASA is presented, where they are converting a gas passenger plane into a full electric prototype passenger plane. Electric engines have limitless potential in the twenty-first century and, if given a higher priority for research in the engineering field, can one day be the leading engine design for everyday use.

2. BATTERIES VERSUS GASOLINE

Having an engine is great, but without a fuel source it is completely useless. Gasoline has been the leading fuel source due to its ease of use and practical advantages over electric. However, as eco-friendly engineers become more environmentally conscious it becomes clear that the use of gasoline needs to fade away and the prime goal should be to focus on the use of electricity as a main fuel source.

2.1. LITHIUM BATTERIES

Batteries are used in many everyday appliances from coffee makers to television remotes. The use of batteries began in 1745, when the Leyden Jar was invented to store electric charges for experimental research [6]. Lithium Batteries have been the leading battery in electric vehicles due to its advantages over other batteries, including their high energy density, self-discharge, and low maintenance. Batteries all work in the same fashion, storing and releasing energy by moving electrons from one end of the battery to the other. The two ends are the positively-charged anode and the negatively-charged cathode. The space between them is filled with an electrolyte and has a semipermeable membrane to divide the space. In Lithium batteries, the anode is comprised of a carbon-based graphite while the cathode is made of a lithium metal oxide. The electrolyte fluid that fills the battery is a lithium salt with an organic solvent [11].

2.1.1. CHARGE AND DISCHARGE

When the battery is being charged (Figure 1), the charger applies a potential across the electrodes to force lithium ions to be released from the cathode. Then they move to the anode and cause a build-up of electric potential. However, during the use of the battery the positively charged lithium ions are released from the anode and move through the electrolyte to the cathode (Figure 2). While the electrons move through the engine they use their energy and return to the battery, completing the loop [18]. The discharge and charge cycles are simple processes during which Lithium ions move between the electrodes. An external source provides the energy for charging, whereas the internal chemical energy is released during discharging.

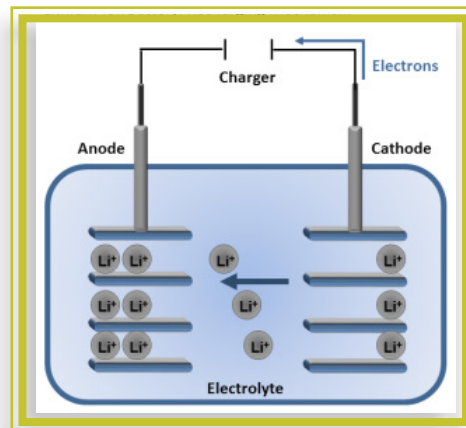


Figure 1. Lithium Ion Battery Charging¹⁸

2.1.2. ADVANTAGES AND DISADVANTAGES

The effectiveness of a battery is measured by the amount of energy that is able to be released relative to the mass of the battery itself. Lithium batteries have a high energy density and are able to release more energy in a smaller amount of mass compared to other batteries. Also, they have a slower rate of self-discharge which means it has a

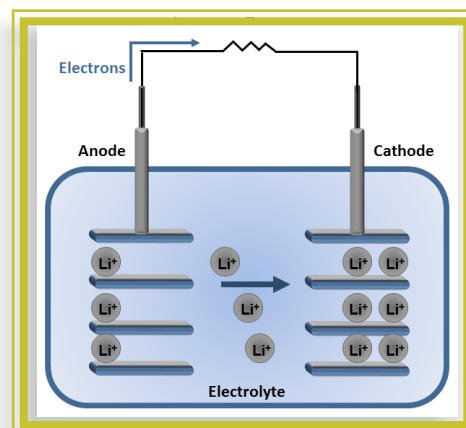


Figure 2. Lithium Ion Battery Discharging¹⁸

longer battery life. Finally, there is effectively no maintenance since it does not completely discharge to be recharged again and there is no need to prime it to charge. However, Lithium batteries require protective circuitry incorporated to make sure they are within

their safe operating limit. In addition, they can last up to five to twenty years however they cost about forty % more initially than normal car batteries but have a lower total lifecycle cost since they need to be replaced less [12].

2.2. GASOLINE

Edwin Drake was the first person to dig an oil well in Pennsylvania in 1859, however he distilled the oil to kerosene and discarded the other petroleum products, without realizing their potential since he did not have a use for them. It was not until 1892 when the inventions of automobiles petroleum based products became in use [9]. Gasoline started making a solid grip on the leading fuel source in the nineteen fifties when the major fuel companies start growing bigger and building it lasting roots [16]. Petroleum is made from hydrocarbons that can also be found in paper, wood, and coal. When the hydrocarbons are burned the molecules split and combine with air molecules producing carbon dioxide, water, and heat energy. This process is known as combustion and is used in almost every engine used today [19].

2.2.1. ADVANTAGES AND DISADVANTAGES

The main reason gasoline is still the major fuel source used is that it contains more energy in the least amount of mass (higher energy density). Also, the market for it is massive and has a strong presence in society making the production process easier and cheaper than ever before. However, because of the greenhouse effect the release of carbon dioxide is slowly destroying the environment which could eventually lead to catastrophic events. Eventually, gasoline will become less available and we will be forced to find a new renewable fuel source since it takes millions of years for the organic material to be converted

into gasoline [19]. Alaska and California combined contain over 55 % of the world's oil source while Saudi Arabia, Ecuador, and Iraq hold the majority of the last 45 % [4]. Therefore, another disadvantage that must be taken into consideration are the political battles and wars fought over the control of these countries and their oil reserves.

2.3. THE DEBATE

The reality remains today that gas is cheaper and more practical as a fuel source than electricity, because of modern advancements and technology. Unless, society can make electricity more efficient than gas, change will only occur slowly. However, that can be changed if as a society we refocus our research from advancing the production of gasoline towards building better and more effective batteries, and make their use economically advantageous. This presents a problem for those who wish to pioneer electrical engine technology because major oil companies possess a majority of the influence and funding for today's energy research. The oil businesses have many contracts and agreements that would need to be broken or renegotiated for a change to progress in the right direction.

3. ELECTRIC VERSUS GAS ENGINES

The development of the engine has led to huge advancement in transportation of materials and people. Once engines were invented people were able to produce ships, cars, planes, and eventually space vehicles. Inventors have created numerous types of engines that run on many different fuels, but the two main ones of today include the electric engine and the gas-powered engine.

3.1 ELECTRIC ENGINES

Electric engine technology dates back to 1834 with the first electric engine made

by Moritz Jacobi. Jacobi's engine set a world record because of its mechanical output power [7]. Jacobi's original engine had an output power of 300W. With further improvements the new output power was around 1kW. This meant that the engine produced enough power to be used on boats or cars and efficiently transport people or items. The "golden age" of electrical engines came in the early twentieth century before the creation of gasoline. The golden age was when most of the groundbreaking advancements took place in electric engines. Even now there has not been as much advancement in electric engines in such a short time period. Major commercial

“The ‘golden age’ of electrical engines came in the early twentieth century before the creation of gasoline.”

companies were using electric taxis in the time and were very impressed by their abilities. In 1912 there were thirty thousand electric vehicles in the United States, beating out the steam and internal combustion engines as the most popular engine design in the country. There were also charging systems around New York where a person could pay to charge their vehicle. The country also relied heavily on electric vehicles during the gasoline shortage throughout WWI, when they became cheaper than the gasoline powered vehicles which were being sent overseas. They also sent over a lot of electric vehicles to Europe which was recovering from the war. Then after the recovery of the war when gas prices dropped, and gas was becoming more available, major gasoline vehicle companies started pushing

the electric cars out of business. Then, in the 1980's when the understanding of air pollution became a pertinent issue, the advancements of the electric car began to slowly improve, gaining traction against the gasoline majority. Presently, electric cars continue to improve but they have yet to incur a major switch in the marketplace from gasoline power to electric [10].

