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Volume Two

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Chandler Jones | History

Mayuri Patel | Biology

Dan Segal | Philosophy

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Editorial: Disrupt, Please

Wes Tirey

What does it mean to be part of a place? That is, what does it mean to be part of a place beyond simply being there? It seems that to be fundamentally part of a place means to be a member—to act as an integral component, as if the removal of oneself from that place would radically change its makeup and function. Thus to be a member of a place has little to do with geography and more to do with activity; yet membership should be thought of less as a matter of submission and more as a matter of engagement—meaning, membership should not be reduced to lock-step homogenization; rather, it should include the ability to question, to inquire, and, if necessary, to disrupt.

Hannah Arendt writes in *The Human Condition* that “[w]herever people gather together...[power] is potentially there, but only potentially, not necessarily and not forever.” Furthermore, Arendt writes that “[p]ower is actualized only where word and deed have not parted company, where words are not empty and deeds not brutal, where words are not used to veil intentions but to disclose realities, and deeds are not used to violate and destroy but to establish relations and create new realities.” When we act as members to our fullest extent, when we fundamentally engage with each other in a fashion that exemplifies our own uniqueness—we exercise our power.

At Warren Wilson College, we pride ourselves on being a very particular place—one that requires work, service, academics, landscape, wildlife, staff and faculty, and, of course, students to function properly. Moreover, the college’s affinity for interdisciplinary academics promotes a particular intellectual engagement—one that puts Environmental Studies students alongside Philosophy students to discuss ethics and the environment, one that puts Music students alongside Appalachian Studies students to discuss the relationship between song and place, one that puts So-

ciology students alongside Creative Writing Students to discuss gender identity in literature.

The essays that make up Volume Two of *Auspex* engage, in some fashion, the idea of place. Indeed, some of the essays have a geographical bent; nonetheless, we at *Auspex* feel that all of the essays deal with the complexity of place in a graceful and sophisticated manner. We begin, fittingly, with Chandler Jones' "Asceticism for Community: The Protestant Ethic and the Spirit of Warren Wilson College," which examines the relationship between Protestantism and our very own work program—a relationship that, according to Jones, at least, escaped the grips of capitalism to instead foster an "asceticism for the common good." We then move to Mayuri Patel's "Eugenol and Methyleugenol Composition in Three Varieties of Tulsi: Rama, Krishna and Vana Tulsi," which, using samples from the Warren Wilson garden, compares for the first time the chemical composition of two types of Tulsi that have the same Latin name. Insofar that Patel also discusses the relationship of Tulsi to practicing Hindus, she engages herself in not just a "scientific place" but in a "cultural place," as well. Helen Albea also used local samples in "Interlocking Threads: Examining the Relationships between Cord Marked Pottery, Gender and Communities of Practice in Western North Carolina." Analyzing cord formations from various sites—including our own campus—Albea's essay "opens a discussion on the lives and social and economic contributions of prehistoric women in this area." Sam Wasko disrupts what had been a popular discussion in "Crystals Of The Tinder Polypore (*Fomes fomentarius*): Where Do They Occur?" In his essay, Wasko questions a popular claim that a particular fungus has antibacterial mechanisms. From Wasko we move to Felicia Hall's piece "Impunity Runs Rampant: The Necessity for Community Healing and Reconciliation in Guatemala," in which she examines the failures of the Guatemalan Peace Accords and the grassroots post-conflict reconciliation amongst Mayan communities. In the final piece, "Rec-

onciling a Deconstructive Method With a Feminist Practice,” Dan Segal examines the possible relationship between the Deconstructive textual analysis of Jacques Derrida and the feminist project of Luce Irigaray. Ironically, it may be *mimesis* that disrupts the “phallocentric discourse” that has dominated western philosophy for so long.

What all these authors display is an element of assertion—an assertion of their membership within a place. Be it an examination of the relationship between the Protestant work ethic and the Warren Wilson College work program, or an analysis of Mayan communities who themselves assert their own membership in post-war Guatemala—what one gleans from these pieces is the willingness to fundamentally question, to interject, to disrupt a particular discourse.

From the *Auspex* crew to the students of Warren Wilson College: we ask you to act as members to a place—to this place and others. We ask you to fundamentally engage—to exercise the power that Arendt promotes, to not swallow all intellectual material whole (despite how ideologically convenient it may be). If you see the need to question the pillars of a particular ideology—then question it; if you see the need for further inquiry concerning a particular argument—then inquire; if you see the need for the disruption of a particular discourse—then disrupt.

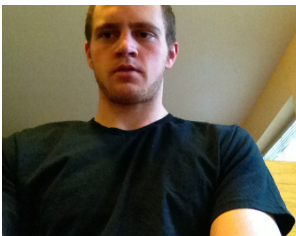


Asceticism for Community: The Protestant Ethic and the Spirit of Warren Wilson College

Abstract: The word “community” is perhaps the most ubiquitous word that can be heard on the campus of Warren Wilson College. At times, it can seem like the coveted “community” is going to disintegrate, with students, faculty, and staff transforming into self-interested rational individuals who do not know what a community is, let alone how to sustain one that is healthy and vibrant. Indeed, my thesis discusses an epoch at Warren Wilson College when the materialization of the above scenario was a possibility. However, my thesis attempts to explain why Warren Wilson College progressed out of that epoch free of any self-interested rational individuals, and seeks to quell any fears that this scenario would ever occur. I posit that, properly understood, the division of labor, in tandem with the impossibility of securing either a higher or lower wage than other student-workers, strengthens the social fabric of Warren Wilson College by encouraging—or rather, forcing—community members to work for the common good of the community. The conclusion I reach is that because the material incentives for work do not encourage individual capital accumulation, but rather individual social utility, work will continue to reinforce the social bonds necessary for the healthy existence of the community at Warren Wilson College.

Chandler Jones | History

After matriculating to Warren Wilson College in the winter of 2008, Chandler Jones soon found himself meandering through political texts of years past. His interests in politics matured into a fascination with the history of ideas and the theoretical; his thesis is the conjunction of these two divergent interests. He is currently pursuing an MA in Elections and Campaigns at Fordham University.



Introduction

Much like Max Weber was concerned with finding what it was about Protestantism that fostered the “spirit of capitalism,” I am concerned with finding what it was about Protestantism that fostered the “spirit” of Warren Wilson College. I borrow Weber’s title to signal my intention to accept Weber’s rendition of the Protestant Ethic. From Weber’s premises, I reach my own conclusion.

First, I will argue what I consider to be the spirit of Warren Wilson College. The spirit of Warren Wilson College is individual self-discipline and work—or, as Weber calls it, asceticism—for the common good of the community. The spirit of the college emanates from and is fostered by the Work Program. This assertion is not radical; Warren Wilson advertises the Work Program as “feed[ing] the spirit of community on our campus.”¹ What I try to show, though, is that the spirit of Warren Wilson emerged from a tense relationship with the spirit of capitalism and, further, that the spirit of Warren Wilson could have been the spirit of capitalism. Rather than cooperation and community, the Work Program mantra could have been one of competition and individualism.

Thus, I trace the development of ideas behind the Work Program from the founding of the college in 1894 to 1938. I argue that the Presbyterians who founded the Asheville Farm School included work in the school’s curriculum because of their belief in the Protestant Ethic. The material incentive to work was provided in the form of social utility. Work was meant to make the students feel like they were contributing to the common good of the school, and students were taught to view their work in relation to how well it served the needs of the school. I argue that this was the first movement towards the modern-day spirit of Warren Wilson.

¹ Warren Wilson College, “Work for the Hands,” <http://www.warren-wilson.edu/work/>.

The rise of two phenomena at the school simultaneously reinforced and undercut the stated purpose of work. These two phenomena were the division of labor and the hourly wage rate system. The division of labor and the hourly wage rate system were meant to increase the social utility of each by increasing the efficiency of labor. However, I argue that while the division of labor encouraged work for the community, when it was combined with the hourly wage rate system, the result undermined the school's commitment to work for the common good of the community.

The actions of Henry Randolph, who became superintendent of the Farm School in 1927, reinforced this tension. Randolph espoused a commitment to working for the community rather than individual gain, but failed to recognize that the hourly wage rate system encouraged harder work for individual gain, rather than for the community. I argue that this tension, between asceticism for the community and asceticism for individual gain, was resolved in 1938 when Henry Jensen instituted the Cooperative Work Program. The Cooperative Work Program retained the division of labor, but abolished the hourly wage rate system and equalized pay for each student. This act signified a formal rejection of work for individual gain and institutionalized the cooperative spirit of Warren Wilson College.

The Early Years: 1894-1927

In the late 1800s the attitude held by the Presbyterian Church towards Appalachia was one of pity.² Appalachians, the Presbyterian Church believed, were plagued by ignorance. Personal cleanliness and hygiene standards

² H. Davis Yeuell and Macia Clark Myers, "The Presbyterians in Central Appalachia," in *Christianity in Appalachia*, ed. Bill J. Leonard (Knoxville: University of Tennessee Press, 1999), 193. In this paper, the term "Presbyterian Church" or "Presbyterians" refers to the northern, Presbyterian-Reformed sect of Presbyterians in America, which founded the Asheville Farm School.

lagged behind the rest of America; Appalachians were also prone to drinking and feuding. Further, they believed that Appalachians were isolated from the rest of society by the rugged terrain and mountainous landscape that characterized the area. Because of this isolation Appalachians were not privy to the benefits of the progress that had been accomplished by the rest of the nation. Appalachians, therefore, lay stagnant, stuck in a previous mode of production, unable to progress to the next stage of American history. The Presbyterians believed that it was their duty to interrupt this cycle that Appalachians were helpless to transcend and help civilize Appalachia.³

The accuracy of this view is questionable, at best.⁴ However, this perception of the conditions in Appalachia was based on what the Presbyterians believed to be axiomatic: that the denizens of Appalachia were lazy, idle, and unmotivated to improve their lot. Predominantly settled by the Scotch-Irish in the mid-to-late 1700s, Appalachia was then considered to be the western frontier of America. By the late 1800s, however, Appalachia was merely part of the eastern United States. As the western frontier expanded, therefore, Appalachians ought to have continued westward because the western frontier offered something Appalachia could not: progress. Individuals could travel westward and be greeted by the vast expanse of land that afforded industrious individuals the opportunity to work hard and improve their lot. The assiduous individuals left Appalachia to realize this opportunity. Foregoing this opportunity was a de facto sign of indolence. Thus, for the Presbyterian Church, Appalachia was a region afflicted with the most repugnant characteristic—idleness.⁵

Idleness, or wasting time, is the “deadliest of sins” for Protestants, according to Max Weber.⁶ Weber argues

³ H. Davis Yeuell, *Moving Mountains* (Amesville: Coalition for Appalachian Ministry, 1985), 8.

⁴ Yeuell and Myers, “Presbyterians in Central Appalachia,” 195.

⁵ Yeuell, *Moving Mountains*, 8.

that Protestants believe that every individual is destined by Providence for a certain profession. It is the duty of all Protestants to pursue their profession with the utmost diligence because it was selected for them by God. Hard work and industrious activity serve to increase God's sublimity, and every hour worked is, therefore, an additional hour devoted to God.⁷ Working for God's glory also reduces the Protestant's likelihood to be overcome by temptation. Every moment of idleness, resulting from either laziness or luxury, is met with a consummate rise in the level of temptation. Protestants who do not keep busy through work are more likely to be overcome by earthly temptations. Constant work decreases idleness, which decreases the potential to be overcome by temptation. The deferment of hard work is thus a near-sacrilegious act.

For the Presbyterians, then, the perceived laziness of Appalachia indicated that the region was afflicted by a lack of devotion towards God. This factor, combined with the general backwardness of the region, made it an ideal location for the Presbyterian Church to conduct missionary work. In 1889, the Women's Board of Home Missions of the Presbyterian Church established a school for girls in Asheville, North Carolina.⁸ However, the 1916 Asheville Farm School catalog explains that while the girls of the region now had an opportunity to uplift themselves from their lowly state, the boys of the region "were left in their poverty and ignorance without a door of hope."⁹ Accordingly, three years after the establishment of the Home Industrial School for girls, the Women's Board of Home Mis-

⁶ Max Weber, *The Protestant Work Ethic and the Spirit of Capitalism* (New York: Charles Scribner's Sons, 1958), 157. Also, the term "Protestant" throughout this paper is used generally. While Weber discusses various forms of the Protestant Ethic, I use the term liberally, most closely associated, however, with the Calvinistic work ethic.

⁷ Weber, *Protestant Ethic*, 160.

⁸ 1905 Asheville Farm School Catalog, 1. WWC Archives.

⁹ 1916 Asheville Farm School Catalog, 13, WWC Archives.

sions founded the Asheville Farm School for the boys of the region.

The primary end of the Asheville Farm School was to teach the boys to seek and recognize the righteousness of God.¹⁰ It was only through God that the boys could be lifted from their state of “poverty and ignorance.” This end, however, could not be accomplished merely through reading God’s Word or by teaching the boys catechism on a daily basis. Because the Presbyterians believed the boys were lazy and idle, they also believed the boys could not fully realize the righteousness of God until they were hard working, industrious young men. True to Weber’s analysis of the Protestant work ethic, the 1905 school catalog describes how the Presbyterians believed that “work [was] a logical necessity” for the boys.¹¹ Thus, in addition to religious training and secular education, the boys at the Asheville Farm School also each performed three hours of work on a daily basis.¹² For these boys to be lifted from their ignorant and sacrilegious state, inculcation with a belief in the Protestant work ethic was absolutely necessary.

What was needed to motivate the boys to work, though, was a material, not spiritual, incentive. The Asheville Farm School attempted to create this material incentive by fomenting a sense of community and making the purpose of work to serve the needs of this community. The 1919 school catalog illustrates this point when it states that work gives the student an opportunity “to feel that he is having a share in supplying the needs of his school home and in contributing his part toward the enrichment of the school life.”¹³ In other words, the boys were not working for their own benefit but for the common good of the school. Whether it was chopping wood to heat the various buildings on the campus or preparing food in the cafeteria, work

¹⁰ 1905 *Asheville Farm School Catalog*, 5, WWC Archives.

¹¹ 1916 *Asheville Farm School Catalog*, 5, WWC Archives.

¹² 1916 *Asheville Farm School Catalog*, 5, WWC Archives.

¹³ 1919 *Asheville Farm School Catalog*, 17, WWC Archives.

contributed to the daily functioning of the school, and the boys were able to observe how their work benefited the community. The incentive to work, therefore, was largely based upon the usefulness, or utility, of the boys' work in contributing their individual share to the common good of the community.

Weber identifies the utilitarian work ethic as a characteristic of the Protestant ethic. For Protestants, Weber argues, the sole purpose of the world is to glorify God. Glorifying God results from obeying His commandments, which above all means obeying His commandment to dutifully labor in the individual's predestined profession. Every individual in a community thus shares the same life purpose; this shared purpose is what Weber calls the "social life," or what can also be called the common good of the community.¹⁴ Further, individuals utilize the same means to 'work' towards the common good of the community, namely laboring in one's occupation. Work, then, not only serves God's glory but also "serves the mundane life of the community."¹⁵ Labor thus serves the material and spiritual needs of the community, and individuals are judged on how well they fulfill each duty.

Weber postulates that the division of labor arose as a response to the dual mandate of the Protestant. Protestants (or boys at the Asheville Farm School) could be more or less efficient at fulfilling their dual duty towards God's glorification and the needs of the community. The division of labor, which encourages specialization in one occupation, allows Protestants to better fulfill both duties by fostering increased efficiency. In regards to the former duty, the better Protestants are at their predestined occupation, the more they increase God's glory. In regards to the latter, the division of labor increases an individual's social utility to the community. Additionally, specialization forces community members to rely upon and work for each other. This

¹⁴ Weber, *Protestant Ethic*, 108.

¹⁵ Weber, *Protestant Ethic*, 108.

reinforces the “social life” of the community and strengthens the importance of the utilitarian work ethic.¹⁶

Weber argues that a “religious upbringing” is the prerequisite condition to commence the desire for specialization.¹⁷ He contends that people only naturally work to the level of subsistence and, perhaps more importantly, do not view labor as an end but rather as a means of survival. A religious upbringing, though, teaches individuals to work for God’s glory and the common good of the community. Thus, a religious upbringing transforms work from a means of survival to an end in and of itself.¹⁸ If Weber’s hypothesis were true, then the “religious upbringing” at the Asheville Farm School should have fostered the rise of a division of labor because of students’ desire to increase their efficiency for the community.

Indeed, during the first quarter-century at the school, the religious culture of the school engendered the rise of the division of labor. From the founding of the school until the late 1910s, the boys performed whatever job needed to be done, whether it was harvesting corn in the fall or chopping wood in the winter.¹⁹ Work was still part of the religious training of the boys and served the needs of the community, but the division of labor was fluid. Slowly, however, specialization arose. According to Lee Roberts, a student at the Asheville Farm School from 1928-1932, when a boy enrolled at the school, he was assigned to a specific work crew. There were various crews, according to Roberts, ranging from the farm crew, to paint crew, to a kitchen crew.²⁰ What was once a “general crew” where students performed any job became a specialized labor force, with students becoming “professionals” at their occupation. Thus, without a specific policy enacting specialization, a division

¹⁶ Weber, *Protestant Ethic*, 62-65.

¹⁷ Weber, *Protestant Ethic*, 63.

¹⁸ Weber, *Protestant Ethic*, 63.

¹⁹ 1905 Asheville Farm School Catalog, 5, WWC Archives.

²⁰ Oral History Collection, Lee Roberts, WWC Archives.

of labor arose.

It is no coincidence that an hourly wage rate system arose around the same time as the division of labor at the Asheville Farm School.²¹ An hourly wage rate system provided an individual incentive to encourage the boys to continue increasing their efficiency and, in turn, maximizing their utility to the community. The same school catalog, which articulated that work gave the student an opportunity to participate in the life of the community, also stated that the boys were paid an hourly wage according to their ability. The wages varied from three to twelve and a half cents an hour, and when a boy's work was worth less than a postage stamp, he was "advised to sever his connection with the school."²² A high hourly wage rate, then, indicated that the boy was a valuable asset to the community and worked hard to serve God's glory. A low hourly wage rate was so repugnant to the purposes of work that when a student's hourly wage dropped below a certain threshold, he could be expelled. The wage rate system thus emphasized the importance of work to students by both rewarding hard work and punishing laziness.

However, the hourly wage system undercut the school's commitment to work for the community; its rise marked the tacit institutionalization of the "spirit of capitalism" at the Asheville Farm School. Weber argues that the "spirit" of capitalism is asceticism, or delayed gratification. Because Protestants do not work for their own enjoyment,

²¹ There is controversy surrounding the history of the hourly wage system at the Asheville Farm School. Dr. Henry Jensen, who served in various positions at the Farm School, including as Dean of Work, from 1927 to 1956, stated that an hourly wage system was not in practice at the school until 1928. However, the school catalog from 1919 clearly states that a sliding hourly wage scale was in place. Nonetheless, the rise of the two phenomena occurred roughly at the same time, and were mutually reinforcing at the school.

²² 1919 *Asheville Farm School Catalog*, 19, WWC Archives. The cost of a first class postage stamp in 1919 was two cents.

but for the common good of the community and God, the additional wealth that is accumulated through the increased efficiency is not to be enjoyed for purposes of idleness or luxury. Rather, the accumulation of money is simply a natural byproduct of fulfilling one's duty as a Protestant. Further, the more money Protestants accumulate, the better they are at fulfilling their duty to God and the community. Protestantism thus encourages capital accumulation and investing that accumulated capital, which Weber argues is necessary for capitalism to flourish.²³ The hourly wage rate encouraged students to accumulate additional capital because a higher hourly wage indicated student's devotion to God and the common good.

Thus, by the late 1920s, the unacknowledged existence of the capitalist spirit was pushing work away from its stated purpose. The division of labor continued to resist this push, encouraging students to work for the common good rather than individual gain. This tension, however, would continue to grow through the 1930s, despite a renewed effort to encourage asceticism for the community.

Randolph's Folly: 1927-1937

In the fall of 1927, Henry S. Randolph became the new superintendent of the Asheville Farm School. Originally from the eastern Tennessee town of Coffee Ridge, Randolph himself hailed from Appalachia. He attended a Presbyterian Mission School as a boy, which launched him towards a notable list of academic achievements. He graduated from the University of Chicago's Divinity School and earned a PhD in education from Columbia University.²⁴ It was the last achievement, his PhD from Columbia, which most heavily influenced his policy-making decisions at the

²³ Weber, *Protestant Ethic*, 162-63.

²⁴ Curriculum Vitae, 1934, Asheville Farm School Records, Folder 7, Box 3, WWC Archives.

Asheville Farm School. Indeed, Randolph ushered in an era of change at the school, and the philosophy that Randolph utilized largely stemmed from his time at Columbia University.

In the 1920s, Columbia University was the bastion of progressivism, housing progressive thinkers such as Charles Beard, Thorstein Veblen, and John Dewey. At its base, the progressive movement was concerned with continuing the economic and social progress that had accompanied the settling of the western frontier into the twentieth century. To achieve this end, progressive thinkers relentlessly pursued a rational and scientific approach to ensure that America's resources were being used in the most efficient way possible.²⁵ One historian of the progressive era describes the progressive movement as espousing a "gospel of efficiency" that preached the canon of science and rationality.²⁶ The progressive gospel of efficiency was coupled with a progressive educational theory. Progressive educational theorists, such as Dewey, argued that education should create a student who can serve society in both a practical and theoretical manner. The school curriculum, Dewey argued, ought to teach students practical skills that society needs, such as sewing, farming, or cooking. Academically, students should be taught how to use their skills from the classroom to solve any challenge or problem that the student might face. To accomplish this goal, students must be granted a large amount of educational freedom so that they can learn how to use their abilities on their own. Further, because students will have to work with others, students should work within a community to gain practical experience working with others.²⁷ Randolph combined the progressive fixation on efficiency and progressive edu-

²⁵ See Herbert Croly, *The Promise of American Life*, (New York, The MacMillan Company, 1912), 100-140.

²⁶ Samuel P. Hays, *Conservation and the Gospel of Efficiency*, (Pittsburgh: University of Pittsburgh Press, 1999), 272.

²⁷ John Dewey, "My Pedagogic Creed," *School Journal* (January 1897): 77-80.

cational theory to correct what he saw as the most salient problem facing Appalachia.

Like the Presbyterians before him, Randolph believed that Appalachia was a region afflicted by poverty and ignorance. He stated in unequivocal terms that Appalachia was under the “tyrannical” and “despotic” rule of poverty, ignorance, and hunger.²⁸ Randolph was particularly dismayed, however, at what he saw as the “economic problem” of the region—inefficiency. In an address he delivered in 1931 to the Presbyterian Women’s Mission Organization, Randolph argued that a new economic philosophy was needed in Appalachia. The previous economic paradigm, Randolph argued, was inefficient. In order for Appalachia to shed its tyrannical chains of poverty, it needed a cadre of efficient workers who could correct the inefficiency that plagued Appalachia.²⁹ Efficiency would save the Appalachian region, lifting it out of poverty and ignorance.

Accordingly, Randolph constructed an educational curriculum at the Asheville Farm School that he believed would create an efficient student to correct the economic problem of the mountains. In the 1931-32 school year, Randolph abolished any remnant of what is usually associated with school: textbooks were discontinued; grades were declared “unethical” and discontinued; examinations and tests were not to be used; different class standings were also discontinued.³⁰ Randolph filled this educational abyss with what he referred to as the “project.” Put simply, the project was the definition of progressive education. Freed of any divisions or rigid requirements, the student freely inquired into a problem or area of thought that interested

²⁸ Henry Randolph, “A Voice That Calls,” 1934, Asheville Farm School Papers, Folder 7, Box 3, WWC Archives.

²⁹ Henry Randolph, 1935, “The New Day in Missions Among the Southern Highlanders.” Asheville Farm School Papers, Folder 11, Box 3, WWC Archives.

³⁰ Henry Randolph, “Statement of Administrative Policies, 1931-32,” Asheville Farm School Papers, Folder 10, Box 3, WWC Archives.

him. If a student worked on the farm and a disease was killing the corn, then he would enlist the help of a professor and diagnose the disease, research potential remedies for the disease, and rid the corn of its blight. In addition, the project could be completed by a group of students.³¹ This organization of the farm school on progressive educational theory, Randolph believed, was the best educational curriculum to create an efficient individual. Education, however, was only one half of Randolph's attack against the poverty of the region.

What Randolph did not abolish with his implementation of progressive educational policies was the division of labor. This was not an accident. In his statement that announced the new educational policies, Randolph cited a quotation from a progressive educational theorist that states how education ought to provide the "student with the experiences that will lead him to adapt himself to the social usages of his fellowmen."³² Randolph also boasted how the program at the farm school was a "cooperative enterprise" that teaches students the skills needed to "efficiently and effectively [complete] the world's work."³³ Considering the quotations simultaneously reveals that Randolph was committed to both the utilitarian work ethic and asceticism for the community. The division of labor thus served Randolph's commitments by teaching the student the importance of working for the benefit of the group and by training an efficient worker through specialization in one occupation.

Leaving the hourly wage rate system in place, then,

³¹ Randolph, "Statement of Administrative Policies." WWC Archives.

³² Randolph, "Statement of Administrative Policies." WWC Archives. Here, Randolph quotes an individual named Breitweiser. My attempts to discover Breitweiser's exact capacity, however, have proved unfruitful.

³³ Henry Randolph, "Lecture to the Women's Home Mission Board," 1933, Asheville Farm School Papers, Folder 12, Box 3, WWC Archives.

seems to correspond with Randolph's goal of moving Appalachia towards an efficient economic system. As previously discussed, a sliding pay scale acts as an incentive for the worker to increase his or her productivity and efficiency. It seems, however, that while Randolph intentionally left the division of labor in place, he unintentionally left the sliding pay scale in place. This claim stems from an understanding of Randolph's progressivism. In addition to a belief in efficiency, progressivism was also committed to economic equality. Progressives, such as John Dewey, argued that laissez-faire economics (which guided the settlement of the western frontier) incorrectly assumed that social and economic inequalities were the opportunity costs of maximum economic freedom. Laissez-faire economics, Dewey argued, created a rigid class structure that worked against individuals and kept them from improving their condition. It was thus the "war-cry" of progressivism to abolish such inequalities and work towards "secur[ing] and establish[ing] equality for all."³⁴ While the hourly wage rate system at the Asheville Farm School encouraged efficiency, it also created rigid economic classes between the students where certain students earned more than others.³⁵ Reliance on the social utility incentive, rather than a sliding pay scale, seems like the logical step for Randolph to have satisfied his dual commitment to efficiency and the common good.

Despite evidence demonstrating that Randolph shared the progressive view toward laissez-faire economics, he did not abolish the practice that contributed to class stratification at the Asheville Farm School. In a speech de-

³⁴ John Dewey, *The Later Works, 1935-1937*, ed. Jo Ann Boydston, John J. McDermott (Carbondale: Southern Illinois University Press, 2008), 368-371.

³⁵ Economic stratification did result from the sliding pay scale. Students who earned a higher hourly wage than other students earned the necessary amount of money to pay their tuition in a quicker time. Thus, two distinct economic classes existed towards the end of every semester, one the "leisure class," and the other "the still laboring class."

livered in 1934 to the school, Randolph argued that Appalachian workers were often kept in a state of poverty because of “Ricardo’s law of wages.”³⁶ What Randolph refers to as “Ricardo’s law” is typically referred to as the Iron Law of Wages. Ricardo’s law, or the Iron Law of Wages, is a law of economics that holds that in the long run, wages tend towards the minimum amount necessary to sustain the life of the worker.³⁷ Randolph’s usage of this law indicates that he believed the laissez-faire system exerted a downward pressure on the wages of Appalachia and prevented Appalachians from overthrowing the despotic chains of poverty. But by leaving the wage distinction in place at the school, Randolph reproduced the very aspect of laissez-faire economics that he decried as keeping Appalachia in poverty.

Randolph thus failed to see the tacit existence of the capitalist spirit and consequently, his policies increased the tension between the stated purpose of work and the unacknowledged purpose of work. By retaining the same practices as his predecessors to foment a sense of community and encourage efficiency, Randolph continued to rely on the principles of the Protestant ethic to achieve his goals. And like his predecessors, he did not correct the tension between the hourly wage rate system and the division of labor. When Randolph left the school in 1937, the asceticism of the Protestant ethic was still misguided, encouraging both the utilitarian work ethic and the laissez-faire ethic of higher wages for harder work. In 1938, however, this tension was finally resolved, thus sowing the seeds for the spirit of Warren Wilson College.

³⁶ Henry Randolph, “The State of Appalachia,” Asheville Farm School Papers Folder 15, Box 3, WWC Archives.

³⁷ David Ricardo, *The Works of David Ricardo*, ed. J.R. Mulloch, (London: John Murray, 1881), 31, 50-58.

