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Message from Nancy M. Giardina

Assistant Vice President For Academic Affairs

We are proud to present the ninth volume of the Grand Valley State University McNair Scholars Journal. It is the culmination of intensive research conducted by our student scholars and their faculty mentors through our Ronald E. McNair Post-baccalaureate Achievement Program.

The Ronald E. McNair Scholars Program, now in its 11th year here at Grand Valley State University, provides an opportunity for students and faculty to apply much of what is learned within the classroom by engaging, outside the classroom, in research activities in a particular area of scholarly interest. These research activities provide a journey through the challenges and affirmations of scholarly work and better prepare students for graduate study and the pursuit of a doctoral degree.

Thank you to the faculty mentors who have worked so closely with our McNair Scholars to propel their research skills towards the next level of educational challenges.

Congratulations to the fifteen McNair Scholars whose research is presented here. Your journey and the challenges you have met during this scholarly activity speak to your talents and persistence in pursuing both your educational and life goals. Thank you for sharing your talents with the university community and continuing the spirit of this program.

Finally, thank you to all the people behind the scenes that work to sustain this program and produce this journal. Your work is valued as well.

Nancy M. Giardina, Ed.D.

Assistant Vice President of Academic Affairs

GRAND VALLEY
STATE UNIVERSITY

Before You Can Make A Dream Come True, You Must First Have One. —Ronald E. McNair, Ph.D.

Ronald Erwin McNair was born October 21, 1950, in Lake City, South Carolina, to Carl and Pearl McNair. He attended North Carolina A&T State University where he graduated Magna Cum Laude with a B.S. degree in physics in 1971. McNair then enrolled in the prestigious Massachusetts Institute of Technology. In 1976, at the age of 26, he earned his Ph.D. in physics.

McNair soon became a recognized expert in laser physics while working as a staff physicist with Hughes Research Laboratory. He was selected by NASA for the space shuttle program in 1978 and was a mission specialist aboard the 1984 flight of the USS *Challenger* space shuttle.

After his death in the USS *Challenger* space shuttle accident in January 1986, members of Congress provided funding for the Ronald E. McNair Post-Baccalaureate Achievement Program. The goal is to encourage low-income, first generation students, as well as students who are traditionally under-represented in graduate schools, to expand their opportunities by pursuing graduate studies.

Ronald E. McNair Post-baccalaureate Achievement Program

The Purpose
The McNair Scholars Program is designed to prepare highly talented undergraduates to pursue doctoral degrees and to increase the number of individuals (from the target groups) on college and university faculties.

Who are McNair Scholars?
The McNair Scholars are highly talented undergraduate students who are from families with no previous college graduate, low-income background or groups under-represented at the graduate level for doctoral studies. The program accepts students from all disciplines.

Program Services
The McNair Scholars are matched with faculty research mentors. They receive academic counseling, mentoring, advising, and GRE preparation. In addition to the above services, the McNair Scholars have opportunities to attend research seminars, conduct research, and present their finding orally or written via poster presentations. In the first semester of their senior year, the scholars receive assistance with the graduate school application process.

Funding
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2005 McNair Scholars

When psychopaths go to college: Psychopathic traits and college adjustment

Lyndsey L. Adams
McNair Scholar

Anton Tolman, Ph.D.
Faculty Mentor

Abstract
Estimated as less than 1% of the general population, psychopaths are responsible for significant amounts of violence. However, few studies have explored psychopathic personality characteristics in non-incarcerated populations, or "hidden" psychopaths. Using the Psychopathic Personality Inventory (PPI), this study evaluated correlations between psychopathic traits and indicators of college maladjustment. We hypothesize that "hidden" college psychopaths are more interpersonally maladjusted than peers, equally successful intellectually, and less impulsive than their incarcerated counterparts. Understanding the differences and similarities between incarcerated and hidden psychopaths may lead to improved recognition and possibly early intervention with these social predators.

A significant body of literature exists regarding the antisocial behavior of criminal offenders. This research has clearly demonstrated a connection between the personality construct of psychopathy and antisocial behavior and aggression (e.g. Hare, 2003). However, relatively little research has explored the interpersonal and affective characteristics of psychopathic personality in non-incarcerated populations. Hare notes that psychopathy is not synonymous with criminality and that many psychopaths may avoid detection by the criminal justice system, becoming unethical professionals, corrupt public officials, and persons engaging in "shady" business dealings. Hare also notes that systematic research on non-criminal psychopathic populations is needed. Likewise, Babiak (1995) believes that the tendency toward unethical behavior is not very different between criminal psychopaths and "sub-criminal" or non-adjudicated psychopaths. In his case study, it was noted that a "hidden" psychopath expresses more of the inherent personality characteristics associated with psychopathy and expresses less of the antisocial behavior and deviant lifestyle characteristics. Cleckley (1976) referred to these individuals as "white collar" psychopaths and stated that he believed these individuals were able to better maintain an outward appearance of normality than their criminal counterparts.

Thus, it is not unreasonable to postulate the existence of "hidden" psychopaths at college; in fact, the college environment is also known to harbor some individuals who commit crimes, including sexual assault (Abbey & McAuslan, 2004). We prefer the term "hidden" psychopaths because of its broader applicability to the earlier term "white collar" psychopath, which refers primarily to work settings. Preliminary research has suggested that some

subtypes of psychopaths may actually appear to be successful in some settings and contexts (e.g. Babiak, 1995; Hare, 1993). Unfortunately, identifying such "hidden" psychopaths may be difficult to do.