3.1.1. DC MOTORS

The components of a DC motor (Figure 3) include positive and negative magnets, an electric current supplied through a commutator and armature apparatus, and brushes. The magnetic field extends from the north pole to the south pole of the magnet creating a magnetic field. The armature is an

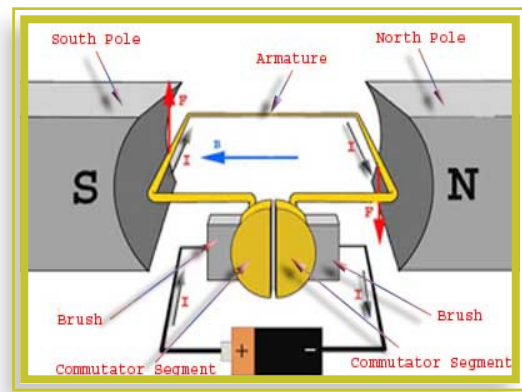


Figure 3. DC Motor¹⁹

electromagnet that provides energy to the end of the shaft since it is a coil of wire wrapped around a shaft. There is one commutator for each end of the coil on the armature and they are used as contact points between the brushes and armature. Additionally, the brushes cause the armature segments to switch from being negatively to positively charged. Then, when the electric current runs through a coil in a magnetic field, the magnetic force produces a torque which turns the DC motor [14-15].

3.1.2. AC MOTORS

The components of an AC motor (Figure 4) are the same as a DC motor with the inclusion of Slip rings with the brushes.

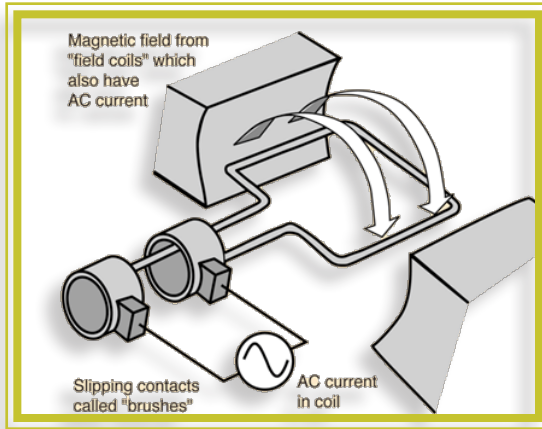


Figure 4. AC Motor¹³

No power goes through the slip rings however their purpose is to allow resistance to be in place with the rotor. The AC motor uses alternating current, so the motor only runs well at the frequency of the sine wave. The problem with AC motors is that it requires high voltage and heating at the contacts is a waste of energy and will shorten the life of the engine. The magnetic field is produced from the electromagnet powered by the same current as the motor coils which are often referred to as the "stator". Just like the current the magnetic field varies in a sinusoidal pattern [13].

3.2. GAS ENGINES

The most common gasoline engine is the four-stroke engine where there is a piston in a cylinder attached to a crank shaft. There is also an inlet valve responsible for letting in a mixture of air and fuel, the outlet valve responsible for releasing the exhaust gases, and the spark plug. Hence, the name the four-stroke engine there are four steps involved; intake, compression, power, and exhaust. In the intake step, the piston is pulled down by the crankshaft and the inlet valve opens and

lets in an air and fuel mixture. Then during the compression step, the inlet valve closes, and the piston compresses the gases. They are then ignited by the spark plug and the gas expands rapidly. In the power step, the gases explode, burning the fuel, and releasing the energy powering the crank shaft. Finally, in the exhaust step, the outlet valve opens, and the crankshaft continues to turn releasing the exhaust gases [19].

3.3. THE DEBATE CONTINUED

The major things to compare between the two engines are the total cost of ownership and greenhouse gas emissions. Arthur D. Little a management consultancy agency conducted research on these factors and concluded that gasoline engines out beat electric engines in 2015 as the most cost-effective type of engine to own. In their analysis they insist that for the total cost of ownership that there is a 44% price advantage in owning a gasoline engine powered car compared to an electric engine powered car. Therefore, owning an electric car can cost upwards of twenty thousand dollars more than a gas car over the span of twenty years [2]. The lower cost of gasoline engines is the larger advantage over electric engines due to the middle-class consumer being the primary target. However, electric engines out preform gasoline engines in reducing greenhouse emissions (or carbon footprint). Arthur D. Little argues that electric engines produce 23% less greenhouse gas than gasoline powered engines [2]. This is not as surprising of a result compared to the total cost of ownerships analysis due to controversy between gas engines and electrical engines since price will be a massive factor in the rate of use of electrical engines. The average cost of an electric vehicle makes it impractical for the modern middle-class family to afford such a

vehicle for only a 23 % difference in emissions. However, as advancements are made the price of electric vehicles may drop to be competitive with the price of gasoline vehicles, making them a more viable option. Before electric cars become a true replacement for gasoline powered cars they will need to be cost efficient for the average middle-class citizen.

4. X-57 MAXWELL CASE STUDY

The X-57 Maxwell is the prototype for an all-electric passenger airplane. Its goal is to reduce the energy used at high speed cruise to a fifth of its current value compared to a normal propulsion craft. It will be converted from a P2006T commercial passenger airplane which is a high winged, twin-engine, all-metal, four-seater aircraft. It is funded and worked on by NASA as well as by Empirical Systems Aerospace and Joby Aviation in collaboration to support the overall design. It began in 2014 when the project titled Scalable Convergent Electric Propulsion Technology and Operation Research (SCEPTOR) was founded. It is the first major research done for its time with this specific goal and is the leading research being conducted on such a large scale.

4.1. PROJECT OBJECTIVE

In this project there are four main stages that are going to occur on the project. The first stage is to conduct research on the potential of electric propulsions and to test the practicality of the system. During this stage, NASA, Empirical Systems Aerospace, and Joby Aviation developed The Leading Edge Asynchronous Propeller Technology (LEAPtech) which is a distributed electric propulsion high-lift system. Also, they came together and built what is known as the Hybrid Electric Integrated Systems Testbed (HEIST) which is an experimental wing

design. HEIST was mounted on a large truck which would drive at speeds of eighty miles per hour to simulate the effects of a wind tunnel. Also, they conducted in flight testing on the P2006T with pilots to collect data on the lift, drag, cruise efficiency, energy usage, and ride quality. The second stage is the physical production and assembly of the actual X-57 Maxwell. The plane was sent to Scaled Composites' facilities at Mojave Air and Space Port for this stage. NASA pilots went through flight simulations of the X-57 to understand how they will eventually be able to fly the real plane. Then, the project team created Airvolt to test the experimental electrical systems. Finally, they will retrofit the P2006T with the electric systems completing the second step. In the third step, the plane will be sent to the company Xperimental who designed the new wing configurations. The prototype wing reduces the wing area and moves the cruise motors to the wing tips. Once testing is over, the fourth step will start, including the completion of a fully functional electric plane. The fourth step has not yet received its funding and more innovations will be necessary to get this plane off the ground [8].

4.2. TIMELINE

NASA has already completed the first step and they have almost completed the second. Right now, the modified airplane was received by AFRC and the wing fabrication should be completed. By the end of 2017 they should finish the building of the prototype so that in the spring they can conduct taxi testing. They plan on spending all of 2018 redesigning and testing the fully built prototype so that by 2019 they can conduct the first flight [1].

