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COLLEGE OF LIBERAL ARTS
AND SCIENCES

CREATING KNOWLEDGE

THE LA&S STUDENT RESEARCH JOURNAL, VOL. 1

KNOWLEDGE

2008

**Creating Knowledge:
The LA&S Student Research Journal
Vol. 1, 2008**

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Creating Knowledge: The LA&S Student Research Journal, Vol. 1, 2008

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Dear Students, Faculty Colleagues, and Friends,

A little over a year ago, the College of Liberal Arts and Sciences committed itself to a number of new strategic initiatives that would reflect our commitment to enhance and enrich the academic quality of the student experience within the College. In league with the University's Vision Twenty12 Strategic Plan, these initiatives were particularly aimed at improving upon the existing programs in the College and augmenting the opportunities for students to reach the very highest academic and career goals that they were capable of achieving. Chief among those was the initiative that we labeled "Students Creating Knowledge" – a set of strategies that would encourage students to become actively engaged in creating scholarship and research. Our goal was to empower students from all academic fields and disciplines to be better prepared to consider future careers that reflect the highest pursuits of a knowledgeable, experienced, and creative mind. The College charged a task force – aptly called the Task Force on "Students Creating Knowledge" – to find various means and methods of realizing these important aims and objectives.

I am extremely pleased that the Task Force, led by Professor Ralph Erber, Associate Dean for Research in the College of Liberal Arts and Sciences, has brought to fruition a most worthy embodiment of our goals, aims and commitments – this student journal of scholarship and research. By sponsoring the publication of what we hope will be an annual showcase of student work, we aim to encourage students across the College and the University to understand that leadership within their disciplines requires them to not only be familiar with the knowledge base of the discipline, but to have the experience of being actively engaged in understanding how knowledge, creative work, and/or scientific discoveries are created through scholarship.

I want to congratulate, first and foremost, the many student scholars whose work is featured in this journal. I also want to thank the students and faculty who helped make this publication possible – those who served on the editorial board that shaped this journal and who reviewed the many submissions of student work. In accomplishing this task all of you have participated in what is the heart of scholarship – the contributions to enabling and sustaining an intellectual community – one which we hope will lead you to make similar contributions beyond the College and DePaul University. To one and all, my most sincere congratulations and gratitude.

Chuck Suchar
Dean

This inaugural volume of
Creating Knowledge: The LA&S Student Research Journal
is dedicated to the graduating class of 2008.

HUMANITIES



Ships on Music Sheet
Ink and Watercolor on Paper, 2008
Andrew Lawrence

The Multiethnic Qing Dynasty of China

Abstract:

The Chinese empire of the Qing Dynasty (1644-1912) was based upon multiethnic coalitions ruled by Manchu emperors who addressed each of the groups that came under their rule in their own cultural vocabulary. This cultural awareness and emphasis on relating to all the groups within the empire allowed the Qing emperors to act as the integrating center of the empire.

The Chinese empire of the Qing Dynasty (1644-1912) was based upon multiethnic coalitions and rulers who addressed each of the groups that came under their rule in their own cultural vocabulary. The Qing emperors were determined to maintain and distinguish their own identity as Manchus, but they used images of rulership in keeping with the cultural patterns of the Han and Inner Asian peoples thought to be their primary constituents. They addressed the Han Chinese literati in the language of Confucianism and depicted Manchu rulers as *dharmaraja* or “wrathful deities” in the Tibetan Buddhist tradition to address Mongols and Tibetans. After the conquest of the Tarim Basin, Qing rulers visited mosques where Muslims worshipped, but they were unsuccessful in posing as protectors of that faith, as well. The Qing court maintained all of these elements in their material culture.

In her book, *The Last Emperors: A Social History of Qing Imperial Institutions*, Evelyn Rawski illustrates the ways in which Qing court society deliberately included many signs of the non-Han cultural origins of its rulers and promoted the representation of the regime as cosmopolitan and multiethnic.² Rawski describes everything from China’s multiple capitals to the cultural policies in place and the clothing popular throughout the empire.

The Qing system of multiple capitals was modeled after the non-Han conquest regimes that dominated North China from the 10th to 14th centuries: these included the Khitan Liao, Jurchen Jin, and Mongol Yuan. Herbert Franke summarizes the meaning of this pattern of multiple capitals by saying that it

can be interpreted as a remnant of the times when even the rulers had no fixed abode, but it was also a remnant of a ritualized system of seasonal sojourns. On a more practical level, the system of multiple capitals also provided the means to establish centralized agencies in more than one locality.³

Capitals were also moved due to changing geopolitical circumstances and to facilitate military advances or consolida-

tion of control in newly acquired lands. In fact, Nurhaci (1588-1626), the founder of the Manchu regime, shifted his capital seven times in keeping with his desire to be close to prospective battlefields.

It could be said that the three capitals of the Qing court were Chengde (the summer capital for symbolic and practical purposes); Peking (Beijing; the primary capital); and Shengjing (the symbolic “original” capital). Chengde was not given an official designation as a capital, but its construction was undertaken to escape Peking’s summer heat. In addition, the city of Mulan became important as an imperial site. Chengde was symbolically the outer capital of the Qing empire where Mongols, Tibetans and Uighurs performed court rituals. Mulan became the Qing imperial hunting preserve and was located directly north of Chengde. The preserve was off-limits to unauthorized individuals and was initially guarded by 800, and later by 1400, Manchu and Mongol bannermen in forty outposts.⁴

Mongol nobles were excused from an annual visit to pay homage to the emperor in Peking because they were vulnerable to smallpox and instead were invited to accompany the emperor in his annual hunts at Mulan. Until 1702, the emperors lived in tents during their travels to and from Chengde and Mulan, that is, until the construction of temporary palaces ranging from simple structures for a brief rest and tea drinking, to substantial buildings for an overnight stay. These buildings were probably used only by the imperial family while others still used tents. Hunting trips required precise coordination and planning of movements, provisions, and shelter that closely resembled the planning of military campaigns. The parties of imperial princes, central government ministers, high officials, and nobles of Mongol, Kazakh, and Uighur origin who hunted at Mulan were on occasion as large as 30,000 people. The hunting trips gave lower-ranking members of the Inner Asian elite an opportunity to come into close proximity with the emperor while participating in an activity that linked the Manchus to Inner Asia.

The main capital of the Qing empire was Peking and the major aspects of the city’s spatial structure and architecture were set long before the Qing occupation. The city had been a capital in the former Liao, Jin, Yuan, and Ming dynasties so the wide streets dividing the city into a chessboard like pattern and lakes inside the city were all features that remained seven centuries later. Emperor Qianlong (1711-1799) improved the city’s water control system, repaired roads and walls, and renovated palaces and villas on a level unmatched by any other Qing ruler. Qianlong built eight temples outside of the Bishu shanzhuang, the first two were named the Purensi and the Pushansi. These were Tibetan Buddhist temples and are counted as part of the Qing court’s patronage of that religion. Qianlong also built nine major temples for specific occasions on the surrounding slopes.

The most important modification made by the Manchus was the dividing of Peking into an Outer City and an Inner City. Peking’s subdivisions coincided with the political and social

1 Supervised by Dr. Elizabeth Lillehoj, Honors 205. Completed Winter Quarter, 2008.

2 Evelyn Rawski, *The Last Emperors: A Social History of Qing Imperial Institutions* (Berkeley, Los Angeles, London: University of California Press, 1998), pp. 17-55.

3 Herbert Franke in *The Cambridge History of China 6 Alien Regimes and Border States, 907-1368* (Cambridge: Cambridge University Press, 1994).

4 Mark C. Elliott and Ning Chia, “The Qing Hunt at Mulan,” in James A. Millward et al., eds., *New Qing Imperial History: The Making of Inner Asian Empire at Qing Chengde* (London and New York: Routledge Curzon, 2004), pp. 66-83.

divisions of the empire by placing the rulers and bannermen in the Inner City and the conquered Chinese population in the Outer City. The Outer City was the center of commercial activity within the capital and served as China's largest consumer market. The Outer City was said to have had 600 or 700 shops with merchants from all corners of the empire. The Outer City was also home to the popular pleasure districts of Peking, including the brothel district. The Inner City was the center of Qing government and served as the residential quarters for the conquest elite. Because the conquest elite eventually included many different people from various regions, Peking's Inner City housed a diverse population. The population included 12 to 15 high ministers of Han Chinese background who were given houses, along with Europeans serving the Qing court who also had their own churches, Turkic Muslim elites, and Tibetan artisans, who were brought to Peking to build Tibetan style watchtowers for army drills. Located within the Inner City and separated by a six-feet-thick wall was the Imperial City where the horse stables, storehouses, workshops, offices of the Imperial Housing Department, and Imperial family residences were located. The three lakes that had been in Peking for centuries were also located in the Imperial City and had temples, pavilions, and other buildings created by Qing rulers.

From the beginning of their entry into Peking, Manchu conquerors courted the Han Chinese literati while simultaneously creating policies to establish their separate cultural identity. The new identity was accompanied by the invention of a Manchu written language coinciding with the emergence of the Qing state. Until the 1670's, many officials did not know Chinese, so spoken and written Manchu dominated the highest ranks of government. Later, Manchu became a security language for the rulers. Manchu officials were required to communicate in Manchu, and important documents were often written only in Manchu. The widespread use of Manchu in government work created a demand for dictionaries that assisted Chinese officials and that served as texts for schools. Manchus also strayed from the flowing robes and slippers of the earlier Ming emperors and dressed in Manchu style to encourage the Manchu people to always remember that their conquests were based on horse riding and archery.⁵ Leaders argued that Ming robes with broad sleeves were completely unsuited for the Manchu way of life. Qing emperors singled out archery as a vital feature of the Manchu identity and encouraged their descendants not to abandon it. This dress code, as well as other regulations, was not uniformly applied to all subjects by the Qing rulers. They followed unique cultural precedents in adapting different regulations for different ethnic subjects in accordance with each group's cultural traditions.

Court clothing was an element of the Qing emperor's gift exchanges with the rulers of Tibet and Mongolia. These articles of clothing often featured pictures of dragons, which became the symbol of the emperor. The privilege to wear a five-clawed dragon garment was extended to the three most prominent dignitaries of Tibetan Buddhism, including the Dalai Lama and Mongol nobles as Mongol tribes were brought under Qing

control. Qing emperors also wished to display the strength of their empire in paintings and works of art.⁶ Artists were to show as accurately as possible the 290 groups of diverse peoples who had submitted to Qing rulership. In their works of art, as well as in historical narratives, the Qing emperors did not just represent themselves as Chinese or Manchu rulers; they adopted different aesthetics to portray themselves to the diverse people who they governed.⁷ This cultural awareness and emphasis on relating to all the groups within the empire allowed the Qing emperors to act as the integrating center of the empire.

6 For more on Qing arts see Richard J. Smith, *China's Cultural Heritage: The Qing Dynasty, 1644-1912* (Boulder, San Francisco, Oxford: Westview Press, 1994), pp. 187-217.

7 For more see Evelyn Rawski and Jessica Rawson, eds., *China: The Three Emperors: 1662-1795* (London: Royal Academy of Arts, 2005).

5 Jonathan Spence, *Emperor of China: Self Portrait of the K'ang-hsi Emperor* (New York: Knopf, 1974), p. xiv.

Am I Free?

Abstract:

Philosophers Baron d'Holbach and John Stuart Mill have a different definition of free will shaped by their respective determinist philosophies. D'Holbach rejects the possibility of free will on the basis that all human actions are predetermined and governed by material laws, whereas Mill argues that free will may arise in situations where one's character guides one's actions.

If one could have asked Paul-Henri Thiry, Baron d'Holbach (1723-89) and John Stuart Mill (1806-73) the question, "Are you free?," their responses would undoubtedly reflect their respective determinist philosophies.² While d'Holbach's hard determinism and Mill's soft determinism share many similar principles, strong distinctions between their theories emerge when examining the concept of human free will. D'Holbach rejects the possibility of free will on the basis that all human actions are predetermined and everything is governed by material laws. Conversely, Mill argues that free will may arise in situations where one's character guides one's actions. Nevertheless, both philosophers deny *complete* human freedom. It should be noted that Mill's perspective seems more appealing as it is more relatable, rational, and justifiable. The concept of free will has been (and will continue to be) subject to constant debate between hard and soft determinist philosophers.

D'Holbach affirms two points: (1) there is an inescapable destiny for every human once he is born, and (2) there is absolutely no way for a human to stray from this designated path. This statement alone illuminates d'Holbach's rejection of human free will. D'Holbach believes that when a child is born, he is born without consent and has no choice on how he looks, acts, or even what his future entails. This is because the people who surround the child ultimately shape his character and habits. Most importantly, d'Holbach stresses that there is a greater outside force that leads people to do certain things or think specific thoughts. He argues that all ideas are involuntarily thoughts—they are created by nature and nurture—highlighting a person's inability to think creatively using free will. Moreover, creativity, among many other personal traits, is an illusion that causes humans to think that they are free. In reality, creativity is restricted to prior education and experiences that have been determined by others. Under the assumption that life is dictated by preordained rules, d'Holbach also rejects the possibility of uncontrollable thoughts. Clearly, d'Holbach believes that nature and nurture ultimately allow people no free will and that they have no choice but to live out their predetermined paths.

According to d'Holbach, people believe (falsely) in their

freedom because of three key actors in their lives: religion, philosophy, and thought complexity. These actors are special because of the nature of their function—they enlighten a person on new depths of his being. The actors mislead him to believe that they are his own creation, when they are actually pre-established.

In contrast to d'Holbach's hard determinism, John Stuart Mill presents soft determinism, a term representing the compatibility between freedom and determinism.³ Mill supports the determinist notion that all actions and decisions are caused; however, he disagrees with determinists largely because he believes that if the cause of the action is a person's character or will, then that person is exercising his free will. Mill has a difficult time accepting hard determinism because he strongly affirms that no one can possibly live a life always lacking free choice because this would make life pointless. Therefore, Mill advocates for his theory of soft determinism, emphasizing that a person's actions *are* important. Even if one does not have control over the outcome of a situation, Mill stresses that one's actions are vital in the unfolding of a situation and *that* is very important. To boot, Mill emphasizes that one's actions compose the chain of events, and thus, one should be happy.

To uncover the truth about free will, Mill initially grapples with the word "necessity" as it is used to describe an individual's action. He finds two different forms of necessity that people need to consider. The first type of necessity deals with a chain of events, an object, or a feeling that leads to an inevitable ending. For instance, if presented with the phrase, "dying is necessary if one does not eat food," it becomes clear that death is inevitable—and therefore predictable—if one does not consume food. The second type of necessity connotes that there are many different possibilities in fulfilling the necessary or desired outcome. To illustrate this further, if given the phrase "dying is necessary if one eats poison," one realizes that there are many options in preventing the end result of death. For example, one could get their stomach pumped or consume medicine shortly after drinking poison, preventing death. Nevertheless, Mill describes these two types of necessity to clarify that, while humans are not totally free, they do have the power to augment their so-called determined actions to deal with situations. The second type of necessity clarifies that human actions *are* necessary, granting them the ability to choose their actions freely. This possibility allows for a person's character to influence the outcome of situations.

Although Mill has shown that humans have some degree of free will, he still affirms that humans are not totally free. To support this claim, Mill clarifies how freedom and necessity can be compatible with each other. Mill believes that possessing freedom does not necessarily mean that actions *are* uncaused or unnecessary. He states that actions, more so, are caused because all actions, stemming from character or not, want to be caused in the right ways. By clarifying these terms and showcasing their compatibility, Mill illustrates how free will can effortlessly position itself in the same realm of necessary actions.

1 Supervised by Dr. Peter Steves, Department of Philosophy. Completed Winter Quarter, 2008.

2 Baron d'Holbach, "Determinism," in Robert Dewey and James A. Gould, eds., *Freedom: Its History, Nature, and Varieties* (London: MacMillan, 1970), pp. 110-117.

John Stuart Mill, "Soft Determinism," in Robert C. Solomon, comp., *Introducing Philosophy* (New York: HBJ, 1985), pp. 429-434.

3 Mill, "Soft Determinism," in Solomon, comp., *Introducing Philosophy*, p. 429.

Unlike d'Holbach's deterministic view of character, Mill shows how an individual can express free will through his character. Mill does not intend to point out that humans create their personalities by themselves, rather he merely wishes to illuminate that they have the power to augment situations using character. According to Mill, the hard deterministic outlook on character is their "grand error" because he believes that, "We are exactly capable of making our own character, *if we will*, as others are making it for us."⁴ If a person is willing to take action to create a change in his character, then he can. In short, humans can express their free will through character because nothing is completely fixed in any given situation that could not be augmented by human action.

Without a doubt, the only way to exercise free will and still abide by the main, underlying rules of determinism is by Mill's soft determinism. Yet, by adhering to the rules of soft determinism, an individual is still not completely free. So then, is there a possibility that I could be free? To some extent, I do agree that humans are not completely free. For instance, I concur with Mill's concept that outside influences initially shape and continue to shape a human's personality throughout life. Mill adds that a person has the ability to mold his character, if he is willing, to cater to his surroundings as he experiences life. It is undoubtedly true that a person's character changes as he progresses through life depending on the people he meets, the places he goes, and the specific activities he involves himself in. Clearly, both external and internal factors influence a human's growth and continual transformation throughout life. In short, Mill does not admit to complete human freedom, but he does permit enjoyment in life as we personally discover the depths of our true character.

If we want to further examine the question "Am I free?" we could analyze Sartre's argument on radical freedom or the theories of Aquinas and Augustine on an omniscient God. Focusing on d'Holbach's hard determinism and Mill's soft determinism, we can see that they possess many parallels. However, in analyzing the concept of free will, a strong division between the two theories materializes. Mill maintains his belief that humans are not completely free, but he still allows people to make adjustments to their innate character and affirms that necessary actions are not predictable. On the contrary, d'Holbach's severe, hard determinism refutes Mill's ideas by adamantly rejecting the idea that people possess free will. Is it possible to conclude that I am free and that others are free? According to these two philosophers, no, but Mill's soft determinism encourages people to be willing to discover their characters and to challenge life.

⁴ Ibid., 433.

Jamie Carlstone¹

Community on the Frontier: The Relationship between Indians and Settlers during an Era of Change

Abstract: *Chicago was established through the Treaty of Chicago in 1833. Prior to this, Chicago was a trading post in “Indian Country.” The treaty ultimately removed the remaining Indians from their land in Illinois to west of the Mississippi. This paper is about the relationship between the Indians and white settlers before the treaty to their removal in the mid-1830s. It focuses on the Indians who were members of the Chicago community and how that changed after the treaty was signed.*

On permanent exhibition at the Chicago History Museum are a series of dioramas depicting scenes of importance in Chicago history. The first depicts Chicago's frontier age and showcases John Kinzie's cabin. Kinzie's cabin stands alone, as it was the only building in 1808. Kinzie and his wife are in the cabin sharing their home with two Native Americans in native dress. The scene shows Kinzie during his employment with the American Fur Company. This is the frontier without question. Like the Indians, Kinzie is dressed in authentic Western clothes with a gun and a coonskin hat as if he is about to hunt. I was inspired by this scene of early Chicago to challenge the exhibit's interpretation. Did Indians and settlers really interact this way? Who or what is left out of this idyllic image of the West?

My research led me to the successors of the Indians standing in John Kinzie's cabin: the generation of traders that followed who were half Indian, half European working as middlemen between the two cultures until 1835. They are recognizable names in Chicago history: Billy Caldwell, Alexander Robinson, Joseph LaFramboise, Madore Beaubien, and others. By most accounts they lived peacefully alongside white settlers as an important part of the fur trade. They lived in the city and attended the same social gatherings as white settlers. Madore Beaubien married a white woman. The “middlemen” also negotiated treaties between the tribes outside the town and U.S. officials. Although they spoke native languages and had native ancestors, their social circle consisted mostly of white settlers.

My research is also about the period between 1833 Treaty of Chicago and the final removal of the last Indians in 1836. The half Indian men occupied a crucial position in Chicago society until they were made obsolete as the city evolved and the Indians were removed. Early Chicagoans drew a distinction between Indians such as Billy Caldwell, who were half-white and lived in their villages, and Indians who still lived in tribes outside of town. My argument is that after the treaty, this distinction began to erode since the “middlemen” were no longer necessary to assist in trade and treaty negotiations. Therefore, my research is focused on understanding the established system that involved Indians in early Chicago and how that changed from the period of their presence in the town to their removal. My research sources are mainly letters, memoirs, travel narratives, and government documents found at either

the Chicago History Museum or the Newberry Library in addition to other archives in the Midwest.

The U.S. Bureau of Indian Affairs (BIA), which was part of the Department of War until 1849, became an important part of my research. Unlike today, when the BIA's role is to aid Native American communities, the BIA served in the nineteenth century to control the Indian trade economy and keep peace with disgruntled tribes. The BIA used “middlemen” Indians to assist in regulating local tribes. In Chicago, many of the town leaders held various positions, including offices, or they held licenses under the BIA. Chicago had its own Indian agency from 1824 to 1847, and most of my findings derive from the “Letters Received by the Office of Indian Affairs” collection at the Newberry Library and the Elias Kane Collection at the Chicago History Museum.²

Chicago's Indian Agent between 1831 and 1834 was Thomas J. V. Owen. Fortunately, many of Owen's correspondences survive to this day, and they reveal his attitude towards the Indians under his control. The Indians whom Owen oversaw are not the middlemen of the town, but rather the tribes living outside of the settlement. In one letter, Owen writes to his friend Elias Kane,

John Reynolds after publicly asserting by proclamation to the people that my Potawatomi were engaged with the Sacs in their horrible movements—has discharged all his forces and returned home in utter disgrace—he will in a short time hear from me upon this subject.³

In this letter, the Potawatomi under the Chicago Agency are accused of an act of violence. Owen's response to the accusations towards “his” Indians is to immediately deny their involvement. According to Owen, his Potawatomi could not be involved because “[I am] constantly with my Indians.”⁴ Owen's remarks do not simply show an agent in fear for his job after a violent incident. Instead, they reveal the complex relationship between Indians and white authorities that have existed throughout American history. The fact that Owen calls the Potawatomi “his” indicates a paternal attachment, and the way he keeps a constant eye on them shows his involvement in their lives. Owen writes of the Potawatomi as if they are his children and feels it is his role to protect them while maintain his role as a superior.

Taverns are often the center of the frontier community. In Chicago, they also served as hotels, restaurants, dance halls, bars, meeting halls, polling places, and, most importantly for this project, trading posts. In addition to letters and oral history accounts, I researched the laws of Illinois and the United States concerning tavern keeping to determine the legal treatment of Native Americans in this time period. In Illinois, tavern keepers were not allowed to sell liquor to Native Americans. However, it is widely known that Native Americans patronized taverns in early Chicago. The Sauganash Tavern, for

² Edward E. Hill, *The Office of Indian Affairs* (New York: Clearwater Publishing Co., 1974), p. 37.

³ Thomas J. V. Owen, “Letter to Elias Kane,” June 6 1832, Chicago History Museum.

⁴ *Ibid.*

¹ Supervised by Dr. Margaret Storey, History Department. Completed Winter Quarter 2008.

instance, was widely known as a gathering place where Whites and Indians socialized, despite the \$20 fine. These laws show that Indians were second-class citizens, but for economic reasons this was often overlooked. Jean Baptiste Beaubien and David Laughton were both granted trade licenses by the Indian Agent in 1824 and they also had family members who kept taverns.⁵ It is not presumptuous to suggest that they used their licenses and their families' establishments to trade with Indians. So, in Chicago, prejudices against Indians were overlooked in order to maintain prosperous economic relationships.

The final part of my project was researching the Indian removal from Chicago. Under the Treaty of Chicago, the Indians were moved to Council Bluffs, Iowa. The removal correlates with an increasingly negative attitude towards the Indians. Indians remained in Chicago up to three years after the treaty was signed. During this transition period, Whites attacked Indian property. Joseph Laframboise, a part Indian, had his home destroyed by fire November 1, 1835. He petitioned Congress in the following year to reimburse him because he believed his home was destroyed due to his part in the 1833 Treaty of Chicago.⁶ This is one instance in which the removal of the Indians from Chicago led to a change in the settlers' behavior. Laframboise's ability to move between the two societies changed from an advantage to a hindrance.

I believe this change can be attributed in part to the population increase. In 1830, the town still numbered around 400 inhabitants, making it an insular community. When more people began to immigrate to the city, its frontier ways diminished. The immigrants came from places unfamiliar with Indians outside of pictures and books. The new settlers only knew stories of savages who scalped and lived in tepees waiting for opportunities to kill settlers. They were far more susceptible to stereotypes of "savages" and "barbarians" than the past settlers who were raised in the old Northwest. Thus, as foreigners to the established Indian trade system they would not make a distinction between a Potawatomi Indian living among his people outside the settlement and someone like Madore Beaubien, Billy Caldwell, or Alexander Robinson who were Indian through blood but lived in white society. Thus, the importance of community membership shifted from economic significance to racial background. Chicago's economy changed as well, and the focus was no longer on the fur trade. Therefore, Indian goods were not the source of wealth any longer.

The diorama exhibit of Kinzie's cabin is an example of the public memory of early Chicago history. The image depicts a time in which Indians and white traders had a peaceful and successful relationship. I decided to research this project because the image of Chicago as an idyllic Western town ignores the events that followed. The one snapshot of Chicago does not sufficiently capture the complexity of the Indian/white relationship that dominated the town for the first forty years of settlement.

5 Alexander Wolcott, "Abstract of licenses," Letters Received by the Office of Indian Affairs, 1806-1824, National Archives Microfilm Publication, Newberry Library.