The most widely used, scientifically validated measure of psychopathy has been the *Hare Psychopathy Checklist – Revised* ([PCL-R]; Hare, 2003). Hare contends that factor analyses of this scale suggest that the construct is "underpinned" by two correlated factors: Factor 1 measuring Interpersonal/Affective characteristics (e.g. glibness, pathological lying, lack of remorse, lack of empathy) and Factor 2 measuring Social Deviance (e.g. need for stimulation, irresponsibility, poor behavioral controls, juvenile delinquency). The drawbacks of using this measure in studies with a college population include the high degree of professional training required to use the instrument, its use of multiple items related to an explicit criminal/legal history, its validation primarily with incarcerated samples, and its requirements for an extensive interview and a review of institutional files. A screening version was developed for use outside of forensic settings ([PCL-SV]; Hart, Cox, & Hare, 1995), but it was found that the behavioral traits had to be strong before the interpersonal and affective traits become evident (Cooke, Michie, Hart, & Hare, 1999), and it likewise requires a significant investment in time for an interview and review of records. Because of these difficulties, several attempts have been made to develop self-report instruments to assess psychopathy.

One such instrument that was recently tested using college undergraduate students is the *Psychopathic Personality Inventory* ([PPI]; Lilienfeld & Andrews, 1996). This personality styles inventory has been shown to correlate moderately with the Factor 1 Interpersonal/Affective characteristics of psychopathy and less strongly to Factor 2 Social Deviance, making it more useful with non-correctional participants (Edens, Poythress, & Watkins, 2001; Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). With further validation, this scale might improve our ability to understand the similarities and differences between the personalities of "hidden" psychopaths and their more overt cousins, improve our ability to assess characteristics of psychopathy in non-criminal populations, and possibly provide targets for intervention that help some of these "hidden" psychopaths to live lives that are less harmful to society and more productive.

This study will examine whether psychopathic personality elements (as measured by the PPI) are related to adjustment to college. Hare (1993) has proposed that one major difference between "white collar" or "hidden" psychopaths and those who become embroiled in the justice system relates to the types of social norms these offenders violate: the difference between ethical standards and laws. It seems reasonable to assume that if "hidden" psychopaths, in fact, represent a proportion of college undergraduates, they may be involved in ethical violations and negative interpersonal behaviors that may not rise to the level of violence or aggression represented by breaking the law, but may be measurable as "college maladjustment."

In order to test this hypothesis, college undergraduates were asked to complete both the PPI and the *Student Adaptation to College Questionnaire* (Baker & Siryk, 1984). Because the PPI is a relatively new instrument, this study aims to accomplish several objectives: estimate the percentage of our sample who may represent "hidden" psychopaths, describe the types and nature of maladjustment admitted to by these persons, and evaluate the factor structure of the PPI as a validation attempt for this instrument. In so doing, we hope to advance the state of knowledge of these "hidden" psychopaths and their impact on society.

Method

Participants

Participants were 136 females and 131 males recruited from the Department of Psychology Human Subjects Pool at Grand Valley State University. Participants voluntarily earned enrichment credits that were considered part of their Introductory Psychology courses. Students were free to choose an alternative activity and were not required to participate to earn the enrichment credits. There was no significant difference in mean age between males and females, with the mean age of the participants being 19 years old. There were two participants who deviated considerably from this sample norm (ages 32 and 47), but their data did not significantly differ from that of the other participants. The class construction of the sample included 69.9% second semester freshman, 17.9% sophomores, 9% juniors, and 3.2% seniors.

Instruments

The *Psychopathic Personality Inventory* ([PPI]; Lilienfeld & Andrews, 1996) is a 187-item instrument labeled "A Personality Styles Inventory." Participants respond to Likert-scale descriptive items in accordance with how much the statement applies to them. A score of 1 indicates the statement is false and a score of 4 indicates the statement is true. Approximately half of the items are reverse scored. Higher total and subscale scores represent a higher tendency to manifest overall psychopathy or that particular psychopathic trait. The PPI contains

eight subscales that measure different facets of the psychopathic personality: Machiavellian Egocentricity, Social Potency, Fearlessness, Coldheartedness, Impulsive Nonconformity, Carefree Nonplanfulness, Alienation (also known as Blame Externalization), and Stress Immunity. In a study by Poythress, Edens, and Lilienfeld (1998), using a prison inmate population, the PPI was found to correlate moderately high with the PCL-R total score (r = .62). They also found the PPI to correlate significantly with scores on both factor 1 (r = .61) and factor 2 (r = .48). In another study conducted by Benning et al. (2003) using a non-incarcerated population, factor analysis revealed a central two-factor structure of the PPI similar to that of the PCL-R. When using an oblique rotation, the researchers found the two factors to be independent of one another, signifying that they each measure a unique aspect of psychopathy.

The *Student Adaptation to College Questionnaire* (SACQ; Baker and Siryk, 1999) is a 67-item college adjustment scale, in which respondents evaluate statements on a 9-point rating scale indicating how well he or she is dealing with the aspect in question. A rating of 1 indicates the statement applies very closely to the subject, and a rating of 9 indicates the statement does not apply at all. The higher the subscale and total score the better the student's adjustment to college. The SACQ contains four subscales: Academic Adjustment, Social Adjustment, Personal-Emotional Adjustment, and Attachment. Reliability studies of the SACQ were carried out by the Baker and Siryk over several years, with coefficient alphas consistently ranging from .81 to .95. Initial validation studies were conducted at 21 different colleges demonstrating high intercorrelation data for all four subscales, with internal consistency coefficients ranging from .64 to .91.