20/20: Jensen's Cooperative Work Program

During the Great Depression, decreased hiring of professors at other institutions yielded positive consequences for the Asheville Farm School. Several individuals who would have otherwise never taught at the school were lured by the prospect of secure housing and a professorship, despite the lackluster pay offered by the school. One of these individuals was Dr. Henry W. Jensen. Like Randolph, Jensen possessed a distinguished pedigree: he received both an MA and PhD in botany from Harvard University. Jensen graduated from Harvard in 1933 and, being unable to find a professorship in New England, accepted a one-year position at the Asheville Farm School. Jensen's one-year position turned into a lifetime career, however, spanning from the early 1930s to the late 60s.³⁸ Throughout his career, Jensen held multiple administrative positions and significantly contributed to the philosophy that guided the school. His most significant contribution, however, came just four years after assuming his position at the Asheville Farm School.

By the mid-1930s, both students and work crew supervisors alike were unhappy with the hourly wage rate system. Students were confused about how well they performed their work because there was no standard system for awarding higher wages; it was done at the discretion of individual work crew supervisors. The work crew supervisors were confused because the sliding pay scale system created a substantial amount of bookkeeping. Each boy's individual wage had to be recorded, along with the amount of hours each student worked each week, so that the supervisor would know when the student fulfilled his work obligation to the school. On a practical level, then, the sliding pay scale was falling out of favor with the agents that

³⁸ Henry Jensen Biography, Henry Jensen Papers, Folder 7, Box 8, WWC Archives.

composed the Work Program.³⁹

Recognizing discontent with the work program, Randolph appointed Jensen as Director of Work in 1937 to reform work at the Asheville Farm School. Randolph's appointment of Jensen stemmed from Jensen's recommendation of a Cooperative Work Program around 1936.⁴⁰ Once appointed, Jensen implemented his idea for a Cooperative Work Program. Jensen's Work Program equalized wages and work hours for each student. Each job, Jensen believed, was equally important to the functioning of the school, and therefore, all boys should be equally compensated for the jobs they performed.⁴¹ With this reformation, Jensen eliminated the confusion of the sliding pay scale and created a Work Program that used a set of incentives that resolved the tension of the dueling forms of asceticism at the school.

Jensen directed the school towards relying upon the social utility incentive for work; it is, however, useful to discuss the alternative to the Cooperative Work Program to realize the consequences of the equalization of pay. Weber's analysis of the Protestant ethic could have been realized at the Asheville Farm School, and rather than a Cooperative Work Program, Jensen could have implemented a Competitive Work Program. Rather than equalizing pay, Jensen could have established a standard to allow students to know when they should get a pay raise, and streamlined a bookkeeping system for the work crew supervisors to keep track of the boys' wages and hours worked (with a bookkeeping crew, perhaps?). Indeed, a Competitive Work

³⁹ Henry Jensen, "The Cooperative Work Program," *Mountain Life and Work* (October 1938), 12.

⁴⁰ The exact dates here are elusive. In recalling the establishment of the Cooperative Work Program in the early 1950s, Jensen himself stated that he implemented the program in 1938. In his *History of Warren Wilson College*, however, Jensen states that the Cooperative Work Program was established in 1937. A detailed review of the staff minutes from 1936 to 1939 contains no mention of the Cooperative Work Program.

⁴¹ Henry Jensen Papers, Folder 8, Box 8, WWC Archives.

Program could have increased the efficiency of each student by allowing the student to earn a higher wage and, conversely, established a minimum level of work by retaining the possibility to expel a student once that student's work was worth less than a predetermined minimum level of pay. Thus, the "spirit of capitalism," or asceticism resulting from the Protestant ethic, could have been realized at the Asheville Farm School.

Jensen's Cooperative Work Program represents an alternative to Weber's argument that the Protestant ethic creates the "spirit of capitalism." Jensen, in effect, created both a maximum and minimum wage at the school and, consequently, no matter how hard a boy worked he could never earn more than his fellow students. From a free market perspective, this eliminates the most powerful incentive to work: more money. However, Jensen relied upon a different incentive to encourage the boys to work: social utility. Under the Cooperative Work Program, the boys did not work for their individual monetary gain but rather for the community. The incentive for the boys to be efficient and work hard was how much their work would contribute to the common good of the community. If the boys worked harder, then the community benefited. If they were lazy, then the community suffered. Asceticism thus benefited the community, rather than the position of the individual.

The Legacy: Work Today

The 'spirit' of Warren Wilson College was solidified in 1938 with the institutionalization of the Cooperative Work Program. Today, students still work the same amount of hours and receive the same hourly wage (no matter how industrious—or lazy—a student might be). The division of labor has become more specialized, with certain crews, such as the electric and forestry crews, requiring two-year minimum commitments. The increased specialization of the Work Program has continued to strengthen the social

fabric of the community at Warren Wilson College.

Of course, neither students, faculty, nor staff harken back to Max Weber and the Protestant Ethic when discussing the value of work for the community. Rather, the legacy of the Protestant Ethic is secular; the incentive for students to work is for the common good of the community, not to recognize the righteousness of God. The quotation I used in the beginning best represents this point: "Everyone contributing and working together creates an air of respect which feeds the spirit of community on our campus." Working for the common good, which is the acknowledged "spirit" of Warren Wilson College, is thus the legacy of the Protestant Ethic.⁴²

⁴² Warren Wilson College, "Work for the Hands," <http://www.warren-wilson.edu/work/>.

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Eugenol and Methyleugenol Composition in Three Varieties of Tulsi: Rama, Krishna, and Vana Tulsi (*Ocimum tenuiflorum* L. and *Ocimum gratissimum* L.)

Abstract: In this study, three varieties of Tulsi were analyzed for eugenol and methyleugenol concentrations: Rama Tulsi (*Ocimum tenuiflorum* L.), Krishna Tulsi (*Ocimum tenuiflorum* L.), and Vana Tulsi (*Ocimum gratissimum* L.). Tulsi, or Holy Basil, is well known for its medicinal properties and religious value in Hinduism. Tulsi contains high concentrations of eugenol and methyleugenol; however, different studies have found a wide range of concentrations and do not distinguish between the Rama and Krishna varieties. Therefore, this study compared eugenol and methyleugenol concentrations in Rama, Krishna, and Vana Tulsi grown at Warren Wilson College, NC. The findings suggest that the wide variations in Tulsi composition reported in the literature may be due to strain differences. Furthermore, methyleugenol is a known carcinogen in rodents. If Tulsi is a health concern for humans, this study suggests that the Indian community should use Rama Tulsi because the medicinal benefits can be obtained with limited methyleugenol exposure..

Mayuri Patel | Biology

Mayuri Patel was born in Gujarat, India and immigrated to the USA to be closer to family and continue her education. At a young age, she became fascinated by science and health care. As she studied at Warren Wilson College, she became interested in performing a research project that was related to both Hindu culture and health. Thus, she began researching the chemical composition of Holy Basil. Ms. Patel is the recipient of the Algernon Sydney Sullivan Award 2012 and Most Outstanding Biology Undergraduate 2012 Award at Warren Wilson College. She is currently serving in a year-long medically related Fellowship at a non-profit organization, Project Horseshoe Farm, and aims to continue pursuing a medical career.



Introduction

Religious Background

In the Hindu religion Lord Vishnu is considered the supreme God and his wife Laxmi is highly valued. The Tulsi plant is held sacred by Hindu people because it is considered the incarnation of the Goddess Laxmi. Laxmi was born as Vrinda and married to a demon named Jalandhar. As a faithful wife, she prayed to Lord Vishnu for her husband's protection. Lord Vishnu granted her wish, but the demon was causing much trouble. The other Hindu Gods felt threatened and requested assistance from Lord Vishnu. Thus, Lord Vishnu decided to take the form of the demon, Jalandhar, and stay with the unsuspecting Vrinda. When the truth emerged after the demon's death, Vrinda cursed Lord Vishnu for betraying her and turned him into a stone. She then collapsed and from her body emerged the Tulsi plant (G. Patel, personal communication, 2010). The Hindu people believe that Tulsi is the wife of Lord Vishnu and pray to the plant as a part of their daily rituals (Yash, 1992).

Tulsi Varieties

In this experiment, three varieties of Tulsi were studied. The Krishna Tulsi (KT) has purple leaves and stems. Lord Krishna is believed to have a darker skin tone, so this variety is named after him. The Rama Tulsi (RT) has green leaves, as Lord Rama is believed to have a lighter skin tone. Both Lord Krishna and Lord Rama are believed to be incarnations of Lord Vishnu. Therefore, the Krishna Tulsi and Rama Tulsi are considered holy in Hinduism.

The botanical name of both of these varieties is *Ocimum tenuiflorum* L. (Mondal et al., 2009). The KT and RT leaves are considered extremely holy, so they are added to any offering to the Hindu Gods before the offering can be accepted. Furthermore, a human clinical trial suggested that the KT and RT are typically used internally in quantities ranging from 1,000 to 2500 mg/day depending on the

individual (Holy Basil).

The third variety studied, Vana Tulsi (VT), grows in the wild in India but is more common in Africa. Its botanical name is *Ocimum gratissimum* L. This variety is not considered holy in Hinduism. All three varieties are found not only in India, but also in Malaysia, Australia, West Africa, and some Arab countries (Siddique et al., 2007).

Literature Review

Ocimum tenuiflorum L.

Medicinal Properties

In addition to the religious importance of the KT and RT, leaves of these varieties are traditionally chewed or boiled with water to obtain a juice mixture to cure illnesses such as asthma, chronic fever, cold, cough, earaches, insect bites, and skin infections (Anbarasu et al., 2007, Siddique et al., 2007, Mondal et al., 2009, Holy Basil).

Gupta et al. and Mondal et al. provide valuable insight into the medicinal properties of the *Ocimum tenuiflorum* L. variety of Tulsi. Both reported that the essential oil of *O. tenuiflorum* L. has varying effects against gram-positive and gram-negative bacteria. The essential oil is not effective against *Shigella*, *Salmonella*, *Staphylococcus citreus*, *E. coli*, and *Aspergillus niger*. However, high concentrations of the essential oil do provide protection against *Trichophyton mentagrophytes* and *Pestalotiopsis mangiferae*. Furthermore, both studies showed that the alcoholic extracts of *O. tenuiflorum* L. have antimicrobial activity against *Neisseria gonorrhoeae*, *Staphylococcus aureus* (MRSA), and methicillin-sensitive *Staphylococcus aureus* (MSSA) (Gupta et al., 2002; Mondal et al., 2009).

Both Gupta et al. and Mondal et al. also found that fresh leaves of *O. tenuiflorum* L. are more effective for medicinal purposes than dried leaves. Fresh leaves increase physical endurance, decrease serotonin levels, and reduce

the amount of cholesterol and triglyceride phospholipids in rodents. The alcoholic extract of fresh leaves of *O. tenuiflorum* L. is able to reduce glucose levels in rodents as well. The extract stimulates insulin secretion, promoting the entrance of Ca^{2+} into the endoplasmic reticulum of a cell. In result, glucose transporter proteins move to the plasma membrane where they can bring glucose into the cell by endocytosis (Gupta et al., 2002; Mondal et al., 2009).

Finally, Gupta et al. and Mondal et al. found that *O. tenuiflorum* L. plays a role in liver function and inflammation in rodents. Ethanolic extracts of *O. tenuiflorum* L. prevent liver damage by enhancing levels of glutathione and serum enzymes such as aspartate aminotransferase and acid phosphatase in experimental rats. The extract prevents inflammation caused by paw edema by inhibiting cyclooxygenase and lipoxygenase enzyme pathways (Gupta et al., 2002; Mondal et al., 2009).

Two studies by Singh et al. (2007) also describe beneficial properties of *O. tenuiflorum*. The first found that *O. tenuiflorum* L. exhibits protective action against aspirin and indomethacin induced gastric lesions. This protective action could be due to the inhibition of lipoxygenase pathways studied by Gupta et al. and Mondal et al.

The second study suggested that *O. tenuiflorum* L. alone or in combination with cloxacillin or beta-lactamase resistant penicillin is effective in preventing bovine mastitis, which is caused by *Staphylococcal* infection. *O. tenuiflorum* L. provides this benefit by reducing total bacterial count, increasing neutrophil and lymphocyte counts, and increasing the concentration of lysozymes (2007).

Antioxidant Properties

Ocimum tenuiflorum L. has also been shown to have antioxidant properties. Singh et al. reported that *O. tenuiflorum* L. suppresses histamine-induced vasospastic effect and gastric secretion. The seeds of *O. tenuiflorum* L. contain linoleic and linolenic acid, which both have a high affinity

for oxygen and could provide antioxidant activity (2007).

Siddique et al. found that *Ocimum tenuiflorum* L. reduces the frequency of sister chromatid exchange and chromosomal aberrations as well as radiation induced damage in bone marrow of rats. Two water-soluble flavonoids, orientin and vicenin, play a role in scavenging free radicals (2007).

Finally, a study by Jyoti et al. suggested that *O. tenuiflorum* L. decreases the oxidation of glutathione by free radicals. *O. tenuiflorum* L. increases the activity of two antioxidant enzymes in the liver: superoxide dismutase (SOD) and catalase. SOD detoxifies superoxide radicals and converts them to H_2O_2 , which is then converted into H_2O by a catalase. Higher levels of SOD correlate with less susceptibility to cell damage (2007). Furthermore, eugenol present in *O. tenuiflorum* L. was found to inhibit iron-mediated lipid peroxidation and copper dependent low-density lipoprotein oxidation (Suanarunsawat et al., 2010).

Ocimum gratissimum L.

Ocimum gratissimum L. provides similar medicinal benefits as *Ocimum tenuiflorum* L. However, fewer studies have been performed on this variety. Both Kenyan and sub-Saharan African individuals use *O. gratissimum* L. as a traditional medicine. They rub the leaves between their palms and sniff them as a remedy for blocked nostrils. The leaves are also used for abdominal pains, sore eyes, ear infections, coughs, barrenness, fever, convulsions, tooth gargle, regulation of menstruation, and prolapsed rectum (Matasyoh et al., 2008).

Matasyoh et al. showed that *O. gratissimum* L. has antimicrobial property against gram-positive bacteria (*Staphylococcus aureus*, *Bacillus*), gram-negative bacteria (*E. coli*, *Pseudomonas aeruginosa*, *Salmonella typhi*, *Klebsiella pneumoniae*, and *Proteus mirabilis*), and pathogenic fungus such as *Candida albicans* (2008). Moreover, Zheljaskov et al. suggested that *Ocimum gratissimum* L. has antimicrobial

activity along with *in vivo* antimalarial activity and *in vitro* antileishmanial activity (2008).

In 2009, Pino Benitez and colleagues performed a microwave-assisted hydro-distillation using the leaves of *O. gratissimum* L. and found that eugenol was the main chemical constituent in the essential oil.

Eugenol

Eugenol is found in *O. tenuiflorum* L. and *O. gratissimum* L., as well as in cloves, sweet basil, cinnamon, and nutmeg (Kumar et al., 2009). It is routinely used as an anesthetic agent for dentistry applications (McGinley, 2006).

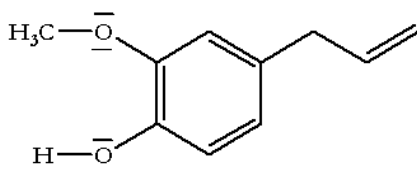


Figure 1: Eugenol

Eugenol may be responsible for the therapeutic properties of the essential oils and extracts of the three varieties of Tulsi (Mukherji, 1987; Juntachote et al., 2004; Trevisan et al., 2006; Dutta et al., 2007; Matasyoh et al., 2008).

Eugenol can be toxic at certain levels. Shokeen et al. reported that Jenner et al. found the LD₅₀ of eugenol to be 3000 mg/kg bw in mice and 2130 mg/kg bw in guinea pigs through oral routes. Shokeen et al. also reported that Sober et al. and Taylor et al. found the LD₅₀ of eugenol in rats to be 1930 mg/kg bw and 2680 mg/kg bw, respectively. The study with Shokeen et al. found the LD₅₀ of eugenol to be 2000 mg/kg bw. Accordingly, the LD₅₀ value of eugenol varies from approximately 1900 mg/kg bw to 3000 mg/kg bw (2008).

Methyleugenol

The other important chemical constituent in Tulsi is

methyleugenol, and it is used widely as a flavoring agent in baked goods, non-alcoholic beverages, chewing gum, candy, pudding, relish, ketchup, and ice cream. The compound is also used as a fragrance in perfumes, lotions, and soaps (De Vincenzi et al., 2000; Smith et al., 2002; Kothari et al., 2004; Zhou et al., 2007).

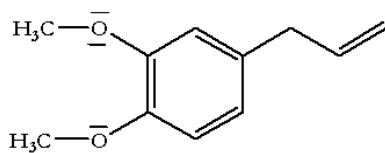


Figure 2: Methyleugenol

The National Toxicology Program studied the toxicity of methyleugenol because it resembles safrole, a known carcinogen, and estragole, a suspected carcinogen. In a 14-week study, female and male rats were given 0, 10, 30, 100, 300, or 1000 mg methyleugenol/kg bw in 0.5% methylcellulose by gavage five days per week. The study found the following: mean body weights of the experimental rats were less than the control groups, erythrocyte microcytosis started occurring at a 300 mg/kg bw dosage, evidence of thrombocytosis was present at all times, hepatocellular injury occurred, and incidences of atrophy and chronic inflammation of the mucosa of the glandular stomach significantly increased in rats that were given 300 or 1000 mg/kg bw dosages of methyleugenol. In a two-year study, rats of both sexes were given 37, 75, or 150 mg/kg bw dosages of methyleugenol five days per week. This experiment showed a positive trend in incidences of hepatocellular adenoma and carcinoma (National Toxicology Program, 2000).

Metabolism of methyleugenol

Methyleugenol is metabolically activated in a manner similar to estragole (Zhou et al., 2007). In 2002, Smith et al. reported that methyleugenol undergoes rapid

and essentially complete absorption via the oral route in 30 to 60 minutes. Methyleugenol can be metabolized by three different pathways, which are dose dependent. The first pathway includes *ortho*-demethylation of the *m*- or *p*-methoxy substituent of methyleugenol. This pathway is prevalent at low doses in humans and rodents; approximately 100 µg/kg bw. Dose dependent metabolism studies on the structurally related propenylalkoxybenzene derivative, 4-methoxypropenyl benzene, confirmed that *o*-demethylation is the main metabolic pathway occurring at low dose levels (Smith et al., 2002).

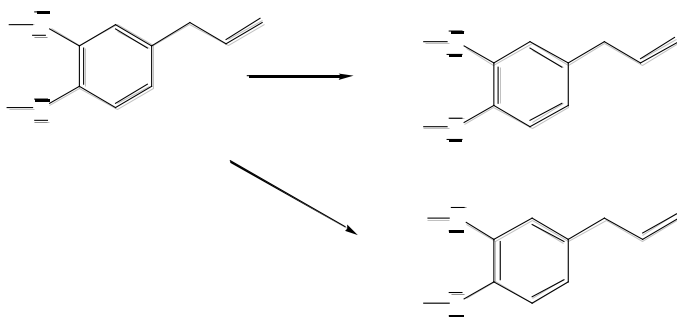


Figure 3: Pathway I: *Ortho*-demethylation of methyleugenol.

In the second pathway, epoxidation of the side chain alkene yields 2'-3'-epoxide. The epoxide is detoxicated by epoxide hydrolase to form a diol. The carboxylic acid formed via oxidation of the diol may be conjugated with glycine and excreted, or undergo beta-oxidation and conjugation to a hippuric acid derivative (Smith et al., 2002).

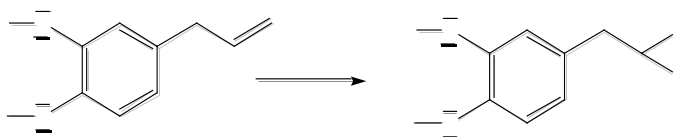


Figure 4: Pathway II: Epoxidation of methyleugenol.

In the third pathway, 1'-hydroxylation yields 1'-hydroxymethyleugenol. This metabolic pathway can produce carcinogenic derivatives. The 1'-hydroxy metabolite contains an unstable terminal alkene, 1'-hydroxy-2-3-alkene. The 1'-hydroxy metabolite or its sulfate conjugate may be isomerized to yield the more stable 3'-hydroxy-1'-2'-alkene containing a readily oxidisable primary alcohol function. A cinnamic acid derivative is produced, beta-oxidized, and cleaved to yield a benzoic acid derivative that can be excreted. Alternatively, the sulfate conjugate may react with the 1'-hydroxy metabolite, producing the proximate hepatotoxic and hepatocarcinogenic agent in rodents (Smith et al., 2002). The third pathway occurs at high concentrations of methyleugenol: >10 mg/kg bw. The unstable sulfate ester is anticipated to hydrolyze to form a reactive electrophilic intermediate (carbonium ion or quinonium cation) that binds to hepatic proteins and hepatic DNA. The formation of protein and DNA adducts is dose dependent.

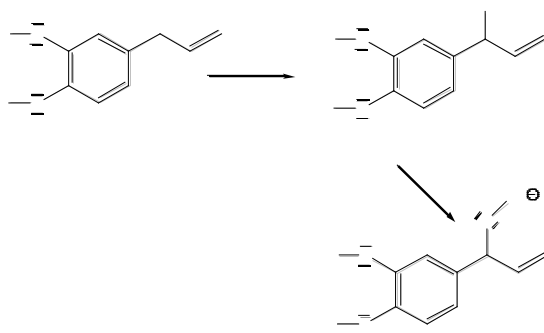


Figure 5: Pathway III: Hydroxylation of methyleugenol.

Health effects of methyleugenol

Multiple studies illustrate the potential negative health effects of high methyleugenol exposure. Zhou et al. reported that methyleugenol and its derivatives, 1'-hydroxymethyleugenol and 2'-3'-epoxymethyleugenol,

induced unscheduled DNA synthesis in cultured rat hepatocytes (2007). Smith et al. found that methyleugenol reaches a metabolic saturation point at approximately 150 mg/kg bw dosage and remains concentrated in the liver even after 72 hours of exposure. If human exposure to high levels of methyleugenol were accompanied by recurrent liver tissue damage and hyperplasia then methyleugenol might possibly induce liver cancer in humans (2002).

The European Scientific Committee on Flavoring Substances additionally reinforced the hypothesis that methyleugenol has the potential to cause liver damage. The committee suggested that the median lethal oral dose of methyleugenol is between 810 to 15600 mg/kg bw for rats and 540 mg/kg bw for mice (European Commission, 2001). De Vincenzi et al. reported that methyleugenol induced sister chromatid exchange in cytogenetic tests with cultured Chinese hamster ovary cells. Methyleugenol and its derivatives were found to be mutagenic in yeast and UDS assays and the Ames test. De Vincenzi et al. also reported that methyleugenol is distributed mainly in the liver, spleen, ovaries, fat, and stomach and that metabolism of methyleugenol may decrease with age. This study suggests a limit of 0.05 mg/kg (detection limit) due to the carcinogenic potential of methyleugenol (2000).

Concentrations of eugenol and methyleugenol in Tulsi varieties

Several studies have reported a wide range of eugenol and methyleugenol concentrations in Tulsi plants. Table 1 summarizes their results.

The concentration of eugenol in the essential oils or extracts of *O. tenuiflorum* L. ranged from 3% to 71% while methyleugenol ranged from no detection to 73%. Only one study found methyleugenol in Vana Tulsi, and the eugenol concentration ranged from 43% to 69%.

Variety	% Eugenol	% Methyl-eugenol	Study Source
<i>O. tenuiflorum</i> L.	3.40	68	Juliani et al., 2002
<i>O. tenuiflorum</i> L.	8	73	Kothari et al., 2004
<i>O. tenuiflorum</i> L.	18	0.210	Zheljazkov et al., 2008
<i>O. tenuiflorum</i> L.	18.25	47.06	Suanarunsawat et al., 2010
<i>O. tenuiflorum</i> L.	59	Not reported	Trevisan et al., 2006
<i>O. tenuiflorum</i> L.	61	Not reported	Kumar et al., 2009
<i>O. tenuiflorum</i> L.	70	Not reported	Siddique et al., 2007; Jyoti et al., 2007
<i>O. tenuiflorum</i> L.	71	20	Gupta et al., 2002
<i>O. gratissimum</i> L.	43	Not reported	Pino Benitez et al., 2009
<i>O. gratissimum</i> L.	54	Not reported	Trevisan et al., 2006
<i>O. gratissimum</i> L.	69	13	Matasyoh et al., 2008

Table 1: % Eugenol and methyleugenol in essential oil and extracts of Tulsi.

The studies listed in the table did not distinguish between Rama Tulsi and Krishna Tulsi. They simply referred to the two varieties as *Ocimum tenuiflorum* L. Distinguishing Krishna Tulsi from Rama Tulsi is essential because, although they may contain similar chemical constituents, the concentrations of the constituents may not be similar. While eugenol has clearly been studied to have medicinal benefits, methyleugenol has been found to have carcinogenic potential. The variation in these two constituents is important for the health of the individuals who consume parts of the Tulsi plants several times throughout their day.

Since the literature has found a wide range of con-

centrations of eugenol and methyleugenol and does not distinguish between Rama and Krishna Tulsi, this study investigates the difference in eugenol and methyleugenol concentrations in Rama Tulsi (*Ocimum tenuiflorum* L.), Krishna Tulsi (*Ocimum tenuiflorum* L.), and Vana Tulsi (*Ocimum gratissimum* L.).

Method

The three varieties of Tulsi were grown at the Warren Wilson College greenhouse with no manipulations. In total, 60 plant samples were used: 35 KT, 18 RT, and 7 VT. An Indian family in Asheville, NC donated 19 of the 60 plants. Once the plants had grown for approximately five months and neared a height of one meter, the leaves were harvested and placed in zip-lock bags. The leaves were kept in a -70 degree Celsius freezer for preservation.

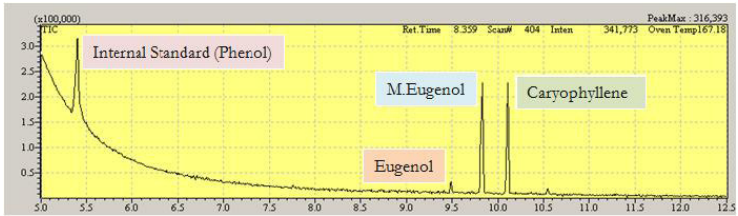
Eugenol and methyleugenol were extracted from the leaves of each variety with methylene chloride. Phenol was added as an internal standard to each plant sample solution. In addition, five internal standard samples were made to obtain internal standard calibration curves for eugenol and methyleugenol.

The plant sample solutions and standard solution were analyzed by gas chromatography-mass spectrometry according to a method originally reported by Kothari et al. in 2004.

The details of this method are in Appendix I.