6 U.S. Senate Journal. 24th Cong., 1st sess., 21 March 1836.

Emily Halberg¹

The Creation of a Messiah

Abstract:

For Christians, the crucifixion is a clear indication of God's presence in history. In his movie, The Passion of the Christ, released near Easter of 2004, Mel Gibson uses the theory of atonement to create a brutal visual representation of the Messiah suffering for the sins of humanity. In contrast, the biblical scholar John Dominic Crossan describes Jesus' death as an unfortunate historical event and an unintended consequence of his message of radical egalitarianism. As a historian, Crossan explains that faith should not be confused with historiography.

But these are written so that you may come to believe that Jesus is the Messiah, the Son of God, and that through believing you may have life in his name.

Gospel of John 20:31²

The four Gospels of the Christian Bible represent the after-life of a Jewish peasant from Nazareth crucified for his subversive message. These Gospels were written to tell the story of Jesus Christ, Jesus the Messiah, crucified and resurrected according to the plan of God so that you might believe. Belief became history as faith in Jesus as the resurrected Messiah rewrote the life of this peasant. Who was Jesus? How did he become the savior of humanity? Nearly two thousand years after his crucifixion, the Jesus of faith continues to shape reconstructions of the historical Jesus. Christian faith has turned a crucifixion into the central drama of God's presence in history. By giving significance to a violently brutal death, the followers of Jesus Christ created a history when they created a Messiah.

Mel Gibson's movie, *The Passion of the Christ*, released in 2004 at Easter, belongs to this aftermath of early Christianity in which belief in Jesus as the Messiah becomes history. Gibson uses his belief in atonement theory to create a brutal visual representation of the Messiah suffering for the sins of humanity. The movie goes back and forth among the four Gospels in the New Testament and draws upon the visions of an early nineteenth-century Augustinian nun to tell the story of Jesus' last hours³. Gibson gives a sense of historical reality to his drama of Jesus' confrontation with Satan, Jews, and Romans by employing original languages. The Jews speak Aramaic, the Romans Latin, and Jesus understands both. Here Gibson is telling the audience to watch this film not as a mere story but as a historical representation, documentation in fact, of how the events of Jesus' suffering as the Christian Messiah unfolded. In an EWTN interview, Gibson responded to his critics who use a critical method of reconstructing history that separates the divine and human by saying, "They talk about the biblical Jesus, and the historic Jesus, what is the difference? Please,

tell me what is the difference? John was an eyewitness--is that not history? Matthew was there, is that not history?"⁴ Faith is historiography for Mel Gibson; the stories of the Gospels *are* the history of what happened; his selective combination of the four Gospels with the visions of Catherine Emmerich is for him an accurate representation of Christian faith, the Gospels, and history.

In a similar manner to the authors of the Gospels, Gibson is creating his own history of Jesus the Messiah through his faith. For example, to depict a suffering Messiah, brief scenes involving violence inflicted upon Jesus in the Gospels are drawn out in the movie in a historically unrealistic manner. As the biblical scholar Dominic Crossan comments, "The Gospels of Mark and Matthew record the scourging with a single word: 'flogged'; but those Gospels give no further details."⁵ A single word becomes an extended scene in the movie, so that the flogging extends to a flogging with a cat-o'-nine-tails tipped with hooked claws. Apparently one word was not sufficient enough to create the type of suffering that Gibson needed to portray his faith in the atonement, in the Messiah's suffering for all humanity.

The following scene in which Jesus carries his cross through the streets while sustaining constant physical abuse from the Romans and Jews is equally implausible. After the scourging that should have left him dead, he would not be able to carry his own cross. (One wonders whether it would be counterproductive for a Roman guard to force someone to carry something and then beat them until they cannot carry the object any longer.) With the number of crucifixions carried out under the Roman occupation, it seems unlikely that so much time and effort would have been given to a single man. But the Jesus that Mel Gibson portrayed in his film, reflecting his own belief, is not just a man: He is the Christian Messiah. Even the visual representation of Jesus in the movie corresponds to European images of the Christian Messiah. The Anglo-Christian image of Jesus appearing in *The Passion of the Christ* sets Jesus apart, for a Christian audience, from the Jews hostile to Jesus in the movie.⁶ Thus, historical accuracy has been altered to appeal to the faith of a certain audience.

John Dominic Crossan is a biblical scholar who has spent years trying to reconstruct who Jesus was in order to separate the Jesus of history from the Jesus of faith. For the Jesus of history, crucifixion was simply an unfortunate and unintended consequence of his message of radical egalitarianism. In his book entitled *Jesus: A Revolutionary Biography*, Crossan uses Christian, Roman, and Jewish sources to reconstruct a Jesus whose social reform movement of open eating and free healing challenged hierarchies of power.⁷ In contrast to Mel Gibson's "savage" God who requires the suffering and death of the only Son of God to atone for the sins of humanity, for Crossan, Jesus' death was an unfortunate historical event that caused problems for the followers of Jesus who wanted a Messiah. But why was the Messiah crucified? To under-

1 Supervised by Dr. Christopher Mount, Department of Religious Studies. Completed Winter Quarter, 2008.

2 All biblical quotations are from the New Revised Standard Version.

3 John Dominic Crossan, "Hymn to a Savage God," in *Jesus and Mel Gibson's The Passion of the Christ*, ed. Kathleen E. Corley and Robert L. Webb (London: Continuum, 2004), 11.

4 *Ibid.*, 11.

5 *Ibid.*, 22.

6 For images of Jesus, see David Morgan, *Visual Piety* (Berkeley: University of California Press, 1998), 2.

7 Crossan, *Jesus: A Revolutionary Biography* (New York: Harper Collins, 1994).

stand this, his followers looked into the Hebrew Bible where they found understanding by searching for “texts that show death not as end but as beginning, not as divine judgment but divine plan.”⁸ His followers concluded that Jesus died because his death was prophesied in the text. The followers of Jesus interpreted the Hebrew Bible to create the passion narrative for Jesus, thus giving importance to the crucifixion, which otherwise would have just been another insignificant event. It was here, in the aftermath of his death, that a narrative was formed. He could not simply have been nailed to the cross along with many others, suffered and died, only to have his body consumed by scavengers.⁹ For Jesus’ followers, there had to be a reason. Crossan argues that the followers of Jesus found in the Hebrew Bible their answer to the death of Jesus as well as the basis for the Passion narrative. For example, in the context of the scapegoat ritual of the day of atonement, Jesus’ followers read Isaiah 50:6, “I gave my back to those who struck me, and my cheeks to those who pulled out the beard; I did not hide my face from insult and spitting,” as a prophecy for the treatment given to Jesus.¹⁰ Prophecy was turned into history in the Passion narrative. Crossan comments, “Spitting or striking with a reed [in Mark 15:16-20] comes not from what actually happened to Jesus, but from the popular ritual of spitting one’s sins out upon the scapegoat and hurrying it toward the desert by poking or striking it with sharp reeds.”¹¹ In this example of “prophecy historicized,” Jesus becomes the scapegoat offered as a sacrifice by the people of Israel as a payment for their sins.¹² Through his death they were offered salvation. Now it became not a question of what actually happened but what one believes and interprets as having happened. For Crossan as a historian, however, faith cannot be confused with historiography.¹³

For those who believe, the Jesus of faith becomes the Jesus of history and the crucifixion becomes religiously meaningful. Preaching shortly after the crucifixion, Peter proclaims, “Therefore let the entire house of Israel know with certainty that God has made him both Lord and Messiah, this Jesus whom you crucified” (Acts 2:36). It is important, however, that historiography not be replaced by faith. Peter proclaimed that it was God who made Jesus a Messiah. This is his confession of faith, a confession that turns the passion of the Messiah into a historical fact. But the historian of religion constantly ques-

tions facts created by faith and uncovers the historical processes from which beliefs arise. The passion of Jesus created by his believers reflects not a historiography of the past but a faith in the present. The Jesus of history died on a cross; the Jesus of faith became a Messiah for all those who would believe.

8 Ibid., 146.

9 Ibid., 154.

10 Ibid., 147.

11 Ibid., 152.

12 Ibid., 152.

13 Yet, even as a supposedly unbiased scholar Crossan is not exempt from allowing his beliefs to affect his reconstruction of Jesus. In his review of *The Passion of the Christ* he states, “For myself, I believe in a God whose character is the grace or free gift of loving forgiveness. I do not believe in a God who *could* forgive gratuitously but actually does so only after Jesus has been beaten to a bloody pulp in our place.” (“Hymn to a Savage God,” 27). This character of God is remarkably similar to the social program of open eating and free healing imagined for Jesus by Crossan. For Crossan’s loving God, the death of Jesus was a regrettable end to a radical social program of transformation. Not confrontation between God and Satan, but instead a confrontation between the idealized peasant and oppressive imperial powers. It seems that faith creates history for Crossan as well.

The Female Essence in Buddhist Art

Abstract:

The female form has a special place in the artistic culture of Buddhism, and two exquisite examples are the sculptures of The Sovereign of the Clouds of Dawn from China and the Prajnaparamita from Java. These sculptures reveal a transition in the depiction of female subjects as female figures came to embody a wider set of values. The early works represent women as fertility figures, while later works suggest female wisdom and salvation.

Lotus flower thrones, graceful hand gestures, and meditating monks are all popular images that exude a sense of the ever present Buddha. Yet the female form has also retained a special place in the artistic culture of Buddhism, beginning with early images of the *yakshi* and later expanding to include consorts, deities, and goddesses. Two exquisite examples of such artistic works are the sculptures of *The Sovereign of the Clouds of Dawn* (acquisition #1967.333; Art Institute of Chicago) from China and the *Prajnaparamita* from Java.² *The Sovereign of the Clouds of Dawn*, made from bronze with traces of polychromy, was created in the 15th century while the *Prajnaparamita* was carved from andesite during the early 14th century. These two sculptures reveal a transition in the depiction of female subjects because the qualities assigned to female figures increased with the growth and flexibility of the Buddhist religion. The ability of Buddhism to adapt to other cultures and religions, as well as its ability to integrate regional artistic differences, significantly influenced the transformation of female forms in Buddhist works of art, allowing female figures to embody a wider set of values.

The representation of female forms started with early artworks in India and spread across other countries, leading to the development of new ideas about women. Much of the early art in India portrayed a sexual and fertile nature through the sensuously curving bodies of female images of *yakshi*, seen, for example, in the *Yakshi* from Bharhut created during the Shunga period.³ Such female forms were often carved in relief, used as bracketing in architecture or portrayed as attendants in groups of figures. Although these female images were beautifully carved, they did not function as sole objects of worship; instead, they enhanced religious sites or icons. Their symbolic values complemented their surroundings as these early female forms represented fertility, good fortune, and abundance. Moreover, they served a sense of welcoming assurance to followers who passed them by as they entered sacred buildings.

While early female images are prevalent in Indian arts, it is crucial to note that the Buddha himself had reservations about the female body and its link to sexuality. Women were associated with sexuality and seen as a threat to men's dedication

to achieving enlightenment.⁴ Thus, it is intriguing that early female images overcame the negative attitudes still circulating in Asian society and retained a strong place within Buddhist art. As Buddhism became more accepted, its images and iconography grew. The transition from abstract symbols to human images provided an avenue for acceptance of more independent and powerful female images.

The formation of new sects and adaptations of Buddhist beliefs created an opportunity for female forms to gain a position of respect and reverence within the religion. For example, the introduction of Vajrayana in the 7th and 8th centuries encompassed Tantric and esoteric beliefs that allowed the celebration of women's spirituality.⁵ In fact, many *tantras* encouraged respect for women as an essential step in reaching enlightenment. The female form of the *yogini* venerated within Vajrayana demonstrates the importance granted to females, and the goddess is said to be able to lead followers to experience ultimate *prajna*, or wisdom.⁶ Furthermore, the development of new sects brought in many deities and goddesses from other religions, such as Hinduism, Daoism, and Jainism.

Esoteric Buddhism encouraged the transformation of female figures and their association with a renewed perception of sexuality. Women now represented wisdom, and men represented compassion. The sexual embrace of man and woman, deity and consort, reaches an apex of balance and equality wherein both male and female energies were required to challenge the illusions of the material world.⁷ This permitted a host of female forms to become independent figures of worship and admiration.

The Sovereign of the Clouds of Dawn—who is also known as the Lady of Mount Tai, a mountain in Northeast China—represents a female deity common to Daoism. The first important symbol is the association with the mountain, which is recognized in both Daoism and Buddhism as an example of energy, a link to the heavens, and a home to immortals. Mountains were viewed as peaceful locations for meditation and worship. A second significant symbol is illustrated through Daoist beliefs, in which women were often portrayed as divine mothers who watch over mortal women and their children. The deity in *The Sovereign of the Clouds of Dawn* is said to protect women, heal illness, and bless the birth of healthy sons. She exhibits a motherly attitude by the inclusion of two young male figures perched upon her knees and she seems to shelter the boys, who are dwarfed by her large form.

Buddhist *lakshanas* or holy marks are readily apparent in *The Sovereign of the Clouds of Dawn*. She holds her hands in a *mudra*, or hand gesture, which resembles the turning of the wheel of the law. Her earlobes are elongated much like Buddha images. Other distinguishing marks are present in the deity's attire, which consists of an elaborate headdress,

4 Karen Lang, "Images of Women in Early Buddhism and Christian Gnosticism." *Buddhist-Christian Studies* Vol. 2 (1982): 98.

5 Kevin Trainor, ed., *Buddhism: The Illustrated Guide* (New York, NY: Oxford University Press, 2001), p. 163

6 Gill Farrer-Halls, *The Feminine Face of Buddhism* (Wheaton, IL: Quest Books, 2002), pp. 110-121.

7 H. Richard Robinson and Willard L. Johnson, *The Buddhist Religion: A Historical Introduction* (Belmont, CA: Wadsworth Publishing, 2004), pp. 127-130.

1 Supervised by Dr. Elizabeth Lillehoj, Department of Art and Art History. Completed Winter Quarter, 2008.

2 Robert E. Fisher, *Buddhist Art and Architecture* (New York, NY: Thames & Hudson), p. 203, plate 179.

3 For illustration see Fisher, *Buddhist Art and Architecture*, p. 37, plate 23.

detailed neckline, and shoes upturned at the tips. This style of dress suggests the princely theme seen in elaborately dressed bodhisattvas. The headdress of *The Sovereign of the Clouds of Dawn* displays a phoenix, which symbolizes immortality. Such fanciful ornamentation may have been utilized by the artist to exhibit the deity's prominent place in worship, as she represented a source of safety for women in distress. As an object of worship, *The Sovereign of the Clouds of Dawn* was probably positioned in an open area where groups of followers could gather to meditate and reflect upon the deity's sense of protection and wisdom.

The Sovereign of the Clouds of Dawn has a fluid style exhibited by the flowing robes draped upon the figure. The body is completely covered, with the garments extending up to the wrists except for the areas around the neck, face, and hands. The robe itself ends in flaring edges and has floral patterns bordering the hemline among the many folds. There is a strong focus on the linear patterns surrounding the body, which is characteristic of Chinese artworks. The flaring garments also give a sense of excitement and enliven the otherwise relaxed pose of the figure. The deity's facial expression reveals drowsy eyes, fleshy rounded face, and partly opened mouth with pursed lips. These features are characteristic of the Tang dynasty style.

The sculpture of *Prajnaparamita* has a female deity in the center, placed in front of an ornate backdrop. The word "prajnaparamita" means "perfection of wisdom," and the corresponding female deity can be found in records dating back to early Mahayana sutras.⁸ These sutras refer to *Prajnaparamita* as the "Mother of All Buddhas" or the "Bodhisattva of Wisdom," portraying her as a beautiful matriarchal being. However, the term *prajna* (wisdom) is also used to describe many other female deities and consorts, demonstrating the close connection between the quality of wisdom and the way in which it became embedded within female figures. As the piece was discovered in one of the Singhasari temples of eastern Java, its function was most likely for worship by large groups of followers within a sacred site.

Prajnaparamita appears youthful, idealized, and elaborately dressed with jewelry and finely patterned clothes. There is a sense of vertical rigidity from the tight upright posture of the figure. This vertical effect seems to symbolize the unyielding focus of the deity and is repeated in the high headdress rising from *Prajnaparamita's* head and the carefully positioned vertical alignment of the teaching hand gesture. *Prajnaparamita's* vertical alignment of hands, headdress, and backdrop symbolize the restraint and intense religious focus of the figure. The religious wisdom possessed by *Prajnaparamita* is also emphasized through the use of the teaching *mudra*, positioned centrally within the sculpture.

Female figures acquired a broader set of values, power, and importance within Buddhism with the growth of the religion and its ability to blend regional artistic styles and cultures into its art. The contrast between early Indian art and later artistic styles illustrates the transformed perception of women's bodies from symbolic fertility figures, such as the *yakshi*, to female wisdom and salvation, such as the *yogini* and Tantric deities.

The successful mixture of native cultures and outside religious forms produced a mode through which new concepts about the female body could be created, ultimately securing their revered position within Buddhism.

8 Farrer-Halls, *The Feminine Face of Buddhism*, pp. 48-69.

The Ethics of Weapons of Mass Destruction

Abstract:

To understand the justification and conduct of war, including the possession and use of weapons of mass destruction (WMD), we must evaluate three persisting schools of thought: pacifism, realism, and the just-war theory. One of the main problems of war is that violence is so ingrained in people that most take its existence for granted. Given this, and our history, it is entirely possible that there will be another use of WMDs. Yet, there is nothing reasonable about us living under constant threat of attack by WMDs. By working against the structures and ideologies that create this environment, we can all benefit.

The beliefs of the international community regarding weapons of mass destruction (WMD), or even war itself, vary greatly. For the purpose of this essay, I am going to primarily discuss issues concerning the justification of war and the conduct involved, as well as beliefs regarding the development, possession, and use of WMD, namely nuclear weapons. For one to form an educated opinion regarding these issues, it would seem prudent to evaluate three persisting schools of thought: realism, pacifism and the just-war theory.

Realism, as described by Susan B. Martin in *Realism and Weapons of Mass Destruction- A Consequentialist Analysis*, seeks above all to understand the world “as it is.”² Only by recognizing the context and structure in which international politics occurs can one properly analyze the actions and outcomes of the actors involved. Martin explains that structural realism has two underlying beliefs: the primary actors in the system are nation-states, and the primary goal of these actors is national security.³

Realists assert that there is no morality involved in international politics. To ensure security, there must exist what political theorist Kenneth Waltz terms a “balance of power.”⁴ That is, by being on equal militarily terms with another nation-state, a state can believe in its own security, because war would most likely affect negatively the other as much as itself. A state can believe this because, according to realism, all actors are rational actors.

In evaluating the utility of WMDs, realists take their existence for granted. There can be no return to the times preceding their invention.⁵ Any hope of doing so is simply unrealistic. As long as these weapons exist, states will pursue them out of their own security. In applying a realist perspective to issues of deterrence or even deployment of WMDs, one must always keep in mind that every state will act rationally for its own sake. Thus, every state would most likely determine that the benefits of possessing a nuclear arsenal would outweigh its

costs, deciding that the decreased likelihood of the outbreak of conventional war through deterrence is worth the even minuscule possibility of nuclear deployment.⁶

The theory of pacifism takes an opposite approach to that of realism. For pacifism, it is vital for morality to become involved in international politics. Duane L. Cady gives a detailed description of the theory, first asserting that there is a difference between what he calls “positive peace” and “negative peace.”⁷ Negative peace is simply the absence of war, a peace imposed by external sources by threats or other means, while a positive peace arises out of dialogue, cooperation, and the cultivation of general good will. Cady labels this mentality as “warism,” asserting that war is both inevitable and morally justifiable.⁸ To begin to work against warism, pacifists must begin to change the world’s overall view of violence and war. This, as Cady states, is no small task. It is to be taken step by step, because easy solutions do not exist.⁹ How could there be, considering that a majority belief is being considered?

Clearly, pacifism abhors WMDs and denounces all forms of weaponry. More specifically, pacifists believe that there can be no justification for even the development of WMD, since the possession of such weapons implies at least a minimal intent to use them. As the use of WMDs is in no way acceptable, their development cannot be either. The same principle applies to notions of deterrence. Cady exposes a logical flaw in the belief in nuclear deterrence when he writes that for true deterrence to occur, it would seem logical for all states to engage in nuclear proliferation so that the use of nuclear weapons would never arise. However, because many nations actively work to deny proliferation by other nations, this implies a belief that those countries would not work for deterrence, but simply might use them as a first option.¹⁰ Thus, the foundation of deterrence is shown to be flawed.

For pacifism to work, it is essential to believe that morality can in fact change the current trend of increased armament. If the core mentality of the international community can be changed, then a reversal of this trend is possible.¹¹ By working for rather than against one another, nations can get away from blatant self-interest and consider the interest of the human community as a whole.

The just-war theory, as defined by the U.S. Catholic Bishops in *The Challenge of Peace*, falls between the previous two theories of realism and pacifism. Like realists, the bishops acknowledge the existence of war and the perpetual danger that it represents. Because of the ever-present danger, a nation-state cannot be denied the right to possess means for its own defense.¹² Consequently, evil exists in the world in the form of oppression and aggression and it is a Christian’s duty to work against these evils whenever possible. If all other efforts have failed, violence and war are necessary to combat the suffering of innocents, which the bishops would argue is inevitable, especially considering modern warfare. Above all,

1 Supervised by Dr. Yuki Miyamoto, Department of Religious Studies. Completed Winter Quarter, 2008.

2 Susan B. Martin in *Realism and Weapons of Mass Destruction- A Consequentialist Analysis* (location: publisher, date?), 96.

3 *Ibid.*, 97.

4 Kenneth Waltz

5 *Ibid.*, 100.

6 *Ibid.*, 103.

7 Duane L. Cady, 471.

8 *Ibid.*, 472.

9 *Ibid.*, 471.

10 *Ibid.*, 474.

11 *Ibid.*, 472.

12 US Catholic Bishops, *The Challenge of Peace* 2, 72.

the just-war theory seeks to prevent war; but, should all efforts be for naught and war arises, then the theory seeks to reduce the horrors that would occur.¹³

Just-war theory revolves around two notions: *jus ad bellum* (the conditions under which war is permissible) and *jus in bello* (the conduct necessary in wartime). For war to be justifiable, there must always be a just cause for declaring it. Under most circumstances, this involves the protection of innocents or human rights.¹⁴ In addition, those who would declare war must do so out of concern for the entire population, rather than certain personal or group interests.¹⁵ Should war be declared, the principles of *jus in bello* then apply. Among the most prominent of these principles are proportionality and discrimination. The principle of proportionality states that the damage done during a military conflict must be equalized by the good resulting from said conflict.¹⁶ Discrimination states that violence against non-combatants must be avoided at all costs, as the bishops state that indiscriminate violence is a “crime against man and God himself.”¹⁷ Thus, in understanding discrimination one can understand that the bishops denounce the use of all WMD, which can never be fully reigned in to only kill combatants. Likewise, many conventional forms of weaponry such as the use of large-scale bombings are also decried.

Having tried to briefly summarize the three positions, pacifism, in my opinion, makes the most logical sense. I support many of the principles set forth by the bishops, but my qualms arise out of glaring inconsistencies and flaws in their logic.¹⁸ Pacifism is a theory that must deal almost constantly with criticism, as Cady notes.¹⁹ However, I would state that pacifism both in theory and practice is neither overly naïve nor optimistic, as some might argue. The theory recognizes the incredibly difficult task before us. The world, as it is right now, is a violent place. Having recognized that reality, should we then simply embrace it and take no action? That would be the action of a resigned and passive person, and despite what pacifism’s opponents would argue, that is in no way representative of pacifists. Because “warism” has so permeated the global thought process, pacifism rightly argues that this, in itself, is the most important conflict. Taking steps to change the belief that war is inevitable is an imperative, for people’s beliefs are what determine their actions.

One of the most important points that Cady makes in his article is that at one time it did not seem likely that segregation

would be ended in America.²⁰ This issue was resolved through pacifism, by non-violence and by embracing those who persecute you. Nuclear deterrence, or even proliferation, cannot be a logical solution to maintaining even a negative peace. Deterrence, as pacifism emphatically states, makes it necessary to have the intent to deploy the weapons. If a nation’s leaders thought that the weapons would never be used, then deterrence would have no effect. We have studied the horrors that stem from the deployment of WMDs. Whether it is the nuclear bombs dropped on Hiroshima and Nagasaki, or the deployment of chemical weapons in the Iraq city of Halabja, there is rarely anything to be gained through the use of these weapons. Working from a pacifist viewpoint, my argument can be supported by logic. Thus, the use of WMDs should never again occur. Deterrence carries with it the implication that the use of WMDs is a possibility. Proliferation makes deterrence possible. In short, abolition is the only way to solve this issue.

By bringing morality into central focus, pacifism also works in national and domestic contexts. Because pacifism seeks to serve the human community as a whole, it leads to activism for social justice and attempts to work for that positive peace that Cady emphasizes. The use of WMDs, as it stands now, is a real and distinct possibility. They have been deployed in Hiroshima and Nagasaki, and their effects continue to resonate throughout the international community. The numbers of nuclear tests, especially those conducted by the United States and Russia, are astounding. How can one see those numbers and not believe that another use of WMDs is entirely possible? And, having realized this fact, how can one not be inspired to act against their use? The theories about these weapons vary with no end. Reflecting upon realism, I would argue that its central principle, logic, is the greatest asset in asserting a pacifist perspective. How is human existence under the constant threat of attack in any way logical? By working against the structures and ideologies that create this environment, one can benefit not only oneself, but also benefit all others. This, I would argue, is the epitome of a logical perspective.