Procedure

Students completed an Informed Consent Form prior to participation in the study. The form described the study as seeking to understand the relationship between aspects of personality and adjustment in college. The confidential nature of the study was emphasized.

To ensure anonymity, participants constructed their own unique research identification numbers using an algorithm devised by the researchers. The purpose of the algorithm was to ensure the ability to link the participant's PPI scores with his or her SACQ scores. This algorithm was sufficiently complex that upon review, no two subjects produced identical numbers.

Once the informed consent and research identification number forms were complete, students were given the SACQ, immediately followed by the "personality styles inventory," or the PPI. Students responded directly on the SACQ form and utilized a Scantron sheet for the PPI. Upon completion of the surveys, students were provided with a Debriefing Form that explained the purpose of the study in more detail. After reading the Debriefing Form, students were informed that if they were concerned or wished to know their score on either scale, they would be able to contact the researchers for their specific information and for assistance.

Results

Gender Differences

Because the PPI is a relatively new instrument, an exploratory approach was taken to data analysis. A possible gender difference was found in overall PPI scores with males scoring higher overall in self-reported psychopathic traits (M=364) than females (M=356; t=1.541, p<.08). In order to explore possible gender-based differences in phenotypic expression of these traits, the sample was split by gender. There were no significant differences between the genders with regard to year in school or age.

Independent T-Tests evaluated gender differences on PPI subscales. The primary difference concerned fearlessness, with male fearlessness scores (M=49) being significantly higher than females (M=45; t=2.536, p<.05). Also found was a trend involving impulsive nonconformity (t= 1.458, p<.08) with male scores slightly higher (M=36) than females (M=34). There were no further significant differences with any of the other six subscales.

An independent T-Test demonstrated no significant differences between males and females concerning overall SACQ scores. However, significant gender differences were found on several subscales. First, males (M=135) reported being less adjusted than females (M=141) with regard to academic adjustment (t=-2.138, p<.05). Second, significant differences between the genders were also found concerning attachment to the institution (t=-2.122, p<.05), with males being less attached (M=109) than females (M=115). Finally, there were significant differences between the genders in relation to emotional adjustment (t=2.301, p<.05) where it was found that males in this sample were better emotionally adjusted to college life (M=87) than females (M=81). There were no significant differences detected between the genders on social adjustment to college.

Intensity of Psychopathic Traits

A two-step cluster analysis was used to determine if the sample fell into natural groupings according to PPI total scores. The cluster analysis confirmed that both males and females naturally fell into groups of high, medium, and low levels of psychopathy, with approximately 68% of the sample falling into the medium group, 16% in the high group, and 16% in the low group.

This cluster analysis was consistent with the normal distribution patterns of both male and female samples, with high and low groups falling approximately one standard deviation from the mean PPI total score. There were no significant differences between male and female distributions on the PPI total score.

Hypothesizing that notable differences in college adjustment would be most visible at the extremes of reported psychopathic traits, gender segregated t-tests were used to compare groups based on high (Males>406, Females>396) and low (Males<240, Females<249) scores on the PPI. The only trend noted was found within the males' emotional adjustment, with males scoring in the low range on the PPI being significantly better adjusted emotionally according to the SACQ (M=93.85) than males scoring in the high range (M=81.71; t=1.749, p=.088 (2-tailed))

Correlational Analyses

Finally, correlations were run between the overall and subscale scores of both surveys to explore bivariate relationships between psychopathic personality traits and college adjustment. Tables 1 and 2 present these results. It should be noted that these correlations are consistently low to moderate in strength.

Females. There were relatively few significant relationships between female PPI scores and college adjustment. The only exceptions were Machiavellian egocentricity and impulsive nonconformity. Machiavellian egocentricity was negatively correlated with academic adjustment in females, while impulsive nonconformity was correlated negatively with emotional adjustment.

Males. The correlations between the measures found among the male participants demonstrated multiple relationships between college adjustment and psychopathy. Overall college adjustment was negatively correlated with impulsive nonconformity and was positively correlated with fearlessness and coldheartedness. Academic adjustment was positively correlated with coldheartedness, stress immunity, and fearlessness. Social adjustment was only found to correlate with fearlessness. Emotional adjustment was negatively correlated with Machiavellian egocentricity, alienation, impulsive nonconformity, and carefree nonplanfulness, and was positively correlated with fearlessness and coldheartedness. Finally, attachment to the institution was only found to negatively correlate with impulsive nonconformity.

Table 1. *Female Correlates of Psychopathy and College Maladjustment*

PPI Scales	SACQ Total	Academic	Social	Emotional	Attachment
Total	-.04	-.06	.02	-.07	.01
Machiavellian	-.05	-.12†	.03	-.05	.01
Social Potency	-.06	-.10	.01	-.07	-.04
Fearlessness	.01	.07	.00	-.01	.07
Coldheartedness	.02	.04	.00	.04	-.02
Impulsivity	-.08	-.08	-.01	-.17*	.03
Alienation	-.01	-.01	.00	-.08	.07
Carefree	.00	-.08	.09	-.05	.09
Stress Immunity	.03	.06	-.06	.10	-.04

* p<.05
† p<.10 (trend)