Results

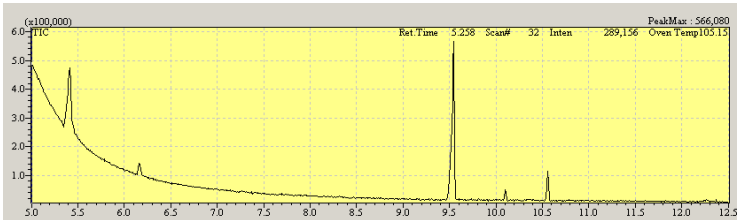
Sample chromatograms



Krishna Tulsi



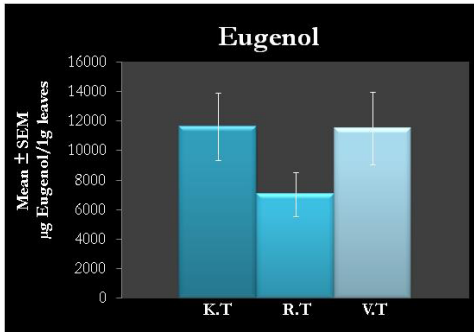
Rama Tulsi



Vana Tulsi

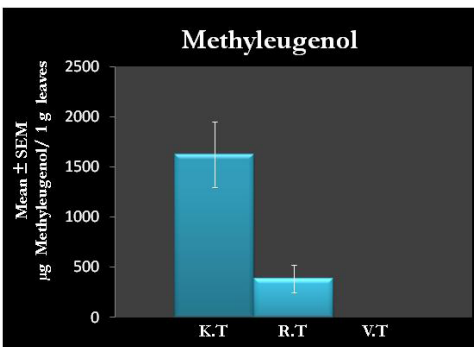
All Tulsi (self and friend grown)

Eugenol



Variable	N	Mean µg/g	SE mean µg/g	StDev µg/g
Krishna Tulsi	35	11620	2280	13486
Rama Tulsi	18	7068	1484	6295
Vana Tulsi	7	11499	2491	6591
Mann Whitney 95% Confidence Interval KT vs. RT	(-6914, 21262) Not Significant			
95% CI KT vs. VT	(-26847, 18871) Not Significant			
95% CI RT vs. VT	(-31231, 3821) Not Significant			

Methyleugenol



Variable	N	Mean µg/g	SE Mean µg/g	StDev µg/g
Krishna Tulsi	35	1626	327	51937
Rama Tulsi	18	385	141	580
Vana Tulsi	7	0	0	0
Mann Whitney 95% CI KT vs. RT	(1038.1, 3905.1) Significant			

Self grown Tulsi only

Eugenol

Variable	N	Mean µg/g	SE mean µg/g	StDev µg/g
Krishna Tulsi	24	16839	2726	13355
Rama Tulsi	10	11255	1751	5538
Vana Tulsi	7	11499	2491	2491
Mann Whitney 95% Confidence Interval KT vs. RT	(-12331, 40967) Not Significant			
95% CI KT vs. VT	(-13955, 46480) Not Significant			
95% CI RT vs. VT	(-21568, 19938) Not Significant			

Methyleugenol

Variable	N	Mean µg/g	SE Mean µg/g	StDev µg/g
Krishna Tulsi	24	1017	170	830
Rama Tulsi	10	627	228	720
Vana Tulsi	7	0	0	0
Mann Whitney 95% CI KT vs. RT	(-643.9, 2921.3) Not Significant			

Friend grown Tulsi only

Eugenol

Variable	N	Mean µg/g	SE Mean µg/g	StDev µg/g
Krishna Tulsi	11	234	116	385
Rama Tulsi	8	1835	247	700
Vana Tulsi	0	0	0	0
Mann Whitney 95% CI KT vs. RT	(-6008.4, -3323.5) Significant			

Methyleugenol

Variable	N	Mean µg/g	SE Mean µg/g	StDev µg/g
Krishna Tulsi	11	2955	871	2889
Rama Tulsi	8	82	38	108
Vana Tulsi	0	0	0	0
Mann Whitney 95% CI KT vs. RT	(3175.8, 10605.2) Significant			

Self and friend grown Krishna Tulsi

Eugenol

Variable	N	Mean µg/g	SE Mean µg/g	StDev µg/g
Friend Krishna Tulsi	11	234	116	385
Own Krishna Tulsi	24	16839	2726	13355
Mann Whitney 95% Confidence Interval Friend KT vs. Own KT	(-70340, -20703) Significant			

Methyleugenol

Variable	N	Mean µg/g	SE Mean µg/g	StDev µg/g
Friend Krishna Tulsi	11	2955	871	2889
Own Krishna Tulsi	24	1017	170	830
Mann Whitney 95% Confidence Interval Friend KT vs. Own KT	(1089.0, 6997.9) Significant			

Self and friend grown Rama Tulsi

Eugenol

Variable	N	Mean µg/g	SE Mean µg/g	StDev µg/g
Friend Rama Tulsi	8	1835	247	700
Own Rama Tulsi	10	11245	1751	5538
Two-Sample T-Test 95% Confidence Interval Friend RT vs. Own RT	(-40259.6, -16255.0) Significant			

Methyleugenol

Variable	N	Mean µg/g	SE Mean µg/g	StDev µg/g
Friend Rama Tulsi	8	82	38	108
Own Rama Tulsi	10	627	228	720
Two-Sample T-Test 95% Confidence Interval Friend RT vs. Own RT	(-3787.9, 140.6) Not Significant			

Discussion

Eugenol was the main component in the three types of Tulsi analyzed in the experiment. Eugenol has a minimum LD_{50} value of 1930 mg/kg bw (Shokeen et al., 2008). An individual of 70 kg would have to consume approximately 12 kg of the KT leaves that were grown at WWC to reach this level, so acute toxicity is not a concern. The literature does not suggest chronic toxicity concern dealing with eugenol either. Thus, the amount of eugenol present in the three varieties of Tulsi can be considered beneficial for medicinal purposes.

Methyleugenol, which was a secondary constituent in the Tulsi plants, has a minimum LD_{50} value of 810 mg/kw bw (European Commission, 2001). In order to reach this median lethal dosage, an individual of 70 kg would have to consume 33 kg of the KT leaves grown in this experiment. It is important to understand that the LD_{50} value is the dose of substance required to kill half of a population over a certain amount of time. The LD_{50} does not describe carcinogenicity. However, as pointed out earlier in the literature review, even 37 mg/kg bw dosages of methyleugenol led to harmful effects in the rodents' bodies. Moreover, methyleugenol can reach a metabolic saturation point, remaining concentrated in many organs, especially the liver. In addition, metabolism of methyleugenol possibly decreases with age. Since methyleugenol and its derivatives have shown evidence of carcinogenic activity, it is important to be aware of the presence of methyleugenol in the Tulsi plants. Chronic toxicity of methyleugenol is a legitimate concern.

Even in controlled growing conditions, Krishna Tulsi and Rama Tulsi plants differed. The results showed that KT contained significantly more methyleugenol than RT. This variation could be due to soil mixture, strain and genetic differences, or errors in method of extraction. This study cannot definitively suggest exactly how soil mixture could affect the concentration of the chemical constituents

in Tulsi plants because growing conditions were kept controlled over the course of the experiment.

Strain differences between KT and RT are the most likely reason that concentrations of methyleugenol differed. Although the literature does not point out strain difference, this study has shown that they are significantly different. The wide ranges of eugenol and methyleugenol concentrations reported for *Ocimum tenuiflorum* L. earlier in Table 1 could be explained by this hypothesis.

The method of extraction may have also contributed to the methyleugenol difference in KT and RT. Previous researchers have used water, alcohol, and hexane to extract the chemical constituents. For this experiment, methylene chloride was used. Further studies are required to accurately understand the effects of soil conditions, strain and genetic differences, and method of extraction on the chemical constituents of Tulsi plants.

Conclusion

The Hindu people in my village use Tulsi in a variety of ways. Food must be offered to the Hindu Gods before it is eaten. These offerings must contain the leaves of Tulsi because they are considered especially holy. In addition, both the holy water and parasad, fruits blessed by Hindu Gods, given at Hindu temples contain KT and RT leaves. The people in my village also chew RT and KT leaves to cure their illnesses. Since this study found a significant difference in the amount of methyleugenol between the Rama Tulsi and Krishna Tulsi, I suggest that the Indian community should consume the Rama Tulsi during illnesses and limit the amount of Krishna Tulsi use during their day. Krishna Tulsi and Rama Tulsi will and should be used in holy Hindu rituals; however, awareness of the exposure to methyleugenol is important because of the potential negative health effects on those who consume KT leaves on a regular basis. However, this study is limited in scope. Further studies are re-

quired to test the naturally growing RT and KT in different villages and other areas of India to provide strong evidence for the use of only Rama Tulsi during illness.

This study does not suggest the use of Vana Tulsi for the Indian communities because RT and KT are commonly grown and considered holy, whereas the Vana Tulsi is not. Additionally, only seven of the Vana Tulsi samples survived. More samples are needed from different regions of India and Africa to test Vana Tulsi for eugenol and methyleugenol concentrations. If further studies show positive signs for medicinal use of Vana Tulsi, then Indian communities may use this variety when they are ill and continue using the other varieties for religious rituals.

Appendix I

Growing conditions

Basic soil and water

Exposed to regular weather in Asheville, North Carolina

Tulsi pots were placed in plastic trays and watered from the roots-up.

Extraction

3 grams of leaves were ground with 4 grams of sand in 40 mL of methylene chloride for about 7 minutes. The solution was then placed in a flask over night. The next day, the solution was filtered, and approximately 5000 micrograms of phenol, an internal standard, was added. Anhydrous magnesium sulfate was added to remove any water in the solution. The solution was filtered again and samples were prepared for the GC-MS.

The solutions were filtered for a third time before analysis by GC-MS to prevent the column from clogging.

GC-MS Conditions

Injection temp	250 °C
Interface temp	280 °C
Column int. pressure	100 kPa
Column flow	1.7 mL/min
Linear velocity	47.4 cm/sec
Split ratio	1
Total flow	6.6 mL/min
Solvent cut time	3 min
Start time	4.00 min
End time	12.50 min
Start M/Z	41.00
End M/Z	350

Rate	Temperature (°C)	Hold Time
-	50.00	0.00
10.0	100.0	0.00
20.0	250.0	0.00

Standards

Vial	Methyl-eugenol/ CH ₂ Cl ₂ (μl)	Methyl-eugenol (μg)	Eugenol/ CH ₂ Cl ₂ (μl)	Eugenol (μg)	Phenol/ CH ₂ Cl ₂ (μl)	Phenol (μg)	CH ₂ Cl ₂ (mL)
A	1000	5300	1000	5300	1000	5695	2
B	500	2650	500	2650	1000	5695	3
C	250	1325	250	1325	1000	5695	3.5
D	100	530	100	530	1000	5695	3.8
E	50	265	50	265	1000	5695	3.9

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Interlocking Threads: Examining the Relationships between Cord-Marked Pottery, Gender, and Communities of Practice in Western North Carolina

Abstract: Native Americans produced a wide variety of textiles in the Southeast; unfortunately these artifacts are not well-preserved. In Western North Carolina the only evidence of Native textiles is cord- and fabric-impressed pottery. This research examines prehistoric textile production from three archaeological sites through the description and analysis of cord-marked pottery, using quantitative data coding, SPSS statistics software, and experimental archaeological methods. The theoretical foundation for this research is feminist archaeology and situated learning theory. This study tracks variations in cordage construction temporally and geographically by statistically analyzing S- and Z-final twist directions of cordage in relation to pottery typologies and site locations. Labor intensity of cordage construction is also addressed via statistical analysis. A non-statistically significant tendency toward the S-twist exists both temporally and geographically, suggesting a possible community of practice in Western North Carolina.

Helen Albea | Anthropology

History, natural sciences, and all manner of hand-crafts were keen interests to Helen from a young age, which led her to study archaeology at Warren Wilson College. After spending two years on the locksmith crew and one year on the archaeology crew, and after getting to know and befriend many of the faculty and students in the sociology/anthropology department, Helen graduated from Warren Wilson College in May 2012. She is currently living in Birmingham, Alabama with her husband Eric and working for the University of Alabama Health Services Foundation.



Introduction

Who were they? What was their daily life like? What would my role have been if I was born among them? These are the questions I ask myself whenever I hear of an ancient civilization or culture. I often try to relate to the past by seeing myself there, and what is more relatable than daily life? I am sure my fascination with the mundane seems strange from the outside, but these moments fill up most of a human life and are common to everyone. Even if the routines and actions change over time, the needs they sustain are the same. So when I first visited the Berry and Warren Wilson sites, and first heard of the Biltmore Mound site, I wondered what my life would have been like if I had grown up and lived in this Native American town.

Archaeology is the best way to answer questions like these, for it studies the objects left behind by past societies. But it takes more than just a general study of the artifacts found on the sites to fully answer my question. I not only want to know what life was like, I want to know what it was like for female-bodied individuals. This requires research on pre-Columbian Native American culture, with a feminist archeological perspective. What follows are the pieces of the puzzle I have been able to put together so far.

Women were key economic contributors to their societies throughout the Southeast. Most of the cultures were matrilineal, so the importance of women was both material and social (Braund 1990; Rifkin 2005). They cared for children, produced pottery, and were involved in every aspect of food preparation. Women harvested wild plants, hunted, tended gardens, and were often responsible for cooking, tanning hides, and other meat processing activities (Adovasio et al. 2007:268; Braund 1990; Bridges 1989; Claassen 1997:69-70; Hurcombe 2000; Koehler 1997:223-224). We know this from archaeological evidence such as Patricia Bridges' 1989 study on stresses on long bones from Mississippian agricultural and archaic hunter-gatherer so-

cieties. Women's arm and leg strength showed an increase, indicating use of mortar and pestle and other shifts in agriculture-related labor (Bridges 1989; Claassen 1997:69-70). While there is variation between populations as to who was primarily responsible for creating and maintaining different objects of material culture, it is generally agreed that Native American women produced textiles and pottery (Braund 1990; Hurcombe 2000; Koehler 1997: 224). However, this research will not be focusing on pottery production. This study concerns cord-marked pottery—the intersection between pottery and fiber arts—with an emphasis on cordage (the twisted or spun fibers that make up textiles).

Women on the Berry, Biltmore Mound, and Warren Wilson sites were most likely spinners, weavers, potters, farmers, and gatherers. They were also included in hunting and war parties and capable of flintknapping (Claassen 1997, 68-71; Koehler 1997: 224). Despite this information, it is very difficult to find evidence of the women as individuals. The plants they harvested and the children they raised are long gone, and pottery and stone tools can only tell us so much. So how can we reach them?

This is where the magic of cordage and fabric comes in. Cordage and cloth display within their construction every decision the artist made during the process (Eriksen et al. 2000, 69). In other words, cordage and cloth are records of thought processes, which are in turn related to communities of craftspeople. Pottery does not display the same kind of detail because the stages of its construction are usually smoothed over.

Unfortunately, all of the cordage from the Berry, Biltmore Mound, and Warren Wilson sites has long since decayed. This situation is not unique; in fact, very few textile artifacts associated with the humid American Southeast survived to reach the hands of modern archaeologists. Most Native American cordage was made of wild plant fibers such as dogbane or milkweed, tree barks, and stinging nettle. Organic matter such as this does not take long to decompose

if left to the elements. The Spiro Mound in Oklahoma and Hopewell culture burial sites in Ohio are sites that contain intact fabric remains; unfortunately, this study does not have access to any physical cloth or cordage. All we have left of Native American textiles at the sites in question are the impressions of cordage left on potsherds. Cord-marked and fabric-impressed pottery was made throughout the American Southeast and East coast, so information about Native fiber arts in this area is often obtained from these types of pottery. These impressions provide archaeologists with a great deal of insight; for example, the cultural information represented in the final twist direction of cordage (the clockwise or counterclockwise direction that a spinner twists her yarn to finish a product). Final twist direction can indicate communities of practice and ethnic boundaries.

Fabric-impressed and cord-marked pottery is commonly found on Southeastern Woodland (roughly 600 BC to AD 1000) and Mississippian-period (circa AD 900 to AD 1600) sites. The Biltmore site has a majority of Woodland artifacts. The Warren Wilson and Berry sites contain mostly Mississippian artifacts. The Berry site contains comparatively rare instances of Woodland objects. The cord-marked pottery from these sites is the basis for the following study. Using these artifacts, I will attempt to answer my questions, at least in part: Who were they, what was their daily life like, and what would my role have been if I were born among them?

Thesis Statement, Research Questions, and Purpose of Study

This study examines prehistoric Native American textile production in Western North Carolina through the description and analysis of cord-marked pottery, using situated learning theory and feminist archaeological perspectives. The goal of this research is to answer the following

questions:

- 1) What did prehistoric cordage in Western North Carolina look like? What were its most common attributes, and did they change over time?
- 2) Are there any patterns represented in the frequency of S- and Z-final twists in relation to temporal or geographic association that could indicate a prehistoric Western North Carolinian community of practice?
- 3) How labor-intensive was cordage production in prehistoric Western North Carolina?

This research gains insight into the women who made cordage, and how and why. More specifically, this study looks for traces of the culturally distinct methods used to craft these cords and how that community of practice relates to others within the Southeast. This perspective is the most valuable theoretical approach for the Southeast because we have so few physical remains with which to conduct our studies.

Another fundamental part of this study is its relation to the lives of women in Western North Carolinian Native American society. Rebecca Kugel and Lucy Murphy (2007) make the excellent point that “The field of women’s history can also benefit greatly from more culturally accurate interpretations of Native women’s experiences.” This cultural accuracy is what I seek by focusing on fiber arts. Cultural specificity is needed because most of the work regarding women’s association with textiles is based on the European experience. This study contributes to our knowledge of Native American women’s roles in pre-Columbian Western North Carolinian society by examining cord-marked and fabric-impressed pottery from the Berry Site near Morganton, the Biltmore Mound Site in Asheville, and the Warren Wilson site in the Swannanoa Valley.

Significance and Benefits

This is the first study of cordage for the Berry, Biltmore, and Warren Wilson sites, or for any sites in Western North Carolina. Fiber-based artifacts are essential items of material culture (Adovasio et al. 2007: 242). I would argue that a study of cordage and/or textiles should be included in every discussion of a Native American site. Thus, this study is an important component of the overall body of archaeological knowledge pertaining to this geographic region. It also contributes to existing data on the Warren Wilson, Biltmore, and Berry sites, and could serve as a starting point for a more intensive study.

Research Framework: Overview of Archaeological Sites

The three sites in my study represent a diverse array of geographic and temporal components of Western North Carolinian prehistory. The Biltmore Mound site is a Woodland period site located in the Appalachian Mountains and associated with Cherokee ancestors. The Warren Wilson site on the Swannanoa River is also located in the mountains and associated with Cherokee ancestors (Dickens 1976), but contains mostly Mississippian artifacts. The Berry site is located on the Piedmont and is associated with Catawba ancestors. To more fully address the geographic and temporal aspects of my research questions, I must also associate my findings with indicators of regional chronologies. Ceramic typologies are often used to identify cultural chronologies on sites in this area. By identifying which pottery series (and which type within that series) each of my cord-marked sherds belongs to, I was able to make rough inferences about the culture groups producing the cordage I discuss in this study.

The cord-marked pottery series I analyzed in this study were Burke, Cowans Ford, Uwharrie, Dan River, Con-

nestee, and Swannanoa. The Burke and Cowans Ford series are Mississippian Piedmont pottery dating from A.D. 1400-1600. They represent the Mississippian component of my study and were found on the Berry site (Moore 2002). Uwharrie and Dan River are the Late Woodland components of this study, dating from A.D. 800-1200 and A.D. 1000-1450 respectively ("Archaeology of North Carolina: The Woodland and Mississippian Periods in North Carolina" 2010). Both were found on the Piedmont and in small amounts on the Berry site. The Connestee series is the Middle Woodland component of the study, dating from A.D. 200-800. Connestee sherds occurred on both the Warren Wilson and Biltmore Mound sites in abundant amounts. Swannanoa pottery is the Early Woodland pottery used in this study, dating from 1000-300 B.C. It was found on both the Warren Wilson and Biltmore sites.

The Warren Wilson village site is located on the Warren Wilson College campus. The site was excavated as part of the college's field school from 1964-75, again from 1978-83, and finally from 1996-2000. Units on the site are still occasionally reopened for archaeology classes. The site contains majority Mississippian ceramics from the Pisgah phase. However, the Woodland period Swannanoa phase pottery found on this site is known for its cord-marked and fabric-impressed surface treatment (Keel 1972:246). Most of the sherds for this study came from pit features and subsoil excavated during the 1996-98 field seasons.

The Biltmore Mound site is a small village site with an adjacent platform mound. The mound was a ceremonial center built in three stages by the Connestee culture over a 200-year time span from A.D. 400 to A.D. 600 (Kimball et al. 2010, 44). One of the defining characteristics of Connestee pottery is cord-marked surface treatment. Cord-marked sherds were the second most common Connestee ceramic type found on the site (Kimball et. al. 2010, 49-50). The Biltmore Mound pottery I analyzed was from pit features and surface contexts collected during David Moore's survey of

the site in 1984.

The Berry site is located on the North Carolina Piedmont, in Burke County. It is a Mississippian period site inhabited by Catawba Indian ancestors. Burke series is the most common pottery found on the Berry site (Moore and Beck 2002:9). Cord and fabric-impressed Burke pottery is rare, but did make up a fair portion of my sample. Uwharrie, Cowans Ford, and other less common forms found on the Berry site were also analyzed. Over half of the pottery I analyzed from the Berry site came from pit features, subsoil, and structure contexts excavated during the 2007-11 Warren Wilson College field school seasons; the rest were found in the plowzones.

Literature Review

The theoretical foundations for this study are feminist archaeology—based on Frances Dahlberg’s pioneering work *Woman the Gatherer* (1983)—and Lave and Wenger’s situated learning theory (1991). These two conceptual spheres provide our knowledge of prehistoric cordage, the women who made it, its cultural implications, and how we can study all of this from our twenty-first-century perspective.

Feminist archaeology involves gendered interpretations of textile production. Fabric and gender are inextricable because—aside from a few exceptions—ethnographic studies of pre-industrial agricultural communities indicate that women were the primary producers of textiles (Adovasio et al. 2007:192, Hurcombe 2010). This association has provided an outlet for feminist archaeological inquiry. Since its introduction in the 70s, the field of feminist archaeology has greatly enhanced our understanding of gender on sites worldwide. This is the sentiment put forward by theorists Margaret Conkey and Joan Gero, who state that “Feminist inquiry in archaeology[...] [is] committed to changing the way archaeology is practiced, the way it is presented, and

the nature of archaeological interpretation” (1997:412).

Jean Lave and Etienne Wenger’s situated learning theory states that all learning takes place through legitimate peripheral participation in socially located communities of practice (1991). A community of practice is any situation where people share and learn skills, for example, the women producing cordage in an ancient society.

Archaeologists have begun to apply situated learning theory to artifact analysis by identifying which attributes are the result of subconscious motor skills and which are stylistic choices. Motor skills are indicators of communities of practice because they come from ingrained behaviors rather than aesthetic choices. Final twist direction in cordage and twining direction in fabric are primary indicators of geographic and temporal cultural differences (Gilligan 2008; Hayden 2009; Maslowski 1996; Minar 1999; Peterson 2000).

Through the application of Lave and Wenger’s situated learning theory, changes in cordage construction can be tracked temporally and geographically by statistically analyzing certain culturally indicative attributes. These attributes must be tied to craft-specific motor skills, which tend to be taught and learned the same way over time. A break from these motor skills represents a break from a community of practice. Most studies on the significance of twist direction in cordage incorporate situated learning theory (Maslowski 1996, Minar 2000, Peterson & Wolford 2000). Learning processes and their related culturally-unique motor skills are especially useful to United States regional studies focusing on ethnic identity and the evolution of culture groups. Annette Ericksen, Kathryn Jakes, and Virginia Wimberley preface their study with the assertion that “textiles embody the sum of individual and societal behaviors, combining individual decisions and group-derived conventions with social patterns of a given time and place” (2000:69). These “conventions” indicate communities of practice; the weaving of the fabric is their manifestation.

Though it is widely agreed that textiles can tell us a great deal about personal and group identities, there is debate over which attributes are the most telling and why (Drooker 2000:2). One such debate involves the culturally indicative attributes associated with twist direction. C. Jill Minar studied the standardized final twist directions in cordage present among cultural groups (2000). She argues that spinning technique, fiber type, and handedness were not associated with final twist directions, as was previously accepted. Instead, she presents the following reasons as to why final twist direction persists temporally and geographically: the teaching and learning process, automatization of motor skills, efficiency and practicality, and cultural beliefs about directionality (2000:96-98). Minar's study challenges assumptions about the significance of textiles by introducing new lenses through which to view them. Categories of meaning attributed to twist direction, such as Minar's, provide researchers like myself with the statistical analysis used to make sense of the patterns found in groups of artifacts.

Mississippian Village Textiles at Wickliffe by Penelope Drooker (1992) is one of the only book-length studies on Southeastern textiles. Drooker gathered her data using fabric-impressed pottery, and offers a step-by-step description of her methods, which proved extremely valuable to my research. Though Drooker's focus is textiles rather than cordage, her basic methods of pottery impression analysis still apply to this study in terms of appropriate size of sherd, significant attributes of cordage, and, most importantly, the cultural implications conveyed by those attributes. Drooker briefly mentions that final twist direction is "one indicator of the amount of labor involved in fabric production" because this shows how loose or tight the cordage is twisted (48). Hurley measures the tightness of cordage by comparing the width and number of twists per centimeter (1979). I used and compared both approaches in the hopes that this would provide the clearest indication of labor intensity. I

measure labor intensity based on the assumption that all the cordage in my sample is handmade, without the use of tools.

Peterson and Wolford's study discusses how best to interpret cultural boundaries through cord-marked pottery. They focused on Woodland Iroquois populations in the Northeast and found that coastal groups made Z-twist cordage and interior populations made S-twist (2000:112). Final twist direction is often the most telling in terms of cultural boundaries because this aspect of cordage construction is, more often than any other, unconsciously chosen based on how the individual was taught.

Methods

In this research I attempted to identify construction patterns in cordage found on the Berry, Biltmore, and Warren Wilson sites, using purposive sampling of cord- and fabric-impressed pottery. I used a quantitative coding spreadsheet to recode cordage attributes, and experimental archaeological techniques for reference and visual aid. The coding and methods used in this study analyze cords and fabric by breaking them down into individual aspects. The terminology used to describe these aspects is best understood in the context of construction. Each cord is made of fibers spun either to the right or left (initial spin direction). These single-ply yarns are then spun together, usually in the opposite direction, to make cordage. This is the secondary, or sometimes final, twist. More cords can be added, in a variety of ways.

Because twist direction is best studied "in conjunction with other diagnostic artifacts whenever possible" (Maslowski 1996:96), and because pottery is an artifact associated with regional cultural chronologies and culture groups, I first recorded the pottery type for each sherd. I then began to identify the following cordage attributes: final twist direction (S- or Z-twist), width of cord (in millime-

ters), number of twists per centimeter, cordage ply (single, 2, 3, 4, etc.), re-ply (2:2, 2:3, 3:2, etc.), final angle of twist, and hardness of cords. All discussion of these attributes refers to the final cord, rather than the internal elements. Data was first collected by taking a positive cast of each sherd with modeling clay (Figure 1).

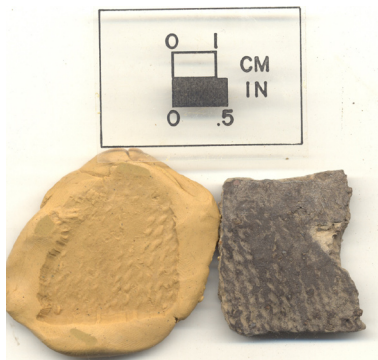


Figure 1: Positive Cast of Cordage Impressions

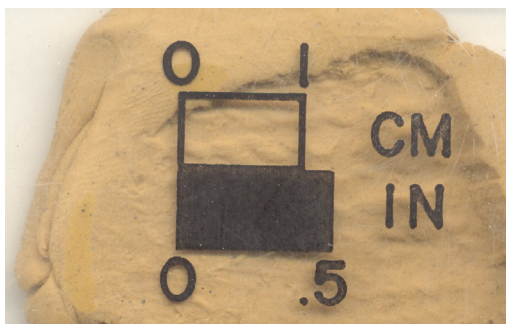


Figure 2: Measuring Twists Per Centimeter

The number of twists per centimeter was taken from the positive cast using a centimeter scale printed on a transparency (Figure 2). The twists per centimeter were used in conjunction with the width of the cord—measured with a ruler—to find the cordage tension/hardness as per Hurley's diagram (see table 1).

Tensions of Cord	Diameter of Cord in Millimeters	Twists Per Centimeter
Soft Cords	0.5	7.2
	1	5.6
Medium Cords	0.5	9.6
	1	7.2
	2.5	1.6
Hard Cords	0.5	12
	1	9.6
	2.5	2
	4	2
Very Hard Cords	0.5	16
	1	12
	2.5	3.2
	4	2.4

Table 1: Hurley's Cordage Tension Diagram (Hurley 1979:7).

The diagram lacks many of the possible cord width/number of twist per centimeter combinations, so I constructed a table that filled in some of these gaps (Appendix E). Because the relation between cord hardness and twists per cord width is based on a range of possible combinations and follows no clear formula, I constructed my table in as logical a manner as possible by making sure my calculations remained consistent with Hurley's table.

The next variable identified is ply type. Single-ply cords are those not combined with other cords (Figure 3). Plied cordage is any construction of two or more single cords twisted together. Two Z-twist single cords would make an S-twist 2-ply cord (Figures 4 and 5). Re-plied cords are made of plied cords twisted together (Figure 6).



Figure 3: Single Ply Cord and Positive and Negative Impressions



Figure 4: 2-ply Cordage and Positive and Negative Impressions



Figure 5: 3-Ply Cord and Positive and Negative Impressions



Figure 6: Re-plied Positive and Negative Impressions

Final angle of twist was measured using Penelope Drooker's diagram (1992:45). I printed the diagram onto a transparency and put it on top of the positive cast to get as accurate an assessment of the twist angle as possible (Appendix C).

To select sherds for the coding process, I used purposive sampling to select potsherds at least one by one centimeters in diameter. Some sherds did not have clear impressions of cords, and I was unable to code their cordage attributes.

Throughout my research and the instrument construction process I referenced Hurley's analysis of cord-marked pottery, as outlined in *Prehistoric Cordage* (1979), Drooker's *Mississippian Village Textiles at Wickliffe* (1992), and Emery's *The Primary Structures of Fabric* (1966). I used my coding spreadsheet to create descriptive data of the cordage represented in my sample (Appendix A). I used Hurley's style of notation to record the few instances of complex, re-plied cordage (1979:7).

Data Coding

My coding forms for this research are based primarily on Jenna Kuttruff's fabric complexity index, specifically her yarn structure and fabric patterning sections (2000), and David Moore's pottery analysis spreadsheet (2002). I chose the variables outlined by Kuttruff and began creating a coding key encompassing all possible attributes for cordage in this area, resulting in the list discussed above. I identified only six series with certainty (Burke, Cowans Ford, Uwharrie, Dan River, Connestee, and Swannanoa). The rest I listed as either Woodland or Mississippian indeterminate.