13 Ibid., vol. 3, 83.

14 Ibid., vol. 3, 86.

15 Ibid., vol. 3, 92.

16 Ibid., vol. 3, 98.

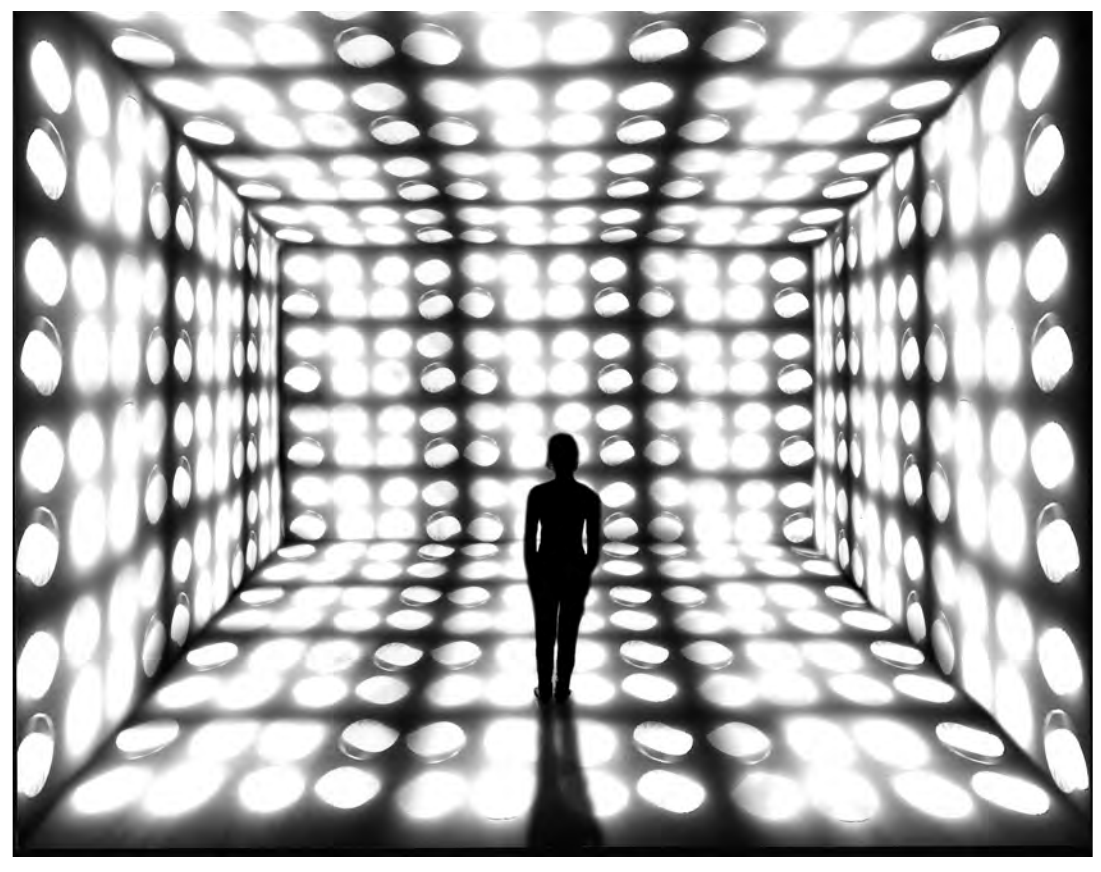
17 Ibid., vol. 3, 101.

18 To specify, the notion that war can be justified to defend against oppression and protect human rights is one that I find can be a slippery slope when applied to international politics. The U.S. Bishops do not set forth an exact set of principles that can be followed, and thus leave the matter of war’s justification open to interpretation. Who is to say what events do or do not make recourse to war necessary? Rather than risk such a relative stance regarding war, I believe that rooting oneself in the foundational belief that war is never morally justifiable gives one a much clearer sense of principles and of direction.

19 Cady, 471.

20 Ibid., 472.

NATURAL SCIENCES



Untitled
Computer Image, 2007
Felicia Vijitchanton

The Impact of Corn (*Zea mays*) on Restoration Efforts in Buckthorn (*Rhamnus cathartica*) Invaded Soils

Abstract:

Successful restoration efforts of natural areas in the Chicagoland region have been complicated by the presence of the invasive species, European buckthorn (*Rhamnus cathartica*). Buckthorn alters the soil chemistry dramatically, resulting in elevated inorganic nitrogen levels, and altered C:N ratios. These changes leave a legacy effect that persists long after the buckthorn monocultures are removed, thus hindering restoration efforts. Due to its high nitrogen requirement, corn (*Zea mays*) was planted in an attempt to decrease soil nitrogen levels and reestablish pre-buckthorn soil chemistry. This study examines the potential for corn as a tool in restoring ecosystem properties to pre-invaded conditions.

Intro

Conservation of biodiversity has long been a topic of interest for ecologists worldwide. Although habitat reduction and modification have primarily been thought of as the cause for loss of biodiversity, it is becoming apparent through field observations and studies that invasive species can also play a significant role in the degradation of native habitats (Williamson 1996). Recognition of the impact of invaders has influenced the efforts of land managers and scientist alike and has resulted in a greater emphasis on ecosystem approaches to restoration practices.

Attempts to restore ecosystems, especially those that are inhabited by invasive species, have resulted in limited success though. European buckthorn (EBT) is a shrubby species native to Europe that has proven to be a particularly resilient invader in the Midwestern United States. It is present in dense thickets all around the Chicagoland area, turning woodlands, savannas and prairies into monocultures of EBT. Enormous efforts have been made to clear this shrubby invader from a number of areas and to seed the cleared areas with native species. Despite these efforts, results are mixed (Heneghan & Umek 2003). This lack of success could be a result of altered ecosystem properties in the soil beneath buckthorn monocultures (Davis 2000). Specifically, in soils underneath buckthorn there is a dramatic increase in nitrogen, lowered C:N ratio, and increased pH and moisture content. (Heneghan et al. 2004). Since these soil properties affect plant community structure and function this may explain the limited success of previous restoration efforts.

In the past year, students and faculty from DePaul University have collaborated with Mettawa Openlands Association in developing a project that focuses on reestablishing ecosystem function post buckthorn removal. This ongoing experiment is an attempt to determine the factors that promote and limit successful restoration in hopes that the increased knowledge would aid in improving future restoration attempts.

One of the experimental methods, and the focus of this paper, is the use of corn (*Zea mays*) cultivation as a method to reduce excess soil nitrogen following buckthorn removal. This

treatment includes the traditional removal of buckthorn and is followed by a corn cover crop stage before the planting of native seeds. Elevated nitrogen content in the soil is a likely inhibitor to successful native plant reestablishment (Heneghan et al 2006). Consequently, it is our hope that by planting a cover crop that notoriously demands a lot of nitrogen we will be able to decrease the amount of nitrogen present in the soil and re-establish the ecosystem function to that of pre-buckthorn conditions.

Methods

Our study area, Whipporwill Farm, is part of the Mettawa Openlands Association located in Mettawa, IL. The soil is characterized by Nappanese silt loam with 2-4 percent slopes and a pH range of 5.1-7.3 (Web soil survey). The 7-acre site was used as a horse pasture until the early 1990's at which time it was abandoned and colonized by a monoculture of European buckthorn (*Rhamnus cathartica*). Restoration of this site is primarily being conducted by Integrated Lakes Management and Tallgrass Restoration. However, 2500m² of the site was retained by DePaul University in order to rigorously evaluate several restoration techniques. The restoration began in February 2007 and will continue until 2012.

Within the site area, 5 random plots measuring 52m² were treated with the planting of corn (*Zea mays*). After one growing season (May 2007-September 2007), the corn was harvested and 3 soil samples from the A horizon of each experimental plot and one control plot were taken for analysis. All soil samples were taken in November 2007.

Soil characteristics measured included KCl extractable N (NO₃-N and NH₄-N), inorganic phosphorus which was extracted via the Bray-1 method, total carbon and nitrogen measured by combustion, and moisture. Except where stated, methods follow those of Standard Soil Methods for Long-Term Ecological Research (Robertson et al. 1999). Vegetation characteristics measured included total fruit production, above ground biomass, total carbon and nitrogen, and moisture. Statistical analysis included t-tests (p<0.05) using Microsoft Excel.

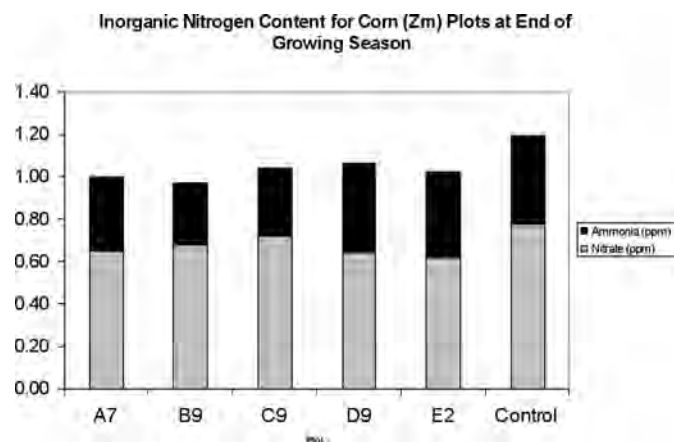


Figure 1: Total soil inorganic nitrogen (in ppm) under corn plots after one growing season

Results

Preliminary analysis of soil inorganic N (fig 1) reveals that in plots where corn was grown, soil N was reduced. Although this reduction

¹ Supervised by Liam Heneghan and Lauren Umek, Environmental Science Department. Completed Winter 2008.

was not overall statistically significant, when all plots were compared individually with the control plot via t-test analysis, some individual reductions in inorganic N content were significant.

The total nitrogen content in the soil decreased significantly after one growing season (fig 2). There was also an increase in soil total carbon, although this change was not statistically significant (fig 3).

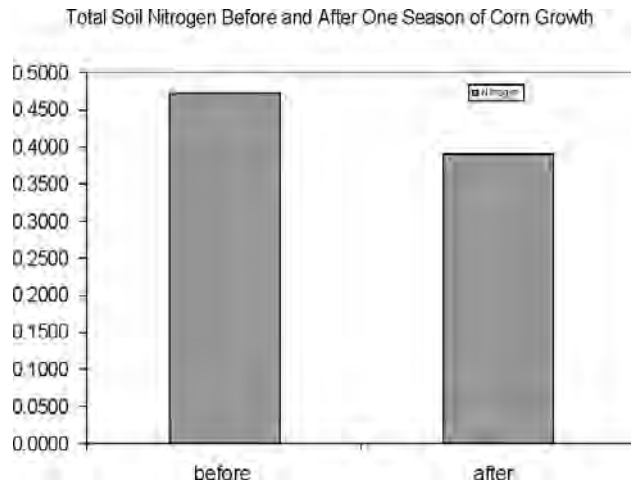


Figure 2: Percentage of total nitrogen (in ppm) in corn Plots before and after one growing season

C:N ratios differed between corn plots before and after one growing season. Although the total difference was not significant, it shows a trend of increased total carbon and decreased total nitrogen. The available soil phosphorus also increased by 19.7% over the duration of the corn growth period (data not shown). The soil moisture content of the treatment plots increased by 65.7% from the beginning of the summer (9.1%) to the end of the summer when the corn cover crop was harvested (26.6%).

Discussion

The results show that corn is associated with a decrease in total soil nitrogen. Previous agricultural studies indicate that corn requires a lot of nitrogen from the soil for its survival. General invasion models and previous observations show that

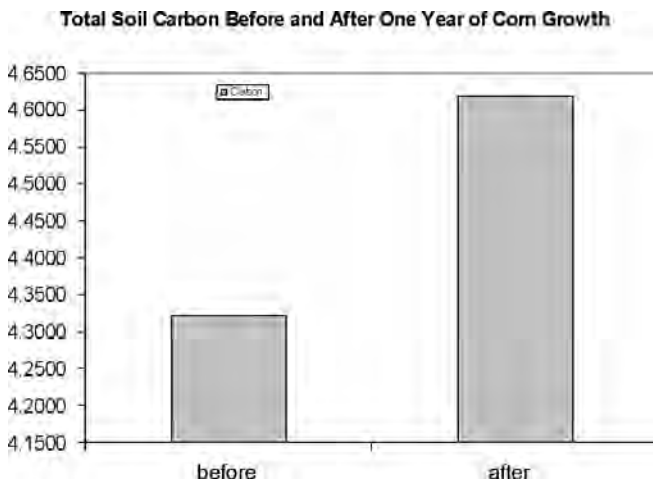


Figure 3: Percentage of total carbon in corn plots before and after one growing season.

increased soil nitrogen facilitates the invasion of ecosystems by exotic species. With that in mind, a prediction was made that corn would act as an aid in restoration efforts by decreasing the soil nitrogen content.

The results of this study indicate that overall nitrogen content (organic and inorganic) decreased and total carbon increased in soils underneath the corn cover crop. Non-invaded soils are characterized by lower nitrogen and higher carbon content. Although not all results were statistically significant, this study shows that corn may be an affective tool for putting soil properties on the trajectory to pre-invaded conditions.

Acknowledgements

I'd like to thank Lauren Umek and Liam Heneghan, PhD. for facilitating this project. Thanks also to Vanessa Coffman, Ryan Wiethohlter, Kim Frye, Will Turner and Thomas Murphy for help out in the field and in the lab. I'd like to thank Maggie Workman for help in the lab as well and Judy Bramble for help with statistics. Lastly, I'd like to thank the Gutsell Foundation and the Environmental Science Program for financial support.

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Earthworm Impacts on Restoration Efforts in Buckthorn (*Rhamnus Cathartica*) Invaded Soils

Abstract:

In an effort to manage and restore native habitats in the Midwest, buckthorn (*Rhamnus cathartica*) has been a fierce opponent. Soil beneath buckthorn has a higher percentage of nitrogen and carbon, modified nitrogen mineralization rates, and elevated pH and soil moisture than those areas where buckthorn is not present. These below ground alterations favor the invader while reducing the viability of the native species, ultimately resulting in a decimation of the native flora. The impacts of this invader are exacerbated by the presence of non-native earthworms (*Lumbricus*), although little is known about the chemical changes in this specific ecosystem. Utilizing terrariums, or mesocosms, the ecological impacts of earthworms and buckthorn soils were examined in a greenhouse for the equivalent of one summer growing season. The preliminary results of this study suggest that there is a mutualistic relationship between the two invasive species that may have substantial consequences for natural area restoration.

Keywords: Buckthorn, earthworms, soil restoration, mesocosm, decomposition

The impact of buckthorn is apparently complicated by the presence of earthworms (Heneghan, Steffen and Fagen 2006). European earthworms (*Lumbricus spp.*) are important in soils, as they are known to alter soil chemistry. This may facilitate the survival of both earthworms and buckthorn (Coleman et al. 1996). Earthworms break up organic matter, thereby redistributing phosphates, facilitating enzyme activity, and elevating nitrogen concentrations (Syers and Springett 1983). This may increase the availability of resources for buckthorn. Buckthorn in turn changes the soil in a way that may facilitate earthworm invasion causing an invasive meltdown. This research aims to evaluate the impact of earthworms' alterations of nutrient cycling, an approach not previously attempted, and to provide a template for future restoration of buckthorn-invaded lands. If earthworms truly degrade soil hindering native flora, as suspected, restoration ecologists may be able to combat the aboveground invader by removing the one below.

Methods:

To capture the modifications to ecosystem properties treatment and control mesocosms were assembled. Forty sterile 1000 mL NALGENE® MF75™ Sterile Bottletop Filters, used as mesocosms, figure 1, were filled with approximately 700 mL of either buckthorn or native soil, approximately five grams of buckthorn or oak leaves, and inserted into worm treatment mesocosms were two *Lumbricus terrestris* and one *Lumbricus*

	OOO	OBO	OOW	OWW	BOO	BOW	BBO	BBW
Soil Type	native	native	native	native	buckthorn	buckthorn	buckthorn	buckthorn
Leaf Type	oak	buckthorn	oak	buckthorn	oak	oak	buckthorn	buckthorn
Worm #	0	0	3	3	0	3	0	3

Table 1: Mesocosm group identity and contents

Introduction:

Biodiversity is an integral and defining characteristic of ecosystem health. Invasive species, globally, are the second largest cause of decreased biodiversity and species extinction (Soule, 1990). Nonnative organisms are regularly able to out-compete natives by more effectively utilizing resources or by being free of herbivores and/or parasites found in their native lands (Gordon, 1998). Over the past 25 years, restoration ecology has become a valuable and necessary practice in efforts to conserve rare habitats in the Chicagoland area. Despite tremendous efforts to restore native ecosystems, success has been limited in prairies, savanna, and woodland areas as a consequence of nonnative biota (Heneghan, 2004).

In the Chicagoland area, European buckthorn (*Rhamnus cathartica*) is changing the landscape of the Midwest. *R. cathartica* has spread wildly, degrading once pristine lands and creating dense monoculture tree-like stands. Buckthorn not only broadcasts vast numbers of seeds but also changes ecosystem properties including increased decomposition rates, modified nitrogen availability, and reduced soil biodiversity (Heneghan et al. 2002; Heneghan et al. 2004).

rubellus in an invasion gradient as detailed in table 1, where the first mesocosm *OOO* contained a native habitat absent of any invader and the final mesocosm *BBW* being comprised of all invasive components.

The earthworms were collected from the Mettawa site, detailed below, using a mustard seed extraction method (Heneghan et al. 2006). Five replicates of each of the eight treatments were monitored for a summer-like growing season of three months within a greenhouse. A 150.0 mL portion of deionized water was added to the mesocosms to keep moisture levels high enough for worm

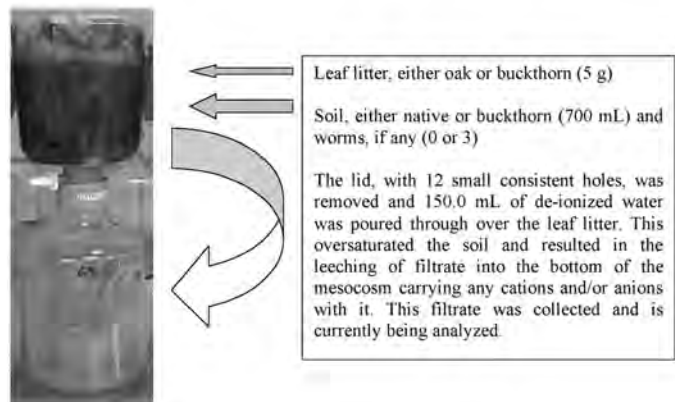


Figure 1: Mesocosm contents

¹ Advised by Dr. Liam Heneghan and Prof. Lauren Umek, Environmental Sciences Department; research completed Winter 2008.

viability. This also allowed for the collection of the filtrate, which contained all cations and anions present in the system. This was collected initially, and then sporadically, throughout the experiment to compare any chemical changes within the mesocosm. At the conclusion of the experiment, soil cores were taken and analyzed for moisture content and pH, while leaf and worm masses were recorded along with worm identity and abundance. These values were compared to initial values recorded prior to mesocosm construction. Currently ongoing is the filtrate analysis.

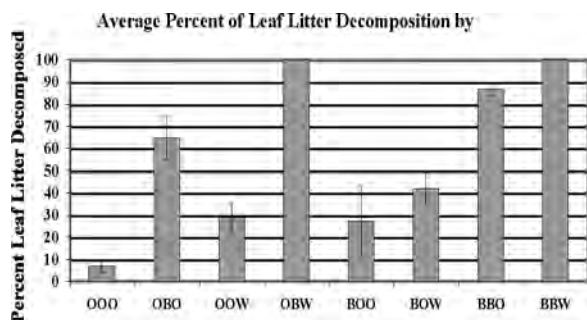


Figure 2: Average leaf decomposition as % loss of leaf mass

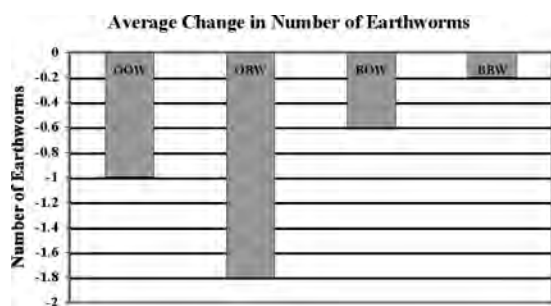


Figure 3: Average loss of worm biomass

Site Descriptions:

Located in Mettawa, IL, approximately 35 miles northwest of Chicago, a seven-acre site consists of an abandoned horse pasture which is currently overrun by a buckthorn invasion dating to the late 1990s. The site was the source of the earthworms as well as the buckthorn leaves and soil inserted used in the mesocosms. The oak leaves and native soil samples were taken from an undisturbed native oak forest adjacent to the Mettawa site. Both sites are characterized as Nappanese silt loam soils with comparable soil texture and weather patterns with a mean annual precipitation of 71 centimeters to 102 centimeters and average annual air temperature of 7.2° to 12.2° Celsius (Web Soil Survey).

Results:

Average earthworm abundance for worm treatment mesocosms was not significantly different between habitats although all numbers did decrease (figure 3). The pH data likewise showed no significant change after the growing season. However, initial pH data showed that native soils were more acidic than those gathered beneath buckthorn, averaging 5.4 and 6.4 respectively.

The concentration of plant available nitrogen, as seen in figure 4, was analyzed in two components: ammonia and nitrate. For all mesocosms containing oak soils (OOO, OBO,

OOW and OBW) nitrate levels increased while ammonia levels decreased. Ammonia levels in buckthorn soil mesocosms (BOO, BOW, BBO, and BBW) all increased while nitrate levels decreased in all except the highly invaded BBW which increased significantly.

Discussion:

In the analysis of earthworm impacts on native and buckthorn-invaded ecosystems, pH and earthworm abundance were similar for all treatments at the conclusion of the experiment, although there was a difference in leaf litter decomposition between treatments. An increase in leaf litter decomposition was found in those mesocosms that contained buckthorn leaves while the highest overall decomposition was reported in those containing both buckthorn leaves and worms independent of the soil type. Because these treatments (OBO and BBW) had complete decomposition, it is inconclusive as to which decomposed faster. However, the treatments with the second largest decomposition were in those containing no earthworms and buckthorn leaf litter, with the larger of those two being the one holding buckthorn soil. The least amount of decomposition was reported in the mesocosms with native soil and native leaves without the presence of worms. This is consistent with previously published data. Nitrate and ammonia levels were altered by the presence of earthworms as well. This could have a significant impact in the growth rates and invasive potential of buckthorn, as it requires high amounts of these compounds. Further analysis should be conducted in order to quantify the anion and cation changes within the mesocosms as this too may hinder native plant viability and/

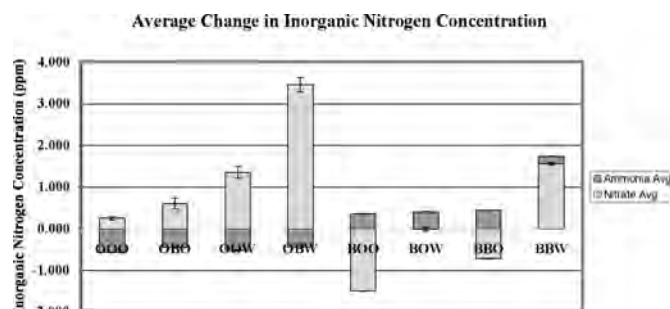


Figure 4: Average change in plant available nitrogen concentrations

or increase the success of buckthorn growth.

Acknowledgments:

I would like to give a big mini-racer thanks to Dr. Liam Heneghan, Miss Lauren Umek, Dr. Judy Bramble, Dr. Margaret Workman, and Dr. Thomas Murphy for guidance and support. Chelsea Carey, Amy Sparrow, Will Warner, Kimberly Frye, Emily White, and Justin Wexler for worm retrieval efforts, although many unsuccessful, and dutiful lab assistance. I would also like to thank the Gutsell Foundation, the Environmental Science Program, and the Clare Boothe Luce Scholarship ladies for making these restoration efforts possible.

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Donald Gladish¹

The Relevance of Global Warming in Latin America

Abstract:

The purpose of this paper is to investigate whether longitudinal distances from the equator are somehow related to Latin American media coverage of global warming. The hypothesis of this paper was that Latin American media coverage of global warming would increase as longitudinal distance from the equator increased towards both the north and south poles.

Introduction:

The American media coverage of environmental issues seems to focus mostly on relevant news in the U.S., Europe, and China. What coverage, then, exists in the Latin American media on the subject of global warming? In 1997, The Intergovernmental Panel on Climate Change (IPCC) stated “several Latin American countries—especially those of the Central American isthmus, Ecuador, Brazil, Peru, Bolivia, Chile and Argentina—are significantly affected . . . by seasonal to inter-annual climate variability” (Moss, et. al 11). The IPCC stated in a 1990 report that global warming was expected to heat up the poles faster than more tropical areas; as the sea-ice melts, the surrounding area’s ability to reflect heat back towards its source is greatly diminished, resulting in a greater absorption of such heat (Houghton, et. al). The purpose of this paper was to investigate whether longitudinal distances from the equator are somehow related to Latin American media coverage of global warming. The hypothesis of this paper was that Latin American media coverage of global warming would increase as longitudinal distance from the equator increased towards both the north and south poles.

Methods:

The study was performed through the investigation of major newspapers from countries in continental Latin America. The search was conducted through the Lexis Nexis Academic Database and spanned a five-year period from Jan. 1, 2002 to Jan. 1, 2007. Any article mentioning terms that translated into climate change and/or global warming was further investigated. Such an article then needed to demonstrate a general adherence to the topics of climate change and/or global warming to be included in this study.

The longitudinal distances from the equator for each country were also calculated. Each country was designated by only its capital city’s longitudinal degrees from the equator. The directional vectors of north and south were not taken into account. The basic linear correlation and regression test was conducted with the aid of Vassar College’s statistical computation website.