Table 2. *Male Correlates of Psychopathy and College Maladjustment*

PPI Scales	SACQ Total	Academic	Social	Emotional	Attachment
Total	.04	.10	.10	-.08	-.01
Machiavellian	.00	.06	.06	-.13	-.03
Social Potency	.01	.03	.07	-.05	.02
Fearlessness	.21**	.17*	.26**	.14	.12
Coldheartedness	.15*	.19*	.05	.15*	.06
Impulsivity	-.13†	-.03	-.07	-.20**	-.16*
Alienation	-.10	-.07	-.04	-.17*	-.10
Carefree	.00	.04	.08	-.12†	.01
Stress Immunity	.09	.15*	.02	.10	.03

* $p<.05$, ** $p<.01$
† $p<.10$ (trend)

Discussion

In this exploratory study, we hypothesized that "hidden psychopaths" might be attending college and that they would most likely be less impulsive than their criminal counterparts (although more impulsive than nonpsychopaths) and less socially adaptable than their non-psychopathic college peers. Without a criminal population to make a direct comparison to, it is difficult to state whether or not this particular sample is necessarily less impulsive than an incarcerated sample.

Using the PPI as an exploratory measure of self-reported psychopathic traits, we found that approximately 16% of both male and female students reported psychopathic traits to an extent greater than 84% of the college population. Although we did not evaluate to what degree the students in this study might have engaged in "psychopathic-like" behaviors, this group scoring high on the PPI would be a suitable group for further study; we would suggest that such study focus on relevant areas such as cheating on exams, taking advantage of others, and ethical reasoning. The PPI results also suggested that males self-report higher intensity of psychopathic traits than do females; this finding is not surprising because it seems to fit with reported rates of incarceration of male versus female criminal psychopaths. Other gender differences suggest that primarily males report higher degrees of fearlessness and slightly higher degrees of impulsive behaviors. However, since the PPI is a self-report instrument some caution is warranted in interpreting these results too strongly. It is unclear whether these noted gender differences reflect actual gender differences in the expression of subclinical psychopathic traits or if they reflect, for example, social stereotypes about young males and their expected behavior at college. In addition, these results suggest that males are less well adjusted than females overall to college, and in particular, have less affiliation with their institution. However, males reported being better emotionally adjusted to college, a finding that may be related to a sense of increased fearlessness. The negative correlations between self-reported impulsive behavior for both males and females suggest that the ability to restrain oneself is an important part of adapting to college life.

For females, there were relatively few linkages between reported psychopathic traits and aspects of college adjustment. In particular, it is intriguing that in female college students, Machiavellian egocentricity and impulsive nonconformity were the only variables negatively related to aspects of college adjustment. These findings support a growing body of research (Grann, 2000; Vitale & Newman, 2001) that suggests that females high in psychopathy may express those traits in a manner that is distinct in many ways from males, although available data is again based primarily on incarcerated populations.

Another important implication found within this research is the consistent correlation of fearlessness and coldheartedness in males with overall college adjustment, academic adjustment, social adjustment, and emotional adjustment. Besides the relationship between stress immunity and academic adjustment, no other measures of psychopathy positively relate to the adjustment to college life. These results in males suggest that a

possible combination of high levels of fearlessness and coldheartedness with low levels of impulsive behavior may be the necessary cocktail to a psychopath's success in college. The low impulsivity enables them to delay gratification, an attribute not commonly associated with psychopaths, long enough to obtain a degree. Their fearlessness may provide a motivating factor by encouraging risk-taking behavior as a means of obtaining goals and desensitizing the student psychopath to the discouragement voiced by others. The coldheartedness provides the lack of concern for fellow students and possibly faculty, which is necessary for viewing them as mere stepping-stones to be manipulated on the way to success.

Also important are the psychopathic traits that were found to be inversely related to successful adjustment in college. Traits such as impulsive nonconformity, alienation, and Machiavellian egocentricity, which were found to negatively correlate with variables associated with successful adjustment to college, are measures commonly associated with the deviant behavioral manifestations of psychopathy. These traits are most often found within those psychopaths who have already encountered the criminal justice system and are possibly less successful at obtaining a higher education. The psychopathic traits that are associated with proper adjustment to college, such as fearlessness and stress immunity, are those that relate to the interpersonal and affective characteristics of psychopathy. These characteristics are easier to pass off as personality characteristics and are less likely to be seen as criminally deviant or antisocial. These results suggest that "hidden" college psychopaths who are higher in the Factor 2 type of antisocial traits may struggle more in college, possibly leading them to drop out or ultimately to seek other, perhaps more criminal, avenues to express their personality traits. Of course, this hypothesis is speculative, but it suggests that future studies of college populations might do well to track the trajectories of persons scoring at different levels on the PPI; by evaluating such outcome measures as criminal arrests, behavioral disruptions or infractions on campus, and drop-out rates, we may gain a more significant understanding of the interaction of Factor 1 and Factor 2 traits in noncriminal populations and how they affect behavior.

The future direction of this study seeks to find stronger relationships between these interpersonal and affective characteristics of college students with psychopathic tendencies. By looking at the traditional two-factor model of psychopathy and running an array of more complex statistical analyses in more applied settings, we hope to establish a more solid pattern of behavior consistent with these "hidden" psychopaths. Other samples of the population also need to be taken into consideration as a solution to the restriction of range, which is apparent in studying a single university's population. In a phase two study, measures of grade point average and responses to ethical scenarios will be incorporated as more solid behavioral measures. More consideration will also be taken with gender differences, especially within the two-factor model of psychopathy, to determine the possible pattern differences found between male and female psychopathy.