Once all was coded, I used a more refined system that left out all undiscovered attributes (such as 4-ply cords) in preparation for using IBM's SPSS (Statistical Package for the Social Sciences). I also documented some non-coded information on an extra form, but found this cumbersome

and did not use it for many sherds (Appendix D).

When my data was compiled with the final version of my spreadsheet, I began entering it into SPSS. This was a very simple process, though I did have to create a new key (Appendix F) catered to the codes used in SPSS that differed from my original key. This is partly because I did not find all the pottery types or re-plied varieties that I included on my first key, and partly because I had to code all indeterminate variables as 1 to make the data tables uniform. There were nine variables in total (Appendix F). I then ran frequency and crosstab analyses.

Findings and Discussion of Large Vessel



Figure 7: One Side of Partially Reconstructed Dan River Cord-marked Vessel

I was fortunate to have access to a nearly complete, reconstructed, cord-marked vessel for this study (Figure 7). The over 55 sherds making up the Dan River vessel were found together in feature 84 in 2007. By comparing the

cordage clearly impressed on 27 sherds of the vessel, I was able to describe three distinct cordage types. The first is a 2-ply S-twist cord that varies from .75-3 millimeters in width, averaging 1.6 mm. It also varies from a soft to a medium cord in strength and tightness. This is the most common cord represented and was most likely stamped on the vessel as a surface treatment. The other two cordage types occur less frequently. On three of the sherds analyzed, a re-plied S-twist cord made up of two smaller Z-twist cords appears. This cord is 1.5-3 millimeters wide, with a twist angle of 10 to 25 degrees. This cord appears to be unraveling on sherds 20, 21, and 22, providing a clear impression of the Z-twist cords it is made of. The Z-twist cord is 1 mm wide, with a hardness ranging from soft to medium and a twist angle of 25-45 degrees.

SPSS Analysis

The sample includes 346 sherds, but because some sherds had indiscernible impressions, the sample of analyzed cordage impressions is smaller (N=206). Thirty-one percent of distinct cordage impressions came from the Berry site (31% n=64), 40 percent from the Warren Wilson site (40.8% n=84), and 28 percent from the Biltmore site (28.2% n=58). I ran frequency analyses on all variables, using IBM's SPSS software.

The most common pottery types, quantified by the number of distinct cordage impressions they displayed, were Connestee cord-marked (47.1% n=97), Swannanoa cord-marked (20.4% n=42), and Burke cord-marked (16.5% n=34) (Table 2). The high frequencies of these pottery types were expected; they are common to their respective sites. The less common pottery series and types are Mississippian Indeterminate (6.8% n=14), Woodland Indeterminate (2.9% n=6), Burke Fabric-impressed (1.5% n=3), Cowans Ford Cord-marked (1.5% n=3), Uwharrie Net-impressed (1% n=2), Uwharrie Cord-marked (.5% n=1), and Cowans Ford

Fabric-impressed (.5% n=1). There were only three distinct cordage impressions on the Dan River vessel, accounting for 1.5% of cordage analyzed. All of the minority pottery types, except for Woodland Indeterminate, were found on the Berry site.

The most common cordage attributes in the sample were easily interpreted from the frequency tables (Tables 3-8). Sixty-six percent of the cords were S-twist (66% n=136), fifty-eight percent had a twist angle of 10-25 degrees (58.7% n=121), ninety percent of cords were 2-ply (90.8% n=187), sixty percent of cords were soft (60.7% n=125), and fifty-eight percent of cords were between 1 and 1.9 millimeters in width (58.7% n=121). The rarity of re-plied (2.4% n=5) and single spun cords (5.3% n=11) is also notable, and seems to indicate a tendency toward neither overly simple nor overly complex cords. This data indicates that the most common attributes of cordage in Western North Carolina were soft, S-twist, 2-ply, 1-1.9 millimeter cords, with a twist angle of 10-25 degrees.

From this information, patterns that could indicate a community of practice begin to emerge. Of special interest is the high quantity of final S-twists and the large amounts of Woodland phase Connestee and Swannanoa pottery. I began to suspect that S-twist cordage was a tendency of Woodland Cherokee ancestors in the Appalachians.

To confirm the trends indicated by the frequency data, I ran Pearson chi-square crosstabulation statistical tests to see if there was a relationship between the variables and pottery types on each archaeological site. The most important of these crosstabulations is the test of association between final twist direction, pottery type, and site (Tables 2 and 3).

S-twist was the most common twist form on all three sites, making up 57 percent of the cordage impressions from the Berry site (57.8% n=37), 59 percent from the Warren Wilson Site (59.5% n=50), and 84 percent from the Biltmore Site (84.5% n=49). S-twist is also the most common twist

direction in most of the pottery types. The data for each site is not statistically significant, but the overall tendency toward S-twist is. The chi square test indicates that there is an over .05 chance that this is a random occurrence on the individual sites, as Table 10 illustrates. Yet the majority S-twist is a potential indicator of a temporally and geographically stable community of practice. The creation of S-twist cordage was probably a common motor skill in Western North Carolina, both in the Woodland and Mississippian periods. With a larger sample size, these trends could be tested further, potentially indicating a Swannanoa and Connestee influence on Burke cordage production.

Pottery Type * Final Twist Direction * Archaeological Site Crosstabulation						
Count						
Archaeological Site			Final Twist Direction			Total
			Indeter- minate	S-Twist	Z- Twist	
Berry Site (31BK22)	Pottery Type	Mississippian Indeterminate	0	5	9	14
		Woodland Indeterminate	0	1	2	3
		Uwharrie Cord-Marked	0	0	1	1
		Uwharrie Net-impressed	0	2	0	2
		Dan River Cord-Marked	0	2	1	3
		Burke Cord-Marked	1	23	10	34
		Burke Fabric-Imprinted	1	2	0	3
		Cowans Ford Cord-Marked	0	2	1	3
		Cowans Ford Fabric-Imprinted	0	0	1	1
	Total		2	37	25	64
Warren Wilson Site (31BN29)	Pottery Type	Woodland Indeterminate	0	1	2	3
		Swannanoa Cord-Marked	0	22	10	32
		Connestee Cord-Marked	1	27	21	49
	Total		1	50	33	84
Biltmore Mound (31BN174)	Pottery Type	Swannanoa Cord-Marked		7	3	10
		Connestee Cord-Marked		42	6	48
	Total			49	9	58
Total	Pottery Type	Mississippian Indeterminate	0	5	9	14
		Woodland Indeterminate	0	2	4	6
		Swannanoa Cord-Marked	0	29	13	42
		Connestee Cord-Marked	1	69	27	97
		Uwharrie Cord-Marked	0	0	1	1
		Uwharrie Net-impressed	0	2	0	2
		Dan River Cord-Marked	0	2	1	3
		Burke Cord-Marked	1	23	10	34
		Burke Fabric-Imprinted	1	2	0	3
		Cowans Ford Cord-Marked	0	2	1	3
		Cowans Ford Fabric-Imprinted	0	0	1	1
	Total		3	136	67	206

Table 2: Crosstabulation of Final Twist Direction and Pottery
Type by Archaeological Site

Chi-Square Tests						
Archaeological Site		Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Berry Site (31BK22)	Pearson Chi-Square	21.145 a	16	.173		
	Likelihood Ratio	18.379	16	.302		
	Linear-by-Linear Association	6.134	1	.013		
	N of Valid Cases	64				
Warren Wilson Site (31BN29)	Pearson Chi-Square	2.936 b	4	.569		
	Likelihood Ratio	3.284	4	.512		
	Linear-by-Linear Association	.032	1	.858		
	N of Valid Cases	84				
Biltmore Mound (31BN174)	Pearson Chi-Square	1.933 c	1	.164		
	Continuity Correction d	.829	1	.363		
	Likelihood Ratio	1.676	1	.195		
	Fisher's Exact Test				.177	.177
	Linear-by-Linear Association	1.900	1	.168		
	N of Valid Cases	58				
Total	Pearson Chi-Square	39.371 e	20	.006		
	Likelihood Ratio	24.785	20	.210		
	Linear-by-Linear Association	3.630	1	.057		
	N of Valid Cases	206				
a 23 cells (85.2%) have expected count less than 5. The minimum expected count is .03. b 5 cells (55.6%) have expected count less than 5. The minimum expected count is .04. c 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.55. d Computed only for a 2x2 table e 26 cells (78.8%) have expected count less than 5. The minimum expected count is .01.						

Table 3: Statistical Significance of Table 2

The overall tendency toward S-twist is clear on Figures 1-3. These graphs show the strong majority of S-twist on Burke cord-marked pottery (Figure 1), the less remarkable but still general tendency toward S-twist on the Warren Wilson site (Figure 2), and the clear preference for S-twist on the Biltmore site (Figure 3). The sherds from the Warren Wilson and Biltmore sites represent two culturally similar groups, yet they contrast sharply in twist preferences.

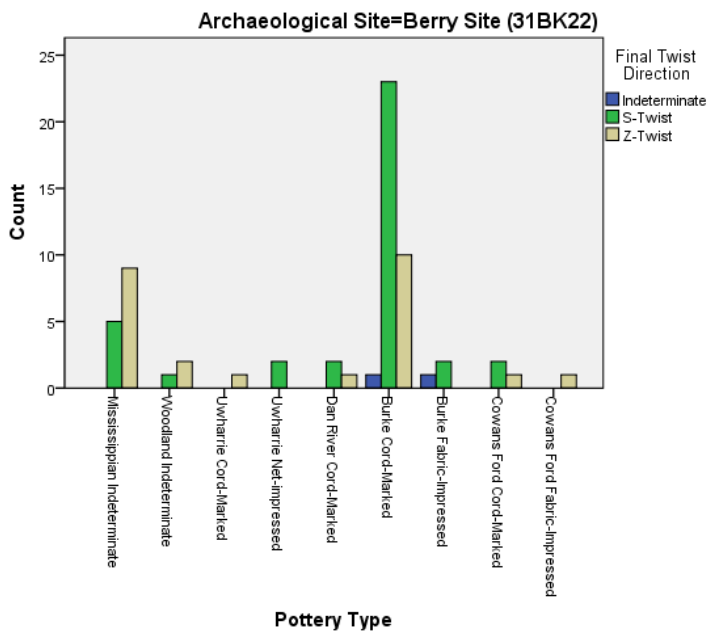


Figure 8: Pottery Types and Final Twist Directions on the Berry Site

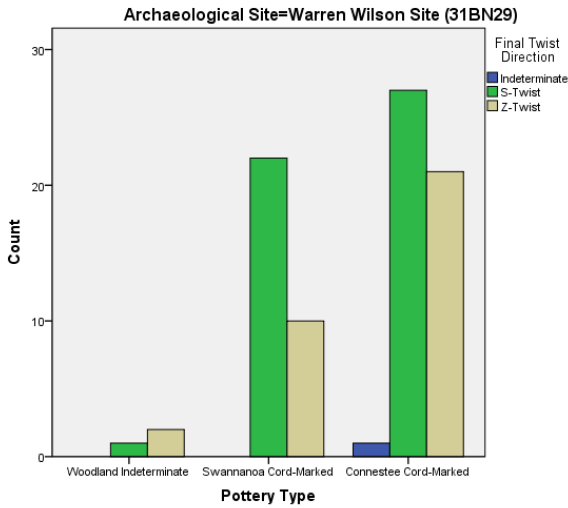


Figure 9: Pottery Types and Final Twist Directions on the Warren Wilson Site

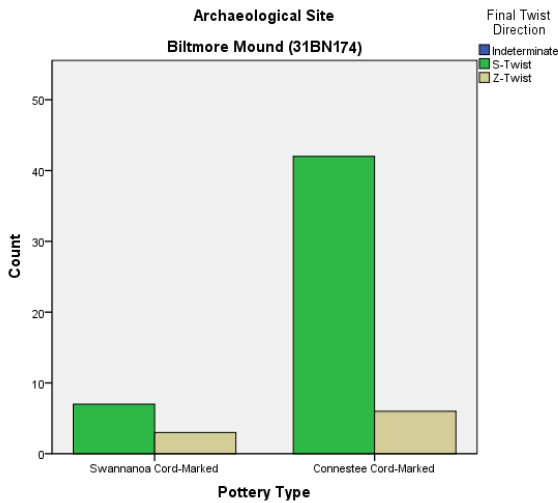


Figure 10: Pottery Types and Final Twist Directions on the Biltmore Mound Site

I also ran crosstabulations on the other variables, by site and pottery type separately, to test for significant correlations between other cordage attributes, time, and geography. Most of these relationships were not statistically significant. However, the variable of cordage width in particular shows some statistical significance. The Berry site was the only site with a slight majority of fine cords, 1 millimeter wide or narrower (46.9% n=30). The Warren Wilson and Biltmore sites showed a majority of slightly wider cords in the 1-1.9 category (65.5% n=55 and 67.2% n=39), though the chi-square test came out with exactly .05, making this data just barely insignificant, I believe this could be a significant trend. Burke pottery shows a clear tendency toward narrow <1 mm cordage impressions (58.8% n=20), whereas Connestee and Swannanoa sherds tend toward the slightly wider 1-1.9 mm category (67% n=65 and 61.9% n=26). This could mean that Mississippian period Piedmont cordage was finer than Woodland Appalachian cordage, and might represent a change in technique over time.

Crosstab						
Count						
		Width of Cord				Total
		< 1mm	1-1.9 mm	2-2.9 mm	3-4 mm	
Pottery Type	Mississippian Indeterminate	6	8	0	0	14
	Woodland Indeterminate	0	5	1	0	6
	Swannanoa Cord-Marked	9	26	5	2	42
	Connestee Cord-Marked	20	65	10	2	97
	Uwharrie Cord-Marked	0	1	0	0	1
	Uwharrie Net-impressed	0	2	0	0	2
	Dan River Cord-Marked	0	2	1	0	3
	Burke Cord-Marked	20	10	3	1	34
	Burke Fabric-Impressed	3	0	0	0	3
	Cowans Ford Cord-Marked	0	2	1	0	3
	Cowans Ford Fabric-Impressed	1	0	0	0	1
Total		59	121	21	5	206

Table 4: Crosstabulation of Pottery Types and Cordage Width

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	43.798 ^a	30	.050
Likelihood Ratio	47.608	30	.022
Linear-by-Linear Association	4.336	1	.037
N of Valid Cases	206		
a 36 cells (81.8%) have expected count less than 5. The minimum expected count is .02.			

Table 5: Statistical Significance of Table 4

I ran crosstabulation analyses comparing angle of twist with hardness to find the labor intensity of cordage production. These analyses found a large concentration of soft cords with a final angle of 10-25 degrees on each site. For example, this type of cord makes up 40 percent of the total cordage impressions from the Berry site (40.6% n=26), while soft 26-45 degree cordage, the second most common type, makes up only fifteen percent (15.6% n=10). Similar trends exist on the Warren Wilson and Biltmore sites. The aforementioned rarity of single and re-plied cords also illustrates the point that the cordage was neither unnecessarily elaborate and strong nor simple and fragile. Cordage production seems to be well-suited for a practical use of time and resources. Because cordage was probably all handmade, this preference for practicality over complexity makes sense. My examples indicate that cordage was simple to moderately intensive to create and took just enough effort to produce functional cords of ordinary strength.

Conclusion

Recognizing a community of practice for Western North Carolina is the first step toward better understanding prehistoric Western North Carolinian cordage. The discovery that both Cherokee and Catawba ancestors exhibited a preference for S-twist cordage could suggest cultural interaction between the two, but requires more research from a wider variety of sites to confirm. This connection suggests possible interaction among Native American women. The change in cordage thickness over time and across space may also suggest a refinement of techniques, technological advancements, or a difference in methods between the mountains and the Piedmont. The concepts of labor intensity and a community of practice come together in the most common cordage type, the soft S-twist 2-ply cords between 1-1.9 millimeters in width, and the majority of the cordage displayed on the large vessel.

Both types of cord are stronger than single ply, but not rigid or complex like hard or re-plied cords. This research shows that the craftspeople who created cordage were pragmatic and knew how to make strong cords quickly and simply. The women who inhabited our campus roughly 2,000-3,000 years ago, and the generations that followed across North Carolina, taught each other how to make cordage basically the same way for thousands of years. They also passed on the ethics of practicality and efficiency that come with a self-sufficient community. Cordage, one of the most versatile tools used in Native American daily life, represents women's technological ingenuity and their contributions to society. The cords impressed in the pottery I analyzed are records of thought processes from women of the past. I am grateful I was given the opportunity to read their messages.

Limitations and Delimitations

This study does not create generalizations about all Native American cordage, due to the small sample size and limited time available for research. This is not an exhaustive analysis of the cord-marked material from the Biltmore Mound, Warren Wilson, and Berry sites; there are still many unanalyzed sherds. This study's primary focus is description, with the theoretical themes of situated learning in communities of practice and feminist archaeology. A true situated learning study of cordage in Western North Carolina is beyond the scope of this research; it requires a much larger sample from a broader spectrum of sites. My intention is simply to build the groundwork for such a study by observing initial trends in the cordage assemblages of this region, and to open a discussion on the roles and lives of women on the Biltmore Mound, Warren Wilson, and Berry sites.

Questions for Future Research

A more conclusive understanding of the region's prehistoric textiles requires the analysis of a larger sample size from a wider variety of sites in Western North Carolina. Studies primarily focused on fabric- and net-impressed pottery would greatly improve our understanding of fiber artifacts in this area, as would in-depth studies on settlement patterns and how cordage twist preferences relate to those patterns. This type of analysis would need to rely on cordage twist trends in conjunction with pottery series. Lythic analyses would be required to outline trade routes, culturally-specific craft specialization and design preferences, and other archaeological evidence denoting cultural interaction. Cordage twist analyses also apply to spirituality-based studies, especially in the Southeast, where directionality is known to be a key part of the ceremonial complex. Access to fiber or cord-marked pots from burials and mounds with known ceremonial significance would be necessary for such a study.

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Appendix A: Coding Spreadsheet

[illegible]

Appendix B: Original Coding Key

Cordage Structure key from Kuttruff's Fabric Complexity Index

Site

- 1) 31BK22 (The Berry Site)
- 2) 31BN29 (Warren Wilson Site)
- 3) Other

Pottery Type

- 1) Badin Cord-Marked
- 2) Badin Fabric-Marked
- 3) Yadkin Cord-Marked
- 4) Yadkin Fabric-Marked
- 5) Swannanoa Cord-Marked
- 6) New Hope Cord-Marked
- 7) New Hope Fabric-Impressed
- 8) New Hope Net-Impressed
- 9) Connestee Cord-Marked
- 10) Uwharrie Cord-Marked
- 11) Uwharrie Net-Impressed
- 12) Haw River Net-Impressed
- 13) Dan River Cord-Marked
- 14) Dan River Net-Impressed
- 15) Qualla Cord-Marked
- 16) Burke Cord-Marked
- 17) Burke Fabric-Impressed
- 18) Cowans Ford
- 19) Pee Dee
- 20) Pigeon
- 21) Pisgah
- 22) Other

Number of components/beads 1-10 or indeterminate

Number of twists per centimeter 1-20 or indeterminate

Arrangement of components

Unspun

- 1) Single
- 2) Combined
- 3) N/A

Spun

- 1) Single
- 2) Combined
- 4) Complex (specify)_____
- 5) Other (specify)_____
- 6) Indeterminate

Plied (1-6 or indeterminate)

Re-plied

- 1) 2:2
- 2) 2:3
- 3) 3:2
- 4) Other_____
- 5) Indeterminate
- 6) N/A

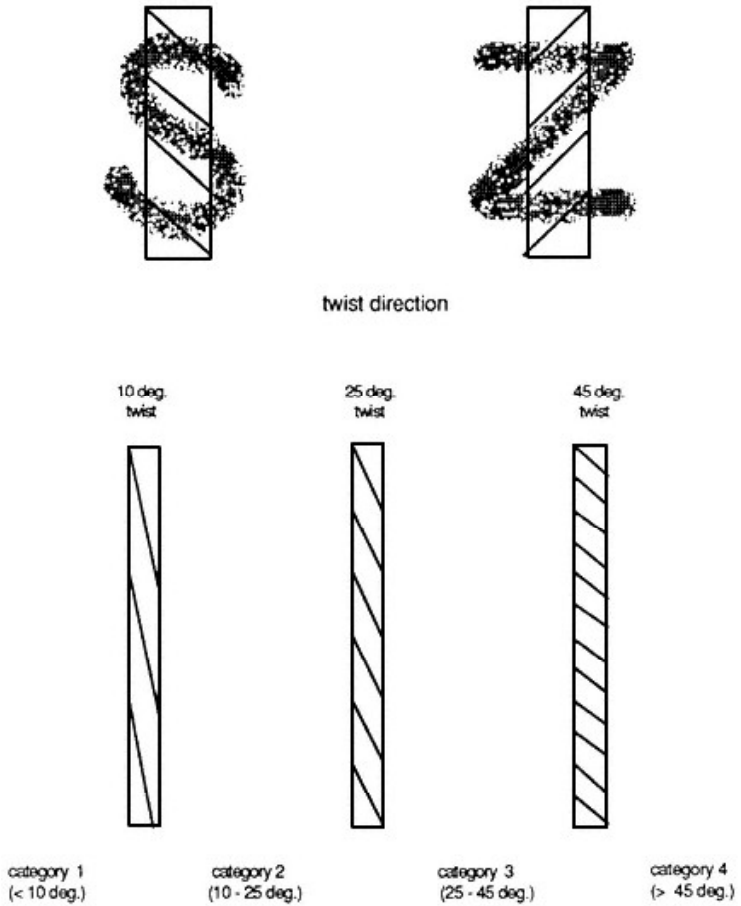
Final twist direction

- 1) No Twist
- 2) S
- 3) Z
- 4) Indeterminate

Final angle of twist in degrees

- 1) No twist
- 2) <10
- 3) 10-25
- 4) 26-45
- 5) > 45
- 6) Indeterminate

Appendix C: Reference Diagram for Twist Angle and Direction



Appendix D: Instrument Form

Photo _____

Date _____

Artifact Number _____

Provenience _____

Potsherd Dimensions _____

Yarn Diameter in mm _____

Measurements taken from:

a) Impression

b) Positive Cast

c) Both _____

Twist direction of components using Hurley's notation style.

References in Literature:

Photo references:

Description:

Comments

Appendix E: Width of Cord/Number of Twists per Centimeter Key

Tensions of Cord	Diameter of Cord in Millimeters	Twists Per Centimeter
Soft Cords	0.4	7.2
	0.5	7.2
	0.6	7
	0.7	7
	0.8	6
	0.9	5.6
	1	5.6
	1.1	4
	1.2	4
	1.3	4
	1.4	4
	1.5	3
	1.6	2
	1.7	2
	1.8	2
	2	1
Medium Cords	0.5	9.6
	1	7.2
	1.5	4
	1.6	4
	1.8	4
	1.9	2
	2	2
	2.5	1.6
	7.24	1

Hard Cords	0.5	12
	1	9.6
	1.6	5
	1.8	5
	2	3
	2.1	2.5
	2.5	2
	3	2
	4	2
Very Hard Cords	0.5	16
	1	12
	2	4
	2.2	3.2
	2.3	3.2
	2.5	3.2
	3	3
	3.5	3
	4	2.4

Appendix F: SPSS Key

Pottery Types

- 1) Mississippian Indeterminate
- 2) Woodland Indeterminate
- 3) Swannanoa Cord-Marked
- 4) Connestee Cord-Marked
- 5) Uwharrie Cord-Marked
- 6) Uwharrie Net-impressed
- 7) Dan River Cord-Marked
- 8) Burke Cord-Marked
- 9) Burke Fabric-Impressed
- 10) Cowans Ford Cord-Marked
- 11) Cowans Ford Fabric-Impressed

Final Twist Direction

- 1) Indeterminate
- 2) S-twist
- 3) Z-twist

Final Angle of Twist

- 1) Indeterminate
- 2) <10
- 3) 10-25
- 4) 26-45
- 5) >45
- 6) Indeterminate

Site

- 1) Berry Site (31BK22)
- 2) Warren Wilson Site (31BK29)
- 3) Biltmore Mound Site (31BK174)

Hardness

- 1) Indeterminate
- 2) Soft
- 3) Medium

- 4) Hard
- 5) Very Hard

Spin

- 1) Single
- 2) Combined

Ply

- 1) Indeterminate
- 2) No Ply
- 3) 2 Ply
- 4) 3 Ply

Re-plied

- 1) Not Applicable
- 2) 2:2
- 3) 3:2

Acknowledgements

I would first like to thank my advisors, David Moore and Christey Carwile, for their continued support. Laura Vance deserves equal thanks for her relentless guidance through the proposal writing process prior to this research, and for offering help with SPSS and interpreting my findings; without her I would not have been able to analyze and understand my data. I would also like to thank Linda Hall for allowing me access to the Western Office of North Carolina State Archaeology and its Biltmore Mound pottery collection. Special thanks go to my fellow students in my Directed Research class and all those who provided me with encouragement and allowed me to discuss my ideas with them. Of these wonderfully helpful peers I would like to especially call attention to Elizabeth Creech at the Writing Center, who helped me with the first draft of the paper, my roommate Valorie Nichols (who also wrote her senior thesis in anthropology), my fellow archaeologists Kat Kipfer and Maureen Vaughan, and everyone else on the archaeology crew. I am proud and grateful to be situated in the Warren Wilson College community of learning. Without the unique cultural interaction that occurs here, I would not be who I am today. I will carry the teachings of this community of practice with me always.





Crystals of the Tinder Polypore (*Fomes fomentarius*): Where Do They Occur?

Abstract: In 2005, author Paul Stamets detailed a novel antimicrobial mechanism in his book *Mycelium Running*. According to Stamets' observations, microscopic octahedral crystals produced by the fungus *Fomes fomentarius* "stunned" surrounding *E. coli* bacteria. No other observations of this mechanism were found during extensive literature searches. Given the clear need for replication, the present study was established to evaluate Stamets' claims. Specifically, the claim that large "secondary" crystals only occur in the presence of *E. coli* was addressed. Local specimens of *F. fomentarius* were cultivated, cultures were randomly assigned to two treatment groups, and after 10 days of *E. coli* exposure, samples were selected. High magnification microscopy (400-1000x DIC) revealed that five out of six interspecies dishes and six out of six isolated *F. fomentarius* dishes contained "secondary" crystals. These observations contradict Stamets' prediction that "secondary" crystals only occur in the presence of *E. coli*. In light of this new evidence, Stamets' proposed antibacterial mechanism is improbable. It is suggested that future chemical tests evaluate whether or not *F. fomentarius* crystals are composed of calcium oxalate.

Sam Wasko | Biology

Sam Wasko is a Warren Wilson alumnus with a B.S. in Biology and a legacy of curiosity. He currently lives in Portland, Oregon, where he continues to ponder life's persistent questions. Recent topics have included: "how to find work in the 21st century," "the jubilations of employment," "what moving in with your parents is really like," and "the fiscal benefits of rice and beans." His ideas for the future include teaching abroad, attending graduate school, and ultimately teaching high school students how to appreciate the world through a scientific lens. He will always seek to benefit his community through a dynamic combination of rationality and humor.



Introduction

In a world where drug-resistant pathogens continue to proliferate, novel antibiotics are urgently needed. To develop our next wave of chemical treatments, researchers are investigating successful antimicrobial defenses as they occur in nature. Higher fungi are central to this search as their wealth of potent metabolic compounds remain largely unexplored and underutilized. Thus, new attention is being placed on seemingly unremarkable organisms like *Fomes fomentarius* for help in fending off pathogens.

Fomes fomentarius is a type of white-rot fungus that inhabits the boreal forests of the northern hemisphere (Pegler, 2001). As a xylem endophyte, *F. fomentarius* infiltrates the wood of living and dead trees where it acts as both a parasite and decomposer (Sieber, 2007; Schwarze, 2007). Beech and birch trees are preferred hosts, though *F. fomentarius* can be found inhabiting a range of other species (National Audubon Society, 2001; Sieber, 2007).

Uses of *F. fomentarius* go far beyond its immediate ecological niche. The hard fruiting bodies of the fungus have been used by humans for millennia, with archaeological traces of their use dating as far back as $11,555 \pm 100$ years before present (Peintner, Pöder, and Pumpel, 1998). Since ancient times, the tough fibers from the fruiting body of *F. fomentarius* have been used to make tinder and prolong the life of embers (Pegler, 2001; Peintner, Pöder, and Pumpel, 1998). These same fibers have traditionally been processed to produce felted clothing and compresses, acting as highly absorbent styptics when applied to wounds (Pegler, 2001; Stamets, 2002).