¹ Submitted in partial fulfillment of the requirements of Dr. Sarah Richardson’s Honors Inquiry into Environmental Science, Fall 2007.

Results

Figure 1 supports the hypothesis that media coverage of global warming would increase as longitudinal distance from the equator increased towards both the north and south poles. The five countries with the highest number of appropriate articles—Mexico, Argentina, Uruguay, Brazil, and Chile, respectively—are all more than 15.0 longitudinal degrees from the equator (www.worldatlas.com), a relatively high number in terms of the table. However, the country with the sixth most appropriate articles, Colombia, is only 4.38 longitudinal degrees away from the equator (www.worldatlas.com). In addition, although Figure 2 of the results section does confirm that countries with capital cities closest to the poles discussed climate change most frequently, the countries with capital cities in mid-range proximity to the poles, 15.0-19.9 longitudinal

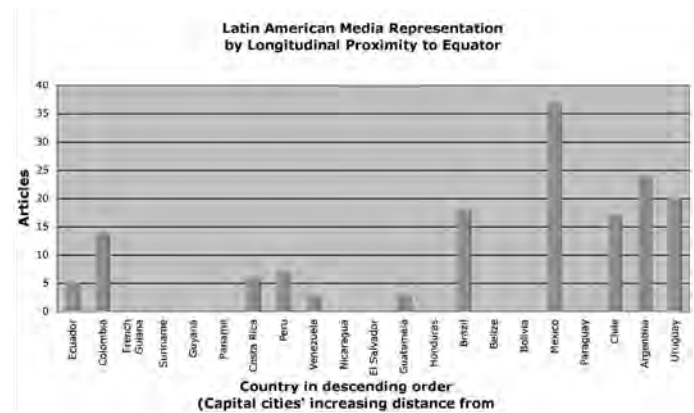


Figure 1. Collected articles from all continental Latin American countries

degrees from the equator (www.worldatlas.com), discussed climate change second most frequently. Much of this occurrence can be attributed to the fact that only one country, Paraguay, has its capital city in between the ranges of 20.0-29.9 longitudinal degrees from the equator (www.worldatlas.com), but it should still be noted that no appropriate articles were collected from the media in Paraguay. The data explicated in Figure 1 and Figure 2 was somewhat supportive of the hypothesis but still called for further investigation.

There is a positive correlation between the number of newspaper mentions and the longitudinal distance from the equator for countries in Latin America according to the data from the basic linear correlation and regression test, which is represented in Figure 3. In this particular test for correlation, there were two variables: newspaper coverage and the longitudinal distance of each country’s capital city from the equator. A positive correlation between newspaper coverage and the longitudinal distance from the equator would result if the correlation coefficient “r” were larger than the critical value (also known as “the number to beat”) of 0.456. “R” was equal to 0.526.

It should be noted here that an outlier, an irregularly high or low data point, could misconstrue the calculations proving or disproving a correlation. Concerns arose in this particular study over Mexico’s irregularly high number of mentions, 37 in all (Figure 1), and whether it artificially pulled the correlation coefficient “r” higher than it should have been. The test for cor-

relation was resubmitted, excluding Mexico's data. "R" actually rose from 0.526 to .61 without Mexico's data. Such results vindicated Mexico's data points from suspicion of a more than proportional influence on the positive correlation. Therefore, such results continued to support the hypothesis that media coverage of global warming would increase as longitudinal distance from the equator increased towards both the north

Latin American Media Representation by Longitudinal Proximity to Equator

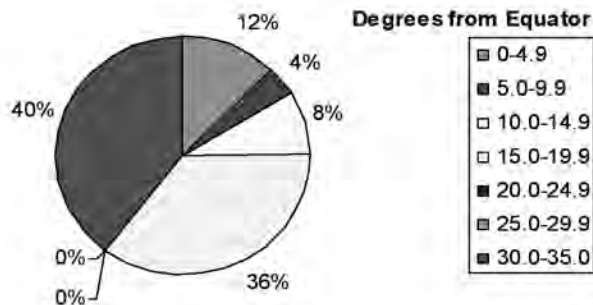


Figure 2. The % of coverage in each 4.9-degree longitudinal section of Latin America

and south poles.

Discussion:

The Mexican media covered climate change the most out of all Latin American countries (Figure 1), and its capital city was 19.24 longitudinal degrees from the equator (www.worldatlas.com), quite far in terms relative to the study. Mexico has a clear need to provide plenty of information on global warming. "Rising tropical sea surface temperatures also appear to be causing an increase in the average strength of hurricanes and tropical storms" (Young). The Mexican people and their government must be aware of the dangerous consequences global warming and climate change have, especially when these effects hit so close to home. In the Gulf of Mexico, "historically there have been about 11 storms a season, two of them violent. Colorado State University researchers expect 17 this year [2006]--five severe" (Lustgarten). Not including seaside towns and homes, the industries that rely upon the Gulf of Mexico, including oil and fishing, are threatened now more than ever. However, many or all of the countries in Central America that could also be immediately affected by increasingly strong hurricanes and tropical storms have little to no coverage of the global warming issue. Perhaps Mexico's exact proximity from the equator contains another reason that results in its media focus on climate change: its border with the United States.

In the case of Argentina, causation can also be argued for; as can be seen in Figure 1 of the results section, Argentina had the second highest amount of appropriate articles (24), while its capital was 34.36 degrees from the equator (www.worldatlas.com), second closest to a pole. Argentina's media had been most likely influenced by the proximity of the southern portion of the country to Antarctica. "Global warming threatens to sharply accelerate the rate of global sea-level rise by melting glaciers and ice sheets in Greenland and Antarctica" (Young).

Argentineans not only have an immediate stake in this global sea-rise, they also have the opportunity to display the effects to the world that such a rise in temperature could soon have all across the globe, and not just in their country.

As seen in Mexico, there are more motives for coverage of global warming or climate change that are related to equatorial proximity, but do not have much to do with the environment. To be clear, a portion of Mexico's high level of coverage of global warming or climate change has been attributed, in this study, to its proximity to the United States. Though this is related to equatorial proximity, it is less based on the environmental side of the proximity to the equator and more on the social, political, and economical side of the proximity to a powerful nation state with heightening coverage of climate change by its own media.

Why does Paraguay, which is 25.16 degrees from the equator, not cover the issues as closely as Colombia or Peru, which are 4.38 and 10 degrees from the equator respectively (Table 1)? A general investigation into the distribution of wealth in Latin America helps to clarify just what else might be affecting this study. Wikipedia has compiled a list of the 2006 GDPs for all Latin American countries. Though the website is not usually reputable enough to warrant inclusion in an academic research paper such as this, the information had been taken straight from the CIA World Factbook 2007, and simply compiled in a spreadsheet capable of comparison.

The results of comparing the GDPs for each country to its media coverage are quite interesting. The six wealthiest Latin American nations in 2006 were Brazil, Mexico, Argentina, Colombia, Chile, and Peru (<http://en.wikipedia.org>). All of these countries are within the top seven nations covering global warming or climate change (Table 1). In addition, the capital cities of Brazil, Mexico, Argentina, and Chile are all more than 15.0 longitudinal degrees from the equator (<http://worldatlas.com>). Though this study will not extend to investigate the distribution of wealth along longitudinal axes in Latin America, there is some relationship apparent even at a glance. Compared with many Latin American countries that are relatively close to the equator, Latin American countries that are relatively farther north or farther south of the equator have both higher GDPs and more media coverage of climate change.

Limitations:

There are several ways in which this study was limited. The search criteria could have been expanded to include different forms of media, such as radio or television. The search engine, LexisNexis Academic, is a strong and reputable source, but even it faces problems when dealing with more obscure Latin

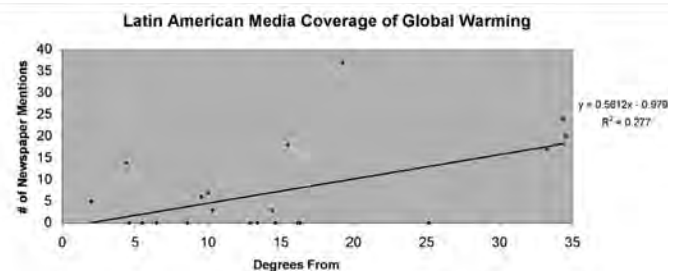


Figure 3. The graphical rendering of the standard test for correlation

American newspapers. The search engine could have largely ignored the bigger newspapers of the smaller countries, especially in Central America. Additionally, some of the less economically developed countries might not have the resources to produce many newspapers. In such cases, a lack of newspaper coverage would not necessarily display a lack of concern about climate change. Political sway also plays a key role in media coverage, and so it borders on the unethical to label a country as unsympathetic towards environmental issues just because its national media does not discuss these issues. Overtly biased or even state-controlled media could be an issue in some countries. Finally, the measurement of equatorial proximity is problematic since the capital city of each country was counted as the entire country's proximity to the equator.

Final Conclusion:

The results of this study support the hypothesis. Media coverage of global warming did become greater as longitudinal distance from the equator increased both northerly and southerly. Important ideas as to the cause of this arose as the results were further synthesized, and as more patterns emerged from the pattern of media coverage and equatorial proximity. Worth noting among these patterns is the distribution of wealth in Latin America related to equatorial proximity and the influence of this wealth, or lack thereof, upon media coverage of global warming or climate change. Many of the countries in Latin America, especially in Central America, are still considered developing countries and therefore cannot devote as much time or attention to environmental causes as they may desire. No matter where a country may be located, however, it is up to those who are capable to enact change. As we better understand the influence global warming has upon different locations we will hopefully begin to devise better plans for the implementation of preservation programs in immediately affected areas and awareness-raising programs and cautionary conservation measures in other parts of the globe.

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cfm?PgNm=TCE&Params=A1SEC832562

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Eric Leser¹

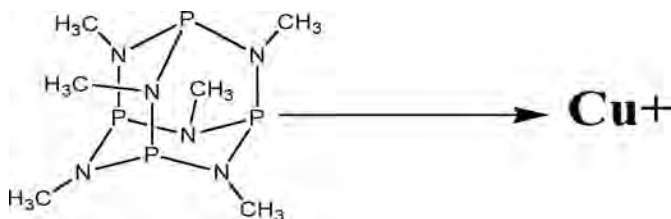
Coordination Polymers and Networks of Phosphorous/Nitrogen Cage Ligands with Copper Chloride.

Abstract:

The ligand at the focus of the research presented here is Closo-tetraphosphorus-hexamethylimide ($P_4(NCH_3)_6$), also known as the “cage” ligand. This array of phosphorous and nitrogen atoms is of interest because of its unique geometric shape and ability to bind to multiple metal ions—in this instance copper. Up to four cage ligands can bond to a single copper atom. When multiple cage ligands are placed in solution with multiple copper ions, a complex network of inorganic polymers is formed. More than 30 reactions with the above reactants were performed using different molar ratios and different conditions in order to fully investigate bonding and solubility trends and ultimately gain control of the produced polymer structure.

Introduction:

The $P_4(NCH_3)_6$ ligand (formally known as closo-tetraphosphorus-hexamethyl-imide) has a unique geometric shape and can bind to multiple metal atoms thanks to the expanded valence shells of the phosphorous atoms it contains. The phosphorous atoms in these “cage” ligands donate both electrons in the bond to the metal ions, forming coordinate covalent bonds. Because of the unique geometric shape of the cage ligand, these bonds can form in multiple directions at multiple angles. Depending on the other reactants used in the reaction, the cage ligand can propagate polymer strings in multiple directions indefinitely.



Phosphorous from $P_4(NCH_3)_6$ forming a coordinate bond with a copper ion

Methods:

During the last few quarters of research, the experiments in the Sommer Lab focused on reacting the cage ligand with copper chloride. The molar ratios used in these reactions ultimately determined the bonding schemes. More than 30 reactions were performed with cage and copper chloride in a controlled nitrogen atmosphere, using different molar ratios in order to fully investigate the bonding and solubility properties of the products. In order to gain some control over the final product, the compound sodium tetraphenylborate was added to some reactions in an equimolar amount to the copper chloride. This removed the bridging ligand chlorine from the reaction

and stabilized the final polymer product. All of these reactions were conducted in a glove box using acetonitrile as the initial reaction solvent. Re-crystallization took place using a solvent exchange technique in a sealed di-ethyl ether chamber.

Results:

The initial reaction scheme and product:

One cage ligand bonded to three different copper atoms. The copper is bonded to chloride atoms that serve as “bridging ligands” that bind to different monomers and contribute to the random binding of the product. Solvent interaction with the acetonitrile can be viewed at the very top of the graphic.

Chlorine serves as a “bridging ligand” and the polymer binds in multiple directions. The end result is an unchecked polymer propagating in multiple directions. Cage is stacked on top of cage many times over and in several directions.

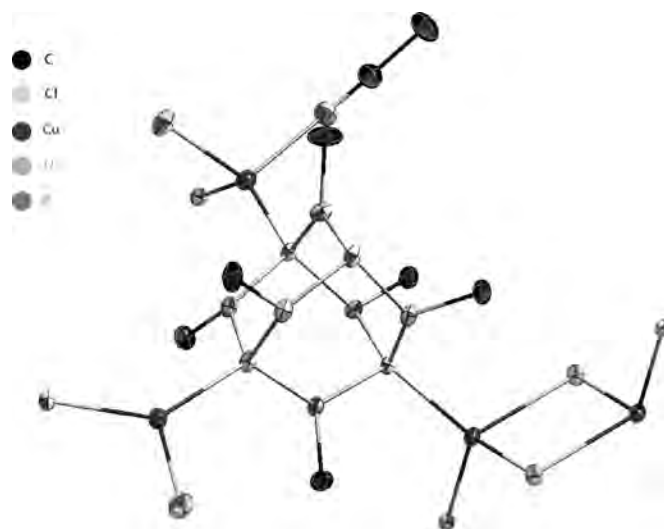
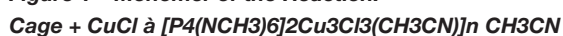


Figure 1 – Monomer of the Reaction:



Discussion:

When provided with an excess of cage, the copper ion can bond with up to four cage ligands. When all the binding sites on the copper ion are occupied by free cage ligands (cage ligands not bound to other copper atoms), the resulting complex is soluble and remains in solution. This is not the case when the metal atom is forced to bind with cage ligands bound to another metal atom. As the amount of cage is decreased or the amount of copper in the reaction is increased, more and more precipitate falls out of solution. If the copper is starved of free cage ligands, it must bind with other cage/copper monomers. As previously stated, these polymer strings can propagate in multiple directions. As the polymer product becomes larger in all directions, it becomes insoluble and precipitates. In order to gain some control over the final product, the compound sodium tetraphenylborate was added to the reaction in an equimolar amount to the copper chloride. This limits some of the multidirectional bonding that can be seen in Figure 2. The addition of sodium tetraphenylborate accomplishes two things. First, it precipitates the bridging ligand chlorine from solution as NaCl. Removing chlorine from the reaction gives one more control over the shape of the product. Second, the

¹ Advisor: Dr. Roger Sommer, Chemistry Department; research completed Spring 2007.

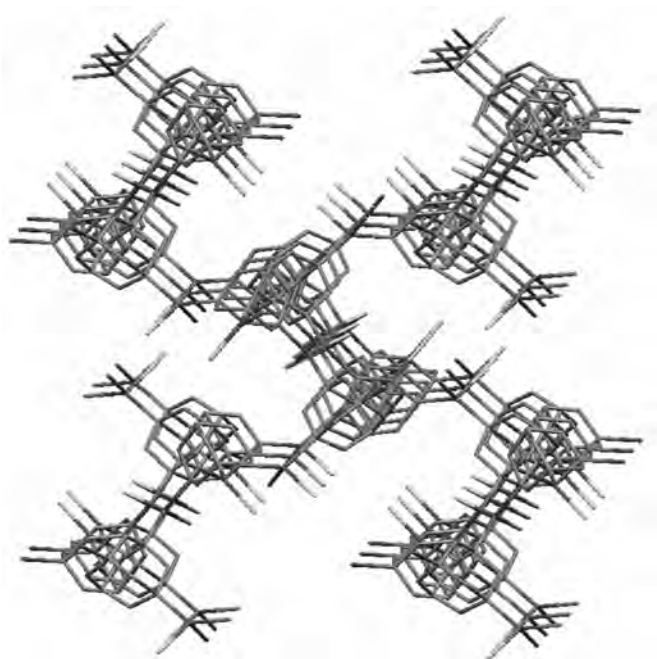


Figure 2 – Polymer Growth in Multiple Directions from the Reaction: Cage + CuCl à [P4(NCH3)6]2Cu3Cl3(CH3CN)]n CH3CN

remaining tetraphenylborate anion is a large and inert stabilizing negative charge. The anion has no electrons that are in position to interfere with the cage/copper complex. The electron rich phenyl rings on the tetraphenylborate anion interact with the methyl group in the acetonitrile bonded to the product, providing a stabilizing interaction that is similar to hydrogen bonding. The general purpose of adding the extra solution is to form a more linear polymer and gain some control of the end product.

In an effort to further stabilize the final product of the reactions, 1,10 phenanthroline was stirred into the reaction (in addition to the reactants already being used). Phenanthroline is an excellent ligand that binds tightly to two binding sites on the copper atom. The nitrogen in the phenanthroline bonds strongly with the copper and removes two bonding sites. This gives us more control over the form of the product. The addition of the compound also removed acetonitrile from our final product.

The phenanthroline was added in an equimolar amount to the copper chloride in each reaction (also a 0.1 M solution). The phenanthroline was added dropwise immediately after the addition of copper chloride. A slight amount of extra phenanthroline solution was added to the solution in order to assure that there was more phenanthroline ligand than copper. Before the 1,10 phenanthroline was added to solution, the observations about the reactions did not deviate from the previous reactions involving sodium tetraphenylborate. However, upon addition of the phenanthroline, the solution turned a deep, burnt-orange color. Upon stirring or agitation of the reaction vial, the burnt orange color would slowly fade to a lighter yellow/orange. After crystallization in an ether chamber (after filtering), the crystals formed from these reactions were light orange and cylindrical in shape. The full spectrum of molar ratios from previous reactions was not used in the phenanthroline experiments. The series of phenanthroline experi-

ments used cage/copper molar ratios of 3:2, 2:1, and 1:1.

The additions of sodium tetraphenylborate and 1,10 phenanthroline had a definite and noticeable effect on the organization of the polymer product. What was initially a jumbled product with multiple branching in most directions became a more linear and defined product, which yielded decent quality crystals. Future work may include investigation of the optical properties of the chiral crystals grown from the phenanthroline reaction monomers and further investigation of the bonding schemes of similar reactions in various reaction conditions. Future work may also include similar reactions with different metals and/or larger quantities of reactants to grow a larger yield of crystals.

Acknowledgments:

Polymer images (figures 1 and 2) come courtesy of Dr. Bruce Noll at the University of Notre Dame.

Observations of Linear Polarization of Water Masers in Star-forming Regions

Abstract:

We² measured the linear polarization in water maser data from the star forming region OH43.8–0.1 that has been observed with the Very Long Baseline Array (VLBA) radio telescope. We took the data through several elaborate procedures using the Astronomical Image Processing Software (AIPS). We then generated Stokes I, Q, and U images³ for the polarization calibrator (the quasar 3c454.3) and used these images to measure the linear polarization intensity for 3c454.3. We measured the linear polarization of 3c454.3 to be 255 milli-Jansky; this gives a polarization percentage of 4 percent. This compares well with the 150 milli-Jansky⁴ (~2 percent) measured at the VLBA for 3c454.3 about 10 days after this observation.

Introduction:

Almost all the information that we receive from space is from electromagnetic radiation. Electromagnetic radiation can be modeled as transverse waves of electric and magnetic fields, as shown in Figure 1. In this picture the electric and magnetic field vectors are perpendicular to each other, and the wave propagates in a direction at right angles to the electric and magnetic field directions. Visible light is a common example of electromagnetic radiation, as are gamma rays, X-rays, infrared, and radio waves [1].

By convention, the direction of the electric field vector gives the state of polarization of the electro-magnetic wave. There are three different types of polarization: circular polarization, elliptical polarization, and linear polarization, and they are shown in Figure 2. Circularly polarized waves are those for which the electric field vector describes a circle at a fixed point in space as the wave propagates [3]. Elliptical polarization is a more general case of circular polarization, in which the electric field vector traces out an ellipse at a fixed point in space as the wave propagates [4]. Finally, the wave is said to be linearly polarized if the electric field vector is confined to a single plane as the wave propagates [5]. In this project we studied the linear polarization of electromagnetic radiation from water masers in the star-forming region OH43.8–0.1.

Maser stands for Microwave Amplification by Stimulated Emission of Radiation. Masers are generated by the same physical mechanism as lasers except that they occur at microwave frequencies. The fundamental requirements for a maser (or laser) are population inversion and amplification [6]. In a laboratory or industrial laser, population inversion is achieved

by pumping the lasing atoms to a higher energy level, so that there are more atoms in the higher energy level than the lower level. Likewise, atoms are pumped to the upper level in an astronomical maser via collisions between atoms. By energy levels, we mean that every atom has a set of discrete energy levels much like the levels on a ladder; atoms can stay on a level, or move up or down from one level to another, but cannot have energies between levels. After population inversion is achieved in a laser or maser with a larger number of atoms in the upper level, the atoms can be stimulated to cascade down to the lower level, providing a single-frequency beam of radiation. In a laboratory or industrial laser, this radiation is then bounced millions of times per second between two mirrors in order to amplify it. In an astronomical water maser, however, the amplification is achieved because the microwave radiation travels a very long distance through the interstellar medium [7].

Water maser radiation observed for this project has a frequency of 22 GHz, which is in the radio region of the spectrum. Therefore, water masers must be observed with a radio telescope. Moreover, masers are point sources and several masers may lie close together in the sky. Consequently, they must be observed with high angular resolution; angular resolution is the ability to observe detail in an object. The larger the diameter of a telescope dish, the higher its angular resolution. However, radio telescopes must be made very large to achieve the desired angular resolution and the cost of building such large telescopes becomes enormous. Fortunately, by digitally combining the signals from one or more radio telescopes, we are able to obtain the angular resolution equivalent to that of a telescope with a diameter equal to the largest separation between these telescopes [8]. The VLBA is an example of such an instrument [9]. It is a collection of ten radio telescopes across the continental US, Virgin Islands, and Hawaii. Due to the high angular resolution required for maser observations, we used the VLBA to observe water masers in the star forming region OH43.8–0.1.

Procedure:

The source OH43.8–0.1 was observed with the VLBA, and the data were calibrated and imaged by Dr. Sarma in order to measure circular polarization [10]. In this project we measured

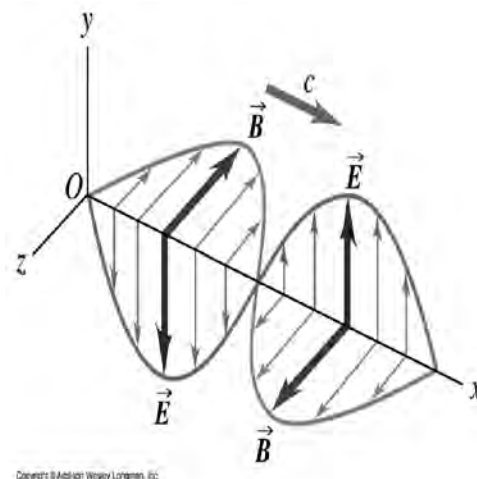


Figure 1: Electro-magnetic waves (B denotes the magnetic field vector and E denotes the electric field vector)

¹ Advised by Dr. Anuj P. Sarma of the Physics Department as part of a Summer 2007 research project.

² Collaborators on the OH43.8–0.1 water maser project with Dr. Sarma include Dr. Thomas H. Troland (University of Kentucky) and Dr. Jon Romney (National Radio Astronomy Observatory).

³ See section titled Procedure for an explanation of Stokes I , Q , and U .

⁴ The Jansky (Jy) is a well-known unit of the brightness of a source in radio astronomy, and is equal to 10^{-26} watts per meter squared per hertz [2].

the linear polarization of this calibrated data. We used the Astronomical Image Processing Software (AIPS) provided by the National Radio Astronomy Observatory (NRAO). Initially, we inspected the data set for bad data and flagged any bad data that showed up in our inspection. We then carried out a procedure known as fringe fitting to determine delays and rates for the phase. This allowed us to correlate the data from each of the telescopes. Each run of the procedure generated solution

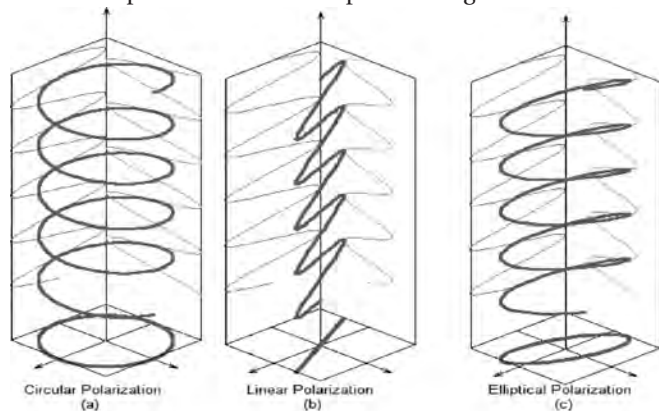


Figure 2: Examples of circular, linear and elliptical polarization

tables, which we examined to verify that the procedures ran correctly and had the intended and desired effect. We then generated Stokes I , Q , and U images for the polarization calibrator (the quasar 3c454.3). The Stokes I image gives the total intensity in the image, whereas the Stokes Q and U images were used to derive the intensity of the linear polarization.