5. CONCLUSION

Gasoline powered engines have many advantages over electric engines and their

dominance will continue until there is a major shift in culture allowing for more advancements in the technology. There is still a lot of political debate involving the oil business and how it is so strongly founded in our society. In addition, climate change presents an ethical dilemma because even though gasoline is more cost effective it is negatively contributing to climate change and hurting the environment. There has been a clear link between carbon dioxide emissions and global warming, a decrease in precipitation in already dry climates, and a rise in sea levels [17]. The atmosphere is becoming

“Gasoline powered engines have many advantages over electric engines and their dominance will continue until there is a major shift in culture allowing for more advancements in the technology.”

saturated with carbon emissions and now there is an abundance of harmful emissions like never before. Even small changes in the temperature can incur dramatic consequences for the environment. The electric engine needs to be developed and modified to go farther distances, require less charging time, and cost the same as a gas engine for it to gain prevalence [5]. The X-57 Maxwell case study was chosen to show the latest advancements taking place today and to encourage others to follow in similar research. It is a thought-provoking project that shows just how electricity can be used in vehicles other than cars. There is much work that must be done before it can

become practical, but it is encouraging to see a step in the right direction. Once finished, it will be another major advancement in the use of electrical power in engines and a stepping stone for further research.

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"Ultralight Beam" by Austin Chawporn

Morocco - Slow, Steady, and Setting the Example: An Analysis of Democratization in the Kingdom of Morocco

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ABSTRACT

This paper analyzes the political institutions of the Kingdom of Morocco and describes the nation's status as being "partly free." One of the essential questions of politics is whether the citizens of a nation are free to participate politically. Following the Arab Spring in 2013, the Middle East and Northern Africa region has experienced political movements attempting to increase freedom in virtually every nation; most nations have failed at political reform with some gaining minimal success. This essay explores the essential question of freedom in the Kingdom of Morocco and evaluates the success of their political institutions.

The Kingdom of Morocco is one of the Southern Mediterranean states in North Africa. The nation lies on the Northwest corner of the African continent and shares its borders with Algeria, the Sahrawi Arab Democratic Republic (commonly referred to as Western Sahara), and at its closest is roughly nine miles away from Spain. The official religion of The Kingdom of Morocco is Sunni Islam and it is considered to be part of the Arab world. As was the case with most African nations during the period of colonialism, European powers dominated the nation's affairs; France established a protectorate in the nation at the beginning of the 20th century which lasted until 1956, when Morocco gained its independence. Officially a constitutional monarchy, the nation has a monarch who is the head executive, a prime minister who is head of the government, and a bicameral legislature. However, historically the presence of democracy has not been readily present. According to Freedom Houses' 2017 Freedom in the World report, Morocco is only "partly free" – a designation reserved for nations who do not meet the full criteria of a free, liberal democracy, but also do not meet the criteria for an authoritarian regime. In order to fully understand the nation's "partly free" status it is essential to examine the historical background of the nation, the influences that led the transition from a state that was "not free" to "partly free," the current domestic political system, and lastly the current state of the security sector.

Essential to understanding Morocco's liberalization process is a greater understanding of the history of Morocco; examining the history of the kingdom will provide a background to the influences that led to this stage of transition and the resulting institutions. As most other nations in North Africa, the Roman Empire influenced the

regions affairs at the turn of the century up until the collapse of the empire in 476 C.E. Following the Roman Empire's influence were the early Islamic Caliphates, which then fell to significant Berber influence, and finally culminated in Sharifian Arab dynasties. It was during these Arab dynasties that Morocco began to increasingly interact with the West; the Kingdom of Morocco "in 1777 became the first nation to recognize the independence of the United States" which would prove pivotal to their later independence movement (The White House, 2013). During the infamous Scramble for Africa, Spain and France vied over control of the nation. This contention resulted in the "Treaty of Fez in 1912," which established a French "Protectorate Regime." This regime was recognized "over the whole Sherifian Empire" (Mitchell, 1955). This domination by France had significant impacts on the social dynamics within the state; the signing of the "Berber Decree of May 16, 1930" which "placed the Berbers under the French penal code" was an attempt to effectively "destroy the national aspirations of the Moroccan people by dividing them into two cultural groups" (Mitchell, 1955). As the Moroccans were increasingly cut-out of their own governance, "the ensuing years leading up to World War II witnessed disorders, police action, and...a state of siege," it seemed as if autonomy and independence was truly out of the Moroccans' reach (Mitchell, 1955). However, the dynamic of the independence movement changed when the US entered the fray in Africa during the war. In defiance of the French occupying forces, Sultan Sidi Mohammed Ben Youssef declared that "the

Americans were to be greeted as friends and allies" and was determined to establish a working relationship (Baida, 2014). His attempt at creating this working relationship succeeded and resulted in a meeting "between the Sultan and Franklin Delano Roosevelt in January 1943 during the Anfa conference" (Baida, 2014). Through the support of the American government and the actions of revived nationalists, this struggle to free themselves of French rule "ended successfully in 1956" and was then organized by Sultan Mohammed V "as a constitutional monarchy" (Central Intelligence Agency, 2017). The establishment of the state as a constitutional



Moroccan Flag

monarchy marks the beginning of their transition into a liberal state. The historical factors preceding this development provide a background to the analysis of trends of liberalization later discussed in this paper.

Before delving deeper into the details pertaining to Morocco's recent transition towards democracy, an understanding of democracy must first be reached. According to Richard Rose, "free and fair elections that can hold government accountable" in addition to the presence of the rule of law which implies the presence of a "constitution [that] not only sets out what governors can do but also what they cannot do" (Haerpfer, Bernhagen, Inglehart, & Welzel, 2009, pp. 10, 12). These criteria are not merely guidelines but "necessary precondition[s] for a fully democratic state" (Haerpfer, Bernhagen, Inglehart, & Welzel, 2009, p. 12). However, this does not mean that democratic states are monolithic—democracies present themselves in many different varieties. While there are some long-lasting democratic

nations, the existence of democracy is a rather new phenomenon. According to the renowned political scientist, Samuel Huntington, there have been three waves of democracy: the first from 1776 - 1914, the second 1945 - 1960, and the third from 1974 and continuing to present

“In a free state, the functions of government must remain free from corruption and accountable to the people.”

day. Many theories of democratization have been formed so that we may better understand the transitory process from non-democratic to democratic; these theories can be domestic in nature, such as the modernization theory, or international in nature, such as the model of diffusion, also developed by Samuel Huntington. Understanding the logistics of democracy and the democratization process allows us to better examine Morocco which falls in the third wave of democratization and has been influenced by both internal and external forces.

Now that an operational definition of a democratic state has been given, one can delve further into Morocco’s status as “partly free.” Freedom House assigned Morocco an aggregate score of 41/100, with 100 being most free and 0 being least free. Moreover, their average freedom rating is 4.5/7 which is derived from a Political Rights score of 5/7 and a Civil Liberties Score of 4/7, with all three scales valuing 1 as the most free and 7 as the least free. While it is great to examine the quantitative score for Morocco’s freedom, it does not mean much unless one examines

the report’s methodologies. Scoring consists of awarding 0-4 points for “10 political rights indicators and 15 civil liberties indicators” with “a score of 0 represent[ing] the smallest degree of freedom and 4 the greatest degree of freedom” (Freedom House, 2017). For the sake of organization, Freedom House divided the political questions into three distinct categories: “Electoral Process (3 questions), Political Pluralism and Participation (4), and Functioning of Government (3)” while the civil liberties questions are divided into four different categories: “Freedom of Expression and Belief (4 questions), Associational and Organizational Rights (3), Rule of Law (4), and Personal Autonomy and Individual Rights (4)” (Freedom House, 2017). These categories provide a framework for analysis of the nation’s level of freedom.