In traditional East Asian and Slavic medicine, *F. fomentarius* is said to have extensive therapeutic properties (Beketova et al., 2011; Goldsmith et al., 2009). Different preparations of the fungus have been used to treat “oral ulcers, gastroenteric disorders, hepatocirrhosis, inflammation, and various cancers” (Chen, 2008). Recent *in vitro*

and *in vivo* studies have confirmed some of the antibiotic, immuno-stimulating, antioxidant, diuretic, anti-tumor, and anti-inflammatory properties of *F. fomentarius* implied by traditional practices (Beketova et al., 2011; Chen, 2008; Choi et al., 2004; Hiramatsu et al., 1999; Lee, 2005). In light of this growing evidence of efficacy, clinical case studies involving *F. fomentarius* are imminent (An and Jiang, 2000; Beketova et al., 2011; Chen et al., 2008; Choi et al., 2004; Lee, 2005; Wasser, 2011). However, there remains a need to identify the active compounds and mechanisms behind the observed effects of *Fomes fomentarius* treatments (Beketova et al., 2011; Wasser, 2011).

One such mechanism has been proposed by author Paul E. Stamets in his book *Mycelium Running* (2005). Having demonstrated that cultures of *F. fomentarius* were able to completely inhibit the growth of *E. coli* bacteria, Stamets suggested that *F. fomentarius* could be producing an “extracellular antibiotic” (Stamets, 2002). Upon closer examination, Stamets found that *F. fomentarius* produced microscopic octahedral crystals in advance of its mycelia (2005). Termed “primary crystals,” Stamets proposed that these crystals served as chemical “messengers,” releasing a “chemical scent trail” upon contact with *E. coli* (Stamets, 2005). Triggered by the dissolution of “primary crystals,” larger “secondary crystals” were produced in cultures of *F. fomentarius* exposed to *E. coli* (Stamets, 2005). Unlike their smaller counterparts, these “secondary crystals” stunned encroaching *E. coli*, allowing the “mother mycelium” to devour the pathogenic bacteria in direct proximity (Stamets, 2005). These larger “secondary crystals” are of enormous interest as they could yield utterly unique antibacterial compounds.

Unfortunately, no description of experimental design is provided in *Mycelium Running*, presumably because the book is geared toward a general audience. Based on extensive literature searches, the original study, conducted by Stamets in conjunction with the Batelle mycoremediation

team, has not been published in any peer-reviewed journal (Stamets, 2005). Similar articles paralleling or supporting Stamets' observations were not found in published literature.

Thus, in the wake of such intriguing descriptions, there remains a real need to replicate and review Stamets' work. This study investigates the antibacterial mechanism proposed by Stamets, approximating his experimental design and producing a second set of observations using microscopy.

Methods

Preliminary Study

With permission from the Montreat Wilderness Committee, wild specimens of *Fomes fomentarius* were collected from the Montreat Wilderness area (Buncombe County, North Carolina). Specimens were identified in the field using the National Audubon Society Field Guide to North American Mushrooms (2001). Exposure to a strong base (1M KOH) indicated that fomentariol was present in the fruiting bodies, confirming sample identity as *F. fomentarius* (Peintner, Pöder, and Pumpel, 1998).

Fruiting bodies were then broken open under sterile lab conditions, exposing internal tissue. This tissue was transferred to plates of malt extract agar prepared in accordance with manufacturer instructions (Difco™, 2009). Out of 16 initial tissue cultures, 10 were discarded due to contamination.

In vitro mycelia were identified as *Fomes fomentarius* by observing growth patterns (Campbell, 1938). Subsequent to identification, successful mycelia were cloned to new plates of malt agar by transplanting plugs of hyphae into the new dishes (Rodriguez et al., 2008). Dishes were sealed with Parafilm™ and stored at room temperature (~25°C) in a dark cupboard (Chen et al., 2007). Non-pathogenic *E. coli* from Carolina Biological™ was stored under identical con-

ditions on plates of tryptic soy and malt agar.

Microscopy observations were made using an Olympus BX60 compound microscope at 40x, 100x, 200x, 400x, and 1000x magnification. Bright Field, Phase Contrast, and Differential Interference Contrast (DIC) forms of photomicroscopy were used for all initial observations. Photographs were collected using CapturePro2.8.8 software. All subsequent measurements were made using this software.

To determine whether crystals could be found under any conditions, slides were prepared from pure *F. fomentarius* (n = 1 dish), pure *E. coli* (n = 1 dish), and interspecies frontiers between the two organisms (n = 7 dishes). These cultures were viewed at irregular intervals over the course of several weeks using a complete range of microscopy methods.

Frequency Comparison

After the preliminary study confirmed that crystals could be found using the aforementioned set of methods, a second study was launched to test Stamets' hypothesis that "secondary crystals" only occur when *F. fomentarius* is in the presence of *E. coli*.

New cultures of *F. fomentarius* were cloned onto plates of solid growth medium (10g tryptic soy agar per liter, 26g malt agar per liter, 5g yeast extract per liter, and 5g D-(+)-glucose per liter). Using a random number generator, uncontaminated cultures of *F. fomentarius* were assigned to two treatments: *F. fomentarius* grown in isolation (n=6 plates) and *F. fomentarius* grown in the presence of *E. coli* (n=6 plates). A plate of sterile growth medium (same as treatments) and a plate of *E. coli* served as controls. Plates were sealed with Parafilm™ and stored at room temperature (~25°C) in a dark cupboard (Chen et al., 2007).

After 28 days of mycelial growth and 10 days of *E. coli* exposure, cross-section samples were taken from the periphery of each plate using a sterile glass pipette. It should be noted that sample sites were not randomly selected; due

to limited and irregular mycelial growth, samples had to be taken from the leading edges of hyphae wherever sizeable new growth could be found. In the case of the interspecies treatment, samples were taken from wherever new hyphal growth was in direct contact with bacterial colonies.

Immediately following collection, each sample was transferred to a glass slide and viewed under 400-1000x Differential Interference Contrast (DIC) microscopy. “Secondary crystals” were recorded as either present or absent from each plate according to sample results. Based off of Stamets’ pictures in *Mycelium Running* (2005), “secondary crystals” were defined as bi-pyramidal octahedral crystals whose side lengths exceeded 4µm.

Samples were also collected and evaluated from the center of each mycelial mat. Presumably, these sites contained the oldest hyphae within each plate, having been transferred from clones dating back to the preliminary study. This would make the hyphae in these samples between 28 and 58 days old. It should be noted that none of the cloned parent tissue had been exposed to *E. coli* prior to this study of crystal frequency. It should be noted that the cultures used in this study were pseudoreplicates; parent tissue for both treatment groups were cloned from 3 plates of isolated *F. fomentarius*. Observed “secondary crystal” frequencies were compared to Stamets’ expected “secondary crystal” frequencies. According to Stamets, “secondary crystals” are produced as a response to the presence of *E. coli* (2005). The presence of any “secondary crystals” in isolated cultures of *F. fomentarius* would contradict Stamets’ proposed antibacterial mechanism.

Results

Preliminary Study

Day 5 – Samples were prepared from one dish of isolated *F. fomentarius*, one dish of isolated *E. coli*, and seven dishes containing both species. No crystals matching Stamets’ de-

scription were found.

Day 14 – Crystals roughly matching Stamets’ description of “secondary crystals” were observed in one out of seven interspecies dishes. Within this dish, only one sample site out of nine contained crystals. Hyphae and an unknown bacterial contaminant were present in this site.

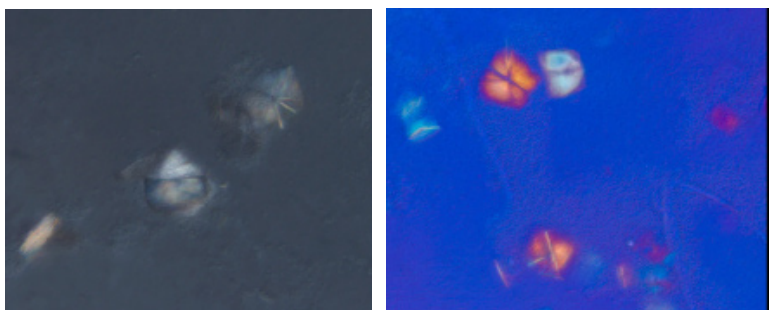


Image 1: Photographs of the crystals observed on day 14. Photographs were taken at 1000x magnification using DIC photography. The edge length of each crystal is approximately 15 μ m.

Day 23 – Octahedral, bipyramidal crystals were found in the same site as on day 14. These were an exact match to Stamets’ descriptions of “secondary crystals.” In a separate interspecies dish, oblong disk shaped crystals were discovered, constituting a new and unexpected crystal morphology.

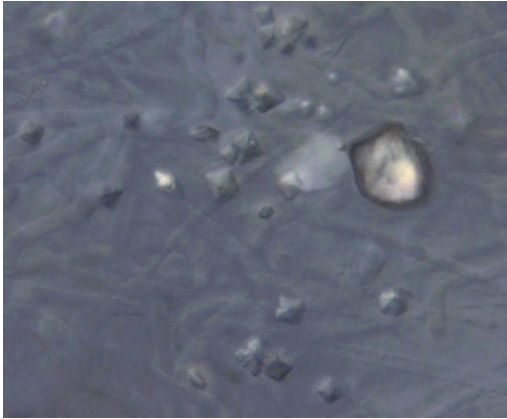


Image 2: Bipyrimidal octahedral crystals with edges measuring approximately 3-7 μm in length, as observed on day 23 (1000x DIC photomicroscopy).



Image 3: New crystal morphology observed on day 23 (400x DIC photomicroscopy). Note that the crystals are flat, oblong polygons roughly 15 μm in length.

Day 24 – In an effort to inundate the fungi with a more thorough bacterial exposure, fresh scrapings of *E. coli* were taken from tryptic soy plates and transferred directly onto the mycelial mats of the seven interspecies dishes. For record keeping, these dishes were labeled ‘A’ through ‘G’.

Day 27 – Octahedral crystals were observed in dish ‘B’. The majority of crystals were visible using 400x magnification. However, 1000x magnification was required for a complete inventory of crystals as they varied considerably in size and apparent development ($<1\mu\text{m}$ to $7\mu\text{m}$ in length). Crystals appeared to be clustered on the surfaces of certain hyphae.

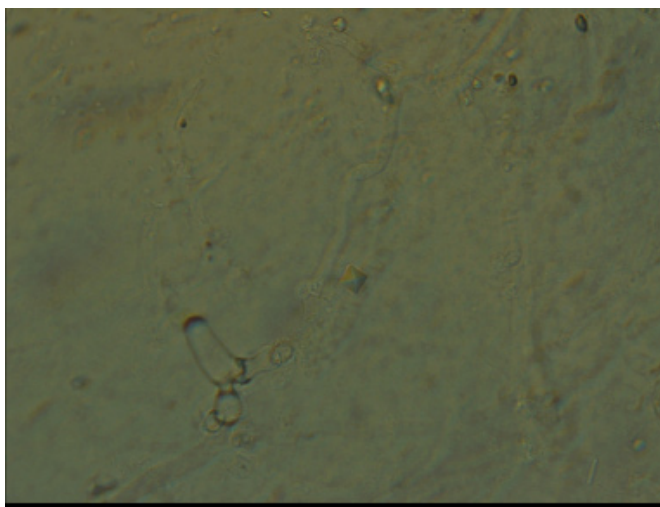


Image 4: Picture from dish ‘B’ sample, taken on day 27 using 1000x DIC. At the center, a single bipyramidal, octahedral crystal can be seen surrounded by hyphae. With a side length of $\sim 5\mu\text{m}$, this crystal appears to be an exact match to Stamets’ description of a “secondary crystal.” Note the range of smaller crystals and particulates in the upper right corner.

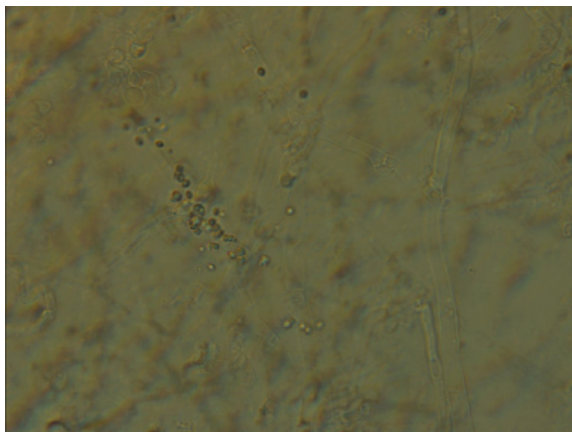


Image 5: Picture from dish 'B', taken on day 27 using 1000x DIC. Note the range of crystal development and size as they follow along the length of a single hypha.

Day 36 – Octahedral crystals were observed in all seven interspecies dishes ('A' through 'G'). Crystals were found almost exclusively within clumps of hyphae. Some strands of hyphae appeared to have crystals lining their entire surface. A new crystal morphology was observed exclusively with dish 'A'. These large rhombus shaped crystals measured about 20 μ m in length.

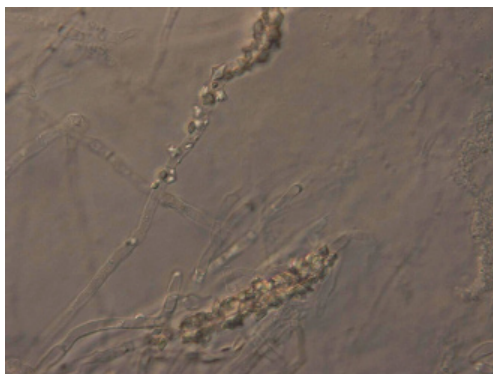


Image 6: Picture from dish 'B', taken on day 36 using 1000x DIC. Note the dense clusters of crystals forming along the two central hyphae and the apparent range of crystal size and development.

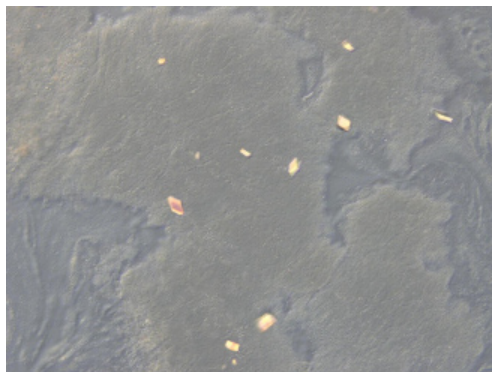


Image 7: Picture from dish 'A', taken on day 36 using 200x DIC. Note the new rhombus morphology of crystal, measuring ~ 20 μ m in length.

Frequency Comparison

	"Secondary Crystals" Absent	"Secondary Crystals" Present
<i>F. fomentarius</i> + <i>E. coli</i>	0	6
Isolated <i>fomen-</i> <i>tarius</i>	6	0

Table 1: Expected "secondary crystal" frequency within the two treatments if Stamets' hypothesis is true (secondary crystals only form in response to contact with *E. coli*). Note that a "secondary crystal" is defined here as a bipyramidal, octahedral crystal with side lengths greater than 4 μ m.

	"Secondary Crystals" Absent	"Secondary Crystals" Present
<i>F. fomentarius</i> + <i>E. coli</i>	0	6
Isolated <i>fomen-</i> <i>tarius</i>	6	0

Table 2: Observed "secondary crystal" frequency after 28 days of mycelial growth and 10 days of *E. coli* exposure. Note that only one dish (isolated *F. fomentarius*) contains secondary crystals at its leading hyphae.

	"Secondary Crystals" Absent	"Secondary Crystals" Present
<i>F. fomentarius</i> + <i>E. coli</i>	1	5
Isolated <i>fomen-</i> <i>tarius</i>	0	6

Table 3: Observed "secondary crystal" frequency using samples from the center of each mycelium (mycelia 28 to 58 days old with 10 days of *E. coli* exposure). Note that the majority of both treatments contain secondary crystals.

NOTE: Neither control (a plate of isolated *E. coli* and a plate of sterile growth medium) contained crystals at the time of these observations.

Discussion

While the preliminary study was originally meant to establish and refine methods, it ultimately led to several unexpected discoveries. Before the experiment, it was expected that crystals would either appear exactly as described by Stamets or be completely absent. It was not anticipated that a range of crystal shapes and sizes would exist. Similarly, because Stamets distinguished between "primary crystals" and "secondary crystals" on the basis of size, it was expected that these bipyramidal octahedral crystals would display a clear size dichotomy. Instead, an apparent continuum of sizes was observed but not statistically evaluated. These observations suggest that a size-based distinction between "primary crystals" and "secondary crystals" is inadequate.

For the sake of comparing crystal frequency between treatments, "secondary crystals" were defined as octahedral crystals with side lengths greater than 4 μ m. This definition was based off of an image of "secondary crystals" provided by Stamets in *Mycelium Running* (2005). The image, which showed "secondary crystals" surrounded by bacteria (presumably *E. coli*), lacked any indication of scale. Crystal size had to be estimated using bacteria in the picture as primi-

tive scale-bars. The resulting definition constitutes the best characterization of “secondary crystals” currently available (K. Brownson, personal communication, April 2, 2012).

Using this definition, “secondary crystals” were identified at the center of all six (100%) cultures of *F. fomentarius* grown in isolation. According to Stamets’ proposed antibacterial mechanism, none of these plates should have contained “secondary crystals.” Following Stamets’ hypothesis, “secondary crystals” were only predicted in cases where *F. fomentarius* encountered *E. coli*. Clearly, the results of this study do not support Stamets’ predictions; rather, they contradict a key component of his proposed antibacterial mechanism by showing that “secondary crystals” can occur in the absence of any pathogen. This does not exclude the potential that a different antibacterial mechanism is in effect and responsible for Stamets’ observations.

It should be noted that the chemical composition of these crystals remains unknown and the question as to whether or not they contain antibacterial compounds remains unanswered. However, similarities in crystal shape, size, and circumstance are highly suggestive of calcium oxalate.

A host of journal articles have documented calcium oxalate forming bipyramidal, octahedral crystals (Cheng et al., 2004; Choi et al. 2003; Nakata, 2003). The size of these crystals spans the same range as those described by Stamets and the present study (Cheng et al., 2004; Choi et al. 2003; Nakata, 2003). The fact that calcium oxalate crystals are commonly found among higher fungi further suggests that the “primary” and “secondary crystals” described by Stamets are composed of calcium oxalate (Aragno et al., 2011; Larsson, 1994).

The considerable variation of crystal morphology observed in this study can also be explained by the calcium oxalate hypothesis. According to Larsson’s examination of the *Trechispora* genus of fungi, calcium oxalate crystal morphology varies considerably across gradients of tempera-

ture, chemical environment, and host genetics (1994). Time is also a significant factor, causing “aberrant growth and corrosion” and ultimately “recrystallization” into morphologically unique derivatives (Larsson, 1994). Thus, under the calcium oxalate hypothesis, time alone could account for changes in crystal morphology.

Larsson also notes how “in hyphae, young crystals are seen as blisters on the hyphal surface” and that “heavily encrusted parts” sometimes develop (1994). These descriptions are consistent with observations made during this study of encrusted hyphae bearing a spectrum of ‘developing’ crystals. Given these similarities, it is possible that *Fomes fomentarius* develops calcium oxalate crystals in a similar way as the genus *Trechispora*.

It should be noted that while no calcium oxalate article specifically addresses *F. fomentarius*, other white-rot fungi have been documented producing calcium oxalate crystals when grown on malt agar medium (Aragno et al., 2011). In all cases of crystal production, the oxalate is biosynthesized and the calcium taken from surroundings (Nakata, 2003). Within malt agar medium, residual levels of calcium are present from the initial processing of barley grains (Aragno et al., 2011). This means that, provided *F. fomentarius* can biosynthesize oxalic acid, all of the reactants needed for calcium oxalate crystal production were present within this study.

Evaluating this ‘calcium oxalate’ hypothesis will require chemical testing. Using methods adapted from this study, *F. fomentarius* could be cultivated on malt agar growth medium. After 10 or more days of growth, various HPLC methods could be used to determine oxalic acid concentrations within cultures of *F. fomentarius* and compare these levels to controls (Aragno et al., 2011). Provided access to the necessary instruments, energy-dispersive X-ray microanalysis could be used to determine whether or not crystals contain high concentrations of calcium (Larsson, 1994). The most direct method of analyzing for calcium ox-

alate may be X-ray powder diffraction, if available (as cited by Larson, 1994). This list of potential methods is not exhaustive and will, no doubt, be expanded in preparation for future studies.

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Impunity Runs Rampant: The Necessity for Community Healing and Reconciliation in Guatemala

Abstract: On December 29, 1996, the Guatemalan government and the Guatemalan National Revolutionary Unity signed the Guatemalan Peace Accords, ending the 36-year conflict that had resulted in 626 massacres, the death of about 200,000 people, the disappearance of 40,000, and the displacement of 1.5 million. The Peace Accords addressed different facets of Guatemala's commitment to socioeconomic reform, observance of human rights violations, and the restoration of democracy. The Identity and Rights of Indigenous Peoples Accord encompassed a number of commitments related to the identity and rights of indigenous peoples. Fifteen years later, however, government impunity runs rampant, and many communities still exist in a state of fear and apprehension. Yet Maya communities are attempting to heal and reconcile despite a lack of accountability and severe injustice from the state. By examining the implementation of the Identity and Rights of Indigenous Peoples Accord and comparing the government's follow-through with Maya communities, this essay underscores the necessity of community-supported healing and reconciliation to promote a larger movement for genuine democracy in post-conflict Guatemala.

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Introduction

In Guatemala, between 1960 and 1996, there was a complicated and bloody civil war involving left-wing insurgents, right-wing paramilitary organizations, the Guatemalan government, and external influences such as the United States. The atrocities of the war are immense and complicated, and have left deep scars on the people of Guatemala. Among those most affected by the war were the Maya population, specifically those of the Central and Western Highlands. Much of the fighting took place in these highlands, and the Maya people became victims of massacre, torture, and oppression. Despite the intended goals of the Peace Accords to bring peace and democracy to the people of Guatemala, the Maya still feel the repercussions from the war. Since the signing of the Peace Accords, there has been a debatable amount of follow-through on behalf of the Guatemalan government for the justice and reconciliation of Maya communities.

Despite still having a strong sense of fear and apprehension, many communities have begun the task of compensating for the lack of governmental support by beginning their own healing and reconciliation processes. This essay examines some of the processes that communities have engaged in to understand how they are trying to find their voices and move toward justice, despite continual fear of the government's lack of accountability. By examining the government's commitments in the Identity and Rights of Indigenous Peoples Accord and comparing the follow-through experiences described by individuals engaged in community healing and reconciliation projects, this essay underscores the necessity of community-supported healing and reconciliation to promote a larger movement against government impunity and, eventually, genuine democracy for Guatemala.

The research is broken into two different approaches, which allow for a broader understanding of the con-

flict, the government's role, and a focused understanding of why local communities have chosen to engage in healing and reconciliation processes. The first approach looks at the Guatemalan Peace Accords and the follow-through that has or has not occurred since they were signed in 1996. It explores how the lack of implementation of the Rights of Indigenous Peoples Accord has pushed the responsibility of healing and reconciliation on to Maya communities. The primary sources for this paper include the Peace Accords themselves—in addition to post-signature reports—a combination of United Nations, nongovernmental organizations, and governmental task forces documents, and secondary Peace Accords literature.

The second approach pursues local perspectives in different communities by examining their healing processes and experiences. Using e-mail and phone interviews with community members and organizations, this approach hones in on their reaction to the Peace Accords in their communities and the actions that their communities have performed to promote healing and reconciliation. Additionally, ethnographic literature examining communities and individuals engaging in healing and reconciliation processes is used to highlight the diversity of approaches and the various experiences of communities throughout Guatemala.

This two-part research style draws attention to the reconciliation process and the governmental setbacks that have prevented or slowed the peace and justice process since the 1996 Peace Accords. Overall, in a country where much of the history of the civil war is untold because many voices of experience have been silenced, it is essential for the people of marginalized communities to be empowered through self-initiated healing and reconciliation, thereby beginning the larger, united process of holding the government accountable and, eventually, creating and participating in a truly democratic Guatemala.

While living in a Maya community in the Western

Highlands of Guatemala last summer, I was fortunate to meet several individuals willing to speak about their war experiences. Their stories and opinions contributed greatly to the section on local community engagement. There were also a few ethnographers whose work on post-conflict healing and reconciliation in Guatemala enhanced my perspective, most notably David Carey, Victoria Sanford, and Patricia Foxen. Sanford takes a broader approach on the effects the war has had on Maya people, focusing on violence and fear as deeply ingrained in Guatemala's contemporary society, whereas Carey and Foxen take a case-study approach to look at small communities and their engagements and experiences with reconciliation and healing. Through the combination of both political analysis regarding the Guatemalan government's implementation of the Peace Accords and community narratives addressing how they have been engaged in healing and reconciliation processes, this essay links both the broader perspective and the local insights, bridging a gap in research between governmental implementation of the accords and the lived realities of those engaging in healing and reconciliation.

Throughout the essay, impunity is used as a term to describe the lack of government accountability and the ease with which the government takes advantage of their exemption from consequences related to Peace Accords implementation. Healing is defined as the processing and nurturing of the emotional wounds from the war. The definition of reconciliation is borrowed from a USAID report, "Promoting Social Reconciliation in Post-Conflict Societies: Selected Lessons From USAID's Experience" by Krishna Kumar. She writes, "The word reconciliation derives from the Latin expression *conciliatus*, which means 'coming together.' Strictly speaking, reconciliation implies a process, that of restoring the shattered relationship between

two actors.”¹ When reconciliation is referred to, it does not mean complete forgiveness or friendship. It focuses on intergroup tolerance, mutual trust, and peaceful coexistence on a community, and eventually on a national, scale.

Argumentative Framework

It was when I spoke with Jonathan Treat, human rights activist, documentary filmmaker, and professor at the School of International Training with a specialty in Guatemalan politics, that my argument fell into place. When I asked him about the inequality and impunity in Guatemala, he said, “Guatemala has been a state of rape, pillage, and plunder since the Spanish conquest. Since the beginning, indigenous people have suffered the damnation of living on resource-rich land in a state that thrives on inequality and marginalization.”² After spending time in villages deeply scarred by the war, the truth of his statement resonated deeply with me, and my perspective of local-to-national change was reinforced. In a land that, since its conquest in 1525, has never been in a lasting state of peaceful coexistence, the process of establishing genuine democracy is much more complex than just a matter of implementing laws, programs, and policy. This essay takes the local-to-national approach while honing in on one of numerous examples: the Peace Accords and their impact on indigenous communities.

Based on the Pan-Maya movement—a cultural movement for self-determination and resurgence throughout Guatemala—this essay argues that individual communities must first establish a state of peace, trust, and unity, and then build on their unity by connecting with regional com-

¹ Krishna Kumar, “Promoting Social Reconciliation in Postconflict Societies: Selected Lessons from USAID’s Experience,” *Agency for International Development, and Center for Development Information and Evaluation* (U.S.) (1999), 17.

² Jonathan Treat, interview by author, Skype, April 6 2012.

munities. Regions then need to branch out to neighboring regions and come together in order to establish bonds that are strong enough to pressure the oligarchy and dominant population into reconstructing the current structures of inequality. Conflicts around economy, language, transportation, and historical community, in addition to organizational barriers, will have to be put aside or resolved for regions to collaboratively make this model function. If communities are able to successfully do this in a peaceful manner and without extreme coercion from the government, a larger movement for equality will emerge, and then, perhaps, genuine democracy. Although much easier said in theory than practice, this essay illustrates how individual communities have already begun the first step of inter-community healing and reconciliation.

Based off a similar structure and goal, Sudan's healing and reconciliation process is a good example of the local-to-national approach modeled in this paper. Sudan has had numerous successes for community-initiated projects of healing and reconciliation, with the goal of one day living in a peaceful, democratic state. Reconcile International, a branch organization of the New Sudan Council of Churches, has been working to reestablish unity and trust among severely scarred communities through psychological rehabilitation, civic education, and peacebuilding programs.³ The intention behind these projects is to begin the healing at home and in the community in hopes of reuniting communities one by one over time. In Sudan, this approach has been effective because of the accessibility of civic engagement and its non-punitive approach. Beginning on an interpersonal, local level has been a manageable and effective starting place for healing and reconciliation to take place in Sudan. Therefore, it has the potential to create great change in Guatemala, also.

³ Reconcile International, "Reconcile's Objectives" About Reconcile Page, <http://www.reconcile-int.org/drupal/about> (Accessed August 28, 2012).