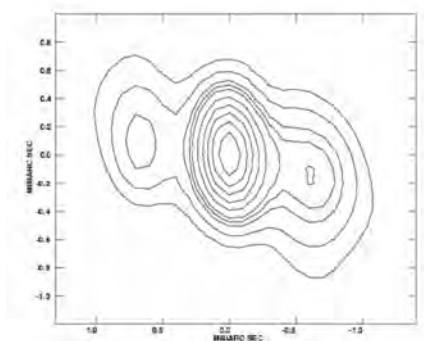


Figure 3: Image of 3c454.3 from our observations

Results:

The total intensity of 3c454.3 was found to be 5.7 Jansky (where Jansky is a standard unit used in radio astronomy; see footnote 1 on page 2). The linearly polarized intensity for 3c454.3 was found to be 255 milli-Jansky. Therefore, the polarization for this source is about 4 percent. Figure 3 shows the final image of the polarization calibrator 3c454.3 obtained by us.

Discussion:

Our measured value for the polarization of 3c454.3 compares well with the 150 milli-Jansky measured at the VLBA as part of a monitoring program for calibrator sources about 10 days after this observation (about 2 percent polarization). Dr. Sarma will apply the results obtained for the polarization calibrator 3c454.3

in this project to find the linear polarizations of masers in the star-forming region OH43.8-0.1. This will allow him to study whether the linear polarizations exhibit any correlation or influence on the circular polarizations. Any influence exerted by the linear polarization may affect the derived value of the magnetic field in this region, thereby affecting to some degree the interpretation of the influence of magnetic fields on star formation.

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Search for Impact Triggered Fires at the End Pleistocene

Abstract:

Rocks from the End Pleistocene (12,500 ya), which witnessed the extinction of thirty-three North American land mammals, were analyzed for the presence of soot from possible impact-triggered fires. Initial analysis found evidence for fires at one geographic site; the search for soot at additional End Pleistocene sites is underway.

Introduction:

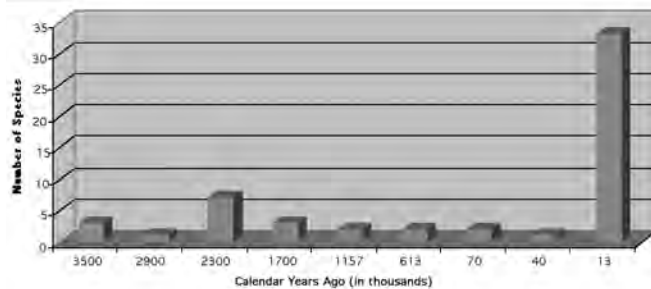
There is some evidence that a meteor may have impacted the earth 12,900 years ago, which correlates to the end of the Pleistocene Period, resulting in animal extinction.² Although an impact site has not been found, evidence supporting an impact includes: magnetic grains, magnetic spherules, impact tracts, charcoal, black mat, radioactivity, and mammoth tusks with magnetic inclusions.² These were found in much higher concentrations in the Clovis layer than in the surrounding layers indicating that an impact occurred at that time.² At this time period, it is believed that over thirty animals went extinct including the mammoth, mastodon, and saber-toothed tiger, many more animals than in the preceding times (Graph 1).²

The purpose of this research was to determine if the proposed meteorite impact could have initiated widespread fires that contributed to the increase in animal extinctions at the End- Pleistocene, as they did at the Cretaceous-Tertiary (K/T) boundary 65 Ma ago.³ This was accomplished by looking for soot in rock samples dating to the End-Pleistocene using methods developed by Wolbach and Anders. Previous work by Alvarez et al. provided strong support for a meteor impact at the K/T boundary.⁴ Evidence included thirty times the expected concentration of iridium at the K/T boundary, an element which is more common in extraterrestrial matter than it is on earth.⁴ Alvarez *et al.* concluded that a 10 ± 4 km diameter asteroid impacted the earth at the K/T boundary.⁴ High amounts of carbon, most in the form of soot, were later found at the K/T boundary by Wolbach *et al.*³ At the time, the source of the carbon was unknown but hypothesized to include fragments of the meteorite that impacted the earth, fossil carbon from the crater formed by the impact, and wildfires triggered by the impact.³ Further analysis ruled out the meteoritic component and work at more sites led to the conclusion that there were widespread fires at the K/T boundary, likely triggered by the impact.^{3,5}

Procedure:

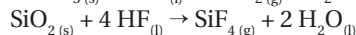
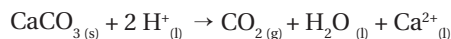
The methods used by Wolbach and Anders to isolate elemental carbon from rocks were used in this study.⁶ Samples were dried in an oven before being weighed. Alternating treatments of 9M hydrochloric acid and 10M hydrofluoric acid in 1M hydrochloric acid were used to de-mineralize the rocks. The HCl removed any ionic compounds and destroyed any fluorides that may have formed from reacting with the HF.

¹ Advised by Dr. Wendy Wolbach, Chemistry Department; research completed Spring 2006

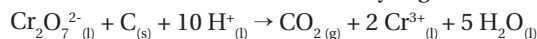


Graph 1: North American Extinct Land Mammals

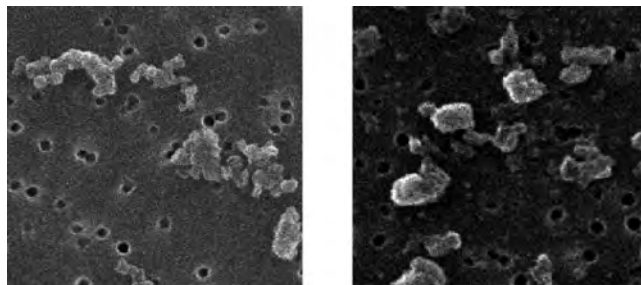
The HF was used to destroy the silicon-oxygen bonds found in quartz and other silicates. An ultrasonic bath was used to accelerate the reactions.



Density separation was performed on the samples using a sodium metatungstate solution with a density of 1.978 g/mL. After separation, 0.1M potassium dichromate in 2M sulfuric acid at 50° Celsius was used to destroy organic matter.



Samples were incubated for 600 hours in this dichromate solution. After incubation, the samples were rinsed several times with deionized water before being resuspended in deionized water. Samples were vacuum filtered onto a polycarbonate 0.1 micron filter paper and gold plated for scanning electron microscope (SEM) analysis. Samples were then analyzed with the SEM which generates micrographs of samples based on the way the electrons flow over them. The micrographs are then examined for traces of soot particles.



Figures 1 and 2: Figure 1 is an SEM micrograph of known soot (carbon black) while Figure 2 is a microgram of the sample T13-0-BU which contained soot (red)

Soot particles have a specific aciniform, or “grape-bunch-like,” morphology that allow them to be distinguished from most other matter. If the micrographs indicated soot was present, it was quantified. To do this, SEM images were blown up and printed on printer paper, then all the particles present were cut from the image and sorted into two piles: soot and non-soot. The soot and non-soot particles were weighed and the soot composition was calculated. In the absence of soot, 10 percent was used as the relative SEM area of soot since the methods utilized have a previously determined error of ± 10 percent.

Location	Sample	Rock (g)	Post-oxidation		SEM Area		Soot† (ppm)	Error* (ppm)
			Carbon (ppm)	Error (ppm)	Soot (rel %)	Weight percent (ppm)		
Carolina Bay, Blackville, SC	T13-0-BU	6.7012	2947	4	61	66.8	1969	197
Murray Springs, AZ	MS-3B-T-BU	5.2312	2552	14	10	3.6	91	
	MS-3B-B-BU	5.1749	1165	16	10	3.6	42	
Chobot Site, Alberta, Canada	CH-S-4-BU	3.8551	4446	11	10	3.6	159	
	CH-S-6-BU	7.5753	870	5	10	3.6	31	
	CH-S-8-BU	3.8772	1063	10	10	3.6	38	
	CH-S-9-BU	5.5787	597	16	10	3.6	21	
	CH-S-10-BU	6.2333	1215	6	10	3.6	43	
Blackwater Draw, Clovis, NM	BW-DT-BU	7.3166	312	5	10	3.6	11	
	BW-DM-BU	5.7046	1235	8	10	3.6	44	
	BW-D-B-BU	4.9155	479	15	10	3.6	17	
	BW-D/C-BU	7.2505	688	8	10	3.6	25	
	BW-FOW-BU	6.2119	762	15	10	3.6	27	
	BW-CLW-BU	5.4174					2	
	BW-BSW-BU	9.0651					1	
	BW-C-M-BU	6.5219	330	8	10	3.6	12	
	BW-LK-T-BU	9.3814	1284	5	10	3.6	46	
	BW-LK-B-BU	11.4823	776	5	10	3.6	28	

*Error associated with recognizing area percent soot shown to be ± 10 percent.

†Upper limits are calculated when no detectable sample survives demineralization/dichromate oxidation or no soot is observed on the SEM.

Significant figures are not indicated but are necessarily limited to one. ppm is parts per million

Table 1: Sample Analysis

Discussion:

Two of the initial eighteen samples, BW-CLW-BU and BW-BSW-BU, did not survive the density separation. Out of the remaining samples, the only one that contained soot was T13-0-BU with a soot composition of 1969 ppm. The calculated soot composition is an upper limit calculation where the results and the constraints of the methods are taken into consideration to determine what the maximum amount of soot present could be. The results suggest that if there was an impact, it would have been closest to the Carolina Bay site than the other three sites tested. Since only one sample contained soot, it appears any fires present at the End Pleistocene were not wide spread, but with four geographic sites that are spaced fairly far apart, more analysis is needed.

Conclusion:

Although analysis of the samples taken from the End-Pleistocene period did not provide support for the concept of widespread (regional or global) impact-triggered fires that contributed to extinction, it does not necessarily follow that an impact did not occur. The four sites analyzed all had evidence of an impact, just not a fire. There may have been an impact that did not trigger widespread fires and the presence of soot at the Carolina Bay site may be due to a local fire started by lightning that coincidentally occurred at the same time period. Other possible explanations include an impact that was closer in vicinity to Carolina Bay and did start a fire there, or perhaps there was no impact and just a lightning triggered fire at

Carolina Bay. Future areas of investigation include analyzing samples from more geographic areas for soot, particularly ones surrounding Carolina Bay. Also, an impact site has yet to be found for the proposed meteorite. A crater, the so-called “smoking gun,” would be the ultimate proof of impact and convince researchers that the End-Pleistocene extinctions had an extraterrestrial cause.

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Butterflies and Citizen Monitoring as a Method for Researching Climate Change

Abstract:

There is a consensus among the scientific community that the phenomenon of climate change, whether triggered by human or natural causes, is certainly occurring. As of 2007, the Intergovernmental Panel on Climate Change (IPCC) has stated with “very high confidence” that the earth is warming (IPCC 3). The reality of this global warming trend has been found in “observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level” (IPCC 5). However, climate change is not just about weather; many scientists are focusing on plants and animals as bioindicators. One strong bioindicator of climate change is the insects in the order Lepidoptera, which includes butterflies, moths, and skippers. The terms “lepidoptera” and “butterflies” will be used interchangeably in this essay.

A remarkable quality of butterfly research is that it is not just done by scientists. Since the late 1970s, citizen monitoring groups have been growing and increasing. In previous eras, the research and study of nature was left to naturalists who were usually more focused on the discovery, classification, and behavioral study of species, rather than the current concerns of protection and conservation. Now, the possibilities of communication created by the Internet, combined with increasing concern about climate change, have spurred new methods of butterfly research and new applications of butterfly data. The possibility of sharing recorded data has encouraged amateur naturalists to get involved in volunteer monitoring. Amateur naturalists, also referred to as citizen scientists, are useful for tasks ranging from testing water or soil quality to tracking plant and animal life.

With the increasing environmental concerns of our era, these monitoring groups can be helpful in obtaining widespread data about a particular area of research. Butterflies are particularly charismatic and easily identifiable creatures, so they have become the focus of many volunteer monitoring programs. In Great Britain, the United Kingdom Butterfly Monitoring Scheme (UKBMS) has monitored the number of butterflies since 1976 (Dennis 65). In the UKBMS, both volunteer and professional lepidopterists go on specific routes every week from April 1 to October 1, monitoring roughly 80 sites each year (A.J. van Strien et al. 818). A similar monitoring scheme was implemented in the Netherlands in 1990, including 100 to 200 different sites (A.J. van Strien et al. 818). From Ohio to Florida, from Utah to France, many areas have their own butterfly monitoring program or lepidopterist society. In the Chicago area alone, the Chicago Park District has implemented a butterfly monitoring program, following the success of the Illinois Butterfly Monitoring Network.

Why Butterflies?

The popular enthusiasm for butterflies can be harnessed

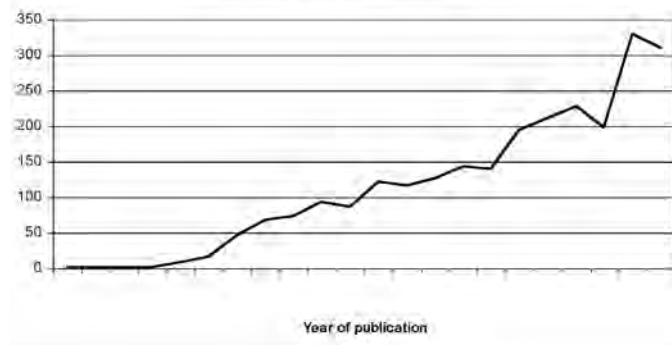
for research on climate change. Butterflies are ideal candidates for climate change research, because they are remarkable bioindicators. In Camille Parmesan's essay, “Butterflies as Bioindicators for Climate Change Effects,” she insists that an ideal bioindicator species should be sensitive to climate but resistant to other factors caused by human influence, quick to respond to climate changes, well-recorded in the past, and currently easy to monitor with data accessible over a large range (Parmesan 543). Parmesan asserts that “butterflies and birds are the only taxa that meet all of these criteria” (Parmesan 544).

Atmospheric conditions are important to the survival of butterflies, as they require fixed levels of temperature, moisture, and to a somewhat lesser degree, radiation (Dennis 1). Butterflies have adapted to specific environments with certain taxa using different methods of regulating body heat, including postures and wing movement, coloring, and flying and resting habits (Dennis 16). Weather can affect flight with wind influencing migration (Dennis 26). Climate also directly affects the amount of nectar sources available to butterflies which affects population sizes (Dennis 26-27). These traits and necessary conditions make the Lepidoptera order extremely climate-sensitive and likely to illustrate climate change in both species range and individual survival levels.

Over the centuries, seasonal changes have caused diverse adaptations as well, with some butterflies developing methods of handling the cold, and others using behavior in their life-cycles to deal with seasonality (Dennis 47). In many species such as the monarch, butterflies migrate to overwintering sites. Such migration allows researchers to study population changes as well as beginning and end dates of the migratory season. A recent study by Roy and Sparks (2000) showed that the red admiral (*Vanessa atalanta*) is now appearing in Britain over a month earlier than it did historically (Roy and Sparks 2000 in Parmesan 548). Any sort of drastic change in such a highly specialized cycle would be a sign of unusual behavior, ostensibly created by outside sources, and possibly created by climate change.

In addition to phenology, or the study of the cyclical seasons in regard to flora and fauna, researchers can use butterflies to study range shifts. As early as 1945, Ford associated the range shifts of certain British butterflies with a warming trend in Britain (Parmesan 544). Ford mentioned that in 1907 or 1908, the attempted introduction of *Limenitis camilla* in a

Articles Related to Butterflies and Climate Change
(on Biological Abstracts Database)



¹ Advised by Dr. Sarah Richardson, Environmental Studies Department.

northern location was unsuccessful, but only 26 years later, the butterfly had naturally shifted its range to include the same northern locality (Ford 1945 in Parmesan 544). In a much later study, Burton found that a statistically significant number of species of butterflies, 190 out of 260 ($P < 0.001$), had shifted north (Burton 1998 in Parmesan 547). According to Parmesan, “range shifts are perhaps the least controversial, as well as the most easily observed, responses expected under global warming scenarios” (559).

Methods of Butterfly Research in Regards to Climate Change

The concept of applying butterfly research and monitoring to the topic of climate change is fairly recent, at least as recent as our understanding of the phenomenon of climate change itself. Previous butterfly research, in many cases, often driven from a protectionist impulse, has analyzed the decreasing ranges of certain species (Parmesan 547). Although habitat fragmentation, extinction, and other crises are important and relevant to environmental dialogue, it can be difficult to use such past studies in terms of climate change.

In addition, there are many problems that can arise with the use of volunteer or amateur lepidopterist data. Even professional and experienced researchers have difficulty working with complex phenological butterfly data. Butterfly researchers—especially those who are interested in studying trends, range shifts, and migration as they apply to climate change—must create feasible statistical tests able to accurately measure the power of their data.

The Statistical Power of Butterfly Monitoring Schemes

In 1997, Dutch and British researchers concerned with the decline of butterfly populations due to habitat loss, and possibly climate change, sought to explore the numbers and trends of butterfly species (Van Strein 817). They wanted to measure the statistical power of data taken from monitoring networks (Van Strein 818). The researchers hoped to find a method of statistical analysis that would better detect trends in data assembled from monitoring networks (Van Strein 818).

Relatively long-term count data is available through the UKBMS, which, since 1976, has weekly counted long fixed routes (Van Strein 818). Also, a similar monitoring scheme was implemented in the Netherlands in 1990 (Van Strein 818). The researchers sought to evaluate the statistical power of the two schemes in a variety of approaches, admitting that such assessment is “not a straightforward matter” (Van Strein 818). To work with the data, they had to make assumptions, treating all observations as independent and looking only for linear trends (Van Strein 820). The researchers also had to do some estimating when it came to rare and elusive species in order to compare them with more common species (Van Strein 822). While the statistical analysis for common species was verifiable, the assumptions required to analyze rare species were somewhat dubious (Van Strein 827).

The study tested attributes such as hibernating stage and degree of latitudinal restriction (Van Strein 821). The researchers discovered that trends were difficult to detect because butterflies are so sensitive to year-to-year weather conditions (Van Strein 825). Although butterflies’ sensitivity to climate

may seem helpful for predicting trends, the insects are almost too sensitive to detect definite patterns, except over a long period of time. The researchers determined that such data is best studied over a 20-year period at the least, or ideally, to detect earlier change, sampling sites would have to be increased (Van Strein 826). For some species, the researchers recommended that data be adjusted for weather conditions, using models to detect trends even more quickly (Van Strein 826). Ultimately, the size of data sets is key; monitoring scheme data works best when increased, either over the course of time or through an increase in observation sites.

The Increasing Trend of the Study of Butterflies and Climate Change

Given the difficulties of working with phenological data as well as volunteer monitoring data, few climate change studies have used both kinds of information. However, many researchers have implemented successful studies on climate change using butterfly range shifts and population sizes. Also, as volunteer monitoring groups multiply and become more established over a longer period of time, the pool of butterfly data will not be so difficult to work with. Butterflies are so sensitive that they are strongly affected by year-to-year patterns or day-to-day weather, but over a longer period of time, the increase of data will more clearly reflect larger changes and trends.

Research concerning butterflies and climate change is increasing rapidly. By searching the Biological Abstracts database on-line for articles containing the terms “butterfly” and “climate change” or “global warming,” I found growth in the numbers of scholarly articles dealing with butterflies and climate change. However, this search was limited by the fact that I was looking within only one scientific database and also by the possibility of variance of terminology. While the trend shown is not meant to be a definitive study on climate change and butterfly monitoring research, at a glimpse it illustrates the increase of butterfly research in regard to climate change.

Conclusion

While it is encouraging to see the general public gaining interest in the volunteer monitoring of butterflies—for both the sake of both ecology and pleasure—researchers face a difficult task in the analysis of volunteer monitoring data. Phenological data in itself is messy and complex and volunteer data has additional flaws, such as unreliability, inaccuracy, and the lack of cohesive, consistent, long-term data. Compared to other research such as ornithology, amateur lepidoptery is a fairly recent trend, but volunteer monitoring groups are increasing and also improving their methods. Meanwhile, researchers are trying to find new and innovative ways of statistically analyzing data from volunteer counts. The increase and persistent popularity of butterfly monitoring groups and the increase of climate change and butterfly study is encouraging; perhaps the improvement of methods and statistical analysis is imminent. It is easy for the average individual to be unconcerned with gradual change in the behavior of insects—in particular, butterflies—but such “meaningless” information lends knowledge about the possible overall impact of climate change.

Even if volunteer monitoring groups are not always statistically helpful, they encourage ordinary people to get involved with nature and become more aware of their impact on the environment. Perhaps, researchers will soon find a way to use volunteer butterfly monitoring data to successfully measure the effects of climate change on the seasonality of butterflies.

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Soil Decomposition Rates Following Carbon Amendment and the Physical Removal of an Invasive Shrub (*Rhamnus cathartica*) Determined by Cotton Strip Assay

Abstract:

The invasive shrub *Rhamnus cathartica* has been detrimental to Midwestern restoration efforts. *R. cathartica* is associated with modified soil ecosystem properties. A cotton strip assay was used to determine soil decomposition rates under various restoration treatments. Tensile strength of a cotton substrate determined that soil decomposition rates are elevated under restoration receiving the carbon amendment.

Introduction:

Invasive plant species impose a variety of impacts upon the local ecosystems in which they reside. The impacts of invasive species may be relatively insignificant, for instance the addition of a small-sized invasive plant population, resulting in little or no change in native ecosystem functioning. In other circumstances, the impacts of invasive plant species may be significant by dramatically altering native ecosystem functioning (Iatropulos 2006). When the population size of invaders is high, invaders may out-compete the native plant species resulting in the reduction of local biodiversity, leading to a monoculture of invaders (Davis et al. 2000).

Recently there has been interest in exploring the impacts of ecosystem processes for their ability to impact the outcomes of restoration. Invaders dramatically alter ecosystem processes, creating an undesirable “legacy” upon system functioning. Changes in system processes caused by invaders can ultimately change the outcome of restoration (Heneghan et al. 2004).

The invasive shrub *R. cathartica* has been detrimental to restoration efforts of native species in the Midwest region (Heneghan et al. 2004). Previous studies have indicated that areas invaded by shrubs including *R. cathartica* are associated with modified soil ecosystem properties (Ehrenfeld et al. 2001, Heneghan et al. 2002), processes that can alter the outcome of ecological restorations.

To further investigate these soil ecosystem processes, a cotton strip assay was used to determine soil decomposition rates under various restoration treatments. The objective was to examine the rate at which soil ecosystem functioning returns to the system. This would help provide an understanding of the “legacy” of the ecosystem processes. It would also measure the success of restoration, and determine where these systems are at a particular time in progression.

Cotton strips inserted into the soil at the restoration site were removed periodically, and tensile strength was determined to measure the rate of soil decomposition under each treatment. Data was used in the attempt to better understand whether *R. cathartica* has altered soil conditions to favor its own persistence, and ultimately to develop improved restoration management techniques.

¹ Advised by Dr. Liam Heneghan, Environmental Sciences Program; research completed Fall 2007.

Materials and Methods:

Site Description

Whipporwill Farm, a restoration site of the Mettawa Openlands Association, is a seven-acre site located in Mettawa, Illinois, 35 miles northwest of Chicago. The site was an enclosed horse pasture from the 1930s until abandoned in the late 1990s. The farm has since turned into a monoculture of *R. cathartica* and has formed a dense thicket. DePaul University's Environmental Science Program has retained 2500 square meters of the seven-acre site as a restoration experiment.

The soils at DePaul's site are a Nappanese silt loam with a pH between 5.1 and 7.3. The silt loam is composed of 5 to 20 percent sand, 53 to 75 percent silt, and 20 to 27 percent clay. Conditions include a mean annual precipitation of 28 to 40 inches, and a mean annual air temperature of 7.2 to 12.2 ° Celsius. The moist bulk density of the soils range between 1.25 to 1.45 g mL⁻¹, and the site gradient spans from 2 to 4 percent slope (Web Soil Survey).

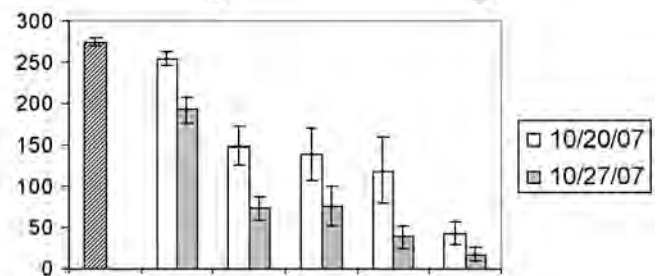


Fig 1: Decomposition Determined by Cotton Strip Tensile Strength

Decomposition Analysis

The 2500 square meter site was divided into five experimental blocks, representing the five trial sets. Each block contained nine plots, for a total of 45 plots. Each plot was randomly assigned one of six different treatments. Three plots in each set contained non-cut standing *R. cathartica* (controls), two plots had invasives physically removed, two plots involved physically removing invasives and applying *R. cathartica* mulch (carbon amendment), one plot involved removing invasives and applying standard landscaping mulch (carbon amendment), and one plot involved removing invasives and corn (*Zea mays*) was planted. All cut plots were treated with herbicide once *R. cathartica* had been removed.

Cotton strips were used to analyze decomposition potential in all plots, and to measure microbial activity in the soil. The purpose of this measure was to provide inter-plot comparisons of decomposition potential among the various treatments. Cotton strips were used as uniform cellulose substrates, which can be prepared with reliable consistency for replicate inter-year comparisons at sites that continue to receive restoration management (Iatropulos 2006).

Test strips were cut from 100 percent Egyptian cotton bed sheets with a 300-thread count. A total of 495 cotton strips measuring 10 cm x 25 cm were prepared. Eleven strips were inserted randomly into each plot using a standard trenching shovel. One strip from each plot was immediately removed to serve as a control. After two weeks, two strips were removed

from each plot and washed with tap water using a low-pressure spray nozzle to remove the excess soil. The strips were immediately dried on wire mesh to prevent further decomposition, and finally bagged individually. Another two strips were removed the following week and were washed, dried, and bagged as before.