For the sake of expediency, only four of the subcategories will be examined: two from the political category, Electoral Process and Functioning of Government, and two from the civil liberties category, Rule of Law and Personal Autonomy and individual Rights. Of the 12 possible points in the Electoral Process subcategory, Morocco was only awarded 5 points; Freedom House cited the monarch’s ability to “disband the legislature, rule by decree, and dismiss or appoint cabinet members” unilaterally as one of the reasons for the low score (Freedom House, 2017). Moreover, following the recent October 2016 elections, “the National Council of Human Rights released a report noting...cases of vote buying” indicating that the notion of “fair and free” elections is compromised (Freedom House, 2017). Similarly, Freedom House only awarded a score of 3, out of the possible 12 points, to Morocco in the Functioning of Government subcategory. In a free state, the functions of government must remain free from corruption and accountable to

the people. However, in Morocco the king and his cabinet noticeably constrains “[the government’s] power to shape policy” due to the power they possess (Freedom House, 2017). Secondly, institutional corruption is pervasive and Morocco “has a mixed record on enforcement” (Freedom House, 2017). Returning to the operational definition of democracy previously established, it is easy to see how Morocco lacks “free and fair elections that can hold government accountable” (Haerpfer, Bernhagen, Inglehart, & Welzel, 2009, p. 10). This struggle with the political freedoms contributes to Morocco’s status as “partly free.”

The civil liberties side of the state is not much better in Morocco, with only 26 of the possible 60 points being awarded. Particularly lacking in the kingdom is the rule of law which only attained 6 of the possible 16 points. Criteria necessary for full points include “an independent judiciary,” the prevalence of the rule of law “in civil and criminal matters,” and the “guarantee [of] equal treatment of various segments of the population” (Freedom House, 2017). However, Freedom House cites “the judiciary is not independent of the monarchy, and the courts are regularly used to punish” political dissidents as well as the continued practice of “widespread” torture (Freedom House, 2017). Additionally, unfair and “harsh discrimination and occasional violence” is often thrust upon the LGBT community in the kingdom (Freedom House, 2017). Freedom House awards Morocco 7 out of the possible 16 points in the Personal Autonomy and Individual Rights category which focuses on the social, economic, educational rights afforded to individuals. The report cites multiple indicators as to why full points were not received: “poor economic conditions and corruption limit” individual’s right to move, albeit more progressive on women’s rights,

the law still remains “discriminatory” towards women and “women continue to face significant discrimination at the societal level” (Freedom House, 2017). Furthermore, “child laborers... are denied basic rights,” which is counter to the ideals necessary to a free society (Freedom House, 2017). As previously established by Rose’s definition of democracy, essential civil liberties are not guidelines, but “necessary preconditions” for the presence of democracy. Looking at the kingdom’s neglect of these civil liberties, it is easily understood how Morocco has not earned a “free” status.

After examining both the political rights and civil liberties, or lack thereof, one might question how Morocco managed to attain a “partly free” status. However, Morocco has recently undergone many institutional reforms influenced by social movements and international pressures. In response to the liberal fervor spreading through the Arab world during the Arab Spring, King Mohammed VI “implement[ed] a reform program that included a new constitution” in 2011, which did not fundamentally change the government but did pass “some new powers... to parliament and the prime minister” (Central Intelligence Agency, 2017). However, this was not the first attempt at institutional reform and “liberalization measures actually began under [King Mohammed VI’s] predecessor and father, King Hassan II” during the late 1980’s up until his death in the late 1990’s (RAND Corporation, 2008). The reforms implemented by Hassan II included constitutional amendments aimed “to encourage greater party participation and broader political space for civil society;” the reforms even went as far as an introduction of alternance “which was an invitation to oppositionists to form a coalition government” (RAND Corporation, 2008). Following in his father’s footsteps Mohammed VI revitalized the reform efforts and worked to

make the government more transparent, more respectful of human rights, and more helpful to assure the empowerment of the individual. Mohammed VI has carried out this reform process by creating a series of initiatives such as the “Truth and Reconciliation Commission,” “the Human Development Initiative,” and “the revision of the mudawanna, or personal status code governing familial relations” (RAND Corporation, 2008). These series of initiatives as well as the development of a new constitution has to some extent led to a more democratic process; in their first municipal elections following the new constitution, the state “garnered 53 percent voter turnout” and the Party of Justice and Development (PJD) “came in first at the regional level” and formed a plurality (Freedom House, 2017). Subsequent to the October 2016 elections, the PJD “retained its plurality” which positively signaled continued reform due to the party’s nature as a “moderate Islamist group” (Freedom House, 2017). It is undeniable that the monarchs’ reform efforts “have created a climate of openness that has permitted greater participation,” yet it has failed to result in a free liberal democracy (RAND Corporation, 2008). Nonetheless, the transition to democracy in Morocco is steadily progressing and is performing well considering its region.

As with most states, Morocco’s liberalization process draws on both internal and external influences. In the case of King Hassan II, the harsh realities of an economic crisis catalyzed the need for reformation.

Morocco did not escape the deteriorating economic conditions that plagued other Middle Eastern nations which “sparked food riots and protests” that demanded institutional reform to produce better governance and “material survival” that they desperately needed (RAND Corporation, 2008). This repression of the people by the state prompted mass pressure by the Moroccans which led in part to their further democratization. According to Christian Welzel, “mass opposition can grow so wide that repression becomes too



Morocco

costly” to remain a feasible action and “power holders are forced to open the way to regime change” (Haerpfer, Bernhagen, Inglehart, & Welzel, 2009, p. 83). Due to the shortage of vital goods in the 1990’s, Moroccan mobilization became so widespread and popular King Hassan II had no choice but to take reformation seriously. This model of state repression and democratization helps explain Morocco’s early trends towards liberalization. However, reformation efforts made by Mohammed VI’s followed the domestic model of elite pacts forcing mass mobilization. Well-known Moroccan political scientist, Mohamed Tozy, asserted that the failings of Mohammed VI’s government was its favor of elitism. Tozy claimed that “the monarchy and its associated elites had...increasingly engaged in a technocratic discourse of economic transformation” which resulted in “weak levels of participation” (Hoffman & Konig, 2013). This institutional nature of elitism is what prompted the “20 February Movement...

the Moroccan offshoot' of the Arab Spring (Hoffman & Konig, 2013). This movement is ultimately what prompted Mohammed VI's announcement of constitutional reform.

While it goes without saying, the trend towards liberalization has been influenced by domestic factors, international processes of democratization can also help explain Morocco's democratic development. Two particular models of international democratization influenced liberalization: internationalized domestic politics and regional diffusion. The Kingdom of Morocco has been interacting with the West, including the United States, for centuries. As the United States grew more powerful post-World War II, their emphasis of spreading democracy also increased. In 2004 "the United States and Morocco signed [a] free trade agreement" which "entered into force on January 1, 2006" (Office of the United States Trade Representative, 2017). This bilateral relationship between the two countries signaled the United States' investment in maintaining good working relations with Morocco. This was reaffirmed when President Obama expanded the agreement by signing "a Trade Facilitation Agreement" (The White House, 2013). This particular interest by the United States in Morocco undeniably influenced the quickness of which Mohammed VI agreed to constitutional reforms and adherence to them. Similarly, diffusion of democracy by the European Union (EU) helps explain their democratization trends. Particularly, the "open skies agreement signed between the EU and Morocco" aimed to liberalize air traffic relations between the two entities (Bernardo & Fageda, 2017). This agreement exemplifies the means by which a democratic regional international organization can subtly influence the liberalization of a non-democratic state. It truly has been a combination of domestic

and international influences that have led to further liberalization.