Historical Context

In order to understand the necessity for healing and reconciliation among Maya, it is important to offer some historical context around preexisting norms and the causes and consequences of the war. Since the Spanish conquest, an ethnic-based class system has become the norm throughout the country, with Maya being the lowest class. Despite the fact that indigenous people comprise 40% of Guatemala's total population, this social class system continues to be reinforced through racist practices from the government oligarchy in both social and structural forms.⁴ The indigenous people's needs and concerns have nearly always been ignored, and it is extremely rare that they are awarded fair social opportunities or adequate governmental support. In a country run by an oligarchy with special interests and strong ethnic divisions, it has been easy for the government to continue to use intimidation tactics as a form of oppression. Due to the perpetual inequality, there is a strong mistrust of the government and an insecurity that has been amplified since the civil war.⁵

In the 1940s, Guatemala was deeply engaged with the United Fruit Company's (UFC) exportation of bananas under the presidency of pro-American dictator Jorge Ubico. The UFC, an American-owned company, was the largest landowner and most important business in Guatemala at the time, receiving exemptions from taxes and import duties. When Jorge Ubico was overthrown by a civilian revolution, Juan José Arevalo became president in 1945 and implemented a number of education, labor, agrarian, and economic reforms that Jacobo Árbenz Guzmán expanded and strengthened when he was elected in 1951. Called the

⁴ Victor Montejo, *Voices from Exile: Violence and Survival in Modern Maya History* (Alabama: University of Alabama Press, 1999), 44-45.

⁵ Frank Affilito and Paul Jeislow, *The Quiet Revolutionaries: Seeking Justice in Guatemala* (Austin: University of Texas Press, 2007), 19.

“Ten Years of Spring,” President Árbenz put the reforms into action; he legalized unions and began agrarian law reforms that put the people first, a monumental moment in terms of Guatemala’s history of oligarchic priority.⁶ These reforms had negative repercussions on Guatemala’s dealings with large, foreign corporations. Nearly 40% of the UFC’s land was expropriated by the Guatemalan government and, as a response, the UFC appealed to the U.S. The Eisenhower administration then launched Operation PBSUCCESS, a clandestine CIA operation that provided paramilitary groups in Guatemala with weapons and funding to oppose President Árbenz in the name of preventing the spread of communism during the Cold War.⁷

In July of 1954, a U.S.-backed coup overthrew President Árbenz and installed Colonel Carlos Castillo Armas, a former exile, as Guatemala’s new president. The United States portrayed Armas as a hero for his victory over communism. Once in office, Armas took away voting rights from illiterate Guatemalans and cancelled the new agrarian land reform law. A Preventive Penal Law Against Communism was implemented, which led to the arrest of over 17,000 individuals labeled as “communists.” Thousands of people were imprisoned; peasants were made landless; illiterate people were denied political agency.⁸

The laws and decrees implemented by Armas minimized opportunities for legitimate political opposition and restricted access to democratic dissent. Eventually, Guatemala’s government and military merged into a state ruled through military power. Polarization between rich and poor spread throughout Guatemala and resentment brewed. On November 13, 1960, the war began when military rebels captured a base and issued a leftist statement

⁶ Victoria Sanford, *Buried Secrets: Truth and Human Rights in Guatemala* (New York: Palgrave Macmillan, 2003), 15-16.

⁷ Afflitto and Jeislow, *The Quiet Revolutionaries*, 21-25.

⁸ Ibid, 28-30.

calling for social justice and equality for all.⁹ Government military forces and right-wing militias battled leftist rebels comprised of labor leaders, students, and politicians who were inspired by Cuba's Fidel Castro's and Che Guevara's communist ideals. The Cold War served as a logic for the United States in justifying the funding and training of the Guatemalan military, which acted as death squads, fueling terror with village massacres, disappearances, torture, and kidnappings.¹⁰

In 1976, the Guatemalan military began to implement PACs (*patrullas de autodefensa civil*, or civil defense patrols), which were rural paramilitary organizations led by village members that were forced into taking the military's side. By late 1984, there were more than 900,000 members of the civil patrol system.¹¹ According to the 1999 REMHI (Guatemalan Archdiocesan Recovery of Historical Memory Project) report "Guatemala Never Again!," "the civil patrols are identified as the perpetrators in nearly one in five massacres. . . while the military commissioners are identified in one in twenty. Taken together, these irregular government forces were responsible for one out of every four collective murders."¹² The military tactic of forcing community members to report back to Guatemalan army commanders, in addition to conducting patrols, surveillance, punishment, and murder, tore communities apart. The PACs infused fear, mistrust, and betrayal within families and villages that continue to divide communities today. Due to this division and strong sense of mistrust, the social safety nets that would

⁹ Commission for Historical Clarification, *Guatemala, Memory of Silence* (Guatemala: Guatemala, 1999):191. Available online at <http://shr.aaas.org/guatemala/ceh/report/english/toc.html>

¹⁰ Greg Grandin, *The Blood of Guatemala: A History of Race and Nation*, (Durham, NC: Duke University Press, 2000), 43-45.

¹¹ Tom Barry, *Inside Guatemala* (Albuquerque, N.M.: Inter-Hemispheric Education Resource Center, 1992), 43.

¹² REMIHI (Proyecto Interdiocesano Recuperación de la Memoria Histórica), *Guatemala Never Again!* Maryknoll, N.Y.: Orbis Books; London: CIIR: Latin America Bureau, 1999.

be the foundation for healing and reconciliation have been lost, and thus, the process of healing and reconciliation has become much more complex.

In 1982, General Ríos Montt seized power in Guatemala and initiated a scorched earth policy with the intent of dispersing and interrupting guerrilla activity by killing guerrillas and citizens to instill fear and an identity of power, categorizing the slaughtered as “rebels of the state” and taking no care as to who was being killed. As a response, the leftist revolutionaries (approximately 8,000 full-time guerrillas and 200,000 part-time guerrillas) united under the name of the *Unidad Revolucionaria Nacional Guatemalteca* (URNG - Guatemalan National Revolutionary Unity), and it was not long before the war reached genocidal proportions. During Montt’s scorched earth campaign, at least 150,000 Guatemalans (majority Maya) were murdered or disappeared. Throughout the 36 years of war, the government’s military burnt 626 villages, internally displaced over a million people, sent over 100,000 into refuge, and left more than 200,000 dead or disappeared.¹³

In September 1994, negotiations commenced between the government of Guatemala and the URNG. At this time, the United Nation’s General Assembly established a Human Rights Verification Mission (MINUGUA) that placed over 250 human rights monitors, legal experts, Maya specialists, and police throughout Guatemala with the task of carrying out verification activities and institution building with a focus on human rights violations. In addition to work in the field, MINUGUA was instrumental in drafting various peace agreements for the accords. After extensive negotiations, the URNG and the Guatemalan government reached agreement on a cease-fire in December of 1996.

¹³ UNHCR Refworld, “Guatemala: Information on Military Commissioners and Human Rights Abuses,” (United States Bureau of Citizenship and Immigration Services 29, July 2002) <http://www.unhcr.org/cgi-bin/texis/vtx/refworld/rwmain?page=country&skip=0&coi=GTM&publisher=USCIS>. (accessed March 30, 2012).

Subsequently, they signed the Agreement on Implementation, Compliance, and Verification Timetable for the Peace Agreements, which legally ended the war and began the long and fairly unsuccessful task of Peace Accords implementation.¹⁴

The Peace Accords were comprised of sub-agreements that addressed different facets of Guatemala's commitment to socio-economic reform, observance of human rights violations, and the restoration of democracy. There were specifically set goals, policy guidelines, concrete measures, and consultative mechanisms that were laid out in the accords to address human rights, justice system reform, displaced populations, the rights of indigenous peoples, the transformation of the military and police forces, democratization, and economic development. Jonathan Treat, who was in Guatemala between 1993-2000 said, "At the time, many thought that Peace Accords were really going to change Guatemala. You could see the hope the Peace Accords inspired; there was a lot of participation in elections, a lot of truth telling, a lot of speaking out of silence. Unfortunately, it was short-lived."¹⁵

One of the first steps was to create a truth commission. Backed by the United Nations, the Commission for Historical Clarification (CEH), whose goal was to clarify the history of the events that took place during the war through testimonies and extensive investigation, released "Guatemala: A Memory of Silence" in 1999. The CEH report was the most thorough, official document recording the violence and consequences of the war. The CEH report stated that Guatemalan security forces were behind 93% of all the human rights atrocities committed, whereas 3% of the atrocities were on behalf of the guerrilla forces. The report's objective was to make the truth known about the war with the intention of making national reconciliation easier, "so that in the future Guatemalans may live in an

¹⁴ Afflitto & Jesilow, *The Quiet Revolutionaries*, 60.

¹⁵ Jonathan Treat, interview by author, Skype, April 6 2012.

authentic democracy, without forgetting that the rule of justice is the means for creating a new State.. . .To a great extent, the future of Guatemala depends on the responses of the State and society to the tragedies that nearly all Guatemalans have experienced personally.” The CEH report concluded that government security forces had committed genocide against the indigenous people and proposed a list of recommendations to the state designed to foster unity in Guatemala and eliminate the pre-existing political and social divisions so that such acts would never be repeated.¹⁶ With high hopes and good intentions, the report was presented to the state; however, the state did little to adhere to any of the proposed recommendations, leaving communities throughout Guatemala on their own.

Implementation of the Accords

“Because of the Peace Accords, many international institutions donated funds, but those funds were diverted to pay for other things (police, increased government salaries). Thus, the Peace Accords had a lot of nice ideas, but they remain on paper. Indigenous people continue to be marginalized and discriminated against. The Peace Accords exist in name while the war against the Maya continues.”¹⁷

- Fernando, Maya survivor of the war

It has been fifteen years since the Peace Accords were signed, and Guatemala has made little progress toward a state that embodies social justice, accountability, and genuine democracy. Justice for the Maya population has been low on the Guatemalan government’s list of priorities, in terms of admittance of, and compensation for, the injustices that were enacted upon the Maya. According to Kay B. Warren, author of *Indigenous Movements and Their*

¹⁶ *Guatemala: Memory of Silence*: 72, 74, 143.

¹⁷ Jonathan Treat, interview by author, Skype, April 6 2012.

Critics: Pan-Maya Activism in Guatemala, “Governmental ‘promises to promote’ the various legislative reforms outlined in the accords left many loopholes and ambiguities in a political system where anti-reform forces are experienced and well-organized.”¹⁸ The different actors in Guatemala’s future, including Guatemalan civil society, international influences, and the Guatemalan oligarchy, all had different ideas and investments in the results of the Peace Accords, and with such clashing ideologies and goals present, the Peace Accords were bound to struggle.¹⁹ One can see that the implementation of programs and policies laid out in the Peace Accords have not been acted upon with genuine intentions.

An initial fault in the Peace Accords implementation process occurred on May 16, 1999, when the Guatemalan Congress did not pass the twelve constitutional and tax reforms necessary for the implementation and financing of the accords. The failure to pass the funding and the constitutional reforms was the beginning of the end of the momentum and political will needed to mobilize the public and the government to move forward with the accords as a priority. The political discussion preceding the referendum was long, confusing, and caused public disillusionment and indifference toward the peace process.²⁰ Warren wrote about the effort put into the accords, claiming that the process “was seriously compromised by secrecy, limited Maya input, and disregard of indigenous norms of consultation with communities and elders. Major issues such as the rec-

¹⁸ Kay B. Warren, *Indigenous Movements and Their Critics: Pan-Maya Activism in Guatemala* (Princeton, NJ: Princeton University Press, 1998), 56.

¹⁹ Daigle, Lillyanne T. “Clash of Ideologies: The Failure of the Guatemalan Peace Accords,” (Asheville, NC: *Warren Wilson College Auspex*, 2011): 131-158. This piece of work was an inspiration for my piece because Lillyanne was a fellow Warren Wilson student who also spent time in the same region of Guatemala as I.

²⁰ Diane M. Nelson, *Reckoning: The Ends of War in Guatemala* (Durham, N.C.: Duke University Press, 2009), 46.

ognition of regional autonomy, historic land rights, and the officialization of Maya leadership norms were deemed irreconcilable and dropped.”²¹

The second major fault of the Peace Accords was that the timeline was not followed. All changes were supposed to be implemented by December 30, 2000; however, by the end of the first year, Congress had already failed to pass the necessary amendments and budget. By 1999, only a small portion of the commitments had been put into action, which forced the implementation deadline to be delayed to 2004.²² In 1999, MINUGUA stated in its report that it was apparent that the state was underfunding the organizations that were called to be created by the accords through delayed decision making, which ultimately denied them the funding necessary to proceed with their work.²³ This became a theme regarding the implementation of mandates from the Peace Accords—programs and policy would pass, which would look good for national and international media following the accords, but on the ground the funding would be minimal, deeming the work undoable and ineffective.

Signed in 1995, the Identity and Rights of Indigenous Peoples Accord encompassed a number of commitments related to the identity and rights of indigenous peoples, including the official recognition of indigenous languages, the enhanced legal protection of indigenous rights, the recognition and preservation of spiritually significant areas, and comprehensive education reform.²⁴ Perhaps the most demanding and simultaneously abstract commitment made in this accord was the revision of existing legislation in order

²¹ Warren, *Indigenous Movements and Their Critics*, 73.

²² Markus Schultze-Kraft, *Pacificación y poder civil en Centroamérica. Las relaciones cívico-militares en El Salvador, Guatemala y Nicaragua en el posconflicto* (Bogotá, 2005). 392-394.

²³ United Nations Mission for the Verification of Human Rights Report (1999): 58.

²⁴ United Nations General Assembly A/51/795, “Identity and Rights of Indigenous Peoples Accord,” (March, 1995).

to abolish laws or provisions that may have had discriminatory implications for the indigenous populations. Today, with the implementation of certain legal branches and human rights-focused organizations, much of the structural and social violence has become officially recognized to be illegal, yet the prosecution of violators and the reorganization of political institutions to become more inclusive and accessible has been a failure. Considered essential to truly eliminating structural inequalities, this commitment had the potential to eliminate many of the policies and laws that intentionally disadvantage and discriminate the indigenous populations.

The second most significant commitment in this accord was the overarching goal to define Guatemala as a multi-ethnic, pluricultural, and multilingual nation.²⁵ When presented to Congress in a 1999 reform package, the proposed definition was not passed, and this moment was, for many, the final glimpse of hope for the Peace Accords to make any true structural changes. This failure was a message that, although the Peace Accords and the Guatemalan Government had outlined some of the most extensive programs to combat the social and structural racism and inequality practices that had become the norm, the Accords were merely on paper.

Cultural rights, such as the officialization of indigenous languages, were heavily emphasized in this accord. Acknowledging that language is a basic cultural right, the Commission on Indigenous Languages was created. In March 1998, the commission presented a proposal that recognized 23 languages and said that the officialization of the languages should be implemented at the regional level through educational, legal, and health services, in addition to large-scale state media and other services related to a democratic state. Unfortunately it did not pass when presented to congress in 1998. However, in 2007 when President Álvaro Colom was elected, the proposal was reintro-

²⁵ Ibid.

duced and successfully passed. Guatemala now recognizes 23 indigenous languages as national languages. Unfortunately, the promotion of the use of indigenous languages in public administration has not been implemented, leaving those who only speak their native language (approximately 30% of Maya population) unable to seek legal help or participate in politics without some form of aid.²⁶

The accord also created a measure to avoid sentencing people in a language that they do not understand. This commitment has partially been addressed through the creation of justice administration centers and a Commission on Indigenous Affairs, which acts within the Supreme Court of Justice. Justices of the Peace who speak indigenous languages have intentionally been appointed by administration centers, which has made the trial process much easier in some courts; however, there is still a lack of both judges and funding, ultimately leaving the commitment only partially fulfilled.²⁷

With the overarching goal of respecting the spirituality and free access to sacred places and ceremonial centers as a basic cultural right, the accord established that it was necessary to recognize these temples and ceremonial centers, claiming them as part of the cultural heritage of Guatemala. Additionally, it recognized the right for indigenous peoples to participate in the administration and conservation of these places. In order to enact this commitment, the Commission to Define Sacred Sites, comprised of representatives from indigenous organizations, the government, and individual indigenous spiritual guides, was created with the objective to identify sacred places and lay down rules for the preservation of these places. In April 1997, the commission was established, but the representatives failed to reach

²⁶ Bureau of Public Affairs Department of State *Guatemala*, Report, (Department Of State. The Office of Electronic Information, Bureau of Public Affairs, April 8, 2011) <http://www.state.gov/j/drl/rls/hrrpt/2010/wha/154507.htm> (accessed March 23, 2012).

²⁷ Ibid.

agreement before it expired in August of 1998.²⁸

After a long negotiation process, the commission was set up again and resumed its work in 2003. Since its reestablishment, the commission has joined with Oxlajuj Ajpop, a council of spiritual individuals from each linguistic community in Guatemala, to continue the commission's original goals outlined in the accord. In 2008, the commission and Oxlajuj Ajpop presented a proposal pertaining to indigenous people's access of spiritual sites to congress, which, after approval from the Commission for Indigenous Peoples and the Peace Commission, has been pending a vote in congress ever since. In the meantime, the commission has been able to secure and define certain spiritual spaces; however, large spiritual monuments such as Tikal have been controversial due to the profit that the state makes from tourist activity.²⁹ Currently, there is not free access to all sacred sites for indigenous Guatemalans, and the chance of government policy guaranteeing long-term preservation and protection of these sites is slim. Of all aspects of the accord, the commitment to define sacred sites has been one of the most tangible, and therefore, most successful—although it is clear that there have been considerable institutional setbacks.

In order to address the struggle against discrimination, measures for the protection of indigenous rights were laid out in the form of creating legal offices specializing in indigenous rights and popular law. The Office of the Defense of Indigenous Peoples was created as a subsection of the Human Rights Ombudsman, which was intended to review, record, and process human rights violations com-

²⁸ Hilde Salveseen, "Guatemala Five Years After the Peace Accords: The Challenges of Implementing Peace," *International Peace Research Institute*, Oslo (March, 2002): 24.

²⁹ Sacred Natural Sites, "A Law on Sacred Sites in Guatemala" <http://sacrednaturalsites.org/items/a-law-on-sacred-sites-in-guatemala/> (accessed March 20, 2012).

mitted against the indigenous people by the state.³⁰ Nevertheless, lack of political interest and funding has left the office and subsequent indigenous rights organizations poorly staffed and therefore with little credibility and recognition from higher-up political offices.

Along the same vein, the accord committed to promote new legislation recognizing the right of the indigenous communities “to manage their internal affairs according to customary norms as long as these are not incompatible with the basic rights defined by the national legal system or internationally-recognized human rights.”³¹ The incorporation of customary law within the legal system would have given more autonomy to indigenous communities, cost the government less money, and allowed traditional law practices to be continued; unfortunately, this commitment was never broached by the Guatemalan government.

The last section of the accord addressed education reform. The accord redefined educational goals and stressed the importance of education in the process of the democratization of society and the state, creating a completely new civic education program in addition to bilingual educational programs. The accord stated that the educational programs for indigenous peoples needed to pay special attention to their cultural needs, emphasizing indigenous history, their knowledge and use of technology, their values systems, and their social, cultural and economic aspirations. The accord also stated the importance of nationwide intercultural education as a foundation for building relationships of respect and cross-cultural understanding.³² Education was supposed to be used as a means to prevent the perpetuation of injustices pertaining to poverty and discrimination, which

³⁰ Human Rights Watch, “World Report 2011: Guatemala” <http://www.hrw.org/world-report-2011/guatemala> (accessed March 20, 2012).

³¹ United Nations General Assembly A/51/795, “Identity and Rights of Indigenous Peoples ” (Feb. 7, 1997).

³² *Ibid.*

was ironic considering that, during the war, the funding for and the support of education for the indigenous populations was intentionally cut off.

Although the government raised the budget's general spending on education, the newly reformed civic education program was awarded minimal funding. Even worse, the specific bilingual education programs were never funded.³³ Not only have the indigenous communities suffered greatly from poor teaching facilities and programs, but the overall goal to use education as a way to prevent perpetuation of social and economic injustices and ensure a successful transition toward democracy failed.

After examining a fraction of the commitments delineated in the Identity and Rights of Indigenous Peoples Accord, it is clear that the Guatemalan government did not have the political intention to follow through with the accord's commitments. As aforementioned, the more tangible legal commitments were partially implemented, whereas the larger umbrella commitments that would have realigned the Guatemalan political structure with the intended democratic goals of justice and equality were never even approached. According to MINUGUA, this accord has had the least implementation. It states, "The situation of poverty, social exclusion and discrimination faced by the Maya population has not improved as intended."³⁴ The lack of willingness to accept, promote, and make accessible indigenous languages, sacred sites, legal representation, and a civic education program is one of the most prominent signs of intentional assimilation and cultural discrimination on behalf of the government. The government's inaction is continuing the historical pattern of exclusion and repression of indigenous peoples, which is the exact opposite of

³³ John-Andrew McNeish and Oscar Lapez Rivera, "The Ugly Poetics of Violence in Post-Accord Guatemala," *Forum for Development Studies* 36, no. 1 (2009): 49–77.

³⁴ United Nations Mission for the Verification of Human Rights Report (2001): 9

the goal of the accords.

Lived Experience of Postwar Communities

It is clear from most existing social and health indicators that the state of violence and instability characterizing the past ten or so years in Guatemala, combined with socioeconomic changes brought about by rapid globalization, have created an atmosphere of chronic distress and anxiety in many highland Maya communities, expressed in acute levels of fear, distrust, psychosomatic symptoms, substance abuse, and domestic and social violence.³⁵

– Patricia Foxen, *Local Narratives of Distress and Resilience*

As the preceding review of the government's implementation of the accords illustrates, structural workings deeply engrained in Guatemala's political system have prevented war-torn communities from implementing healing and reconciliation processes that are openly supported and encouraged by the state and non-indigenous population. That, however, does not prevent communities from initiating efforts to heal and reconcile. Using narratives of acquaintances I met during my time in Guatemala, as well as examples from anthropologists David Carey Jr. and Patricia Foxen, who have both worked with and written about healing and reconciliation efforts in Maya communities in the highlands, what follows explores a few different forms of community healing and reconciliation processes. The following are examples of first steps toward achieving a larger foundation of people who share the goal of healing and reconciliation as well as the larger goal of a just democracy in

³⁵ Foxen, Patricia. "Local Narratives of Distress and Resilience: Lessons in Psychosocial Well-Being among the K'iche' Maya in Postwar Guatemala." *The Journal of Latin American and Caribbean Anthropology* 15 ,no. 34 (September 1995): 65.

Guatemala.

When I met Fernando, a Maya healer in San Marcos La Laguna, Guatemala, we immediately became friends and have stayed in contact since. During my time there, we spoke a lot about the war and his personal experience being the only survivor from his family in a village massacre; he hid in a closet for six days to avoid the military that invaded his village of Chiul, in the municipality of Nebaj of the K'iche' department, which suffered close to 5,000 deaths during the war. He too believes in the importance of starting to reconcile locally and heal internally. He has been involved in two major healing projects within his hometown of Chiul, and in San Marcos La Laguna, where he now lives.

Based out of San Marcos La Laguna, Fernando began Action for Mayan Orphans (AMOR) when he realized that there was a great deal of physical and spiritual need, and that many people were still blind to the truth of the government's role in the war. Due to the distress, poverty, disappearances, and death brought on by the war, a countless number of children were left as orphans and women as widows. Addressing this reality, Fernando's organization has been able to meet some of his local community's needs on a basic and spiritual healing level. Fueled by individual donations, AMOR's mission is to counteract malnutrition of the body and spirit of the Mayan population of Guatemala through providing widows and orphans with adequate food, education, clothing, shoes, clean beds, and healthy hearts and homes. In May, AMOR will complete building the first of many homes through their newly launched Housebuilding project, where community members come together to build homes for families and children in critical need. AMOR has also set up a Women's Weaving Cooperative, which has been very successful in selling their products to tourists and giving regular weaving lessons for younger children. The Cooperative provides a stable income for the women and passes on the longstanding tradition of weav-

ing to children of the village. According to the AMOR website, “Every Saturday, up to twenty-five families and hordes of excited children descend upon the Institute for weaving lessons as well as games, literacy classes, lunch, and more games!”³⁶

In addition to weekly spiritual meetings that focus on the stories from the war, these various activities support community interaction, positive economic growth, educational programs, promotion of cultural traditions, and, according to Fernando, a “wonderful presence of a community working together around the past to change and better the future.” When I asked Fernando why he decided to engage in a community healing process, he said, “I realized I didn’t need a large group of people in order to do something important in this world. I realized too that if I waited for someone else to do it, it would never happen.” His work has helped hundreds of children and widows find comfort with their present day lives both spiritually and in terms of fulfilling basic necessities.³⁷ If the Peace Accords, specifically the Identity and Rights of Indigenous Peoples Accord, had been implemented in totality, the work of AMOR and Fernando would not be relied upon so heavily because there would be additional programs and organizations facilitating similar work that were financially supported by the government.

Fernando and his wife Sandra also work together in the poverty- and war-stricken community of Chiul on Project Chiul: a community center equipped with the resources and information necessary to educate people on indigenous and citizen rights in Guatemala. In our interview, Fernando said, “This center will establish a dignified and respected society, educating people on their rights and responsibilities as citizens of Guatemala. It will be the manual by which

³⁶ Action for Mayan Orphans, IXIIM International School of Mayan Indigenous Healing & Wisdom, <http://mayanmedicine.org/action-for-mayan-orphans-amor/> (accessed February 17, 2012).

³⁷ Fernando, interview by author, e-mail, March 3, 2012.

people not only protest their legal rights but also see their knowledge and opportunities for their future.” Fernando admitted that there is always fear when speaking out, but, despite that fear, they have continued on. Not surprisingly, finances have been a struggle throughout the process of organizing and running the project effectively. “Oftentimes the local government tries to steal funding and block programs that won’t comply. We’ve had to overcome this by working outside of the system.” The lack of funding is proof that the government never intended to fulfill the accords, for if they did, funding would be sufficient and accessible. In closing, I asked him overall why he was doing this work, and he said, “People need to heal to contribute their gifts and talents to the world so that there is peace and people are awakened to truth. That’s what matters. From there, we can choose how to live.”³⁸ Despite the fear, and continued setbacks due to the lack of implementation of the Peace Accords, it is clear that the sharing and healing that comes out of these organizations have empowered community members, which is one step closer to a healthier community and, ultimately, the larger movement against impunity and toward democracy.

Patricia Foxen, a medical anthropologist, studied the psychological impacts the war had on Maya communities and wrote about her observations in an essay, “Local Narratives of Distress and Resilience: Lessons in Psychosocial Well-Being among the K’iche’ Maya in Postwar Guatemala.”³⁹ Many of her arguments on vulnerability and resilience can be applied to multiple postwar Maya communities. Foxen’s theory on structural inadequacies supports this essay’s argument in regards to the government’s lack of implementation of the Peace Accords, and highlights the importance of community engagement in healing and reconciliation.

³⁹ Fernando, interview by author, e-mail, March 3, 2012.

³⁹ Foxen, “Local Narratives of Distress and Resilience,” 12.

Linking mental health with community development, human rights, and political transformations, Foxen stresses the importance of psychological programs in the aftermath of genocidal violence, claiming that they are equal in importance to economic, material, and cultural reparations for Maya communities. Foxen says, “Postwar psychosocial health cannot be separated from the broader political and economic structural weakness that often follow war, including new forms of social aggression such as widespread corruption, social violence, lack of a rule of law, and global economic failure.”⁴⁰ With the state of violence, governmental inaction, and corruption that Guatemala is in today, it would only make sense to focus on psychological health as a tangible solution to begin with when trying to build a nation based on justice and equality.

In her essay, Foxen presents examples of mental health projects supported by local and international health and human rights organizations that have been successful in moving communities toward healthier forms of personal and collective expression. She describes community speak-out meetings where individuals share their stories of the war and how it has affected them since. Often set in a meeting space that community members are already comfortable with (a church, a school), these meetings are accessible, easily organized, and do not depend on external organizations for their existence. However, when an organization is present, it often provides access to resources such as legal aid, health programs, economic opportunities, awareness of other healing and reconciliation projects, and overall regional networking. She explains how the telling of experiences is empowering, and how oftentimes individuals are more comfortable with seeking social and legal support for various problems related to the war after being affirmed that they have had experiences similar to their community members. Similar to community speak-out meetings is *acompañamiento* (accompaniment), which

⁴⁰ Ibid, 15.

is counseling between individual community members and trained volunteers or staff members of human and health rights organizations. The goals of both the community speak-out meetings and *acompañamiento* are to encourage greater collective trust and dialogue while strengthening social networks.⁴¹

During my time in Guatemala, I was fortunate to meet Julio Cochoy, an economist, human rights activist, public speaker, published author, and lastly, Maya survivor of the war. Born in the village of Santa Lucia Utatlan, in the K'iche' region of Guatemala, he was the only individual in his family who survived the war. We met at a public speak-out meeting that he was facilitating for the women of Utatlan. After a very moving and sobering hour with four survivors, he was willing to answer a few questions. He told us that the first healing and reconciliation project of his was to break the silence that had blanketed the community after the massacre by recording the narratives of 35 survivors. With funding from the United Nations, he was able to publish his book, *Voces Rompiendo el Silencio de Utatlan* (Voices Breaking the Silence in Utatlan) in 2006.⁴² Today, he speaks all over the United States and throughout Guatemala on a mission to educate people about the war and promote community healing and reconciliation projects.