Tensile strength was measured using a United Tensile Machine: Model Number TM-20 at Kieh Company Laboratories, Bellwood, IL using a United O Matic: 500 pound load cell (Serial Number SB2810). Strips were folded into fourths and taped at the ends to prevent unraveling. The folded ends of each strip were placed between rubber grips and then between the mechanical clamps of the tensile machine. The strips were slowly torn apart by the mechanical jaws, and tensile strength was measured in the lengthwise direction on a Houston Instrument Omnigraphic 2000 recorder.

Results:

The greatest amount of decomposition occurred in the landscape and shrub mulch plots (Fig 1). In contrast, there was very little decomposition in the control plots and only moderate amounts of decomposition in the cut shrub and corn plots (Fig 1).

Discussion:

After three weeks, strips from the shrub mulch plots (carbon amendment) had become so decomposed that several had become irrecoverable due to extreme fragmentation. Strips that were able to be recovered from the shrub mulch plots provided data revealing extreme decomposition, indicated by very low amounts of tensile strength remaining.

The rapid decomposition that occurred across the range of treatments demonstrates that the ecosystem processes have been set into motion following restoration treatments. This is especially evident when treatment results are compared with the data from the control plot, which shows that system functioning is moving at a much slower pace under the uncut plots. The treatment areas receiving the greatest amount of disturbance underwent the highest rate of decomposition, an indicator that the restoration technique of carbon amendment has significant impacts on ecosystem functioning.

Cotton strips used as a uniform cellulose substrate proved to be an effective method for measuring decomposition. The rapid decomposition of the cotton substrate under all of the cut plots and specifically the mulch plots was so rapid that a single installation of strips would not be useful in monitoring long-term soil decomposition. However, the method would be extremely useful if replicated on a yearly basis. By comparing annual results, stages of ecosystem functioning could be identified allowing us to pinpoint where recovering ecosystems are functioning at a particular time in restoration.

One possible explanation for higher rates of decomposition within the landscape and shrub mulch plots could be an increase in microbial and/or earthworm activity. This activity is likely fueled by carbon amendment supplied by the mulch, which provides a flux of food for microbes and earthworms.

A new batch of strips will be installed into the existing treatment plots in Spring 2008 to expand on the current soil

decomposition data. These measurements will be compared with the existing data to understand the influence of restoration over an increased time span. By understanding the long-term results of restoration, it may be easier to anticipate how ecosystems will react during various stages of progression.

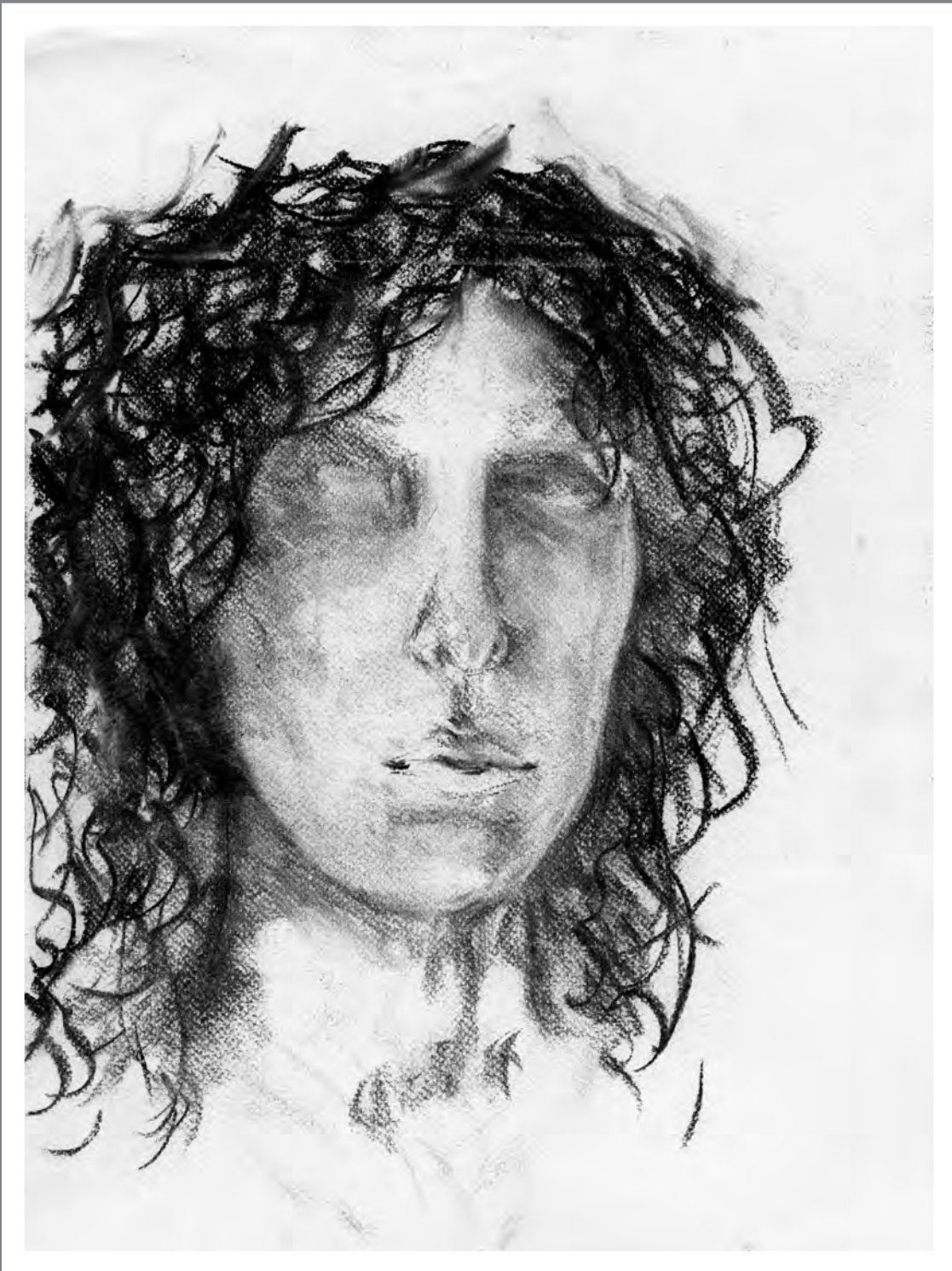
Acknowledgements:

Thank you to Christ Iatropulos and Kieh Company Laboratories for their gracious help throughout my project along with the opportunity to use their facilities for research. I would like to thank Kim Frye and Will Warner for their assistance in the laboratory and field. Finally, Dr. Judy Bramble, Dr. Liam Heneghan, Dr. James Montgomery, Dr. Thomas Murphy, and Lauren Umek for their guidance, assistance, and support throughout this project, thank you! Without your help and guidance I would be lost wandering around in the woods.

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SOCIAL SCIENCES



*Self Portrait
Charcoal on paper, 2008
Jackie Alcantara*

A Commitment to Inaction: U.S. Rhetoric and Darfur

Abstract: *My research project explores the history of the Darfur crisis; the actions taken by the United States and the rhetoric employed to defend those actions; and the American public's reaction to the government's use and misuse of rhetoric. I designed and implemented my own survey project to gain a deeper understanding of public perceptions of Darfur. The preliminary results of my research indicate that educated liberal-minded elites may be aping the feckless behavior of the U.S. government, although future research is warranted to confirm my observations.*

The United States government has officially classified the humanitarian crisis in the Darfur region of Sudan as genocide.² If confronted with genocide, it is the obligation of the United States and the greater international community to combat its manifest evils. According to the 1948 Convention on the Prevention and Punishment of the Crime of Genocide, all signatories, of which the U.S. is one, are required “to provide effective penalties for persons guilty of genocide.”³ However, in 2004 Secretary of State Colin Powell declared that although “genocide has been committed in Darfur ... no new action [by the United States] is dictated by this determination.”⁴ The United States, in accordance with Powell's assessment of its obligations, has not significantly contributed towards building a greater peace in Darfur.

Although the United States is the single largest donor of humanitarian,⁵ development and reconstruction assistance to the people of Darfur, “there has been no dramatic or sustained improvement in security for civilians.”⁶ By declaring genocide in Darfur, the United States committed itself to pursuing a legitimate and lasting peace; by failing to ensure the necessary preconditions of that peace, the United States devalued a necessary rhetorical tool and gave other actors the space to substitute platitudes for tangible action.

Despite the assistance our government provides, most Americans are not concerned with the crisis in Darfur. According to survey data released by the Pew Research Center in December 2006, a scant 13 percent of Americans routinely fol-

low the story.⁷ However, data released in June 2007 indicates that 49 percent of Americans believe that the United States has a responsibility to do something about ethnic genocide in Darfur.⁸ Seventy-two percent of those who follow reports on Darfur very or fairly closely assert that the United States has a responsibility to do something about the ethnic genocide in Sudan, whereas just half of those who have not closely followed the story agree.⁹ This implies a correlation between knowledge and a desire for action.

Education plays a significant role in shaping individual opinions: 68 percent of college graduates, whereas just 40 percent of those with a high school degree or less concur that the United States has a responsibility to do something about Darfur.¹⁰ This again illustrates the correlation between knowledge and a desire for action. However, it is easy to simply express revulsion to genocide, so this correlation does not necessarily demonstrate a profound commitment to action even among the most educated.

Based upon these national survey results, I designed and implemented an additional study to explore more deeply how much an educated and informed individual would know about foreign policy and to what degree they would act on it, focusing on the Darfur case. I sought to discover more about the foreign policy views of a small set of these informed individuals. What did they actually know? Where did they get their information? Most importantly, what course of action did they favor?

In order to better understand what educated people knew, I conducted 12 in-depth exploratory interviews. As those with higher education and steady employment are more likely to be involved in the political process, my research focused primarily on middle to upper class adults.¹¹ All of my participants possessed college degrees and ranged from ages 26 to 36. I interviewed gainfully employed individuals currently receiving a wage-based salary. Prior to conducting these interviews, I obtained IRB approval by submitting a copy of my tentative survey questions. I have appended a sample of these questions to the end of this document. Each interview lasted approximately two hours. I prepared a series of basic questions, but I sought to engage my subjects in meaningful discussion, so much of what I asked was directly pertinent to the individual interviewee and thus unrehearsed.

On the whole, the results were unsurprising. The majority of the individuals willing to speak with me were engaging, lively, and concerned with worldly issues. Although they lacked a deep understanding of the conflict, each respondent knew that

1 Advised by Pat Callahan, Political Science Department; project completed Summer 2007.

2 Ewen MacAskill. “Stakes Rise as U.S. Declares Darfur Killings Genocide.” *The Guardian*. 10 Sept. 2004. <<http://www.guardian.co.uk/politics/2004/sep/10/1>>. 25 March 2008.

3 United Nations. General Assembly. *Convention on Genocide*. 9 Dec. 1948. <<http://www.hrweb.org/legal/genocide.html>>. 29 Jan. 2008.

4 Robert Collins. “Disaster in Darfur: Historical Overview,” in *Genocide in Darfur: Investigating the Atrocities in the Sudan*. (New York: Routledge, 2006), 22.

5 Office of the Spokesman. “U.S. Sanctions on Sudan.” U.S.INFO. 29 May 2007. <<http://www.state.gov/r/pa/prs/ps/2007/may/85597.htm>>. 12 September 2007.

6 “Darfur 2007: Chaos by Design.” *Human Rights Watch*. 20 September 2007. <[http://www.reliefweb.int/rw/RWFiles2007.nsf/FilesByRWDUnidFilename/EMAE-775RVN-Full_Report.pdf/\\$File/Full_Report.pdf](http://www.reliefweb.int/rw/RWFiles2007.nsf/FilesByRWDUnidFilename/EMAE-775RVN-Full_Report.pdf/$File/Full_Report.pdf)>. 21 September 2007

7 “Summary of Findings: Free Trade Agreements Get a Mixed Review.” *Pew Research Center for the People and the Press*. 19 December 2006. <<http://people-press.org/reports/print.php3?PageID=1108>>. 7 June 2007.

8 “Public Wants to Know More about Darfur and Many Favor U.S. Involvement.” *Pew Research Center for the People and the Press*. <<http://pewresearch.org/pubs/504/darfur>>. 7 June 2007.

9 Ibid.

10 “Summary of Findings: Free Trade Agreements Get a Mixed Review.”

11 “Summary of Findings: Who Votes, Who Doesn't, and Why.” *Pew Research Center for the People and the Press*. 18 October 2006. <<http://people-press.org/reports/display.php3?ReportID=292>>. 26 March 2008.

people were dying in the Sudan. Ten individuals were familiar with the term “janjaweed,” although only five understood the direct connection between the Sudanese government’s actions and the instability in the region. Each interviewee professed that “someone” has a responsibility to intervene in Darfur and eight respondents explicitly stated that the United States has a duty to intervene. No one I spoke with, however, had any idea what this intervention might look like. Some individuals expressed muted racial or religious biases. One individual, when prompted to discuss genocide in the context of Darfur, remarked that “everybody in Africa is trying to kill everybody in Africa,” while another replied “it’s all basically about Muslims or Arabs or something like that.”

Nine of the 12 individuals I spoke with identified National Public Radio (NPR) as their primary news source. They frequently cited its “in-depth coverage,” although five respondents noted that coverage on Darfur is becoming increasingly infrequent. CNN was also cited by six respondents as a primary news source. No interviewee watched Fox News and several expressed a dislike for the station, saying “it’s not really news.” This is perhaps consistent with the self-professed “liberal” tendencies of 11 of the 12 respondents. Therefore, I cannot claim with authority that there is a direction connection between a self-professed liberal ideology and an interest in Darfur, I do believe my work presents a valid hypothesis. Although my survey population was disproportionately liberal, I believe these interviews provide useful exploratory results. In order to gather potential interviewees, I briefly explained the purpose and merits of my research project. I was turned down by several possible candidates because they expressed a disinterest in the topic.

In commenting on their own level of knowledge about the issue, many individuals explained that they simply lack the time to become properly educated, as their own lives are far too busy. This is an understandable sentiment. With the rapid expansion and proliferation of information-based technologies, citizens cannot obtain reliable facts without first braving an endless quagmire of datum. According to noted political scientist William Ophuls, “the major political issues of our time have become so esoteric that only full-time specialists can hope to understand them.”¹² Based upon my observations of these interviewees as well as my understanding of Daniel Boorstin’s *The Image: A Guide to Pseudo-Events in America* and Todd Gitlin’s work *Media Unlimited: How the Torrent of Images and Sounds Overwhelms Our Lives*, I believe that the modern polity’s ability to understand and address the problems of society has been hampered by both the sheer complexity of the changing globe and the manner in which the media construes the world.

One interviewee relayed a rather interesting story. He is, in his own words, “unconcerned with worldly issues [and] politics.” Although he is highly educated and intelligent, he rarely reads the newspaper and seldom watches the news. He does not read for pleasure and indeed only reads when he finds a newspaper on the train. While he was able to recognize

the suffering of those in Darfur, he openly acknowledged his own apathy and disinterest. Yet, despite his apparent lack of involvement, he explained that he’s “actually written to [United States] senators and representatives about seeking intervention in Darfur,” because “ethically this is the position we should take.”

By his own admission, this man is woefully ignorant of the genocide in Darfur. Yet he was able to recognize the moral and ethical implications of the situation and took action. His efforts will most likely be unsuccessful. However, his story illustrates a profound point. Large scale human suffering is easily recognizable and not easily disguised. Only through willful ignorance and antipathy can we ignore the anguish of those around U.S..

Questions

1. What is your occupation?
2. Where did you attend college and what did you study?
3. Are you married?
4. Do you have children, ages, number?
5. What do you do in your leisure time?
6. Have you ever traveled abroad?
7. To where? To Africa? For school, leisure?
8. Do you read?
9. Do you read the newspaper, if so which?
10. What section do you typically read?
11. Do you watch the news, if so, what station?
12. Favorite news topic?
13. Do you consider yourself to be aware of current events?
14. Do you consider yourself to be aware of international events?
15. Do you consider yourself to be aware of historical events?
16. What does the word “genocide” mean to you, and what do you associate it with?
17. What does the word “ethnic cleansing” mean to you, and what do you associate it with?
18. What does the phrase “civil war” mean to you, and what do you associate it with?
19. What does the phrase “war crimes” mean to you, and what do you associate it with?
20. Are you aware of the events transpiring in Darfur?
 - A. How have you learned about Darfur?
 - B. Do you read/hear about it often?
 - C. How informed do you consider yourself to be?
 - D. How informed are your peers/spouse/etc.?
 - E. Do you speak with your peers/spouse/etc. about Darfur frequently?
 - F. Are there other international crises that warrant our attention?
 - G. Should we focus on Darfur?
 - H. If so, what should we do as a country?
 - I. As individuals?
 - J. Why should we help those in Darfur?
 - K. Why should we care about Africa at all?

¹² William Ophuls, *Requiem for Modern Politics: The Tragedy of the Enlightenment and the Challenge of the New Millennium* (Boulder Co: Westview Press, 1997) 77.

Immigration Status: Its Effects on Family Dynamics and Future Political Voices

Abstract:

The author examines the intergenerational dynamics of political socialization in immigrant families by analyzing sixteen in-depth semi-structured interviews of northern Californian, immigrant and non-immigrant, Mexican-American families. The findings point to a reversal in the direction of political socialization—from offspring to parent—and they offer insight into variations in the intensity of one's political involvement.²

My parents were born and raised outside of the U.S. Like many other families who had suffered the economic crisis of Latin America's "Lost Decade," they migrated to the U.S. with complete hope and faith in the American Dream. Having been raised elsewhere, they were not familiar with the formal educational and political systems of the United States. From a young age, I have introduced them to educational, civic, and political knowledge that I was learning through school and the media. This unique intergenerational dynamic in U.S. immigrant families, apparent in my own, has led political scientists to question the way political socialization processes work for immigrant populations.

This paper explores how political socialization differs in Mexican-American families based on the parents' citizenship status focusing on two categories: the U.S.-born versus undocumented migrants. Political socialization is defined as the learning process in which an individual adopts various political attitudes, values, and behaviors based on influences in his or her environment.

Literature Review:

For many years, the field of political socialization emphasized a unidirectional transmission of information. For instance, studies by Beck and Jennings (1975) assumed and then established that parents transmit their political attitudes to their children. Pivotal studies conducted in 1986, however, began pointing to the "reciprocal influences," as seen within my family.³ Building on these findings, the field of immigrant socialization has begun to develop new ways of thinking about the socialization process. Unfortunately, the literature available is limited in that it traditionally focuses on adult immigrants. Due to the fact that adult immigrants are beyond the age of formal political socialization, innovative methods have been devised to explore the processes.⁴ Bloemraad

conducted a study in 2006 that highlighted the social nature of immigrant adults' political socialization in their host country where ethnic communities, friends, and family members provide adult immigrants with language skills and resources to facilitate their socialization process. Considering that it may be structurally possible to re-socialize immigrant adults, there is a need to study their offspring and their role in socializing their own parents.⁵

Methodology:

In an attempt to identify the various agents that impact political socialization as well as the intensity levels of political involvement, particularly in those of Mexican-American families after the May Day immigration marches of 2006, two Berkeley faculty members conducted 74 interviews of Mexican-Americans possessing at most a high school degree or equivalent. The parents of the families fell into one of four status categories: U.S.-born, legal permanent residents, naturalized citizens, and undocumented migrants. As a summer research scholar, I was given access to the data to develop my own research project. Due to a time limit of eight weeks, it was only feasible to analyze families with a complete interview set, including both parental and youth transcripts. Families with U.S.-born parents were designated as the control group. Because the immigration protests of 2006 most directly affected families with undocumented migrants, my interview pool included the control group and families with undocumented migrant parents. In total, sixteen in-depth interviews of northern California high school students and their parents were analyzed to explore the "reciprocal influences" on political socialization in Mexican-American families based on the parent's citizenship status.⁶ Using the sixteen available transcripts, I examined two hypotheses about the direction of political socialization and intensity of political involvement in immigrant families.

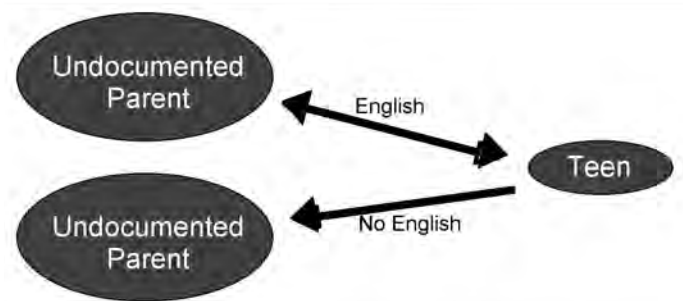


Diagram 1

Hypothesis 1:

Political socialization in families with US-born parents will be unidirectional from parent to offspring, whereas the political socialization process in families with undocumented parents will

1 Advised by Dr. Molly Andolina, Political Science Department; research completed as part of an undergraduate research grant, Summer 2007.

2 The author, a Ronald E. McNair scholar, worked with principle investigators Irene Bloemraad (PhD Sociology) and Christine Trost (PhD Political Science) at UC-Berkeley's Summer Research Opportunity Program 2007.

3 Jennifer Glass, Vern L. Bengston, Charlotte Chorn Dunham, "Attitude Similarity in Three-Generation Families: Socialization, Status-Inheritance, or Reciprocal Influence?" *American Sociological Review* (1986): 685-698.

4 US-born parents introduce their teens to various news stories

about the immigration debate because parents have been introduced to American political institutions for the majority of their lives through formal socializing agents such as American school teachers, curricula, peers, religion, media, and workplaces.

5 David O. Sears, "Whither Political Socialization Research? The Question of Persistence," In *Political Socialization, Citizenship Education, and Democracy*, Edited by Orit Ichilov (New York: Teachers College Press, 1990), 76.

6 Author uses pseudonyms for each participant.

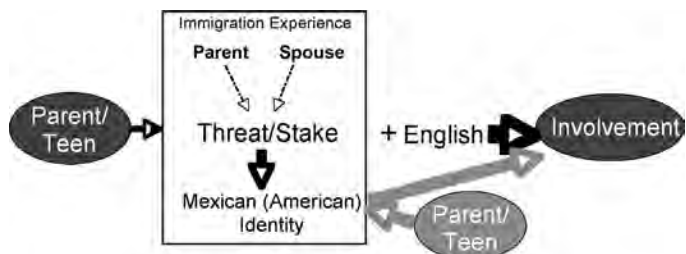


Diagram 2

be bidirectional. Perhaps there will be even more influence from US-born offspring to immigrant parents than the reverse.

Findings (Status):

(See Diagram 1) U.S.-born parents seem to carry the traditional roles of significant socializing agents in the conventional “top-down,” or parent to teen, process of political socialization. U.S.-born parents have gone through the traditional formal agencies of political socialization and are therefore at an advantage in their familiarity with American political institutions over parents of undocumented status.⁷ Some parents introduced their offspring to such resources and methods of acquiring political knowledge through their example or through reinforcement of their own electoral and civic behavior.⁸ In contrast, the direction of political socialization in families with undocumented parents was mixed. The role of the “socializer” and the “socialized” is more complicated in these families because of the English proficiency variable. The language factor determined whether the family would follow a unique unidirectional or bidirectional model. Undocumented parents who were least proficient in English followed a reverse unidirectional political socialization process—from offspring to parent. In effect, teens of undocumented parents experience more of the host country’s formal socializing agents and have access to more resources and outlets of civic and political engagement to share with their parents. Language proficiency plays a larger role for families with non-English-speaking, undocumented parents because teens are socialized into becoming both the voice of their families and their advocates. For instance, in this study, all teens with at least one undocumented parent stated that they have translated for their parents. Non-English-speaking immigrant parents reported that their teens speak on their behalf, especially when confronting American bureaucratic institutions such as clinics, post offices, public school conferences, etc.

Mrs. Karen (she and her husband are undocumented and do not speak English): Yes, yes [our son, Kyle,] helps me a lot and he helps his brothers at times. I try to understand first but he helps me understand or fills out any paperwork like Medical, he always helps us.

As seen with the respondent above, teens with non-English speaking parents become political filters, mediators, and advocates for their undocumented parents.

7 Steven A. Chaffee, Clifford I. Nass and Seung-Mock Yang, “The Bridging Role of Television in Immigrant Political Socialization,” *Human Communication Research* (1990), 271.

8 Ann C. Fletcher, Glen H. Elder, Jr. and Debra Mekos, “Parental Influences on Adolescent Involvement in Community Activities,” *Journal of Research on Adolescence* (2000): 30.

In the case of undocumented parents with high English language proficiency, our interviews suggest that they learn how to navigate American political institutions from their friends or civic engagements more so than from their children. They may have acquired great levels of civic involvement, such as in local Parent Teacher’s Association (PTA) or bilingual committees, because of their ability to voice their own opinions. Teens and parents who share English language proficiency are able to combine their social networks and form alliances to learn about American political institutions. Undocumented parents introduce their teens to Spanish news sources and political activities while their teens introduce them to American political institutions. This demonstrates a bidirectional political socialization process when undocumented parents are English-speaking.

Hypothesis 2:

Family members with high English language proficiency and those who feel a significant “threat or stake” in the struggle over immigration policy are more likely to be intensely involved in political activities.