Collectively, the historical background information and the analysis of the influences of liberalization leads to the political make-up of the state as it stands today. As previously mentioned, the monarch is the head of the state and wields "supreme executive authority over matters of security, justice, and religion;" the monarchy is hereditary by nature (Janes Internal affairs). The prime minister, the head of the parliamentary coalition, is the head of the government. There is a bicameral legislature consisting "of the Chamber of Advisors" (the higher chamber" and "the Chamber of Representatives" (the lower chamber) that undergo regular elections (Central Intelligence Agency, 2017). There is a judiciary present in the country, yet it "is not independent of the monarchy" so it is only a facsimile of what is required of a true democracy (Freedom House, 2017). There are currently five main political parties operating within the state: Justice and Development Party (currently maintains the majority), the Istiqlal party, the Authenticity and Modernity Party, the National Rally of Independents party, and lastly the Socialist Union of Popular Forces (Jane's, 2017). Given a somewhat tenuous history, the military is "firmly under the control of the palace" (Jane's, 2017). The Kingdom of Jordan fits the mold of an authoritarian monarchy transitioning to a democracy; the monarch wields absolute power, but has started to concede his power in the attempt to maintain peace and increase the economic outlook of the state.

Lastly, assessing a transitioning state's military can shed light on the probable success of attempts at liberalization. It is often hard to reign in unruly militaries and authoritarian figures often find themselves quelling military coups. While no recent attempt has been made, "attempted coups against King

Hassan II [took place] in 1970 and 1972” (Jane’s, 2017). Following this dispute, the military has been unwaveringly loyal to the monarch even during the succession from Hassan II to Mohammed VI. However, as the Arab Spring went into full swing there were worries about revolution and Mohammed VI “extended a pay hike to the armed force” in an attempt to quell any would-be dissent against the monarch (Jane’s, 2017). Currently, the Kingdom of Morocco spends “approximately USD4.35 billion” making it the “fifth largest spender in the Arab world” (Jane’s, 2017). This increase in military spending was spurred by two factors: a potential threat posed by Algeria to regional stability and increasing attempts and incidences of acts of terrorism. Moroccan armed forces, under the direction of Mohammed VI, have “succeeded in preserving its stability” in the face of asymmetric threats (Alaoui, 2017). The military’s security strategy is extensively intertwined with their attempt to liberalize; characteristics of the strategy include the wish for the strategy “to be implemented in the framework of...the rule of law” as well as the “promotion of moderate Islam” in an attempt to create a unified “national identity” (Alaoui, 2017). Despite its less than perfect past, Morocco’s military is not a threat to democratization, but rather an advocate.

Given the history of oppression, their fight for independence, and subsequent attempts at reform, Morocco remains steadily progressing towards becoming a liberal democracy. The recent governmental and constitutional reforms signal continued assurance towards respecting individual’s political and civil liberties. This transitional process has been influenced by domestic mass mobilization due to repression by elite officials and international influence by Western Nations, namely the United States,

and regional international organizations, such as the EU. Given a few mishaps in the past, the kingdom does not face any risk to its transition by the military and efforts even benefit from the current security strategy. However, Morocco still has a long way to go; freedom of the press is practically nonexistent, wealth disparity is crippling, and corruption is rampant. Full liberalization will not, and cannot, be achieved until these issues are handled. Despite its

“This increase in military spending was spurred by two factors: a potential threat posed by Algeria to regional stability and increasing attempts and incidences of acts of terrorism.”

shortcomings, Morocco serves as one of the shining models of democratization in the Arab world and should serve as a model (to be improved upon) for states on the cusp of their own liberalization process.

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“Night Time Padgett-Thomas” by Morgan Meredith



"Cadets at Battery Park" by Morgan Meredith

Dueling: The Defense and Development of Honor in the American South

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Kyle Zachwieja, Echo Company, comes from Richmond, VA. An English major, he is a member of the Honor Committee and a recipient of the Citadel Student of Excellence award due to his involvement in the

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ABSTRACT

This paper addresses the development of honor throughout the Antebellum South. It examines the Code Duello and the reasons and rules behind which duels were fought. This system of honor was unique to the Southern states, and was the reason non slave holders were so eager to defend their homes against the “Northern Invader” during the Civil War.

In just about every culture throughout time (up until around the Civil War), there has been a unique system of honor. Nowhere in history is the importance of honor more prevalent than in the Antebellum American South. This idea of honor, or the Code Duello shaped the culture and lifestyle of many people in the Colonial era South. This idea of honor was so important, that it was what prompted men (usually of means) to put their lives on the line fighting duels. “The determination of men to have power, prestige, and self esteem and to immortalize these acquisitions through their progeny was the key to the South’s development” . Not every man in the South practiced the “Code Duello” or personal combat. However, this idea was significant because this sense of honor was what prompted many men to pick up rifles and fight for the Confederacy in defense of their home and their way of life. This is the reason that the majority of men fought for the South, and without it there might not have even been a Civil War.

The Northern and Southern United States were settled by vastly different people. The North was for the most part initially settled by farmers from population centers in major European countries. The South, on the other hand was settled more or less by people from the rural or undomesticated parts of Britain (Scotland, Wales, Northern Ireland etc.). These Scotch-Irish settlers brought with them their ideas of courage, strength, and violence in order to defend a smite on their honor

The Code Duello is the set of rules for one-on-one combat that was primarily found in the American South. This one-on-one combat was almost always dueling. The dueling could either be constituted as a sword fight or a pistol duel, the latter being the most common. To fight duels and to practice the “Code Duello,”

one typically had to be regarded as a gentleman, or a man of the upper class. However, it was fairly common to see duels fought between teenagers and the lower classes as well. This code is unique, due to the rule of the outcome. The rule is traditionally whoever wins the duel is in the right, no matter what the offense was or how the entire situation started.

Dueling was also used as a preventive measure in the American South. It was used to prevent feuds between families, and also as a way to make sure people acted in an upright, righteous, and respectful manner to others. If the thought of dueling occurred to someone when they were being disrespectful towards someone else, there is a chance that it may make that person think twice about doing it.

The rules of dueling and defense of personal honor were quite complex, and very specific. So much so, that many manuals like John Lyde Wilson's *The Code of Honor; or Rules for the Government of Principals and Seconds in Dueling* were written. Manuals like this one lay out the rules and duties of everyone involved in a duel from the two participants to the behavior of the spectators.

Before getting into how the actual duel is conducted, it is important to know why they were fought, and how offenses were made. Offenses could derive from basically anything that could make someone mad, whether it was verbal or physical. However, at the time of the offense the person who is offended is not supposed to make a scene. They are supposed

to say nothing to the person who offended them. They should find a person who will act as their second and tell them what happened. The only exception is if the offense is physical. If it is physical, the offended party has an adequate right to self defense.