It is important to understand that by identifying these "hidden" psychopaths we may be able to conceive of a subtype of psychopathic behavior that explains how these individuals are slipping through the collegiate environment and into the work world. Through continued research, we can improve upon assessment and diagnosis of psychopathic behavior and in the future increase our risk management technologies. Only through a better understanding of the spectrum of psychopathy can we possibly grasp how it manifests in different environments and how we can better preemptively prepare for the destructive predispositions of the psychopathic personality.

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Misuse of myth: Conscious adherence or authoritative control mechanism

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Abstract
Myths are significant in explaining the existential questions of life, but when they are adopted uncritically, they may generate more harm than good. Admittedly, there is no way out of myth; we are the mythical creature. We need, therefore, to become more aware of myth and more critical of the myths we already, if only unknowingly, have adopted. This research addresses common misconceptions of the definitions of myths, attempts to identify the conscious and unconscious use of myths in our daily lives, and ultimately introduces the concept of modified myth adoption. This is done by analyzing and synthesizing selected scholarly works and psychological studies on the subject with the objective of promoting understanding of one's own and other peoples' worldviews and belief systems.

Introduction
It is early morning on December 25, 2005. The seasonal decorations in this particular home reflect the Western world's typical adherence to Christianity. These include a nativity scene of the birth of Jesus Christ and a Christmas tree covered in lights and ornaments. There are also individually wrapped gifts placed beneath the tree. This scene represents a family's joyful and happy time while simultaneously revealing some religious significance. However, there is also something else at work here. Two different horizons of consideration that I contend are not so different at all: religious truth and myth.

Religious truth is represented by the nativity scene, which is universally accepted by Christians as a historically proven fact depicting the birth of the Son of God in Bethlehem, Judah while being attended to by his earthly mother and father, Mary and Joseph. C.S. Lewis, scholar and theologian, says of this story,

> Now the story of Christ is simply a true myth: a myth working on us in the same way as the others, but with this tremendous difference that it really happened. (Lewis, 2004, p. 21)

Secondly, the myth, represented here by the decorated tree, is of Jolly Ole' St. Nick, Santa Claus, who has gained entry to this home by means of the chimney and is bearing gifts for all. The Catholic Encyclopedia (2003) says of Santa,

> In the 19th century, St. Nicholas was superseded in much of Europe by Christkindlein, the Christ-child, who delivered gifts in secret to the children. He traveled with a dwarf-like helper Pelznickel (a.k.a. Bilsnickel) or with St. Nicholas-like figures. Eventually, all three were combined into the image

> that We now know as Santa Claus. "Christkindlein" became Kriss Kringle. (p. 1106)

How is it that one scenario is known to be false (e.g. Santa Claus) and the other (e.g. the birth of Christ) is viewed as historical, religious truth, and yet they are celebrated together with equal fervor during this time of the year? The answer to this question is, I believe, an extremely important one for all of us to contemplate and attempt to understand.

One reason for our need to understand the answer to this question is the fact that many scholars, who have studied mythology and its effects on our human relationships and how we relate to the physical and metaphysical universe, are inclined to acknowledge that humans view myths as "connecting them to the world around them and explaining where they fit in," as "explaining the existential questions of life" (May, 1991, p. 37), and as "necessary for a healthy psychological existence while revealing the meaning of life and of the universe" (Greenberg, 1998, p. 87). Though such statements highlight the importance of this topic, they also cause even more complex issues to surface, such as the closeness that exists between myth and religion, theology and science. Another complex issue, which will be addressed in this study, is how Christianity relates to each of the aforementioned myth, religion, theology, and science.

Significant is the fact that I was not only raised in Christianity, but also was an ordained minister for seventeen years. Even so, I have only recently come to appreciate the value and power of myth as a connection to the universe around me and to recognize the potential present in some individuals and groups to manipulate those who adopt myths uncritically, especially as the knowledge of myths can affect public worship (public worship is used here as a definition of religion). More importantly, I also now see more clearly myth's connection to Christianity, in fact, that Christianity is indeed mythic. Watts (1968) elucidates this point when he wrote:

> It is for us to discuss the Christian story as something much more profound as mere facts which once happened, to give it not only the status of history but the tremendous dignity of myth, which is 'once upon a time' in the sense that it is behind all time. (Watts, p. 2)

Of the many world religions, Christianity is chosen for comparison in this study because of its age, size, and its rich mythological content. But, to suggest that myth actually elevates Christianity as opposed to reducing it raises a whole series of challenges. Two such challenges for the individual researching this area are the absence of scholarly work on the subject and its sensitive nature. Watts (1968) acknowledges both saying,

> There are sound reasons for this omission, for the subject [Christian Mythology] is one of extreme delicacy and complexity, not because of the actual material, but because the whole problem is, in a very special way, 'touchy' (p. 5).

Because humans are the mythical creature we cannot get away from myth. This is also the case when Christians analyze and research myth; one admittedly cannot get away from Christianity, hence, the need for definitions of both *myth* and *Christianity*.

Myth and Christianity by Definition

If this study helps to clarify what I believe to be the connotation of myth, we may be better able to understand myth's conscious and unconscious use in our daily lives, recognize the potential to abuse its power by manipulation, acknowledge the need for acceptance of modified myths, and encourage rather than discourage the connection between myth and religion—even by believers. To accomplish this, we first need a workable, explanatory definition of myth.