Findings (High English and “Threat or Stake”):

(See Diagram 2) While tracing the differences in family dynamics and levels of political involvement within the sixteen interviews, I identified variations in the direct impact respondents felt the immigration marches had on their families. Due to the fact that some respondents felt they had more to lose than others, such as family separation, I coined the concept of “threat or stake” to explain variations in the intensity of their political involvement. This concept helped describe the motives for one teenager’s participation in the march and her friend’s lack of involvement. The uninvolved teen, Kerry, said that the difference between her and her friends who participated in the march was that her parents were not undocumented immigrants. Although Kerry’s father originally arrived to the United States as an undocumented immigrant, he is now naturalized. For both her and her parents, the absence of a “threat or stake” explains why neither actively engaged in the struggle over immigration policies.

When studying the parents’ interviews, I found that those who were not politically active tended to lack either English skills or a significant perceived threat. U.S.-born parents who had this immediate priority, because of the undocumented status of a spouse or parent, are significantly more public and leader-oriented. For example, one U.S.-born parent married to an undocumented migrant and described her strong interest in the debate. It was Mr. Henry’s undocumented status that influenced U.S.-born Mrs. Milenda’s sense of high threat or stake in the immigration debate. On the other hand, even undocumented parents appeared to be less intensely and publicly involved if they lacked English language skills.

Despite the fact that teens of U.S.-born parents may have opportunities and invitations to participate intensely in the struggle over immigration policies, it is not enough to push them to become more involved. Teens such as Kerry’s friends had undocumented migrant parents who participated in the marches and boycotts. These teens have had a perceived significant threat of possibly losing their parents and this fear

has motivated their political involvement. As English-speakers they also have the resources and advocacy skills to do so on their parents' behalf. This indicates that the parents' undocumented status trumps the teens' stable and secure citizenship and provides a significant threat or stake that propels political activism.

Future Research:

I found that in this study, I was extremely short on time and, consequently, had to work with a small sample size. Further research needs to be conducted on a larger sample size and should include the comparison of parents with legal permanent residency and naturalized status.

Conclusion and Implications: My two hypotheses were supported by the research findings: the political socialization of families with U.S.-born parents was demonstrated to be unidirectional from parent to offspring, whereas the political socialization process in families with undocumented parents was more bidirectional. In addition, family members with high English language proficiency and a perceived significant threat or stake in the struggle over immigration policies were more likely to be intensely politically involved in the immigration marches. These two findings suggest that teens of undocumented parents do not have to base their political involvement on the parents' example or support. Not only do U.S.-born teens have the potential to compensate for their undocumented parents' inability to become involved in politics, but U.S.-born parents also compensate for undocumented adults to whom they have a strong attachment.

Further implications suggest the following advocacy and future research issues: (1) apolitical, non-participatory migrant parents may be encouraged to become more active and engaged by reverse unidirectional socialization processes in which their more politically knowledgeable children introduce them to the political processes and opportunities found in the U.S. political system; and (2) accessibility to English language skills and citizenship status foster a victory in civic engagement in American institutions and politics by the entire immigrant family, including even those members who are currently undocumented.

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Lynwellyn H. Gudger¹

Social Factors as Determinants of Health Perceptions: Voices from a Southern Chicago Community

Abstract:

This paper is part of the Community Health Assets and Needs Assessment (CHMNA) conducted in four Chicago communities: Archer Heights, Amour Square, Bridge Park, and Gage Park. The objectives of this study are to identify the assets and needs of Chicago community residents and uncover what processes disparage health in Chicago communities. This paper situates and expands Richard Wilkinson's macro studies on income distribution and life expectancy in developed countries within a micro context. Using grounded theory and Atlas-ti software for qualitative research, the author conducted a content analysis of guided group interviews in Archer Heights. Participant responses reveal the need for more research on the relationship between social stratification and health. This study discovered that social factors created obstacles to managing healthcare in the Archer Heights community.

Introduction:

Medical health interlocks with the material social conditions of peoples' lives. Social status influences individuals' access and choices in relation to their medical wellness. Richard Wilkinson's (1999: 28) work on income distribution (ID) and life expectancy (LE) illuminates how social factors determine medical health. The association between ID and LE explicated by Wilkinson challenges the notion that personal income determines health (1999: 34). Although income has a bearing on health, mediating factors, such as equal distribution of a developed countries' wealth, may indicate that social stratification, represented by ID, influences the health of people in developed countries (Wilkinson, 1999: 32). Michael Marmot and Ruth Bell (2006: 39-30) take Wilkinson's findings further, insisting that social stratification accounts for health inequalities in developed countries. Marmot and Bell (2006:36) describe social stratification as, "unequal access to resources, privileges and esteem". H. Jack Geiger's (2006: 210-211) work adds additional dimension by identifying how social group constructions, such as gender, race, and ethnicity, temper access to healthcare. These studies suggest that social stratification mediates a person's access to healthcare resources.

This paper is part of the Community Health Assets and Needs Assessment (CHANA) conducted in four Chicago communities: Archer Heights, Amour Square, Bridge Park, and Gage Park. I focus my analysis on Archer Heights (AH). AH consists of a mostly White (53 percent) and Hispanic (43 percent) population (Arias, 2007: 6). 46 percent of the community's population is foreign born and 36 percent of the AH residents live below the poverty threshold according to the 2000 U.S. census (Mason, 2006). AH has higher rates of death from heart disease and stroke than the greater Chicago area and the U.S. as a whole (CDC, 2003). AH residents are also at a higher risk for cancer (Mason, 2006).

¹ This Study was conducted during the summer of 2007 with Dr. P. Rafael Hernandez-Arias of the Sociology Department.

In this study, I extend public health theories by Wilkinson (1999); Marmot and Bell (2006); and Geiger (2006) to include community perceptions of health. Wilkinson, Marmot and Bell, and Geiger's theories elucidate respondents' experiences with the U.S. healthcare system in AH. The interviews also reveal that the social influence in health is not simply contingent on a person's socioeconomic status but involves a complex competition between social concerns and health concerns.

Methodology

The overall aim of the CHANA project is to measure the health assets and needs within AH. The project is a multi-method study and the group interviews are a part of the second stage of the project. The interviews were conducted from December 2006 to February 2007 by an independent interviewer. The project is a collaboration between Alivio Medical Center, four Community-based Organizations, the Chicago Department of Public Health, and DePaul University. Dr. P Rafael Hernandez-Arias, research director of the project and assistant professor at DePaul, supervised the interviews. During the summer of 2007, I worked with Dr. Hernandez and several other DePaul students on the analysis of the group interviews. The data consists of four guided adolescent (ages 12-19) group interviews and two guided adult (ages 19-50) group interviews, each containing four to 14 participants. The discussion guide contained four categories: health and illness, community health factors, personal health, and future of the community. From four initial categories, I conducted a content analysis using a grounded theory approach and Atlas-ti software for qualitative content analysis, formulating theoretical explanations of the experiences of community resident health situations. I used three coding phases: initial, focused, and theoretical (Charmaz, 2006: 47-53). The theoretical stage revealed the ways in which community members viewed their health needs.

Results

Responses to the discussion guide categories uncover a relationship between the inabilities of community members to fulfill their healthcare needs and social factors. Excerpts represent these three theoretical codes: social interaction and adequate healthcare, self-medication/alternative health methods, and demoralization. The category "social interaction and access to adequate healthcare" refers to the community's measurement of health services. AH community members discussed inadequacies in both health facilities and healthcare professionals. "Self-medication and alternative methods" describes interviewees managing their own healthcare by seeing non-professionals for treatment or medicating themselves. "Demoralization" refers to the community's disbelief that they can change social inequalities. The categories "social interaction," "self-medication," and "demoralization" highlight the link between social and medical health.

Community Health Factors- what conditions influence health? Impressions by health professionals can hinder a patient's ability to manage care when it creates a hierarchal power struggle that silences the patient:

When I go here to the doctor, the doctor has so many people, he comes in and "let's see, what do you have? Oh, no

that is a virus and it is going to clear up right away, Okay, your [sic] ready, I gave you a prescription” but they don’t even let you talk! (laughter) (GI 131:162)

The respondents also see silencing as an impropriety on the part of the physician, which lowers expectations of care:

[It is like] they divide our illnesses to make the most money from our insurance...”If you brought him [her son] in for his vaccine[s], I can’t check him out for his cold” (GI 131:162)

The respondent positions silencing as a condition of not having insurance:

I don’t have insurance, many people don’t, so they throw all of us who don’t have insurance...to a place where we have to suffer in order to get a doctor to see us, and they give us an appointment to go in a year...They are very cruel to those of us who do not have insurance. (GI 131:162)

The patient describes the interaction between medical faculty and herself as “cruel” because of her insurance status, i.e. economic status.

Personal Health- how do community members maintain health? Poor interaction between physicians, hospitals, and patients diminishes the effectiveness of available services:

I went to a doctor too many times and I went to the emergency room because I have something in my throat ...they found nothing wrong with me and then they [the respondent’s parents] called this one lady that does that kind of thing [holistic medicine] and then the next day after, I woke up and it was gone. And when I went to the doctor, they didn’t find anything. (GI 115:334)

Professional healthcare does not meet the patient’s standards; therefore, alternative methods become a viable option for patients. I do not mean to weight the validity of alternative methods of treatment; my intention is only to weight the conditions that turn patients away from the hospitals.

Future of Community- what will the conditions of health is in the community in the future? Community members recognize the obstacles to healthcare explained in the former examples. Silencing performed in clinic/hospital rooms extends outside of them when racism and the current debates on immigration stand in the way of social justice:

[We are] scared, with the situation the way it is. But I mean, if you get enough people, it’s safe to stand up and say, “Hey, we’re here. We’re going to come out, and be counted, but don’t take that against us. And don’t use that against us by saying, oh you’re illegal, too. (GI 146:521)

Silencing by political rhetoric did not saturate the interviews; however, it represents a sentiment of devaluation the community feels because of dis-function in its social institutions.

Discussion

Physical health is not the central issue on the minds of Archer Heights (AH) community members. Medical conditions that would seem important to most individuals were rarely discussed. For instance, cancer was mentioned in only two interviews. The community’s greatest health problem, according to Chicago Community Health Profile data, is heart disease (Mason, 2006), which none of the respondents mentioned. Community members limited their discussion to social health; many of the interviews main health concern were social problems in the community. For example, the problem of “gangs”

appeared in 83 percent of the interviews as a health concern and “family disintegration” in half. Health conditions and social conditions of this community intertwined in the community’s perceptions of health and healthcare. Indirectly, the respondents realize that their social conditions limit their health.

Implications

How the AH community identifies the health of their institutions gives insight into the decisions they will make in relation to their health. The uneven distribution of resources in the United States affects AH residents in how they regard and use the services available to them. The silence in the doctor’s office, clinic, and current discourse about immigrant health does not afford many AH residents the ability to speak about their medical health with the focus that medical health requires. Wilkinson and Marmot and Bell recommend attempts by governing agencies to redistribute the wealth in developed countries (Wilkinson, 1999: 33; Marmot et al, 2006: 40-41). Geiger suggests that governing agencies must step up but also that the self-interests of both healthcare providers and patients must agree (2006: 217). While these are important features of change in the U.S. healthcare system, they are only a beginning. When communities lose faith in healthcare and change, more must be done to convince them that reform will work. This may mean a reeducation of AH community members through community-based initiatives. It also may require the U.S. to make changes in how it treats health and implements healthcare programs.

While Wilkinson, Marmot and Bell, and Geiger’s studies offer important revelations about how we view health in society, the convoluted statistical conversation does little to chronicle the actual situations of the people affected by health disparities. Marmot and Bell and Geiger see injustice in these disparities, and so do the many who must negotiate these complex social factors in their daily lives. In this study, I have demonstrated some ways that the Archer Heights community negotiates social factors and health outcomes. These findings suggest that Wilkinson, Marmot and Bell, and Geiger’s work offers a useful introduction to how social health influences physical health but there are still areas that need further development.

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The Media, Bare Life, and the Other

Abstract: *The current War on Terror in the post 9/11 era has established a new form of discursive power. This new form of discursive power is commonly referred to as Islamophobia. The media globalizes Islamophobia on large scale. This paper examines The New York Times and Financial Times for Islamophobic language. These newspapers are particularly important as sources of current events in the English speaking world. Particularly, the examined newspapers (although not the sole perpetrators) indicate the spread of Islamophobia. This paper finds that the use of prejudicial language is common in reporting on Muslims and Middle Eastern affairs. The spread of Islamophobia may project the grounds for an increase of discrimination and/or biased treatments towards Muslims through discourses implemented within the media.*

This study seeks to explore how the media represent Muslims with regard to the Global War on Terror (GWOT) and explicate the connection between these representations and Giorgio Agamben's concept of "bare life?" This paper examines two particular outlets of Western media: *The New York Times* and *The Financial Times*. By situating articles on Muslims and Islam in a broader context of social and political theory—particularly the works of Edward Said and Giorgio Agamben—regarding discourses of power, I intend to expose the power relations inherent in the representations of the East and West. These representations effectively reduce Muslims to Agamben's "bare life," or bodies without recognized rights.

In *Homo Sacer: Sovereign Power and Bare Life*, Agamben writes that human life is subject to biopolitics, which is the power to actively separate citizens, or qualified life, from simple bodies, or "bare life."² The concept of "bare life" refers to bodies without recognized rights. In simple terms, biopolitics defines the political power that asserts how certain bodies acquire specific meanings (such as names, gender, race, etc.) and how those meanings affects one's status in the political-legal realm. The separations in the quality of life are possible through the sovereign rule of law (the juridical) that constitutes recognized subjects as "bare life."³ Those not protected by the juridical—the unrecognized subjects—exist in what Agamben considers "bare life."⁴ Arabs, specifically Muslims, may in extreme cases be excluded from the juridical. An example of the exclusion of Muslims from the juridical would be the detainees at Guantanamo Bay.⁵ Guantanamo Bay detainees are the most extreme example of this. They are stripped of political and legal rights, and therefore exist outside of the juridical. From this, one can see that these Muslims are what Edward Said refers to as the "other." The "other" is reduced to narrow conditions of possibility and, in the most

extreme cases, "bare life." Essentially, the relation between the West and the East has escalated beyond Said's Orientalism and has reduced the people of the East, specifically Muslims, to Agamben's "bare life." The subjugation of the East to "bare life" is particularly prevalent in the West in light of GWOT

The concept of Orientalism exposes the bias of texts dealing with the East, particularly Islam. This bias can be illustrated through the "self/other" dichotomy which situates the West as the "self" (Occident) and the East as the "other" (Orient). This dichotomy excavates a process whereby the Occident creates the Orient in opposition to itself. In doing so, the Occident creates the relationship between East and West and defines the terms of engagement between the two.⁶ This dichotomy allows us to see the relationship between the Occident and the Orient as a struggle for power. But since the Occident, and only the Occident, reserves the power to define rationality, the power dynamic exposes an inherent inequality. The Occident will always be seen as rational, whereas the Orient is viewed as irrational. Since the Occident creates the Orient in opposition to itself, the Orient can never have the rights by which the Occident is empowered.⁷ That being said, this dichotomy is a useful theoretical tool in explaining post-9/11 representations of Muslims in the status quo, particularly, the representation of Muslims and Islam in the current GWOT.

Western media depict Islam as repressive, regressive, and aggressive (among many other negatively perceived adjectives). Contemporary media outlets, such as television and newspapers, depict Islam through images of pubescent boys with bombs strapped across their chests and women in hijabs and niqabs hiding quietly in a corner away from the men.⁸ In the background of these images consumers will see a war torn area surrounded by sand, dirt, and ruins.⁹ Through these images, the West (via newspapers in terms of this study) is creating "truth." This "truth" is defined as how the West sees the East and Islam. This truth defines Islam, Muslims, and the Middle East to be violent, repressive, and backwards. Specifically, how the West (represented by media, particularly newspapers in this case) sees the East is how the reader should, and will, perceive Muslims and their livelihoods.

The individual perceptions of journalists form these representations. These individually created representations proliferate within the media, allowing for those representations to obtain the title of "truth," making an individual perception an objective reality. This is problematic because it limits the conditions of possibility for other representations as well as creating the potential for legitimizing material disparities. Constant

6 Gandhi, Leela, *Postcolonial Theory*. (Edinburgh: Edinburgh University Press, 1998.), 73.

7 Said, Edward W. *Orientalism*. New York: Random House, 1979. 4-13.

8 For examples see the following articles: Elliott, Andrea. "Where Boys Grow Up to Be Jihadis." *The New York Times* 25 Nov. 2007. <<http://www.nytimes.com/2007/11/25/magazine/25tetouan-t.html>>.

9 Masood, Salman. "Taliban Leader is Said to Evade Capture by Blowing Himself Up." *The New York Times* 25 July 2007: a3. Perlez, Jane. "Muslims' Veils Test Limits of Britain's Tolerance." *The New York Times* 22 June 2007: a1+1, and Glanz, James, and Stephen Farrell. "More Iraqis Said to Flee Since Troop Rise." *The New York Times* 21 Aug. 2007: a1+.

1 Advised by Professor Shiera Malik, Political Science Department, Winter 2008.

2 Agamben, Giorgio, *Homo Sacer: Sovereign Power and Bare Life*. (Stanford: Stanford University Press, 1995.), 6.

3 Ibid. p. 83.

4 Ibid. p. 28.

5 Davis, Morris D. "The Guantanamo I Know." *The New York Times* 26 June 2007.

reiteration of the same perception results in the acceptance of this image of truth.

For example, in articles about possible terrorists, suspects, and prisoners, the media present images of a relatively fair to dark skinned male carrying himself with various vindictive facial expressions peeking through a full-grown beard.¹⁰ At other times, images show men with weapons at a mosque or during prayer, which creates a direct, yet incorrect, correlation between Islam and violence. Yet, we have no evidence of an actual conceptual correlation between Islam and terror.

Images are not the only form of Orientalist discourse in the media today. Frequently, the terms Islam, Muslims, “extremists,” “terror,” “war,” and “violent” follow references to the Arab World.¹¹ In other scenarios, descriptions such as “enemy” or “combatants” and “fundamentalists” are used to create the nature of the “other” in the media. Such extreme language in relation to Islam and Muslims in the media, on a daily basis, conditions society to believe that Muslims are indeed irrational, extreme beings. The lack of neutral language in reports of the Islamic world perpetuates the discursive power discussed. The perpetuation of this discursive power has political implications for how Islam and its constituents are continuously represented.

I have provided a brief list to illustrate how the “self/other” dichotomy exists in the media today. Certain words/phrases have been highlighted to indicate just how language creates the Islamic world as being the “other,” effectively subjugating Muslims to Agamben’s “bare life.”

- “In a city plagued by *suicide bombers* and *renegade militias*”¹²
- “A *bloodbath* at the *mosque* brings rage in the *madrassa belt*”¹³
- “the *violent fanaticism* it promotes has not only survived, it has proliferated”¹⁴

A number of articles constantly referred to Islam and Muslims as *them, they, they’re, it*, etc. This type of language in comparison to the constant reiteration of American soldiers being heroic, strong, and saviors drastically establishes the realm of the “other,” by situating the strong West in opposition to the weak East, perpetuating the Orientalist discourse. However, it must be clarified that this is not an indictment of *The New York Times* or *Financial Times*; the two media outlets are used to represent Western media on a grand scale. The newspaper articles function as empirical evidence that illustrates the discursive power the media perpetuates in the post 9/11 era. This problem can be identified beyond *The New York Times* or *Financial Times* by examining almost any contemporary Western media outlet. Their perpetuation of the Orientalist discourse creates this constant dilemma of truth and the manipulation of ideals conceived as truth.

10 Liptak, Adam. “Spying Program May Be Tested by Terror Case.” *The New York Times* 26 Aug. 2007: 1+.

11 Gordon, Michael R. “In Baghdad: Justice From Behind the Barricades.” *The New York Times* 30 July 2007, sec. 1: 1+. Oppel Jr., Richard A. “Falluja’s Calm is Seen At Risk If U.S. Leaves.” *The New York Times* 19 Aug. 2007: 1

12 Gordon, Michael R. “In Baghdad: Justice From Behind the Barricades.” *The New York Times* 30 July 2007, sec. 1: 1+.

13 Johnson, Jo, and Farhan Bokhari. “Red Line Drawn.” *Financial Times* 11 July 2007: 11

14 Fidler, Stephen, and Roula Khalaf. “From Frontline Attack to Terror by Franchise.” *Financial Times* 5 July 2007, sec. 1: 5

With the acceptance of the previously articulated perceptions as being “truth” about Islam and its constituents, Muslims are currently vulnerable to be subjugated to Agamben’s concept of “bare life.” By existing in opposition to the West, seen as good, the East, particularly Muslims, through the Orientalist discourse, represent all that is bad and backwards. In doing so, their punishment for being “bad,” as perceived through the media, is being placed outside of the juridical, under “bare life.” As articulated above, Guantanamo Bay is the most extreme example of this. Detainees at the Guantanamo Bay camps often were Middle Eastern Muslims falsely accused of being terrorists or supporting terrorist organizations.¹⁵ Their subjugation to “bare life” is indicated by reports from an unidentified FBI agent stating:

On a couple of occasions I entered interview rooms to find a detainee chained hand and foot in a fetal position to the floor, with no chair, food or water,” an unidentified FBI agent wrote on Aug. 2, 2004. “Most times they had urinated or defecated on themselves, and had been left there for 18 to 24 hours or more.”¹⁶

The result of this discourse in the media can be Islamophobia. Specifically, the implications of Islamophobia in the post-9/11 era place Muslims and the Islamic world outside of the juridical into the realm of “bare life.” The “self/other” dichotomy is clear here because we see the West contrasted with the East, whose Muslim inhabitants are presented to be barbaric and ruthless, with bombs strapped across their chests. The “truth,” thus, is established that Muslims are the suspects of this violent crime of terrorism and the West resides in a state of fear as the mere victims. Additionally, these representations show the subjugation of Muslims to “bare life” by illustrating how Muslims in the Middle East are poverty stricken and acceptable victims of violence.

Historically significant events, such as the atrocities that occurred in Hitler’s Germany and the Holocaust, Rwanda, and Yugoslavia, received substantial discursive treatment from media coverage. Agamben uses the concept of “bare life” to refer to Jews and the Holocaust. It can be inferred, since Muslims are now the subjects of “bare life,” that the discourse of Islamophobia can, in some circumstances, leave Muslims similarly vulnerable. The extreme potential of this vulnerability can already be seen in the case of those held in Guantanamo Bay where the reduction of Muslims to “bare life” is readily apparent.

15 Tim, Golden, and Don Van Natta. “U.S. Said to Overstate Value of Guantánamo Detainees.” *The New York Times* 21 June 2004. 28 Jan. 2008 <<http://www.nytimes.com/2004/06/21/politics/21GITM.html?ex=1403150400&en=4e5ce246b71d48df&ei=5007&partner=USERLAND>>.

16 “War Crimes.” *The Washington Post* 23 Dec. 2004. 30 Jan. 2008 <<http://www.washingtonpost.com/wp-dyn/articles/A20986-2004Dec22.html>>.

Lindsay Konieczny¹

How Sources of Tobacco Vary Among Underage Smokers

Abstract: *Although it is illegal for persons under the age of 18 to purchase tobacco, most smokers report the ability to access tobacco as a minor. This easy access to tobacco contributes to unacceptably high levels of tobacco smoking by minors. This study utilized chi-square analyses to examine the use of commercial and social sources of tobacco among 669 minors who use tobacco. Results showed that established tobacco users were more likely to use a diversity of tobacco sources, including social and commercial sources. Older students also tended to utilize both commercial and social sources for tobacco as compared to students in younger grades. Implications of these findings are discussed.*

Every day 3,000 U.S. youth become regular tobacco users (Pierce, Fiore, Novotny, Hatziandreu, & Davis, 1989). About one-third of these minors will eventually die from a smoking related disease (Centers for Disease Control, 1993). Therefore, in order to prevent their access to it, it is important to investigate how underage smokers illegally acquire tobacco. Previous research on this topic has identified some of the settings where minors acquire tobacco. For example, a study by Harrison Fulkerson, and Park (2000) indicated that fewer than five percent of cigarette smokers exclusively rely on commercial sources of tobacco. Harrison et al. (2000) also found that as age increases, users are more likely to use commercial sources (e.g., gas stations, grocery stores) for tobacco. Similarly, Jason, Billows, Schnopp-Wyatt, and King (1996) found that illegal commercial sales rates for younger students were lower than sales rates for high school students.

The purpose of this study was to identify whether underage smokers who report using both commercial and social sources for tobacco differ from minors who rely exclusively on social sources for their tobacco in relation to their school grade level and smoking history. It is important to understand how different types of minors obtain their tobacco to more effectively reduce the availability of tobacco to minors, and ultimately prevent underage tobacco use. It is hypothesized that minors who report using both commercial and social sources of tobacco will have smoked more cigarettes in their lifetime than minors who report using only social sources. It is also hypothesized that a higher percentage of students in high school will report using both commercial and social sources of tobacco than students in the middle school.

Methods

Participants

This study surveyed 669 students who identified themselves as current smokers (i.e. smoked in the past 30 days) and reported getting tobacco through commercial and/or social sources. This target group was selected from a larger sample of 10,748 students from the Youth Tobacco Access Project

Student Survey (YTAP). The YTAP Student Survey is comprised of data from students in 40 middle and high schools across Illinois. Active parental consent was obtained. Members of the research team administered surveys to students in classrooms or small groups. Students in grades 7-10 were surveyed. This study was approved by the DePaul University Institutional Review Board. Dr. Leonard A. Jason was the principal investigator of the larger grant from which these data were obtained.

Measures

The current study used questions from the Tobacco Access Project Student Survey. Students in seventh and eighth grade were coded as middle school students, and students who reported being in ninth and tenth grade were coded as high school students. To assess lifetime cigarette use, students were asked: "About how many cigarettes have you smoked in your entire life?" Students who reported 100 or more cigarettes were coded as experienced smokers whereas all other smokers were coded as non-experienced smokers. Students were also asked: "In the past 30 days, what are all the different ways that you obtained tobacco from another person?" And, "In the past 30 days, what are all the different ways that you got tobacco on your own?" Students were able to check off all of the different ways they obtained tobacco through both commercial (e.g., purchased at a store) and social sources (e.g., given cigarettes by family members). The vast majority of respondents fell into two large categories, those who used only social sources and those who used both commercial and social sources. All individuals were classified into two categories (i.e. social sources only versus commercial and social sources).