In addition to writing the book, Cochoy continues to facilitate community speak-out meetings throughout the K'iche' region. When I asked him about the speak-out process, he said, "It is difficult to share such a painful story with a community whose members were forced to kill each other through the PAC system. Through these meetings, we have slowly, and with much difficulty, been able to speak their truths for the first time since the war. It's been incred-

⁴¹ Ibid, 15-18.

⁴² Julio Cochoy, *Voces Rompiendo el Silencio de Utatlan*. (United Nations, 2006).

ible to see the growth through the pain.”⁴³ After a series of community speak-out meetings in his town, the core group of attendees wanted to begin a community project that would support the widows of the war economically. In 2007, Cochoy founded Maya Skills, a jewelry co-operative partnered with individuals and organizations in the United States.⁴⁴ These U.S. based partners sell the handcrafted jewelry at a variety of venues and return a profit to Maya Skills, where it is divided throughout the cooperative, resulting in a decent wage for the women. When I asked how he thought Maya Skills has aided the community and the women’s reconciliation experiences, he said, “They have really grown close because of their losses; a lot of suspicion and insecurity has been eliminated. The community is much more open around the war. Children are learning about the atrocities, and individuals are reaching out to other support networks for collaboration and resources. This is the best we can do now.”⁴⁵ Through internal organization with international support, Cochoy has committed his life to publicizing the truth of the war and helping his community and his people in the postwar struggle for equality and justice. Through the work that Cochoy and the community members of Utatlan have done, Utatlan has become a role model for other communities—an affirmation that these projects can be successful even with the government’s lack of support.

Public exhumations are another example of community projects that have brought closure and healing to communities where many loved ones were still missing or were never given proper burial. Forensic anthropologist Victoria Sanford worked with FAFG (*Fundacion de Anthropología Forense De Guatemala*, one of the three main organizations

⁴³ Julio Cochoy, interview by author, Santa Lucia Utatlan, Guatemala July 5, 2011.

⁴⁴ Maya Skills, <http://mayaskillsjewelry.blogspot.com/> (accessed March 27, 2012).

⁴⁵ Julio Cochoy, interview by author, Santa Lucia Utatlan, Guatemala July 5, 2011.

that have been implemented under the Peace Accords) between 1994 and 1997 and wrote an ethnography, *Buried Secrets: Truth and Human Rights in Guatemala*.⁴⁶ In her ethnography, she recorded testimonies from survivors of the war involved in identifying and reburying family members who were originally buried in mass graves. In the chapter about the exhumation in the village of Rabinal, “The Bones Don’t Lie,” a survivor said, “Before the exhumation, all the people hid everything inside. No one would talk about what had happened, much less make a public declaration. It didn’t seem possible that a person had the power . . . We decided that we were going to declare the truth together, all the families united.”⁴⁷

It takes a lot of courage to undergo an exhumation. As mentioned earlier, communities have been torn apart due to the PAC system which, during an exhumation process, often causes the resurfacing of intense tension and hostility between former military members and those who want to elucidate the past. When I asked Jonathan Treat about the process, he said, “One thing that is critical of reconciliation and remembrance is the exhumation of mass graves. For family members to know the truth, and to have the opportunity to honor their memory by giving them proper Maya and Catholic burials, is a very healing experience; and the only way to have that closure is through an exhumation.”⁴⁸ It seemed that both Treat and Foxen shared this opinion, and that overall exhumations are more healing than harmful.

Logistically, arranging for public exhumations is difficult, especially because there is not a unified information registry for disappeared persons. The state support given to the exhumation process is very limited and a symbolic act of reparation; therefore, the three main forensic organizations are continually looking for funding, staff, and volun-

⁴⁶ Sanford, *Buried Secrets*.

⁴⁷ Ibid, 78 as per the interview of the survivor.

⁴⁸ Jonathan Treat, interview by author, Skype, April 6 2012.

teers. The process of applying for authorization to exhume has to come from a victim or a family member and is often slow and complicated due to extensive research that needs to be presented and basic barriers such as language and access to paperwork. Once an exhumation is approved, it is essential to coordinate with psychosocial support organizations to help victims of communities through grievances and to offer legal assistance. As of 2008, over 900 exhumations had taken place and more than 5,000 victims had been exhumed, a total of 12.5% of the disappeared.⁴⁹ Despite all of the governmental inadequacies, exhumations on the whole have proven to be beneficial for the vast number of communities.

Finally, public murals as a form of healing and reconciliation are discussed thoroughly by anthropologist David Carey Jr. in his essay, "Reclaiming the Nation through Public Murals: Maya Resistance and the Reinterpretation of History."⁵⁰ The essay follows the story of the community of San Juan Comalapa, which came together to collectively plan and paint a mural to portray their community's history with a focus on the violence and resistance that the community has experienced. The mural was painted by a local Maya painter in traditional Maya style on the walls of a former military barracks, tracing the community's history, including pre-Hispanic life, the Spanish invasion, and the colonial era. It used a significant amount of space on the civil war—what factors brought about the war, the violence taken out on the Maya people during the war, and the poverty and racism that has been perpetuated since 1996. Carey portrays the mural as a community event that has reclaimed some of their rarely expressed notions of identity.

Murals portraying community history or a specific interpretation of an event have become more common

⁴⁹ Sanford, *Buried Secrets*, 136.

⁵⁰ David Carey Jr., "Reclaiming the Nation Through Public Murals: Maya Resistance and the Reinterpretation of History," *Radical History Review*, no. 106 (October 2003): 26.

throughout Guatemala. They are used to visually portray history from a community's perspective, and often the freedom of expression and conversations that come out of the process are informative and healing. Through communities coming together to discuss their past, especially how they want those who did not live through the same experiences to see it, the mural fosters healing. When I asked Jonathan Treat for his opinion on community murals, he spoke highly of them:

Painting the murals in a form that people understand gives back truth to communities and, ideally, the more understanding you have of the history, the more capable you are to change the present and the future so that you aren't reacting; rather you're acting with consciousness and knowledge that's founded in the truth of the past.⁵¹

The murals are a critique of state repression and a visual representation of a community's understanding of state history that is based in Maya cultural values. Murals are a brave way of publicly claiming history that has been played down by the state, while displaying how communities see themselves as a part of the future of their nation. They raise awareness and bring communities together to confront their history in a united, expressive form that portrays the Maya people not just as victims, but also as a part of a larger movement to reclaim the nation.

All of these examples depend on trust, dialogue, dedication, empowerment, engagement, and perseverance. Although they are small, often isolated examples, they have an impact that is life changing for the individuals, communities, and regions involved. There is no doubt that the government's lack of accountability has been the largest barrier to proactive and public healing processes, and there will not be progress as long as the government fails to ad-

⁵¹ Jonathan Treat, interview by author, Skype, April 6 2012.

dress systemic injustices. However, it is essential to begin somewhere, and by beginning on the community level with primary dependence on fellow community members, as shown, a community can heal and grow in finding solidarity. With time, inspiration, education, and empowerment, communities throughout Guatemala can embark on their own unique healing and reconciliation processes in hopes that someday there will be stronger unity within communities and therefore a larger movement toward social and economic justice and genuine democracy in Guatemala.

Conclusions

After analyzing the implementation of the Identity and Rights of Indigenous Peoples Accord and comparing that analysis with the lived experiences of a few Maya villages, it is clear that the commitments toward upholding the rights of the indigenous populations were never fulfilled. The commitments made in the accord were poorly funded and insufficiently supported by the governing bodies, which, unfortunately, is a theme throughout all of the accords. Due to the impunity that runs rampant throughout Guatemala, institutional structural violence, street violence, mistrust of government institutions, disregard for indigenous rights, restricted political participation, poverty, and government corruption are widespread and have become commonplace. Thus, healing and reconciliation processes that are not solely dependent on the state are essential in order to begin the larger, united process of holding the government accountable and, eventually, creating a truly democratic Guatemala.

What we learn from the Pan-Mayan movement is that a local-to-national approach for self-determination and equality is fundamental in creating change that is effective and lasting. Once individual communities and regions have established peace, trust, and unity, they will be able to engage in a larger, nationwide movement to pressure the

Guatemalan government to fulfill the commitments made in the Peace Accords and make the changes toward a just, accountable, democratic nation that the Peace Accords once intended to do.

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Reconciling a Deconstructive Method with a Feminist Practice

Abstract: Jacques Derrida's deconstructive approach to philosophical texts and Luce Irigaray's feminist project share a fundamental commitment to the demystification of the foundations of Western philosophical discourse. While their projects parallel one another in this respect, they also encounter seemingly fundamental incompatibilities. Deconstruction demonstrates how the edifice of discourse is erected upon an 'ungrounded ground'; it is therefore only the process of unraveling the fabric of philosophical discourse. Irigaray's feminist project is, primarily, to *establish* a new foundation within the discourse that Derrida deconstructs, to reconstruct a discourse of sexuality that accounts for, and embraces, the feminine subject. The question that must be addressed is: Does Derrida's deconstructive method necessarily eliminate the possibility and potential for Irigaray's practical feminist project? In this paper I will show that, although Derrida's method is bound to the 'text' and Irigaray's practice is bound to practical intervention, they are not mutually exclusive. It is precisely Derrida's method of deconstruction which opens the possibility of radically rethinking the discourse on sexuality, and which Irigaray utilizes in her *reconstructive* project.

Dan Segal | Philosophy

A misguided distaste of authority and an inclination toward arguing most likely directed Dan's scattered interests into the pursuit of a BA in Philosophy from Warren Wilson College, which he completed in 2012. With the guidance of his professors and friends he learned the valuable skill of critical thinking, which will probably get him into trouble someday. Since his departure from academia he contemplates returning to graduate school, but enjoys his free time too much to take those thoughts seriously at the moment. He is currently living in Santa Cruz, CA where he works on a small farm and spends his free time riding bikes, going to the beach, and hiking the Redwoods with his friends.



Introduction

The deconstructive method, which Jacques Derrida is most recognized for practicing and cultivating, can in many respects be understood as the culmination of the historical transgression of philosophical discourse. The movement away from a practice of uncovering, locating, and isolating objective truth and certainty, towards the cultivation of a method of thought that calls into question the very foundations upon which the notions of truth and certainty rest, is precisely the direction that deconstruction has taken philosophy. However, deconstruction is often attacked and criticized due to its fundamental characteristics, which seemingly only ask questions and demand no answers, which critique, but put forth no positive solutions. Moreover, deconstruction is often seen as dangerous to practical political intervention; due to its incessant questioning, its utter ambiguity, its fidelity to the text, and its radical uprooting of notions that ground both philosophy and political practice, deconstruction is often misunderstood as merely a dangerous abstraction that devalues the foundations of any political discursive practice.

Feminist thinkers, who remain dedicated to the political and ethical program of critiquing, rethinking, and restructuring an oppressive and dominating patriarchal discourse, often take this position of critique. The movement of feminist politics has historically relied upon a rights-based model of equality within a juridical-political framework. With the advent of poststructural thought, and its rejection of the sovereign—juridical structures of power, feminism started to move away from a strict recourse to political incorporation and equality. Contemporary and radical feminists today, such as Luce Irigaray, attempt to question beyond the horizons of political equality—horizons that are always limited and constrained under sameness. Rather, they offer a critique of phallogentric discourse—the dominating discourse on sexuality that reduces and incorporates

all sexual difference into strictly masculine parameters—and attempt to find recourses of resistance against this pervasive economy that inherently and subversively reduces and erases femininity. This is not to say that Irigaray completely devalues political intervention but that she understands the systematic nature of gendered and sexed inequality to be deeper and more pervasive than mere political inequality.

Irigaray is often criticized for resorting to biological essentialism due to her attempt to offer both a theoretical and practical recourse towards the establishment of sexual difference, which she argues, would open the possibility for genuine political change. This criticism, often offered by deconstructionist thinkers, claims that her recourse relies on the essentiality of the ontological categories of “masculine” and “feminine,” their essential difference and the rigidity of their dualistic opposition. It is these essential and rigid ontological oppositions, such as “man”/“woman,” that deconstructive thought claims to be the foundations of Western discourse, and that its method demystifies in an attempt to show how these foundations are themselves unfounded. The conflict between a deconstructive method and the praxis of a contemporary feminism arises due to deconstruction’s displacement of the very conditions upon which feminism seems to rely.

In this paper, I will address this contradiction and conflict between the theoretical and textual method of deconstruction on the one hand, and the practical intentions and implications of contemporary feminism on the other. I will then offer a reconciliation of this conflict by first outlining each position in relation to criticisms proposed by its opposition and in relation to its internal limitations. By showing that Irigaray’s feminist project is not simply a reduction to essentialism that overlooks or undermines the ontological problems that Derrida posits, I will be able to show what these two projects share with one another and how they can enrich one another. This is not to say that these two projects do not maintain fundamental differences

or that they can be collapsed into one another; I aim to show, then, that the important philosophical and political work of Derrida and Irigaray are not mutually exclusive and that openness between the two can aid and enrich a practical, ethical, and political feminist project.

More specifically, I will show how Derrida lays the foundations for Irigaray's contemporary feminist perspective through his critique of presence and representation. His close reading of Plato's fundamental logic of representation and *mimesis*—which constitutes the foundational dualism between the sensible and the intelligible—shows the internal contradictions of this logic and the open potential of its subversion. I will show how Derrida's analysis lays the foundations and opens the conditions of possibility for Irigaray's formulation and implementation of the *mimetic* strategy as a means to displace phallogocentric discourse. Through this displacement, Irigaray argues that the reconstruction of discourse is possible, one in which sexual difference (and other forms of difference as well) can be established and accounted for. This analysis will highlight the similarities their positions and projects share, and help to reconcile the conflict between them.

Derrida: Deconstruction of the Text

Derrida's method of deconstruction is one that questions the foundations of philosophical thought, and through this questioning demonstrates the inherent groundlessness upon which it is based. This method analyzes the key foundational terms that ground the logic of Western discourse, and shows the ways in which a careful reading of these terms can displace the logic that sustains this discourse. These terms are always posited within a hierarchal oppositional relation, where intelligibility, form, presence etc., are always given priority over their necessary opposites. Derrida's reading shows how the inversion of these oppositions—where the binary terms can be read as foundational—can

serve to undermine the established discourse by opening an *aporia* in the very logic of the text, where the traditional meanings of these texts begin to waiver.

John D. Caputo explains how Derrida's deconstructive reading challenges the traditional reading of texts and points out what these readings overlook: "The classical readings follow what we might call the dominant tendencies of the text, the smooth superhighways with numbered exits. Only after this reading, or through, or best of all along with it, does a deconstructive reading settle in to point out the dead-ends and aporias and to make things more difficult" (*Deconstruction in a Nutshell*, 76). If we submissively read the texts according to their canonical interpretations and refuse to follow the "dead-ends" to their logical conclusions, we will simply repeat and reproduce a flawed logic and a groundless discourse. Therefore, Derrida's reading attempts to show how a different and more complicated interpretation can undermine the traditional meaning of the text.

This method remains loyal to the texts that constitute the foundations of Western discourse. Derrida understands the history of philosophy to be an endless abstraction of these texts. This abstraction arises when the texts are repeatedly interpreted out of context, resulting in the canonical tradition that draws a thesis out of the text, and posits a meaning behind the texts. He claims that "*Platonism* would mean, in these conditions, the thesis or the theme which one has extracted by artifice, misprision, and abstraction from the text, torn out of the written fiction of 'Plato'" (*Khora*, 119). Derrida sees this "abstraction" from the text to be the origins of a philosophy of rhetoric and interpretation that ceaselessly builds upon the previous interpretations and abstractions. Here we can see the beginnings of his larger and more general critique of philosophical discourse; its foundations are not stable and fixed, but rather the edifice of discourse is merely erected upon its own self-perpetuating abstractions and interpretations.

Through the act of giving meaning to a text beyond the text itself, by drawing out a *Platonism* from the texts of Plato, we can see the origins of the problem of naming in general: giving meaning to a sign, or the claim that a truly signified idea, concept or certainty remains latently implicated beyond the sign itself. We will more closely analyze Derrida's position on linguistics, within his lecture "*Différance*," in what follows, but what is important here is to understand the link between his allegiance to the text and his larger critique of classical linguistics as a signification of hidden or non-present truth. He understands both abstractions from a text and from a sign to be dangerous and illusory foundations, and attempts to bring these questionable practices to light through a recourse that adheres strictly to the text itself. In this way he not only shows how "the translations remain caught in networks of interpretation," but also offers a method that reassesses these interpretations and puts them back into (con)text (*Khora*, 93). As we will see in what follows, this strictly textual analysis, which plays a central role in the deconstructive method, becomes problematic for a philosophical practice directed and instigated by political and ethical intentions.

The Privilege of Presence

Derrida's strict commitment to the text arises from his analysis and critique of classical theories of signification. He claims that signification relies upon the prioritization of "presence" and its oppositional relation to "absence." He claims that:

The sign is usually said to be put in the place of the thing itself, the present thing, 'thing' here standing equally for meaning or referent. The sign represents the presence in its absence. It takes the place of presence. When we cannot grasp or show the thing, state the present, the being-present, when the pres-

ent cannot be presented, we signify, we go through the detour of the sign. (*Différance*, 9)

The sign thus represents both the *absence* of the “thing” (the meaning or referent) and its *presence* within a linguistic system of representation. The utterance of a word or name, an idea or concept, simultaneously demonstrates the absence and the presence of that to which it refers; for the sign is not the thing in itself, but it comes to stand for and represent the presence of the thing, which remains latent, hidden and non-present. In this way the “sign represents the presence in its absence” (Ibid), as it gestures to, invokes and signifies presence through a “detour.” It is this constant movement of language—its internal logic of referring and reaching beyond the sign towards what is being signified, and its prioritization of “presence,” as that which must be accounted for and represented through language—that Derrida takes up as a crucial point of critique and deconstruction. Derrida takes this established and constitutive semiology and demonstrates its internal contradiction, which simultaneously constitutes language and brings language into question. He writes:

The classically determined structure of the sign... presupposes that the sign, which defers presence, is conceivable only on the *basis* of the presence that it defers and *moving toward* the deferred presence that it aims to reappropriate. According to this classical semiology, the substitution of the sign for the thing in itself is both *secondary* and *provisional*: secondary due to an original and lost presence from which the sign thus derives; provisional as concerns this final and missing presence towards which the sign in this sense is a movement of mediation. (*Différance*, 9)

This “*secondary* and *provisional*” nature of the sign constitutes an inherent contradiction and circularity within semi-

ology. Inherent within the structural analysis of linguistics is the presupposition that a “present” exists outside of its signified representation. The sign both relies upon the presence as its locus of meaning *and* defers the very presence of that which gives it meaning. It is assumed that without the latent and concealed notion of “presence” the sign would be meaningless, but we can only recognize this missing “presence” through the mediation of its absence—the sign. Without absence (the sign) there could be no presence (meaning/referent).

The method of deconstruction brings the fundamental opposition (presence/absence), which constitutes and gives meaning to the entire system of language, under question and scrutiny due to its own internal logic: “And thereby one puts into question the authority of presence, or of its simple symmetrical opposite, absence or lack” (*Différance*, 10). This logic prioritizes presence over absence, and the signified over the signifier. What Derrida demonstrates—and this is the basic movement and logic of deconstruction—is that the privilege and authority given to presence is displaced within its inherent relation to absence: the hierarchal opposition cannot account for each term individually, presence cannot become present without absence. From this profound displacement of traditional semiology, the ground upon which language derived is revealed as uncertain, wavering, and faulty. Derrida is able to show, as Mary Poovey eloquently articulates, that “none of the members of this linguistic chain has priority, and the ‘ground’ that produces the effect of meaning and essence is the play of substitutions” (*Feminism and Deconstruction*, 52). Through this deconstruction of classical semiology, Derrida demonstrates that presence is not an ontologically distinct category and can no longer be considered the “ground” of truth or the essential referent of signification. Rather, it is the necessary relation and play between presence and absence, where neither retains essentiality outside of their relational opposition, that constitutes the “ground” upon

which linguistics rests as merely the “play of substitution.”

Différance: The Third Genus

Derrida refers to the relational play that constitutes presence and absence as irreducibly linked and interdependent, as *différance*. *Différance* thus stands as that which subtends the system and structure of language as an endless substitution of signs with no essential referent or meaning, as the endless “play of traces.” It is that which stands *between* presence and absence, meaning and signification, truth and representation; and this *space between* positions is the only structure holding the complex system of language together. We can no longer reduce language to an essential truth to which it refers and represents, but rather the constituting element of language is the space between the meaning and its sign. Through Derrida’s radical reconstitution of language as an instantiation of *différance*, we can see how “deconstruction...undermines identity, truth, being as such; it substitutes endless deferral or play for these essences” (*Feminism and Deconstruction*, 52). The truth, meaning, and value of presence are displaced by *différance*, and the authority of presence is lost, as it no longer retains an independent essentiality.

Derrida reiterates again and again that *différance* is neither a word nor a concept, but rather stands between the sign and its meaning. It does not belong to sensibility as a simple signifier, nor does it belong to the intelligible ideality (*Différance*, 5). It is the vital space between these oppositional terms that both subtends the system of language and serves to displace the logic upon which that system operates. Through his deconstructive reading of Plato’s *Timaeus*, Derrida shows how *khora* functions similarly to *différance*, as that which subtends and constitutes the opposition between the intelligible and the sensible through its necessary exclusion from participating in either term.

Within Plato’s formulation of the intelligible/sen-

sible opposition, he denotes a “third genus” which he calls *khora*. This is the locus, space, or matrix that stands between the sensible and the intelligible, and that which mediates their interaction. Although only mentioned briefly in the *Timaeus*, the third genus of *khora* is a vital and necessary aspect of Plato’s metaphysical cosmology. Derrida shows how this fundamental ontological category is itself only constituted through exclusion and substitution, and that it has no place of its own. He writes:

Khora receives, so as to give place to them, all the determinations, but she/it does not possess any of them as her/its own. She possesses them, she has them, since she receives them, but she does not possess them as properties, she does not possess anything as her own. She “is” nothing other than the sum or the process of what has just been inscribed “on” her, on the subject of her...but she is not the *subject* or the *present support* of all these interpretations, even though, nevertheless, she is not reducible to them. (*Khora*, 99)

Derrida’s reading of *Khora* strikingly reassesses the discursive distinction between the intelligible and sensible, while simultaneously alluding to and echoing the feminine connotations inscribed upon *khora* by Plato. *Khora* is the necessary matrix (a word that Derrida uses precisely because of its gendered and sexed connotations) that “gives place” to and mediates the relation between the sensible and the intelligible. *Khora* receives the determinations of intelligibility and reproduces them as sensible; it *stands between* these two ontological categories without participating in either. Its exclusion marks its lack of propriety, its nothingness that also stands as the conditions of possibility, the “place,” for this opposition to stand. Here we can see the beginnings of Irigaray’s critique of the phallographic order and its displacement of femininity.

Derrida's deconstruction of language illuminates his larger deconstructive project as the demystification of hierarchal and binary oppositions. As *différance* now stands as the "ungrounded ground" (ungrounded because it is simply the endless play of substitutions) of language and *khora*, as the excluded and constituting *third genus*, the authority of presence no longer reigns and dominates language, and the privilege given to intelligibility is threatened. Derrida does not intend to reverse the hierarchy of oppositions, but simply to point out that the essentiality of the referent that has come to constitute the meaning of language has no transcendent or objective ground to stand upon. Derrida also does not wish to extrapolate this analysis beyond its contextual basis within texts, and claims that to do so would undermine the entire deconstructive project. To infer, extract, or posit a meaning beyond the text would be to claim that the text itself is an essential sign that represents an essential meaning beyond itself. It is due to this inherent constraint and limitation that deconstruction has received criticism for being a purely intellectual endeavor that contains itself within abstractions and has no practical implementation. I will argue that although it is necessary that deconstruction remain loyal to its textual method, it nonetheless lays the foundations (by destroying the previous ones) for a practical, political, or ethical discursive practice, such as feminism. By demystifying and devaluing the authority of hierarchal oppositions, deconstruction opens the possibilities of rethinking the prioritization and privilege of "man" over "woman" and of masculinity over femininity. It is from this deconstructive starting point that feminist thinkers, such as Luce Irigaray, can begin a project of reconstruction.

Irigaray: Reconstruction of Sexual Difference

From a deconstructive perspective, a feminist project advocating for real political and ethical change to the unequal gendered and sexed conditions of real individuals encounters fundamental limitations. On the one hand, deconstruction creates an opening within discourse and the conditions of possibility for a radical reorientation of oppressive discourse; on the other hand, deconstruction's logic and operation also serve to limit the recourses that a feminist praxis could potentially rely upon and grow from because deconstruction is so bound to the text and seems to reject a re-constructive project. It is this very line that is currently in question and this line that Luce Irigaray strategically acknowledges and works through.

Irigaray's critical analysis of patriarchal domination closely parallels Derrida's analysis and displacement of Western discourse. Like Derrida, Irigaray questions the fundamental conditions that give rise to a system of power ordered around hierarchal oppositions. She claims that, within the discourse on sexuality, the oppositional relation that must be questioned and critiqued is that between masculinity and femininity, where masculinity holds a privileged and prioritized position of meaning—the referent to which femininity signifies. However, as a feminist advocating an ethical and political agenda of intervention, her recourse of establishing an autonomous and liberated feminine subject encounters a deconstructive limit. Irigaray argues that women can possibly constitute an independent feminine subject through signifying towards the lost essential referent of femininity. In what follows I will show how Irigaray shares a similar method of critique with Derrida, and how her project may differ and conflict with deconstructive thought, but that these two practices are not mutually exclusive.

Luce Irigaray's project begins from an analysis of phallogentric discourse that precisely excludes feminine

subjectivity on its own terms. Her analysis shows how femininity has only been articulated as “lack” and “atrophy” of the proper masculine anatomy and characteristics, such as rational, citizen, subject, and form. This is excruciatingly clear within Freud’s theories of psychosexual development, where female development is characterized by her lack of the proper male anatomy, and a woman’s reproductive organs are reduced according to masculine parameters and defined only in relation to male genitals (the vagina as the “sheath” for the penis, or the clitoris as merely a truncated penis). She claims that this discourse, which constitutes the foundations of political and ethical thought, is the origin of patriarchal domination. She writes that “unless we limit ourselves naïvely—or perhaps strategically—to some kind of limited or marginal issue, it is indeed precisely philosophical discourse that we have to challenge and disrupt, inasmuch as this discourse sets forth the law for all others, inasmuch as it constitutes the discourse on discourse” (*The Power of Discourse*, 74). While Irigaray acknowledges the “strategic” intentions of a feminist project narrowly focused on specific issues of rights and juridical equality, she also understands that a feminism that naïvely limits itself to these issues overlooks the more sedimented and latent foundations of sexed inequality constituted within philosophical discourse. It is her aim to show how the inequality and suppression of real women not only arises from philosophical discourse, but also can only be rectified through an acknowledgment and disruption of such a discourse.

The logic through which philosophical discourse operates is one that relies upon the stability, priority, and representation of truth. This logic inherently eradicates genuine difference by its ability to reduce all “otherness,” whether that be the feminine or the sensible, to an economy determined by and organized around the privilege of truth. Within the discourse on sexuality, Irigaray claims that this economy is organized around masculine parameters and privileges the “masculine subject.”

This domination of the philosophical logos stems in large part from its power to *reduce all others to the economy of the Same*. The teleologically constructive project it takes on is always also a project of diversion, deflection, reduction of the other in the Same. And, in its greatest generality perhaps, from its power to *eradicate the difference between the sexes* in systems that are self-representative of a 'masculine subject [emphasis original].' " (*The Power of Discourse*, 74)

Genuine sexual difference is erased by an economy determined by *logos*, where all otherness merely reflects masculinity. The "economy of the Same" determines, not necessarily how femininity and masculinity are folded into one another, nor how the opposition between masculinity and femininity is collapsed; but rather, how femininity is subverted under masculinity as its necessary "other" and necessary point of reference for its own self-reproduction. Within this economy, femininity merely stands as the necessary negative to a dominant masculine subject: "The feminine is defined as the necessary complement to the operation of male sexuality, and, more often, as a negative image that provides male sexuality with an unfailingly phallic self-representation" (*The Power of Discourse*, 70). Here we can draw a parallel between Derrida's deconstruction and demystification of oppositional binaries and Irigaray's analysis of the fundamental economy of Western discourse. Within the discourse on sexuality, femininity stands as the classical sign, a signifier with no inherent meaning or value in itself, that reflects and presents the truth and validity of its referent: male sexuality. In both cases there is a critique of the way in which meaning and value are constituted within discourse through the fundamental prioritization of one term in an opposition—the referent over the signifier, or masculinity over femininity—and how this logic undermines the *différance* and difference between the two.