A "second", is a person whom the offended and the challengee trust to embody their honor. This person is usually one of their closest friends. When an offense is made, or received, the "second" has many responsibilities. The very first responsibility of a "second" is to try and soothe the situation. In most situations, they try to see the other

persons side in an effort to make their friend calm down. According to "Rule Twenty-One" in John Lyde Wilson's dueling manual "Seconds are bound to attempt a reconciliation before the meeting takes place..." However, in certain cases this is not effective, and they must help their principal write a note of challenge to the offending party. The "second"



John Hampden Pleasants and Thomas Ritchie³

bears great responsibility here because it is his job to make sure the letter is written in a gentlemanly and respectful manner that he will have no problem delivering. He then takes the letter to the other party, him and the other person's "second" determine the time and place of the field of honor.

The "second" has three main responsibilities during the duel itself. The first responsibility is the loading of the weapon. The weapons used in most duels in the Antebellum South were single shot conventional dueling

pistols. "Each second informs the other when he is about to load and invites his presence, but the seconds rarely attend on such invitation, as gentleman may be safely trusted in the matter". Another responsibility is fairness. The "second" carries a loaded pistol, if he sees the other principal doing something unfairly, he has a right to fire on him. If this unfairness led to his friend being shot, the "second" is obligated to do it: "...if a principle fires before the word or time agreed on, the second is at liberty to fire on him, and if such second's principal falls, it is his duty to do so". The final responsibility is to know when to stop the duel. John Lyde Wilson's rules state: "...no second is excusable who permits a wounded friend to fight; and no second who knows his duty, will permit his friend to fight a man already hit". The final responsibility of the "seconds" is to stop the fight if one of the principals is already hit.

Besides the traditional duel, where both men were shooting to either injure or to kill their opponent, there were two main strategies that men also used. The first one was aiming high or throwing away their shot. This was common because of the importance of a person, and maintaining honor. John Randolph, a congressman, was challenged to a duel by Secretary of State Henry Clay. Randolph could not have dealt with the consequences of killing someone who was that important, so he aimed high in the duel. Clay missed and he saw what Randolph did, and that was the end of it. There were also many instances where both men would duel and intentionally miss

each other. This allowed both men to leave the duel in peace and with their honor intact in the eyes of society, because they fought a duel and did not show cowardice at all.

Arguably the most famous duel in the history of the United States occurred between the Federalist, Alexander Hamilton and Vice President, Aaron Burr on July 11, 1804. Burr was Thomas Jefferson's first Vice President, but he was not chosen to be on the ticket for reelection. "The antagonism between the two came to a head in 1804 when Hamilton thwarted Burr's attempt to gain renomination for Vice President as well as his bid to win governorship of New York" (Duel at Dawn). Though this duel happened in the North, it

constitutes all of the aspects of the Southern Code Duello. The duel was fought in Weehawken, NJ because the punishment for dueling was not as steep in New Jersey as it was in New York. Hamilton did not want to hurt anyone.

All he wanted was to maintain his honor. To do this, he would implement the dueling strategy of "throwing away" his shot. According to University of Maryland Professor Richard Bell's article "The Double Guilt of Dueling", "Hamilton repeatedly told friends and family of his intent to hold his fire while his opponent took aim" ("Double Guilt"). Hamilton is even quoted as saying: "I have resolved...to reserve and throw away my first fire, and I have thoughts of even reserving my second fire". There are conflicting reports as to how Hamilton threw his fire away. Some say he shot straight up, others say that he aimed about

"Dueling was also used as a preventive measure in the American South. It was used to prevent feuds between families, and also as a way to make sure people acted in an upright, righteous, and respectful manner to others".

twenty feet above Burr's head and pulled the trigger. Regardless of how he threw his shot away, the act of doing it did not move Aaron Burr to throw his away and reconcile with Hamilton. Burr mortally wounded Hamilton: "Hamilton almost instantly fell. Colonel Burr advanced toward General Hamilton with a manner and gesture...to be expressive of regret" ("Duel at Dawn"). Hamilton was taken back to New York City, where he died the next day.

A lesser known fact, is that Abraham Lincoln practiced the Code Duello, and that he almost fought in a duel. This can be seen in a letter written by Abraham Lincoln, that has been transcribed and annotated by the Lincoln Studies Center in Illinois. "Lincoln was challenged to a duel by Illinois State Auditor James Shields over an alleged aspersion on Shields's character in a satirical letter Lincoln contributed under a pseudonym to Springfield's Whig newspaper, the Sangamo Journal in September of 1842" (Lincoln Letter). Lincoln was challenged, so in this case he was able to dictate the terms. It is no secret that Abraham Lincoln was a very big man, very tall for his time. According to John Lyde Wilson's Code of Honor, it is typical for the challenged to choose the weapons: "The challenged has the right to choose his own weapons, unless the challenger gives his honor that he is no swordsman" (*Code of Honor*). Lincoln laid out his terms for the weapons used in the duel: "1st weapons— Cavalry broad swords of the largest size precisely equal in all respects—and such as now used by the cavalry company at Jacksonville" (Lincoln Letter). "This document shows that Lincoln dictated special conditions that would greatly favor the combatant with the longest arms (himself) and presumably discourage his opponent" (Lincoln Letter Annotation). Lincoln and his seconds met Shields on an island in the

Mississippi River for the duel to take place. However, once everyone arrived Shields and Lincoln reconciled and became friends again instead of fighting with broadswords. Shields may have known that there was just no way that he could beat Lincoln dueling with swords because of his longer arm span, or maybe he never intended to actually fight over it to begin with. Either way, both men left the dueling ground that day with their honor fully in tact even though no shots were fired, and no one was hurt.

Honor played a huge role in the foundation of the United States. Though it derives from very similar concepts, honor differed regionally between the North and the South. The Northern code of honor could be found in emotional restraint, and economic success. The Southern code of honor was very similar to that of the middle ages honor code from Europe. This "combined the violent nature of man with virtue and chivalry very similar to that of knights" (*Art of Manliness*). According to Wyatt Brown's *Southern Honor*: "It was that spirit that inspired the famous 'Rebel Yell' on the battlefield. Warlike screams to unnerve the enemy and arouse the fighters had also been part of the Ancient German repertoire (*Southern Honor*). This code of honor could be found a little bit in the North (I.E Alexander Hamilton), but the overwhelming majority of duels and challenges of honor occurred in the American South (*Art of Manliness*). "Anthropologists and social psychologists believe this form of classical honor survived and thrived in the American South and died in the North because of cultural differences between their respective early settlers, as well as the North's and South's divergent economies" (*Art of Manliness*).

The Civil War was about State's Rights, slavery, and even honor. Honor is the reason why many Southern states seceded from the

Union, and why many Southerners, especially those that did not own slaves, fought.

William Yancey was an avid secessionist who represented the state of Alabama at the Democratic Convention in Charleston in April 1860. When speaking on the prospect of secession, he had this to say: "Ours is the property invaded; ours are the institutions which are at stake; ours in the peace that is to be destroyed; ours is the honor at stake-the honor of children, the honor of families, the lives, perhaps, of all" (*Art of Manliness*). This clearly shows that in the back of many Southerners and Secessionists minds they thought that their honor and way of life was being violated in one way or another by the North. This way of thinking caused many states to secede, and inevitably to go to war (Art).

In a traditional culture of honor, loyalty to one's home and people is more important than any other demand. This concept was clearly embodied by Confederate General Robert E. Lee (Art). A well known fact among historians, but not as much among the average person, is that before the Civil War began Robert E. Lee was offered complete command of Union forces by President Lincoln (Art). He turned down the offer, not knowing at the time if Virginia was going to stay in the Union or join the Confederacy. But he did know that he could not take part in an invasion of the South, and fight against his own people (Art). When asked about the decision her husband made,

Robert E. Lee's wife said: "He has wept tears of blood over this terrible war, but as a man of honor, and a Virginian, he must follow the destiny of his state" (art).