Procedure

Chi-square analyses were used to test the study's hypotheses.

Results

I hypothesized that respondents who claimed to use both commercial and social sources of tobacco had smoked more cigarettes in their lifetime than those who rely solely on social sources. A chi-square analysis showed that 67 percent of those who used both commercial and social sources versus 34 percent of respondents who only used social sources had smoked more than 100 cigarettes in their lifetime, $\chi^2(1, N = 668) = 70.47, p < .01$.

I also hypothesized that a higher percentage of students in high school will report using both commercial and social sources of tobacco than students in middle school. Results from another chi-square analysis indicates that 44 percent of high school students (grades 9 and 10) reported using both commercial and social sources versus only 26 percent of students in middle school (grades 7 and 8), $\chi^2(1, N=669) = 18.35, p < .01$.

Discussion

This study investigated how utilization of tobacco sources differed in smoking history and grade level of tobacco users. The study confirms the first hypothesis, indicating that minors who report using both commercial and social sources of tobacco smoked more cigarettes in their lifetime than those

¹ Advised by Dr. Leonard A. Jason and Monica Adams, Psychology Department, Center for Community Research; funding provided by the National Cancer Institute (grant number CA 80288).

who report using only social sources. Underage smokers with a more established tobacco habit or addiction may need to rely on multiple sources or avenues to obtain tobacco, whereas minors who smoke less frequently may be able to secure tobacco through friends and family. Additionally, minors who smoke a greater quantity of cigarettes may become more successful at purchasing tobacco over time. The study also confirms the second hypothesis, indicating that a higher percentage of high school students use both commercial and social sources of tobacco than do middle school students. Students in high school may have greater ability to purchase tobacco due to their older appearance. These students may also be acquainted with store clerks who are both closer to their age and more willing to sell them tobacco illegally.

In middle school, 26 percent of students report using both commercial and social sources of tobacco. Therefore, almost three quarters of middle school students are relying exclusively on social sources to obtain tobacco. These findings underscore the need to target social sources of tobacco. While there has been a sustained effort to reduce underage purchases of tobacco through commercial sources, it appears that much work still needs to be done toward eliminating social sources of tobacco (Croghan, Aveyard, Griffin, & Cheng, 2003).

Limitations

One limitation of the measure utilized by the current study is that students were not asked to indicate the frequency with which they relied on commercial and social sources. Therefore, we were unable to determine whether youth used one type of source more often than another. Future studies ought to identify the frequency that youth obtain tobacco from a variety of sources.

In order to effectively reduce availability of tobacco to minors, it is necessary to reduce both commercial and social sources of tobacco. Anti-tobacco policies need to be developed that relate both to commercial access as well as the social exchange of cigarettes. As one example of a policy, communities might enact and enforce possession, use, and purchase laws that may reduce the ability for youth to engage in tobacco exchanges in public. Policies that are enacted need to be comprehensive, as they need to both reduce youth commercial availability of tobacco and social sources of acquisition.

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Samuel H. Raymond¹

“Top-Down” Egyptian Economic Liberalization: Sinking or Swimming in Islamic Waters?

Abstract: *The Egyptian Government under President Hosni Mubarak has long promoted a program of economic liberalization for many years with the privatization of state companies and the easing of restrictions on foreign direct investment. As a result, the Egyptian economy has grown at impressive rates and international monetary institutions such as the IMF and World Bank have heralded the increases in exports and Gross Domestic Product (GDP). On the other hand, the Muslim Brotherhood (MB), the largest fundamentalist Islamic group in Egypt, has been largely opposed to the government’s changes to a Western, liberal economic system. It raises questions about whether these policies of economic liberalization will actually reduce the overwhelming poverty within the Egyptian population. This paper considers the extent to which economic benefits are trickling down within the Egyptian society and how the possible lack of economic distribution empowers the fundamental Islamists.*

The most recent era of Egyptian market liberalization began in earnest with the May 1991 exchange of letters with the International Monetary Fund (IMF) and a subsequent agreement with the World Bank (WB) the following September. The economic policy shift, traditionally recognized as a “structural adjustment,” mandated a convertible Egyptian pound, transparent budgetary practices, and the privatization of state held enterprises. The IMF and WB would reduce Egypt’s foreign held debt by 50 percent in return for the implementation of reforms (Kienle, 147-8). The program, named the Economic Reform and Structural Adjustment Program (ERSAP), marked the beginning of positive growth for the Egyptian economy. From 1990-2004 the Egyptian economy moved from import based to export based (HDR-2006), indicating a healthy economic trend from the Western perspective.

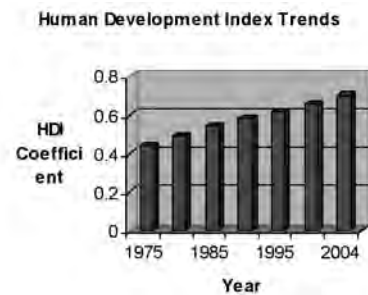
According to the UN’s 2006 Human Development Report, the quality of life for the Egyptian population has improved at a consistent pace following the *Intifah* (the initial economic “opening” c. 1974) through the ERSAP period (HDR). Egypt has experienced positive technological, educational, and medical developments according to the United Nation’s Human Development Index (HDI) (See Figure 1).

From 1990 to 2004, Egypt has witnessed positive technological development with increases in telephone mainlines from 29/1000 ppl. to 130/1000 ppl.; cell phone subscriptions from 0/1000 ppl. to 105/1000 ppl.; and internet users from 0/1000 ppl. to 54/1000 ppl. Education also improved in this time period with adult literacy increasing from 47.1 percent to 71.4 percent, youth literacy increasing from 61.3 percent to 84.9 percent, and primary school enrollment increasing from 84 percent to 95 percent with 99 percent of students now reaching grade five (HDR-2006).

Positive trends in health factors are also apparent. Be-

tween 1975 and 2005, life expectancy rose from 52.1 years to 69.6 years, and infant mortality fell from 157/1000 live births to 26/1000 live births. The under-five mortality rate has also dropped from 235/1000 live births to 36/1000 live births (HDR-2006).

Despite this increased standard of living, economic benefits have not trickled down to the majority of Egyptians in the post-liberalization period. In 1996, the UN’s Human Development Report indicated a rise in unemployment from 8.6 percent in 1990 to 11.3 percent in 1995. Other sources contend that unemployment fluctuated between 12 percent and 17 percent during this period; according to “politically sensitive groups,” recent graduates experienced unemployment between 24 and 35 percent (Kienle, 149). During this time, the poverty level rose 23.3 percent in rural areas and 22.5 percent in urban areas; 50.2 percent of Egyptians polled in 1996 were

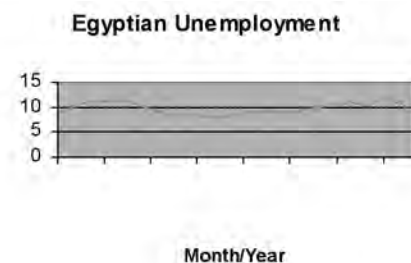


classified as “moderately poor.” In terms of standard of living, 43 percent of those interviewed in the mid 1990s experienced improvement, but 36 percent experienced deterioration and 21 percent experienced no change (HDR-1996).

More recent studies further suggest a great divide between the rich and poor within Egypt. Such a divide may decrease the likelihood of societal acceptance and coexistence between the Islamic society and the pro-Western economic policies implemented by Mubarak’s authoritarian government. In a 1999 study, Timothy Mitchell maintained, “the state has turned resources away from agriculture, industry, and the underlying problems of training and employment. It now subsidizes financiers instead of factories, speculators instead of schools” (Wheeler, 638).

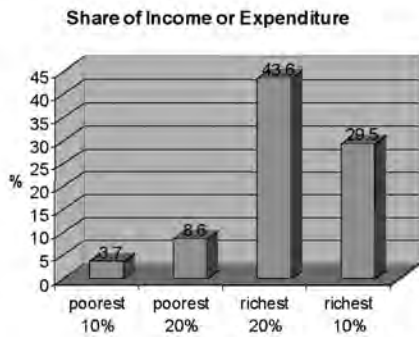
The 2006 Human Development Report (HDR) corroborates the great divide between rich and poor in Egyptian society during the survey year 1999-2000 (see right). The report places the Egyptian GINI rating, a statistical tool that measures overall inequality, at 34.4 (HDR, 2006). Contextually, Egypt’s GINI ratings are higher than Rwanda (28.9) and Uzbekistan (26.8), lower than Bolivia (60.1) and South Africa (57.8), and equal to Indonesia (34.3).

The Egyptian economy has also undergone significant



¹ Advised by Dr. Scott Hibbard, Political Science Department, research completed Winter 2007.

price increases as the government subsidies were eliminated. Egyptians, for decades, have relied on government subsidized food, education, transportation, and healthcare. International financial institutions are leery of such programs which cost the Egyptian government LE100 billion annually. However, efforts to eliminate public debt by cutting subsidies are controversial since approximately 20 percent of Egyptians live on less than \$2 per individual per day (Al-Ahram). Nobel prize-winning economist Joseph E. Stiglitz observes that “service sector liberalizations might have social consequences for the poor...[and] has been accompanied at times by a reduction in competition and increase in prices” (Stiglitz and Charleton 119).



A dissenting view of Egyptian free-market reform that capitalizes on the economic discontent of the Egyptian people is that held by the Muslim Brotherhood (MB). The MB is the most important Islamic organization within Egyptian society and provides the main opposition to the Mubarak regime. The effectiveness of the Mubarak government’s policies at distributing economic benefits directly impacts the strength of the opposition. It must be noted, however, that the Islamic opposition to the Mubarak government is divided on acceptance of Western liberal economics.

The MB is composed of two ideological constituencies: one of an enfranchised, devout bourgeoisie that tentatively accepts Western liberalism and one of disenfranchised urban youth that does not. In May 1981, the MB’s *Al-Dawa* newspaper published an editorial reflecting the ideological position of the latter sub-group:

The United States is the leader of the international crusade and neo-colonialism. The Muslim world in general and the Arab region in particular are considered prime targets for American designs because of their energy resources, strategic location, and tremendous markets. The United States would not permit competition from any rival in its quest to monopolize the pillage of Islamic wealth...The United States implements its schemes through both its own CIA and the client Muslim rulers who sold out their religion, country, nation, and honor. The price for selling out is for these client rulers to stay in the seat of power (Kassem, 158-9).

The extremists’ criticism of the foreign presence within their home market served to marginalize them further in relation to the pro-Western Mubarak Government (Ates, 140). The

youths who compose the more extreme elements of the MB have been born too late to reap the benefits of jobs and social advancement under the Arab Nationalism that their parents had known. Their political, social, and economic discontent is expressed within Islamist terms as a weapon in a new battle for political domination (Kepel, 67). These young ideologues are battling for religious and national independence, which leads to fervent opposition to the IMF and United States, two powerful external actors that directly influence the economic policies of the Mubarak regime (Utvik, 32).

Concurrently, non-violent espousal of fundamental Islamic values held by the moderate, devout bourgeoisie defines the second movement within the MB during the 1980s and 1990s. Unlike the anti-reform views of young radicals, the policies of liberalization were in the interest of these middle class members and thus the economic liberalism and moderate MB became mutually supportive (Ates, 137).

Thus, two social groups within the MB held the same fundamentalist Islamist belief structure: the huge mass of young, urban poor from deprived backgrounds and the devout bourgeoisie who composed the Egyptian middle class (Kepel, 67). Despite their common religious understandings, a split over economic liberalization policies would drive a wedge between the two factions of the MB.

In conclusion, MB coherence or disintegration can be understood through recognition of these diametrically opposed viewpoints concerning economic liberalization. The long-term likelihood of overall societal acceptance of reform can be predicted through further quantitative studies related to the allocation of economic benefits. High levels of unemployment, poverty, and the low levels of Human Development are correlative to the prevalence of extreme, anti-establishment Islamist factions. It may also be assumed that if the quality of life improves under policies of economic liberalization the likelihood of societal acceptance of these policies would also rise.

Due to the repressive political climate within Egypt, information on the strength of the MB is exceedingly difficult to establish. The Economist Intelligence Unit estimates that in the October 2005 Parliamentary elections, MB representatives won approximately 20 percent of the popular vote (EIU, 6). It has yet to be clearly established what the relationship between the devout bourgeoisie and the urban youth is likely to be in the future. If poverty and unemployment remain prevalent, the enfranchised MB will have a choice: either ally themselves in direct opposition to the Mubarak government or submit to co-optation and enjoy the spoils of liberalization.

The cost of adjusting from centralized economy to Western-style market economy will be high, giving the MB a vested interest in maintaining a protected economy. If Egyptian societal volatility increases due to lack of economic benefits, the Mubarak regime may be required to slow or suspend liberalization in hopes of pacifying the public, despite mounting public debt and international disapproval. However, further study is required to identify the full impact of different sectors of Egyptian Islamists on the logistics of Egyptian economic liberalization.

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The Incubator: American Foreign Policy, the Afghanistan War, and Al-Qaeda

Abstract: *The Soviet-Afghanistan war of the 1980s provided the context from which the Islamist organization Al-Qaeda emerged. Fueled by covert support from the United States, Pakistan, and Saudi Arabia the mujahedin (holy warriors) fighting in Afghanistan defeated the Soviet army and legitimized a form of militant Islamic extremism that would live long beyond the conflict. The subsequent fallout of these events manifested itself in the terrorists of the 1990s and eventually the tragedy of the 9/11 attacks. According to Chalmers Johnson, hostile actions against Americans, civilian and military, home and abroad, taken in response to covert actions by the United States in other countries is termed, by the Central Intelligence Agency, “blowback”. This paper argues that the formation of Al-Qaeda is the blowback of the Soviet-Afghan war.*

The 1980 Soviet-Afghanistan war helped to hasten the end of the Soviet Union and ushered in the emergence of a new unipolar world order. As an unintended consequence, the Afghan war provided the space, time, ideology, and pressure necessary to turn separate, nationally focused Islamist movements into a worldwide terrorist network, Al-Qaeda. The multilateral support given to the mujahedeen by Pakistan, Saudi Arabia, and the United States helped defeat the Soviet Union and created a movement that reverberated across the globe. According to Chalmers Johnson, “The attacks of September 11 descend in a direct line from events in 1979, the year in which the CIA, with full presidential authority, began carrying out its largest ever clandestine operation—the secret arming of Afghan freedom fighter to wage a proxy war against the Soviet Union, which involved the recruitment and training of militants from all over the Islamic world.”²

It was never the intention of the United States and its allies to create what scholar Gilles Kepel calls a “universal Islamic personality.”³ Nonetheless, such is the lasting legacy of the Afghan war. Unlike other conflicts of the Cold War, the Soviet-Afghan conflict has long-lasting implications because it aided the formation of a new form of Islamic ideology, specifically that of Al-Qaeda. Five main points make this case study unique, and, in my opinion, these specific points all play a significant role in the evolution of the Islamic movement from a domestic case study to a transnational association. These include a common location, a home for the displaced, a singular goal with joint ideals, the new found ability to defeat a super power, and the chance for martyrdom. These five main points coalesced exceedingly well in Afghanistan to create a breeding ground for Islamic radicalism and global jihad.

The significance of the Afghan conflict is evident in the opportunity it offered to many Arabs in the Muslim world. It

provided a platform upon which they could join their Afghan brothers to fight against one of the world’s superpowers with the assistance of the United States. It provided a common venue for militants from around the globe to meet and interact with one another. The Afghan jihadists who came to fight, such as leaders Osama Bin Laden, Ayman al-Zawahiri, and Abdallah Azzam, came from every country and were from every background. They provided a multitude of ideals and personal experiences upon which to build their idea of global jihad. “The Islamist recruits came from all over the world, not only Muslim-majority countries such as Algeria, Saudi Arabia Egypt and Indonesia, but also such Muslim-Minority countries as the U.S and Britain.”⁴ These men subsequently coalesced around a militant ideology of Islamic activism and formed a loosely connected network of jihadist fighters that would continue to cooperate long after the Afghan war’s conclusion.

Many of the Arab jihadists came to fight based on religious convictions and the chance at martyrdom.⁵ The men were drawn to the “Afghan Cause” after a series of *fatwas* (religious rulings) were issued “interpreting the Soviet intervention as an invasion of the territory of Islam.”⁶ Although the Soviets invaded the country intending to prop up the current failing communist regime in Kabul, the people of Afghanistan saw it as a religious affront that threatened their way of life due to the atheistic beliefs of the Soviets. There were, however, others who had more worldly concerns. Fearing the imminent invasion of their own land after the fall of Afghanistan, Pakistan was more than willing to become a covert backer of the war against the Soviets in Afghanistan. Also afraid of the iron fist coming down upon their oil fields and warm water ports were the Saudi Arabians, who felt that it was inevitable for the Soviets, after they demolished Afghanistan, to head for their own country and its vast riches and resources.⁷ The United States saw the proxy war widening in Afghanistan as a chance to contain the Soviet Union’s expanse into the Middle East and possibly obliterate them from the world stage.⁸

Due to the nature of the enemy, the international order created by the Cold War, and the surmounting fear of nuclear attacks, there was a joint decision to keep the American aid and assistance as covert and unnoticed as possible. As far as President Reagan was concerned, “the Soviet threat was paramount because a long-term nuclear—and conventional—arms buildup by the Soviet Union had shifted the balance of power in its favor.”⁹ The United States feared that if the Soviets had evidence of the aid provided to the Afghans by America, they would invade Pakistan and force the United States to

⁴ *Good Muslim, Bad Muslim: America, The Cold War, and the Roots of Terror.* Mamdani, Mahmood, (New York, Doubleday, 2005.) p. 126.

⁵ *The Looming Tower: Al-Qaeda and the Road to 9/11.* Wright, Lawrence, (New York, Vintage Books, 2007) p. 112-13; *Ghost Wars: The Secret History of the CIA, Afghanistan, and Bin Laden, From the Soviet Invasion to September 10, 2001.* Coll, Steve (New York, Penguin Books, 2004) p. 134.

⁶ Kepel, p. 139.

⁷ Kepel, p. 137.

⁸ Wright p. 114.

⁹ *From Revolution to Apocalypse: Insurgency and Terrorism.* O’Neill, Bard E, (Washington, D.C., Potomac Books, 2005) p.9.

¹ Advised by Dr. Scott Hibbard, Political Science Department; project completed Fall 2007.

² *Blowback: The Costs and Consequences of American Empire.* Johnson, Chalmers, (New York: Henry Holt and Company, LLC, 2000) p. xii.

³ *Jihad: The Trail of Political Islam.* Kepel, Gilles, (Cambridge: The Belknap Press of Harvard University Press, 2002.) p. 142.

act in a way that might trigger a third world war.¹⁰ President Carter was willing to provide economic aid, weapons, and covert CIA agents to train and help mold the paths of communication and funds between the allies. In July 1979, President Carter signed off on the CIA covert war. He authorized “the CIA to spend just over \$500,000 on propaganda and psychological operations, as well as provide radio equipment, medical supplies, and cash to the Afghan rebels.”¹¹ A finding signed by Carter in 1979 and reauthorized by Reagan in 1981, “permitted the CIA to ship weapons secretly to the mujahedin. The document used the word harassment to describe the CIA’s goals against Soviet forces.”¹² Later in the war Reagan gave 3.2 billion in aid to General Zia ul-Haq, the director of Pakistan’s intelligence agencies, along with the permission to buy F-16 fighter jets for Pakistan.¹³ In 1986 under President Reagan, the American-made Stinger, a hand-fired missile, was introduced to the Afghan warriors.¹⁴

Pakistan worked with the CIA to create multiple *madrasas* and training camps to provide incoming Arabs and Afghanistan refugees with training and arms.¹⁵ Pakistan provided its country not only as a base, with operations concentrated mainly in the city of Peshawar, but also as the conduit for money that ultimately went to the Mujahedeen leaders. The Pakistani Inter Services Intelligence Agency (ISI), proved essential to the development and the running of the entire network behind the mujahedeen war effort.¹⁶ They worked closely with the CIA and prince Al-Turki of Saudi Arabia to provide arms, men, and the jihadist ideology. They also worked to keep the operation as covert and well funded as possible. Saudi Arabia pledged that it would match dollar for dollar of what the Americans gave to the Afghan cause.¹⁷ Some estimates show that by 1982, the Afghan cause received \$600 million in U.S. aid per year, with Saudi Arabia matching dollar for dollar.¹⁸

The situation on the ground in Afghanistan proved to be an ideal space for the cultivation of an ideology of militant Islamic fundamentalism. In the eyes of many of the mujahedeen, their countries failed them, secular-Islam failed them, and the West was collapsing as a result of its lack of values. The only thing that would save them and their world was to turn toward Islam. Their experiences in their own countries and their religious alignments before the Afghanistan war put them in the position to create an interpretation of Islamic fundamentalism, which saw Islam in opposition to the entire world and that it was their duty to do something about it. Azzam called out to every Muslim to join in the Afghan cause. He proclaimed that every Muslim “had an obligation to participate morally and financially in jihad.”¹⁹ He also wrote that “If the enemy has entered Muslim lands, the jihad becomes an

individual obligation.”²⁰ Many of the men Azzam recruited would form the ideological base of Al Qaeda

Although the U.S cut off all aid to the Afghan cause in 1989, the communist regime in Kabul did not fall until 1992. With the dissolution of the Soviet Union and the exit of international actors, Afghanistan fell into a state of civil war and anarchy due to its crippled infrastructure and war-torn environment. This state of lawlessness created a haven for many renegade mujahedeen such as Bin Laden who were now searching for a new cause to continue their jihad. After the war Bin Laden went to Sudan but was expelled after international pressure was placed on the Sudanese government concerning Bin Laden’s terrorist activities. Bin Laden left Sudan and went to Afghanistan. He spent his first summer back in Afghanistan writing a lengthy *fatwa* about the alliance of enemies that had delivered him to this exile.²¹ His “Declaration of Jihad on the Americans Occupying the Two Sacred Places” laid out his belief that the Saudi royal family had become “the agent” of alliance between imperialist Jews and Christians.²² He also stressed that he was against the U.S occupation of Saudi Arabia. This declaration was in response to the U.S troops who were stationed in Saudi Arabia after Iraq’s Saddam Hussein invaded Kuwait. In a rare interview given in 1996 Bin Laden said, “having borne arms against the Russians for years, we think our battle with the Americans will be easy by comparison, and we are now more determined to carry on until we see the face of God.”²³

Focusing his anger on the west and under the guidance of Zawahiri, Bin Laden planted the seeds of a globalized network of jihadists. To these men who had just defeated the Soviet Union, American culture and government now threatened to destroy everything they loved about Islam by blending it into a globalized, corporate, interdependent, secular, and commercial world.²⁴ Bin Laden used this anger to carry out multiple terror plots throughout the 1990s. The most elaborate of his plots came in the form of the September 11 attacks.

According to Samuel Huntington, this tension between Islam and the west is due to a “clash of civilizations,” instead of political situations such as conflict and foreign policy.²⁵ His theory suggests that the tension is inherent in the nature of the dichotomy between Islam and the west. This “clash of civilizations,” in his opinion, has been going on for 1,300 years. Bernard Lewis agrees with Huntington, writing that “We are facing a mood and a movement far transcending the level of issues and policies and the governments that pursue them. This is no less than a clash of civilizations—the perhaps irrational but surely historic reaction of an ancient rival against our Judeo-Christian heritage, our secular present, and the worldwide expansion of both.”²⁶

Although labeling conflicts and actions taken in recent

10 Coll p. 43.

11 Coll p. 46.

12 Coll p. 58.

13 Coll p. 62.

14 Wright p. 127.

15 Coll p. 42.

16 Coll p. 59.

17 Wright p. 32, p. Coll 82.

18 Kepel p. 143.

19 *Jihad sahib Muslim (The Jihad of a Muslim People)*, Abdullah Assam, (Beirut: Dar Bin Ham, 1992) p.24.

20 *Ilea bi-l mafia* Abdullah, Assam, (rpt. Beirut: Dar Bin Ham, 1992) p. 44.

21 Wright p. 186.

22 Coll p. 332.

23 Coll p.340.

24 Wright p. 195.

25 “The Clash of Civilizations.” Huntington, Samuel P, (*Foreign Affairs* Vol. 72(3) 1993) p. 22-49.

26 *The Roots of Muslim Rage*. Lewis, Bernard, (*The Atlantic Monthly*, Vol. 266, (September 1990), p. 60; *Time*, (June 15, 1992) 24-28.

years as “clashes of civilizations” adds perspective to the differences between two entities, analyzing the policies that brought about these conflicts delivers clear results that link rogue actions with foreign policies. Realizing that America’s actions had been felt not just by foreign governments and regimes but also by Islamic radicals helps us draw the links between previous U.S. foreign policy and the list of the terrorist grievances that followed. To the mujahedeen the United States was a force that could as easily withdraw its power and wealth as it could bestow it. It was the United States that supported them so fervently during the war and then left them in the ruins when its goal was finally accomplished. As Al Qaeda scholar Lawrence Wright notes, radicalism usually prospers in the gap between rising expectations and declining opportunities.²⁷ After the war, many of the mujahedeen found themselves stranded in this gap with no one to blame but the United States, the country and foreign policy that, in their minds, put them there.

²⁷ Wright p. 123.



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Self Portrait
Ink and watercolor on paper, 2008
Alejandro Gastelum