Today, to say *myth* and *Christian* in the same sentence, or worse, extend the context to include the phrase *Christian mythology*, is to incur instant protest and a figurative rising of the hair on the back of the neck. This, along with an extremely defensive posturing, makes explication of the proper use of myths difficult. Therefore, what follows is my personal definition of myth (a definition that should assist in observing myth as it is intended, at least for the sake of this research, and not as it is commonly misconstrued). *Myths are deep, numinous narratives that figuratively express the very foundations of human life*. To enunciate it another way, myths are organized, supernatural expressions that use metaphor to reveal human connections to life and the universe. The key words here are *metaphor, supernatural,* and *figurative*, all of which denote something other than the literal. According to WordNet (2003) *metaphors* are "figures of speech in which an expression is used to refer to something other than what it literally means." *Webster's New World College Dictionary* (2000) defines *supernatural* as "existing or occurring outside the normal experience or knowledge of man" (p. 1437) and *figurative* as "containing figures of speech, metaphoric" (p. 528). Again Watts (1968) illuminates the subject:

> For the word myth is not to be used here to mean 'untrue' or 'unhistorical.' Myth is to be defined as a complex of stories—some no doubt fact, and some fantasy—

> which, for various reasons human beings regard as demonstrations of the inner meanings of the universe and of life. (p. 7)

In this regard, James Oliver Robertson (1980) puts it plainly, "Myths are that which holds us together" (p. 80). As mythic creatures, we need the hominess of myths and without them we hunger for it and are lost. Nietzsche understood this mythical hunger. In *"The birth of tragedy: Out of the spirit of music"* (1956) he writes,

> What does our great historical hunger signify, our clutching about us of countless other cultures, our consuming desire for knowledge, if not the loss of myth, of a mythic home, the mythic womb? (p. 496-497)

These definitions of myth help to clarify this point: when contemplating myths the attention or concentration should be on their themes, their life lessons, their moral education, and the universal truth to be extracted and not on the literal degree of fact or fantasy therein.

The most common perception of the definition of myth is that of being a false story, merely a myth, untrue. If one were to apply that definition to the Christian account of human beginnings, to take that story simply as mere myth, one might be inclined to be attentive only to, and become wrapped up in, the rich poetry of it, to marvel at its magic, and be awe-struck by its splendor, then, simply relegate it to the inferior position of a mere myth, unbelievable. That certainly would not be the position referred to earlier by Watts (1968) as the "tremendous dignity of myth" (p. 2). Once again, Watts makes it clear when he says:

> There is no more telling symptom of the confusion of 'modern thought' than the very suggestion that poetry and mythology can be 'mere.' This arises from the notion that poetry and myth belong to the realm of fancy as distinct from fact, and that since facts equal Truth, myth and poetry have no serious content. Yet this is a mistake. (p. 64)

Furthermore, both the *American Heritage Dictionary of the English Language* (2000), and the *Merriam-Webster Dictionary of the English Language* (1999) list *myth* as a "fictitious story" only in their fourth and final definitions, which by implication and placement, seems to show it to be more of a common application in everyday English, not necessarily the primary or most accurate application. In definitions one through three in both dictionaries, there are no references to the historical accuracy or degree of fact in myth. Notice one such definition:

> A traditional, typically ancient story dealing with supernatural beings, ancestors, or heroes that serve as a fundamental type in the worldview of a people, as by explaining aspects of the natural world of delineating the psychology, customs, or ideals of society. (*American Heritage Dictionary*, p. 869)

Therefore, this study contends that what is viewed by some in Christianity (and other religions) as religious truth cannot be degraded simply by referring to it as mere myth. Also, a phenomenon referred to as *myth* or *mythical* is not merely a false story related simply for entertainment, but something elevated to a dignified position above history. In fact, Campbell (2002) contends that myth is pre-history, science—particularly nature, or time—, which Watts (1968) describes as "behind all time" (p. 2).

What, then, of Christianity? To find total consensus on this definition would be next to impossible. Therefore, for the sake of this study, I define *Christianity* as follows:

> A monotheistic system of beliefs and practices based on the Old Testament and the teachings of Jesus as embodied in the New Testament and emphasizing the role of Jesus as Savior. (*American Heritage Dictionary*, 4th ed., 2000, p. 239)

As such, the Christian story can be referred to with reverence and contemplated as one of the greatest stories ever told in Western civilization. It can be viewed not just as an event that happened (true or false, historical or fantasy) but as something with tremendous significance in shaping and connecting the lives of Christian believers worldwide and from which personal religious truth, a transcendent fundamental or spiritual reality, can be extracted. Believers can then act upon it mythically, finding truth in their actions—thinking it forward.[1] And in this simple sense, Christianity is mythic!

Conscious and Unconscious Adherence to Myth

Individually and as a society we accept or at least adhere to various myths in certain cultural practices. In the introduction, one such practice was referred to, the practice of celebrating Christmas as a historical, religious truth. Before we examine this horizon of consideration, let it be stated that just as Christianity does not validate every Western myth, neither should we

[1] This action, or process of examining a story, event, or myth for the purpose of realization of its personal, fundamental significance, the following of its meaning to see where it leads you personally in the universal scheme of things; the extracting from it personal, realistic truth for one's own life, is what I refer to as *thinking it forward.*

attempt to validate all religious truth via related myths.

If an individual, a believer, can draw personal truth, a connection to the universe, and find answers to the existential questions of "Where do I go when I die?" or "Why do I have to die at all?" or "Why is there suffering in the world?" or "What are my obligations?" from the story of the birth of the Son of God on earth, then that story has become their myth. It is mythical; it is alive and functional. It is not true or false, but religious truth, a myth. That same individual, so as not to accept that myth uncritically, should think the myth forward, examine it from the standpoint of where it leads us, and be cognizant of the history that influences the myth. Then, and only then, can one relate the myth to the doctrine or practice being examined. By way of example, let's think this myth forward and see where it leads.