Many Southerners from different backgrounds and classes made the same choice as Lee. They were united against the encroachment of outsiders, the threat against their way of life, and showing honor by fighting when insulted. The vast majority of Southerners, whether slave-owners or not, took up arms for the Confederacy (Art).

With the concept of honor generally viewed as a gentlemen's affair, it raises the question of how it made so many Southerners fight and die for the

Confederate cause? The answer is obvious yet complex. When one looks at why Northern troops fought, one sees where they fought for freedom, equality, and democracy. These are very important qualities, but at the same time they are abstract. On the other hand, Southern soldiers fought for more physical ideas such as protecting the Southern way of life, and loyalty to their state (art).

It is important to acknowledge how the traditional Southern Code of Honor hurt the Confederacy's war effort. During the war, a man may have enlisted under the influence that he would be fighting against the "Yankee invader" in his home state along the side of men from his county or town. Unless they were a member of the Confederate Home Guard or something similar, this was hardly the case.

“When one looks at why Northern troops fought, one sees where they fought for freedom, equality, and democracy... On the other hand, Southern soldiers fought for more physical ideas such as protecting the Southern way of life, and loyalty to their state (art)”.

This hurt morale because many men joined to protect their homes, loved ones, and states. They did not join to fight faraway from home. This concept also caused massive desertions later in the war when Union troops occupied much of the South. Many Southern troops deserted because loyalty to family and loved ones came above anything else

Honor was key to developing the way of life in the Antebellum South. One-hundred and sixty years later, we look back and think how crazy it was. I do not really think it was that crazy. They lived in a different time, and that is the way gentlemen took it upon themselves to defend smites on their honor. If anything, it taught people how to act and be respectful because if they were not they might find themselves facing the disrespected party in a duel. Many famous and well known Americans from the Eighteenth and Nineteenth centuries, such as Alexander

Hamilton, Abraham Lincoln, and many others, practiced the Code Duello and engaged in duels. This further shows that at the time, this concept was not viewed as extreme at all, if anything it was normal. Finally, this Southern Code of Honor played a part, and indirectly caused the bloodiest war fought on the American continent. Though overlooked, Southern Honor and the Code Duello played a huge role in the history of our nation.

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"Beneath the Surface" by Austin Chawporn

Religious Freedoms in the Criminal Justice System

Charles Turner



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ABSTRACT

In the United States criminal justice system, a general respect for religious rights is observed. However, every so often a conflict between religious freedoms and general security in corrections facilities arises and the issue goes to court. This paper explores the development of religious freedoms in the incarceration system from Reynolds v United States (1878) until Burwell v Hobby Lobby (2013). A special analysis is made of President Trump's remarks regarding religious freedoms with regard to the U.S. incarceration system.

In the criminal justice system, there has been a great race for religious freedom for incarcerated individuals since the landmark case Reynolds v United States (1878), which challenged anti-bigamy laws in the United States. The Supreme Court of the United States has ruled in greater favor of religious freedoms within prisons, beginning with the Roberts' Court from 2005 until present. (Parlapiano, 2015) Consequently this has led to more lawsuits claiming violations of individuals' first amendment right. As we explore the judicial precedent as well as the criminal justice system in this essay, we will witness the enormous amount of progress that has been made for religious freedoms, not only in the criminal justice system, but also in the United States.

I. FREEDOM OF RELIGION FOR THE PUBLIC

The first amendment states that "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof," (Bill of Rights, Amendment 1) thus allowing individuals in the U.S. to practice the religion of their choice and banning the government from establishing a central religion for the people. This clause has become known as the Free Exercise Clause of the first amendment, and the US Supreme Court uses it to decide whether an act or law about religion is constitutional. The first Supreme Court case that was requested to interpret freedom of religion was Reynold v United States (1878), in which the supreme court upheld a ban on polygamy. By marrying a second wife in 1875, George Reynolds, a member of the Church of Latter-day Saints (LDS), presented himself as a test to the Morrill Anti-bigamy Act, which sought to end bigamy. As a secretary in the office of president of the Church, Reynolds was a well-known figure in

the LDS church. The LDS church believed that the restrictive law was unconstitutional, because it violated a rule of their religion that told all males to practice polygamy. The US Supreme Court under Chief Justice Waite ruled that religious beliefs and an action that came from a religious belief are not one in the same, and the latter is allowed to be regulated. From this standing, the US Supreme Court ruled that Reynolds did not have the right to practice polygamy, since polygamy is an action that came from a religious belief. (Reynolds v US, 1878)

Several decades ago, the US Congress passed the Religious Freedom Restoration Act of 1993. The bill reaffirmed the precedent outlined in Sherbert v Varner (1963) and Wisconsin v Yoder (1972), addressing an addition to the existing test to determine if a governmental body had violated an individual's religious freedoms. In Sherbert v Varner (1963) the US Supreme Court found that the South Carolina Employment Security Commission's actions of denying benefits to Mrs. Sherbert after being fired from her job for not working on Saturday, the Sabbath of the Seventh-day Adventist Church to be unconstitutional because there was no "compelling governmental interest." (Sherbert v Varner, 1963) In Wisconsin v Yoder (1972), the State of Wisconsin prosecuted Jonas Yoder along with several other Amish citizens under a Wisconsin law for refusing to send their children to school after the age of 8, arguing that such actions were "contrary

to their religious faith." (Wisconsin v Yoder, 1972) The US Supreme Court found in favor of the defendant in this case because "the values and programs of secondary school were in conflict with the fundamental mode of life mandated by the Amish religion," and that the extra schooling did not make the significant difference in the state that Wisconsin had used to justify the law. (Wisconsin v Yoder, 1972) As

a nation founded by persecuted Christian denominations, the United States has developed the legal precedence with regard to religious freedoms, and the aforementioned cases are far from the first religious dispute. The purpose of the Free Exercise Clause is to



Prayer Time by Larry Jacobsen¹⁷

protect "not just religious beliefs but actions made on behalf of those beliefs" and additionally, "to allow for the violation of laws, as long as that violation is made for religious reasons." (Cornell, 1999) However, how the courts have changed their interpretation of the phrase "prohibiting the free exercise thereof" has proven influential in the criminal justice system. This clause has allowed for a lot of actions that would be deemed illegal for a different motive other than religion, such as in the recent case Burwell v Hobby Lobby (2013), to be considered legal. Burwell v Hobby Lobby involved a for-profit company that was granted amnesty from taxes which would incur unless they provided access to contraceptives for their employees. The use of contraceptives such as IUDs went against the moral standard, drawn from the Evangelical

Christian denomination, that the company was attempting to uphold. (Fung, 2014) The decision in this case allowed the scope of the Free Exercise Clause to expand, thus allowing for-profit companies to decide if they would provide contraceptives to employees based on moral codes.