Like Derrida's reading of *Khora*, Irigaray shows how femininity simultaneously constitutes the conditions upon which the phallogentric order can reproduce itself, while being totally excluded from maintaining a determinate position. Femininity is erased because it only stands as the necessary, and negative, signifier of masculinity. The feminine, as represented by *Khora* as nurse or mother, has no place within a logocentric discourse grounded on the distinction between intelligibility and sensibility. Femininity is necessary for the reproduction of a masculine subject but has no position of subjectivity itself, and therefore stands outside of the dominating discourse of sexuality.

This comparison shows how Irigaray utilizes a deconstructive approach in her critique of phallogentric sexual discourse. Like Derrida, her analysis demystifies the opposition between "man" and "woman" in order to show how masculinity is inherently prioritized and how this hierarchy inherently erases femininity. For Irigaray, "what is important is to disconcert the staging of representation according to *exclusively* 'masculine' parameters [emphasis original]" (*The Power of Discourse*, 68). However, this analysis differs from that of deconstruction due to its attempt to find recourse for asserting sexual difference. The first step of her process is to "disconcert" the fundamental logic that phallogentrism relies upon in an effort to assert sexual difference within discourse, ethics and politics. Through this recourse Irigaray makes an analogy between feminine inter-subjectivity, pleasure, and anatomy. She claims that the foundation of sexual difference lies within the body and the specific morphology of sexed bodies. It is through this "essentially" feminine body that woman can create an inter-subjectivity outside the parameters of masculinity and can begin to have a voice of their own. Speaking to and about women, Irigaray writes that "our resemblance does without semblances: for in our bodies, we are already the same. Touch yourself, touch me, you'll 'see'" (*Lips Speak Together*, 216). Feminine subjectivity and inter-subjectivity between

women originates in the sexed body that all women share, and through the resemblance of one another, women can begin to speak from a feminine language.

This recourse back towards the body, which grounds the feminist praxis, also conflicts with the deconstructive method that Irigaray seems to parallel so carefully. Although she critiques the hierarchal structure of the opposition between masculinity and femininity, and brings this fundamental problem to light in a deconstructive way, she does not take this analysis to its complete deconstructive end. If she did, she would forfeit any foundation upon which to base an ethical agenda or actual change within embodied reality. This deconstructive conclusion would rather proclaim that not only is masculinity unjustly prioritized within the relational opposition, and must be simply reduced to a term in constant relation to its “other,” but femininity too does not—and cannot—exist without its oppositional term. This formulation states that neither term has an essentiality—there is no meaning behind either term, nor are they both dependent upon their relation to the other. Within a feminist framework this problem represents a serious limitation: femininity can never be constituted independently and autonomously, and doing so would only support the order of discursive domination that it wishes to disrupt. For Irigaray’s project, her recourse to the body represents this very conflict with deconstruction:

To argue that a women’s biological nature grounds a set of experiences and feelings is obviously to fall into this humanistic trap, but even to maintain that all women necessarily occupy the position of “other” to man and that their social oppression follows from this binary split is to risk reducing position to essence...it retains... the oppositional logic that currently dictates our “knowledge” of sex difference and the nature of woman. (*Feminism and Deconstruction*, 52)

Irigaray's position is thus brought under scrutiny and questioning according to deconstructive thinking. By simply positing that femininity "necessarily occupies the position of 'other,'" it seems that Irigaray has already fallen into an essentialist trap.

It seems that deconstruction fundamentally undermines the ground upon which a feminist philosophy could stand. However, we must keep in mind the ethical, political, and concrete agenda of feminism; a philosophical practice that accounts for and attempts to rewrite the lived, embodied, and sexed inequalities of bodily life must both work within and against the discourse that reifies these inequalities. The operation of deconstruction works through the established discourse to displace its sedimented foundations, and in so doing does not account for the inequalities that discourse itself propagates, but only brings to light the ungrounded foundations of such inequalities. In this way, deconstruction only focuses on the discourse itself and leaves the body, matter, and lived oppression out of its agenda. This is the question that Judith Butler addresses in her essay "Bodies That Matter." She asks, "If everything is discourse, what happens to the body? If everything is a text, what about violence and bodily injury?" (142). It is this question that Irigaray addresses; her analysis attempts to account for both the structured, and inherently sexed, inequality that grounds discourse, while simultaneously addressing the ways that this discourse materializes itself within the lived world. Through this analysis, Irigaray wants to show the ways discourse inherently eradicates difference so as to have a place to start a reconstructive project of establishing difference. While it may seem that her reconstructive agenda is naïve according to deconstruction's necessary operation, I would like to argue in the following section that her goals do not naïvely rely on an essential recourse. Rather, her call for, and performance of, strategic *mimetic* practice embraces the deconstructive displacement of dis-

cursive foundations, and itself accomplishes the displacement of the propriety and privilege of masculinity. Through the deconstructive practice of re-thinking and re-writing *mimesis*, Irigaray opens the possibility to reconstruct a feminine subjectivity of genuine difference.

The *Mimetic* Strategy

In her project to both critique and subvert the indifferent logic of phallogentric discourse, Irigaray urges women to “play with *mimesis*” as a means of accounting for genuine difference. She writes that, “to play with *mimesis* is thus, for a woman, to try to recover the place of her exploitation by discourse, without allowing herself to be simply reduced to it” (*The Power of Discourse*, 76). In order to understand how Irigaray posits a strategic and playful interpretation of *mimesis* as a practice that could subvert phallogentrism and lead towards a genuine feminine subjectivity, we must first understand the etymology of the word itself, its multiple meanings and usages, and its place as the fundamental logic that upholds Western discourse.

The Origin of Imitation

In his work “The Birth of Images” the classicist Jean-Pierre Vernant traces the etymology of *mimesis* back to its origins within ancient Greek society in an attempt to show how its meaning was fundamentally subverted within Platonic metaphysics. Today, *mimesis* is commonly translated as imitation or mimicry, but it initially referred to the oral tradition of sharing knowledge through performance, to the “‘*mimetic*’ effect of affective communication that involves the author, the performer (reciter or actor), and the audience of listeners who identify themselves in some fashion with the actions, ways of being, and characters represented in the stories or on the stage [emphasis original]” (*Birth of Images*, 175). In ancient Greece *mimesis* meant more than simply performance; it was performance with the intention

of education, and its reception as knowledge relied upon an understanding between all participants. The performative act of *mimesis* was thus understood as a natural reflection of reality; all the participants shared an understanding that the performance and the speech were intended to reflect and embody the event being performed.

When Plato formulated his metaphysical doctrine of the forms, he saw *mimesis* as a threat to his bifurcation of reality to a conceptual realm, within which truth is stabilized as permanent and disembodied. If the practice of *mimesis* was an embodiment of that being performed, then the performance itself could be mistaken as truth. Therefore, in order to defend the sanctity of truth within its formal reality, he transformed the meaning of *mimesis* from its archaic usage to its present understanding as imitation. Plato established the corporeal world as an imitation of a formal and essential reality.

The Platonic notion of *mimesis* as imitation relies upon and maintains the dichotomy between the intelligible and the sensible. Within this dualism the intelligible is privileged as the static Truth that gives meaning and value to the sensible. Through this logic of imitation—the fundamental logic of Western discourse—all sensible corporeality is contingent upon the value and truth of the intelligible. Irigaray directly critiques the Platonic notion of metaphysics grounded in this logic as “an organization that maintains, among other things, the break between what is perceptible and what is intelligible, and thus maintains the submission, subordination and exploitation of the ‘feminine’” (Irigaray, 80). Within the existing discourse on sexuality—initiated by Platonic metaphysics and explicated by Freudian psychoanalysis—masculinity stands as the formal Truth of sexuality against which femininity is established as its corporeal imitation. In order to create a subjectivity of feminine difference we must escape the prison of Platonic metaphysics.

By invoking the concept of *mimesis* as a strategy,

Irigaray has already alluded to the entire etymology of the word. She shows how its canonical formulation under Platonic metaphysics constitutes the oppressive discursive logic of indifference by always referring the sensible, or the feminine, back against its true referent: the intelligible, or the masculine. She also gestures towards a different reading of the word, the archaic, which sheds light on how Irigaray conceptualizes the potentially strategic implementation of *mimesis*. In order for *mimesis* to be liberated from its canonical interpretations and definitions as imitation—thus liberating the practice for Irigaray’s strategic feminine practice—we must first deconstruct *mimesis* as the site upon which the foundational opposition between intelligibility and sensibility, form and matter, is built upon.

Deconstruction of *Mimesis*

In his lecture *The Double Sessions*, Derrida performs a critical reading of the role that *mimesis* plays within Plato’s texts. He demonstrates how *mimesis* represents the fundamental logic that prioritizes presence, intelligibility, and truth within Plato’s metaphysics. He begins his deconstructive operation by citing a passage from Plato’s dialogue *Philebus*, in which Socrates explains to Protarchus how the soul is like a book, where the memories, sensations, and experiences we have get “written down,” or transcribed. Socrates goes on to say that: “when this experience writes what is true, the result is that true opinion and true assertions spring up inside us, while when the internal scribe I have suggested writes what is false, we get the opposite sorts of opinions and assertions” (Plato, quoted from *The Double Sessions*, 175). Here, Derrida points out how the opinions (*doxa*) and assertions (*logos*) of the soul – that spring from the soul—are the result of a *mimetic* process of writing. When the book resembles, imitates, or copies properly the true model, its effects are said to be valid. When this book copies improperly (such as with poetry), this process yields an invalid and deceptive result: false assertions and opin-

ions spring from the soul. What Derrida attempts to extract from the reading of this passage are the two main functions *mimesis* plays within Plato's texts:

Let us retain the schematic law that structures Plato's discourse: he is obliged sometimes to condemn *mimesis* in itself as a process of duplication, whatever its model might be, and sometimes to disqualify *mimesis* only in function of the model that is "imitated," the mimetic operation itself remaining neutral, or even advisable. But in both cases, *mimesis* is lined up alongside truth: either it hinders the unveiling of the thing itself by substituting a copy or double for what is; or else it works in the service of truth through the double's resemblance. *Logos*, which is itself imitated by writing, only has value as truth. (*The Double Session*, 187)

Within Socrates' metaphor we can see how these two functions of *mimesis* play out. On the one hand, the imitation of a model can serve the function of truth, that is, if the soul (or book) properly represents the model of truth; on the other hand, the impressions written in the soul can be deceptions of truth that falsely represent the true model. Moreover, Derrida points out a third instance of *mimesis*, which is when an imitation represents a false model or referent. However, in any formulation that Plato implements the *mimetic* process and interprets the imitations that derive from it, they are always judged against the truth of what they stand to represent. The book, as a copy or imitation of a model, only has value—either as valid or invalid, true or false, good or bad—in relation to a static and immutable truth: "*mimesis* is [always] lined up along truth" (Ibid) and "in each case, *mimesis* has to follow the process of truth [emphasis original]" (*The Double Session*, 193). Here we see a similar reading of Platonic *mimesis* that Vernant has given us—the imitation is always judged and measured

against the stability of formal truth, and its validity as a signifier is determined by its relation to the model of truth it stands to represent.

Here we can draw a parallel between Derrida's critique of the metaphysics of presence within classical semiology and his reading of *mimesis*, where the imitation stands as the signifier and the imitated model as the signified referent or meaning. We encounter the same prioritization and privilege of the imitated, true model, as we do that of the referent and "presence." The model is what gives meaning to the imitation, where the imitation simply stands as the absence of the model itself. But when we cannot know or grasp the model without its necessary absence (its imitation), or when we cannot know the soul without its transcription in a book, how are we to discern the truth and validity of the model on its own terms? This is the crucial contradiction that Derrida exploits to show how the fundamental *mimetic* logic of Plato's metaphysics is itself ungrounded. We can only know the truth or validity of the model through a proper imitation, as we can know the validity and value of an imitation according to the model that it represents. Likewise, the opinions and assertions that spring from the soul can only be judged according to the truth of the book that they spring from, but the truth of the book itself is contingent upon the truth and validity of what it, in turn, represents. In this way, Derrida shows how the *mimetic* foundation that constitutes the fundamental opposition between the intelligible and the sensible is uncertain and wavering; its ground is merely the endless play of substitutions. Just as the logic behind semiology cannot operate by simply privileging the presence through absence, neither can *mimetic* logic and linguistics operate by simply positing a static and objective truth to be represented, imitated, or signified.

Derrida takes this deconstruction a step further through a close reading and examination of a text written by the famous French poet Stéphane Mallarmé. Through

this example, Derrida shows how the hierarchal opposition mediated through *mimesis* can be inverted to show how the priority of the model, book, or referent is not a necessary condition for the operation to function. The text, entitled *Mimique*, is a poem written about a famous mimodrama; this performance was supposedly based off of a texted script, but the performance of the mime actually preceded the writing of the text (*The Double Sessions*, 195-8). Derrida explains that this “mimodrama ‘takes place,’ as a gestural writing preceded by no booklet; a preface is planned and then written *after* the ‘event’ to precede a booklet written *after the fact*, reflecting the mimodrama rather than programming it [emphasis original]” (*The Double Sessions*, 199). Here we can already see Derrida’s strategic inversion of the oppositional terms of representation and *mimesis*; by showing that a performance, a *mimesis*, can take place without a necessary referent, as Plato insists it must and always does, Derrida wishes to expose the fundamental flaw of Plato’s logic. Within the mimodrama there is no referent through which the act gains significance or meaning; it comes before that which it represents. But Derrida is careful to simply posit an inversion, that the performance constitutes its own meaning, and thereby is no longer a mimicry; this would simply revert to the archaic conception of *mimesis* outlined by Vernant. However, Derrida insists, “*There is* mimicry... We are faced then with mimicry imitating nothing...There is no simple referent. It is in this that the mime’s operation does allude, but alludes to nothing, alludes without breaking the mirror, without reaching beyond the looking glass [emphasis original]” (*The Double Sessions*, 206). This is the crucial point of Derrida’s deconstructive operation: he wishes to demonstrate that this inversion does not negate *mimesis* nor work around it, but that the mimodrama is a *mimetic* operation, one that does not conform to nor give priority to a “presence,” referent, or meaning that precedes it. In this way, this interpretation of *mimesis* does not do away with its function; it does not “break the mirror,” but

simply shows how the performance can be an imitation of nothing.

This deconstructive reading of *mimesis* thus demonstrates how the *mimetic* process can function adequately outside of Platonic metaphysics while maintaining its operation as representation without falling back into a dependence on meaning or truth. In this way, Derrida shows how *mimesis* can function without a referent, neither a referent of a preceding truth or model, or the referent of a presence constituted by the act or performance itself (*The Double Sessions*, 206). Rather, he wishes to show how “[t]he operation, which no longer belongs to the system of truth, does not manifest, produce, or unveil any presence; nor does it constitute any conformity, resemblance, or adequation between presence and representation... [This operation] illustrating nothing—neither word nor deed—beyond itself, illiterates nothing” (*The Double Sessions*, 208). Thus the presence of truth or meaning is no longer a necessary function of *mimesis*; the operation can occur without meaning anything and without relying on nor producing any truth, meaning or presence. *Mimesis* can be seen in this way as an empty gesture, but a gesture nonetheless that points out the emptiness of the meaning that it canonically relies upon. In this way, Derrida opens up an *aporia* through his questioning and puts the very logic of Platonic discourse into question.

Although Derrida is careful not to posit a necessary substitution of this inversion, the deconstructive operation nonetheless opens the possibility for new meaning by its displacement of the privilege given to presence and the true model. This is precisely where Irigaray takes up *mimesis* as the strategic practice of displacing phallocentrism. In the following section I will demonstrate how she urges women to practice this Derridean deconstruction of *mimesis*—that is, the inversion of Platonic *mimesis*—as a means of pointing out and bringing to light the meaninglessness behind the foundations of phallogentric discourse.

Strategic Imitation

As was mentioned earlier, Irigaray's feminist project is to demonstrate the necessary exclusion of femininity within phallogentric discourse and, in so doing, to open a space for femininity to be accounted for. We have also seen how many critical readers understand the method and recourse she utilizes to accomplish her project as reverting to essentialism, which would only reassert the binaries that femininity is excluded from. In order to truly understand her project as not necessarily a reduction to essentialism, we must first understand her style and her writing as a performance and read it as such.

In her essay *Bodies that Matter*, Judith Butler attempts to defend Irigaray's work against accusations that she superficially resorts to biological essentialism and materiality. Through her reading of Irigaray's style and voice, Butler argues that Irigaray does not ignorantly fall into an essentialism that would support or invert binary discourse, but rather she very carefully and strategically takes on and imitates the voice and writing of phallogentric discourse. The suppressive power that phallogentric discourse holds over femininity is not necessarily its reduction of femininity to materiality, but is more importantly the effect of this reduction: the total exclusion of femininity from both form and matter, intelligible and sensible. As Butler explains, Irigaray does not want to simply reclaim materiality for the feminine; she rather wishes to show that "when matter is described within philosophical descriptions...it is at once a substitution for and displacement of the feminine" (*Bodies that Matter*, 150). Her project is not to reclaim materiality for the feminine, nor to reclaim femininity through materiality, but to show how femininity both has no proper place within either oppositional term and how this exclusion serves to ground the opposition which rests at the heart of phallogentrism. To uncover and make visible the exclusion of femininity would serve to radically undermine and disrupt the phallogentric logic that suppresses femininity

while simultaneously relying upon it for the reproduction of masculinity.

Irigaray attempts to exploit and make visible this contradiction within phallogentric logic through a playful, strategic, and performative tactic of imitation. She writes:

To play with mimesis, is thus, for a woman, to try to recover the place of her exploitation by discourse, without allowing herself to be simply reduced to it. It means to resubmit herself—inasmuch as she is on the side of the “perceptible,” of “matter”—to “ideas,” in particular to ideas about herself, that are elaborated in/by a masculine logic, but so as to make “visible,” by an effect of playful repetition, what was supposed to remain invisible: the cover-up of a possible operation of the feminine in language. (*The Power of Discourse*, 76)

Here, Irigaray clearly states the purpose of the *mimetic* strategy as a means to recover and uncover the exclusion of femininity under masculine discourse, but in a careful way that does not simply reassert herself within that discourse. She wishes to show that through the repetitious imitation of masculine logic, women can come to represent themselves in a way that directly threatens the stability of this logic. As phallogentric logic and discourse rests upon the *mimetic* logic of representation—where the validity of the masculine referent is ensured by its representation through the feminine signifier—this logic begins to unravel when women begin to imitate themselves. Irigaray urges women to imitate the logic of phallogentrism, that is, its reliance on hierarchal representation, its language, and its voice. When this imitation is enacted it can subvert the ordered logic of masculine privilege by showing how this logic still operates through a woman’s voice. By inserting herself into this logic, she forcefully shows and extricates the *exclusion* of femininity, an exclusion that is always covered over and

suppressed from realization.

Her writing itself must be read in light of this tactical approach, as it is a performance of this strategy. Her seemingly superficial reduction to materiality is not only a recourse for establishing a feminine subject, but, more importantly, it is a method of disrupting phallogentric logic by implementing an impropriety at its very core. Butler explains that Irigaray “mimes philosophy—as well as psychoanalysis—and, in the mime, takes on a language that effectively cannot belong to her, only to call into question the exclusionary rules of proprietariness that govern the use of that discourse” (*Bodies that Matter*, 151). By taking on the language and discourse of phallogentrism, and improperly inserting herself within that discourse, Irigaray wishes to bring to light the exclusion of femininity, thus calling into question the logic that maintains masculine privilege.

This is precisely the same operation that Derrida utilizes to displace the logic that constitutes and maintains the established discourse. When the hierarchal relation between the imitation and the imitated model is reversed, where the imitation precedes the model and has no true referent, Derrida is able to show that this logic can still function, which demonstrates the arbitrary and ungrounded prioritization of the model. Derrida places the imitation, sign, and absence in a position that does not properly belong to it—in the place of the model, the meaning, and the present, respectively—and in so doing calls into question the priority given to the “proper” term. Likewise, when Irigaray reverses the phallogentric logic by taking the voice of a masculine subject, by imitating the masculine discourse that cannot properly belong to her, she puts into question the priority given to masculinity within the *mimetic* logic of phallogentric discourse. In this way, Irigaray’s *mimetic* strategy shares a fundamental operation and effect with Derrida’s deconstruction: they both demystify the hierarchal oppositions that ground discourse by imitating the logic of that discourse while reversing its fundamental op-

positions.

Conclusion

Although Irigaray seemingly posits an essential femininity grounded in materiality and anatomy, we must read these apparent contradictions within the context of her overall strategies and objectives. Through a form and style of writing that seemingly falls into the same discursive logic that she wishes to disrupt, she is actually performing an imitation of such discourse in order to disrupt it. She takes on the language, logic, and style of phallogentrism in order to bring to light its inherent exclusion of femininity, which, in turn, phallogentrism latently relies upon. While her overall objective is to account for a feminine subject outside of masculine parameters, she also realizes that in order to achieve this goal we must first disrupt the economy that maintains indifference and erases femininity in totality. In order to disrupt this discourse, Irigaray implements a deconstructive strategy targeted at the demystification of the foundations that enable and constitute such an oppressive discourse.

Like Derrida, Irigaray is interested in showing how the hierarchal oppositions that constitute discourse are ungrounded. However, there still remains a fundamental difference in their projects. In *Différance*, Derrida explains that the operation of deconstruction is itself “a strategy without finality, what might be called blind tactics” (7). The deconstructive project has no teleological function, no particular end, goal, or objective other than the displacement of the discursive system. Derrida does not want to posit that the established discourse should be replaced by something “better,” or that there was something “before” that was corrupted; rather, he simply wishes to bring to light the unstable foundations that western discourse relies upon. However, Irigaray does place a value judgment in her analysis of phallogentrism, and her project also encompass-

es a reconstructive agenda. Unlike Derrida, who limits himself to the text, Irigaray is dealing with real political and ethical problems that have real repercussions on individuals. Where she borrows a deconstructive commitment and strategy of demystifying the present conditions, she also argues that this is merely the first step towards implementing political and ethical change. I would argue that Irigaray utilizes deconstructive as a practical, strategic, and necessary tool within her larger feminist project of reconstructing a suppressed and covered-over feminine subjectivity.

Both the overlap and conflict between Derrida's deconstruction and Irigaray's feminism are highlighted within their respective readings of *mimesis*. Derrida's deconstruction of the fundamental logic of representation only goes as far as demystifying its legitimacy and demonstrating its instability. Irigaray shares this commitment, uses a deconstructive reading of *mimesis* as her starting point to show how this logic can be taken up in a different way, and practices a deconstruction of phallogentric logic through a strategic implementation of *mimesis*. In this way, she displaces the phallogentric order, thus opening up the possibility to reorganize this discourse, politics, and ethics to account for all sexual differences. This is the point where her *mimetic* strategy differs from Derrida's "blind tactics." Irigaray utilizes the opening of discourse offered by deconstruction as a space for political change—an opening that deconstruction itself does not exploit or utilize. In this way, Irigaray's feminist project borrows the fundamental operation of deconstruction, but utilizes this operation within a reconstructive project.

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Feature

Globalization, the Mexican Drug War, and Community Organizing: Christian Diaz '12 Talks About His Thesis Re- search and His Work Since Graduation



In his global studies thesis, Christian Diaz '12 examined the propaganda of Mexican drug cartels to find out what they could tell us about social polarization and other changes wrought in Mexican society by advanced capitalism. A year later, *Auspex* editors tracked down Christian in his hometown of Chicago to learn how his thesis research shaped his studies and post-graduation life.

In his thesis, Christian presents the rhetoric used in drug cartel propaganda (which he translated himself)—rhetoric of chivalry, altruism, protection, safety, and honor—contrasts it with the horrible violence being perpetrated by the cartels, and explores the ways in which globalization has left people vulnerable to that sort of rhetoric in the midst of drug violence. “A lot of people were dying, and they weren’t just dying, they were dying in extremely gruesome ways, and being publicly displayed—made examples of in the goriest ways you could imagine. This violence,” he says, “was so absurdly gory and disgusting that it was almost like a caricature.”

When he first started thinking about his senior thesis, Christian knew he wanted to do something about Mexico. Then, he says, “It was in early 2011 that I read a news article about this person who was murdered—they were hung from a bridge, and there was a sign up that said, ‘This is what happens to all those fucking Twitterers.’ And so

that clued me in that there was this social media dimension to the drug violence that's happening. And so as I started doing my research online, I was on twitter a lot, I was on message boards, and all these blogs.

"I came across this really creepy video from this smaller cartel in Michoacán. It was way too interesting to pass up—first of all, the music was super creepy. And the imagery in this propaganda—this is like medieval, Knights of the Round Table-type imagery. It's like, 'We are agents of divine justice, and we are coming here to protect you from criminals because your government can't protect you.' And that's really sinister, because the reality is that that drug cartel is murdering a lot of people. They are the criminals themselves!"

Christian realized, though, that that this violence could be tied to larger themes—that violence like this doesn't happen in a vacuum. "It really had to do with the changes that have been transforming Mexico in the last decades, ever since Mexico transitioned from an authoritarian socialist country to a very intensely free market economy." So, he says, "a lot of my research was based around the inequality that globalization creates in third-world countries as people who were once living in self-sustaining communities are being forced to migrate to cities and to the US."

What he found, he says, "paints a really ugly picture of how Mexico has been changing." The drug propaganda "shows how vulnerable people are in some parts of Mexico, where violence is raging, where there aren't any jobs—there's no way to sustain yourself, really. And all the families are being separated, as fathers have to move to the cities, or mothers have to move to the United States illegally to earn some income.

"The economic revolution that's been happening throughout the world during the last couple decades had really broken down how an individual related to their society, because in a lot of ways that society just doesn't exist anymore. If families are separated, and you don't have a

government that takes care of you or protects you from violence, then that sounds pretty much like a failed state.” And there is a tension, he says, in what he found in his research. “The irony is that the Mexican economy has been growing despite all the violence and despite all the poverty.”

And what about the process of actually researching and crafting the thesis—what were the challenges? “The most challenging part of it was not getting super depressed because I saw a lot of awful pictures and read a lot of awful stories, and it was extremely upsetting. And at first it was kind of enticing and edgy to be looking up these videos of these crimes.” But after a while, Christian says, the reality of what he was seeing sunk in. “These corpses that I’m looking at, that are oftentimes unrecognizable, are people who have parents, who have brothers and sisters.”

“I chose a very morbid topic,” he admits. But aside from that, he says it was difficult to refrain “from making lofty conclusions out of these incidents—I guess that’s true for anybody who does research. It’s really hard not to jump to really big conclusions about globalization, or capitalism, or whatever.”

But, he says, “I was excited because I incorporated social media, and I incorporated primary documents that not many people had looked at. I felt like in some ways my research was breaking ground—I say that based on the fact that it was really hard for me to find research on this topic—and that was really exciting.”

Now, post-graduation, Christian finds himself back in his old neighborhood in Chicago, working at the other end of those issues stemming from economic change and globalization: immigration and immigrant rights.

Prior to the 2012 election, Christian worked on the New Americans for Democracy Project (NADP), mobilizing the immigrant vote in Logan Square to represent the concerns of immigrants who can’t vote. “It was really about bridging different groups around one issue, and that issue was immigration reform—a pathway to citizenship for peo-

ple who are undocumented, who have been living in the country for decades, and yet they don't have the right to vote, they don't have the right to drive legally, they often work in precarious conditions. And because they are not citizens they don't really have rights."

Immigration reform is a major civil rights issue of our time, says Christian. So NADP was trying to reach out to the immigrants who could vote, and to tell them that "they have an obligation to vote on behalf of their brothers and sisters and cousins and neighbors who can't vote and who are living in very difficult circumstances due to their legal status."

Voter turnout in Latino neighborhoods like Logan Square is usually quite low. Immigrants are often infrequent voters, says Christian. "There are so many immigrants who are eligible to vote who don't. They feel like their vote doesn't matter—so it was our job to go to their door and tell them, 'Your vote does matter.' If 500 new people came out to vote in this election from this one part of the city, it would really shock the politicians."

He says that if they can "wake up the sleeping giant that is the Latino and immigrant vote, politicians are going to be tripping over themselves to try to figure out what they need to do to win those votes."

Christian's work was part of a national campaign during the 2012 election. "Throughout the country, groups like ours were reaching out to Latino voters and Asian voters and Muslim voters. And the truth is that it totally paid off."

Since the election, Christian has been working for the Illinois Coalition for Immigrant and Refugee Rights; he is positioned at the Logan Square Neighborhood Association. There, he has been consulting and doing case management with undocumented immigrants who are applying for deferred action—a legal option implemented by the Department of Homeland Security in June of 2012 that allows people who immigrated to the United States as children to

receive some benefits, like work authorization.

The process of writing and presenting his thesis has been helpful in his current work. Christian has done a great deal of presenting and public speaking, and he has to break down complicated legal language and make it easier for people to understand quickly.

He says that before he started working at the LSNA, “I didn’t really know what they did, and I didn’t really know what community organizing was. But it’s really challenging and dynamic work.”

His advice for others looking to get into community organizing and activism? Volunteer, of course. “Find the issue that you’re passionate about and find other people and talk to them. Organizing is really about building relationships.”