History bears out the fact that the present day Christmas celebration was more likely than not borrowed from the Roman celebration of the Saturnalia, a week-long riotous feast, dedicated to the god of seed and sowing, Saturnus. This was the most famous of the Roman holidays because restrictions were relaxed and the social order inverted. Public gambling was allowed and, according to one writer of the time, Seneca, "The whole mob would let itself go in licentious pleasure" (as cited in Holford, 1988, p. 251). Early Christians, not wanting to be aligned with this pagan practice, forbade the celebration of Christmas in this fashion. In fact, its celebration was illegal here in the United States as recently as one hundred years ago. If, with this knowledge of the history of the celebration and thinking it forward as to where it will lead, one can still find within the Christ story and the adherence to a Christmas celebration religious truth that connects them to life and their place in the universal scheme of things, then the myth, a deep, numinous narrative, has served its intended purpose—to figuratively express the very foundations of human life.

Conscious adherence to a celebration, like Christmas for example, should be intentional on the part of the believer, especially if a person has given the celebration critical examination, thought it forward. However, we also unconsciously adhere to myths. The Swiss psychologist, Carl Jung (1959) stated that myths are original revelations of the preconscious psyche. He referred to them as involuntary statements about unconscious psychic happenings (p. 50). Levi-Strauss (1978) described our thoughts of myths as unconscious saying, "I have written that myths get thought in man unbeknownst to him" (p. 3). If myths are indeed unconscious, our adherence to them can also be unconscious. This especially is the case when we contemplate those myths involving the psychological stages of human life. Psychiatrist and sociologist, Dr. Rollo May (1991) refers to these stages as the "existential crises of life" (p. 39). Of those, none is more prominent than the crises of death. I would venture that if we were to assemble all of the myths that deal with our existential considerations, we would find that none influences our daily unconscious thoughts and behavior more than the phenomenon of death and our inherent fear, and subsequent denial, thereof. I refer to denial in the sense that, for example, we can't seem to let go of our loved (or hated) ones who have died. So we create for our loved ones a never—ending paradise in spiritual places and eternal torment for our enemies. Is not Dante's *Divine Comedy: Inferno* (1300), where Dante meets with his dead friends and acquaintances, a prime example? (*Inferno* XXI, lines 112-114). I refer to fear of death in the same sense as cultural anthropologist, Ernest Becker (1973) does when he said:

> The idea of death, the fear of it haunts the human animal like nothing else; it is the mainspring of human activity—activity designed largely to avoid the fatality of death, to overcome it by denying in some way that it is the final destination of man. (xvii)

This fear is so overwhelming, says Becker (1973, p. 5), that man, in order to create for himself some "primary value," some "cosmic specialness," an "ultimate usefulness to creation" will carve out a place in nature by building a temple, a cathedral, a totem pole, a skyscraper, or a family that spans three or four generations. Without getting too far afield of how this fear of death relates to myth, we should allow Becker to make clear this point:

> The hope and belief is that the things that man creates in society are of lasting worth and meaning, that they will outlive or outshine death and decay…. (p. 5)

What can then be implied is that our passionate pursuit to possess things here in America's capitalistic, commercial-driven society can be, from an unconscious psychological point of view, classic reactions to the myths of everlasting life and life eternal.

For the sake of another, albeit darker, example let us examine unconscious adherence to the combined myths of "redemption" and "racial superiority." Redemption, according to Christian dogma (American Bible Society, 1976, Genesis 3:14-18), is necessary because of mankind's Fall from Grace (Genesis 3: 14-18) as a result of the sin of the first man, Adam. In order to get back the perfect, eternal life that Adam lost,

there had to be a perfect life sacrificed in return, to balance the scales, to take away the sins of the world. This was provided for by the sacrifice and crucifixion of the Son of God as he bore mankind's sins and punishment (American Bible Society, Isaiah 53: 4-6). How has our culture socialized this idea of redemption? Do we still look for someone to bear the burden of our guilt, to be our vicar? If so, what does recent history show as to its manifestations?

This cultural or societal need for someone to bear peoples' guilt or sin is not universal because, for one, not all people believe that there was a Fall from Grace and therefore no redemption is needed, but history has shown us what can happen, when an individual or group seeks a replica of the *Divine Scapegoat*. I refer here to anti-Semitism as an authoritative control mechanism, perpetuated upon those who, consciously or unconsciously, adhere to the concept of the Fall from Grace. By means of such a reference, I also reveal why this section was introduced as an example of adherence to the combined myths of redemption *and* racial superiority. Kenneth Burke (1950, p. 31) referred to Hitler's campaign of "the science of genocide" as the manifestations of someone "symbolically laden with the burdens of individual and collective guilt." Would such a manifestation not, then, present the need for figurative (or ritualistic) purging? And, according to Burke, is it not interesting that now, in the post-Christian era, we identify Jews and other minorities in our present society? Because these negative attitudes towards minorities have not been dispelled by identification and acknowledgment, we have to be cognizant of the fact that the potential for such a horrendous campaign of destruction still exists, but on an even grander and more prolific scale. Knowledge of such potential is one of the underlying motivations and objectives of this essay: to promote understanding of one's own and other peoples' worldviews and belief systems. One of the primary means of achieving this understanding, as has been discussed, is critical analysis of adopted myths.