II. FREEDOM OF RELIGION IN THE CRIMINAL JUSTICE SYSTEM

Recently, the Supreme Court has favored more the freedom of religion than they had been in the past. Congress passed the Religious Land Use and Incarcerated Persons Act (RLUIPA) of 2000, which set guidelines describing how those incarcerated persons are allowed to practice their religion. For instance, requests regarding the practice of worship require inmates to: (1) "prove they (the request) are sincere," (2) "that the accommodation pertains to religion," (3) and "that denial of the accommodation imposes a substantial burden on their religious exercise." (Turner, 2016) The RLUIPA "recognizes the crucial role religion plays in the rehabilitation of incarcerated individuals and in the lives of those who are institutionalized, and they require that state and local institutions not place arbitrary or unnecessary restrictions on religious practice." (RLUIPA)

The most recent case of a violation of RLUIPA is Holt v Hobbs (2015) in which an inmate in an Arkansas jail was refused the ability to fully practice Islam by growing a beard. This was a serious concern to the inmate, as it would force him to choose between his highly held religious belief and the grooming

policy of the prison that prohibited beards. The Arkansas Department of Corrections claimed that there was a serious safety concern that if inmates were allowed to have full beards, then they could more easily conceal contraband. However, the Supreme Court ruled in favor of the detainee's religious freedom and stated "that Holt 'easily satisfied' his burden under RLUIPA to establish that growing a beard 'is a dictate of his religious faith,' and that the Department's grooming policy substantially burdened his religious exercise." (Harvard Law Review, p353)

It is possible for constitutional rights, granted outside of the incarceration system, be denied to inmates because of general security. Those who are established sentinels of order in an incarceration system should have authority to fulfill their duties without the threat of violence from any inmate. By the statute of RLUIPA, as stated in the case brief for Holt v Hobbes "the challenging party bears the initial burden of

"This was a serious concern to the inmate, as it would force him to choose between his highly held religious belief and the grooming policy of the prison..."

proving that his religious exercise is grounded in a sincerely held religious belief and that the government's action substantially burdens his religious exercise." (Holt v Hobbs, 2015) Additionally, the government organization explains how the "burden imposed the least restrictive means of furthering a compelling governmental interest," (Holt v Hobbes, 2015) and since both of the necessary stipulations are present, RLUIPA was violated in this case. Had the request not been considered to be of a "sincerely held religious belief," or if the government did not burden the individual's religious exercise, the governmental institution would not have violated RLUIPA.

Another example of religious freedoms in the criminal justice system involving RLUIPA was *Cutter v Wilkinson* (2005). A group of inmates in an Ohio state prison requested special accommodations for several non-mainstream religions which included Satanism, the Wicca religion and a white supremacist version of Christianity. (Marus, 2005) The defense's argument for the state prisons intended to show that by giving some accommodations for religion, the state prisons adequately motivated some people to "get" religion, by offering them benefits that are not available to non-religious inmates. The court held that in the case for *Cutter v Wilkinson* (2005), the respondents to the claim must take action to change current standing to allow prisoners to practice the religion of their choosing to avoid violating the Free Exercise Clause of the first amendment. So as one can see, court cases that make it to the Supreme Court involving RLUIPA are decided in favor of the petitioner, and rarely for the respondent to the charge. (*Cutter v Wilkinson*, 2005)

Another example of the courts making a judgment on a supposed violation of RLUIPA was in the case *Khatib v Orange County* (2011) in which a woman who was temporarily being held in a courthouse lockup was requested to hand over her belongings and to remove her hijab, a profession of her faith. Ensuring the security of her person was the compelling interest of the state. *Khatib* tried to explain to the officers that doing so would be a grave violation of her faith and after the officer in the lockup requested her hijab again, she complied.

She sat in the holding cell for a majority of the day, being seen by a variety of male officers and inmates, making her feel "uncomfortable." The 9th District Court of Appeals' judgment on the matter was simple; a holding cell is not a correctional institution, so RLUIPA does not grant the petitioner the rights afforded by it. (*Khatib v Orange County*, 2011) While this was not a step towards religious freedom, it was an important clarification for the RLUIPA.

Some ad hoc groups in the incarceration system that have proven to be beneficial to inmates have been faith-based groups. Certainly, faith-based organizations encourage inmates to practice in faith, but do faith-based programs do anything useful for the incarcerated persons other

than motivating them to "get" religion, as the defense said in *Cutter v Wilkinson* (2005)? Evidence collected at the Clarion University of Pennsylvania and Western Illinois University suggests that "faith-based programs work to reduce recidivism rates" and thus enable reform in criminal behavior. (Dodson, 2011) The data collected by the team of researchers shows that in multiple studies, incarcerated persons who actively took part in religious services or groups showed signs of "significant long-term changes in behaviors and attitudes." Even in long-term studies, "inmates most active in Bible studies are less likely to recidivate," announcing exposure to pro-social religious groups as one of many causes of non-recidivation. Additionally, the study describes instances when faith-based programs were used in the criminal justice system to meet a



Hijab Glance Back Candid by Niels Photography¹⁰

particular need such as emphasizing prayer, Bible study, and spiritual transformation as a way to deter offenders from committing criminal actions again; at-risk juveniles introduced to mentors from a religious organization with the goal of avoiding future delinquent behavior; and the enrollment of drug addicts in faith-based conversion drug rehabilitation programs to maintain sobriety or to prevent relapse.

A study conducted by Byron Johnson of Baylor University has stated that religious programs in the incarceration system reduce recidivism not only by promoting inmates to act morally but also by “reducing negative outcomes (of the incarceration system) and promoting prosocial behavior.” (Johnson, 2008) Pro-social behavior may be another link between religion-based programs and recidivism. If an individual becomes prosocial and then becomes part of a group, many times this person develops the behaviors of the group and even some of their beliefs. Consider a middle school bully who emits an anti-social persona. If this person joins a group that has positive interactions and makes friends, then this can be a positive influence on the bully’s persona as well as their lifestyle choices because they are meeting people who are positive influences and good role models.

III. UNDER PRESIDENT-ELECT DONALD TRUMP

With the election of Donald J. Trump and his appointment of Jeff Sessions as Attorney General, we may see a departure from religious momentum of the last several years. Donald Trump and Jeff Sessions are both supporters of privatizing the criminal

justice system, an act that would distance the rights of the incarcerated from the judicial branch. Donald Trump has stated that he will ban immigration “from any nation that has been compromised by terrorism,” (Diamond, 2016). Earlier on the campaign trail, he expressed no sympathy to Muslims seeking refuge from conflict and called for a “total and complete shutdown of Muslims entering the country until (we) can figure out what is going on.” (Berman, 2015) This move towards religious restriction and Jeff Sessions’ view of greater incarceration in privately owned prisons will put a strain on the rights of inmates.

A particular US Supreme Court case that has been regarded as precedent on the matter of privatization of the incarceration system is *Richardson v McKnight* (1997). In 1997, Tennessee privatized their South Central Correctional Center (SCCC). A prisoner filed a lawsuit against two prison guards who had placed him in “extremely tight physical restraints” (*Richardson v McKnight*, 1997). The prison guards claimed a qualified immunity since the institution was private and not state owned. However, the US Supreme Court found in favor of the original plaintiff, McKnight. Justice Stephen Breyer wrote in the majority opinion, stating that the guards “cannot assert a defensive qualified immunity,” therefore showing that private prison employees will find no immunizations. However, four justices wrote a dissenting opinion which may also be included in precedent used in future cases. (*Richardson v McKnight*, 1997) While this majority opinion favors the rights of the incarcerated, it is not too far to assume that with Jeff Sessions’ pro-

“The prison guards claimed a qualified immunity since the institution was private and not state owned...”

privatization ideology that more issues such as this may arise. This would undo decades of progress towards reform of the incarceration system, and may end up costing the United States far more than it currently pays. (Hill Lecture, 2016)

The Supreme Court has increasingly been an advocate of the freedom of religion in the incarceration system due to the greater availability of resources, like faith-based programs, as well as extensive studies done on the benefits of religion for members of our mass incarcerated society. We consistently connect with people from various religions through the news and social media. This allows us to understand people with different views than us more. As we understand more about the relationship between desistance and religion, we will witness a greater amount of religious freedom through Supreme Court rulings.

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