Myth vs. Science vs. Theology

Critical examination of any myth should be natural for people because as humans we use two faculties as a means of adaptation to the world around us: memory and reflective thought. When we think the myth forward, make it one's own, as opposed to adopting it uncritically, we become less vulnerable to the interpretation of the one who is relating the myth. Thinking the myth forward should not be understood to mean dissecting the Christ story, to refer to a previous example, for the purpose of revealing truth or historical accuracy; instead it is to uncover the myth's significance to the very foundations of human life. This form of thinking, or reflective thought, should not be confused with scientific thinking. When we employ the processes dictated by the criteria of empirical discovery, we use limited, trained mental abilities that progress us along, step by experimental step, to the *total* understanding of the examined phenomena. In reflection, we attempt to arrive at a *general* understanding of life and the universe—as it relates to us personally. Though I disagree with his use of the word *illusion* in his explanation of this point, Levi-Strauss (1978) makes clear his theory when he says:

> We are able, through scientific thinking, to achieve mastery over nature, while, of course, myth is unsuccessful in giving man more material power over the environment. However, it gives man, very importantly, the illusion[2] that he can understand the universe and that he *does* understand the universe. (p. 17)

Where myth differs from science (I am tempted to say, "at odds with science" but that would be inaccurate inasmuch as the conflict is merely perceived), is in practice. Science, by way of empirical evidence tested by experimentation, can and does produce hypotheses for future predictions. Myths provide no such hypotheses, hence no future predictions, and yet myths, by means of their abstract nature, can and do answer existential questions of life not answered by the world's greatest empirical minds.

Let's consider a mythical example that shows how myth works in conjunction, not in conflict, with science. This is important to establish because of the laborious efforts on the part of some Christian theologians to use science as proof of religious truth, hence, proof of myth.

According to Levi-Strauss (1978) there is a myth from Western Canada about the skate (a large, flat fish of the family of rays) and its successful attempt to master or control the South Wind. It takes place at a time when humans and animals were not distinct from each other, in other words there were still half-human, half-animal creatures roaming the earth. Both were extremely irritated by the fact that the winds would blow constantly. This made it difficult, and sometimes impossible, to fish and gather shellfish on the beaches. It was decided by all

[2] I would be inclined to replace the word *illusion* with *Chimera*. In medicine, Chimera is an organism or part consisting of two or more tissues of genetic composition, produced as the result of grafting. In Greek mythology, Chimera is a composite monster—a fire breathing she-monster made up of the front of a lion, the middle parts of a goat, and the tail of a snake. *Illusion* carries the connotation of misrepresentation, false perception. Whereas, *Chimera* blends different components to create a composite, in this instance, the scientific and the mythological understanding of the universe.

that they would have to fight against the winds to compel them to act more decently. There was then an expedition formed that included the skate, who would play the very important role of capturing the South Wind. The skate released the South Wind only after it promised not to blow all the time, but only at certain periods. The South Wind promised and it is since that time that the South Wind only blows one day out of two and that allows mankind to accomplish its activities.

As opposed to dismissing this as merely myth, an impossible story, let's take it seriously enough to ask: why the skate and why the South Wind? I find myself in agreement with the analysis of this Canadian myth by noted anthropologist Levi-Strauss. Levi-Strauss (1978) contends that the skate is chosen here because of its distinct physical characteristics common in all flat fish, namely smooth and slippery underneath and rough on top, and it appears large from above and below, and very thin from either side. If an adversary were to aim an arrow at the skate, it would only have to suddenly change its position showing its profile which is all but impossible to target, thus providing escape. So, the skate is chosen here because it is capable of two states which are discontinuous—as in cybernetic terms—one negative and one positive, one *yes* and one *no*.

Even though it is impossible, from an empirical point of view, for a fish to fight and capture a wind, logically we can see how experiences could lead to the use of practical images. This is how mythical thinking originated, playing the part of conceptual thinking. It is made even clearer when we read how Levi-Strauss (1978) enunciates it:

> An animal which can be used as what I call a binary operator can have, from a logical point of view, a relationship with a problem which is also a binary problem. If the South Wind blows every day of the year, then life is impossible for mankind. But if it blows only one out of two—'yes' one day, 'no' the other day, and so on—then a kind of compromise becomes possible between the needs of mankind and the conditions prevailing in the natural world. (p. 22)

Though the story is not true from an empirical point of view, our present day study of cybernetics provides us with the understanding of, for instance, binary operations. Current scientific thought, then, helps us understand the contents of this myth. Even though, since the advent of science in the seventeenth century, mythology has been rejected and imputed to primitives and the superstitious, there really should be no divorce or parting of the ways between mythological and scientific thought.

True, we are the mythical creature with a need for mythic answers to questions outside of nature. Yet, there are those who continue to miss myth's explanation of these questions by waiting for scientific proof and/or historical verification. This seems to be the fallacy of some Christian theologians, whose efforts may be noble, but result in consequences that may be causing more harm than good.

Prior to expanding this point of Christian theologians and scientific verification, it may be of benefit to glossarize a few additional terms as they relate to types of knowledge and our discussion. I agree with Watts (1968, p. 63), and his definitions of the following terms:

> *science*: historical record of facts, parts of experience, wherein the reality of realities it discusses remain ultimately undefined. Since Hilbert, science accepts the fact that it has to work with a series of basic unknowns.
>
> *metaphysic*: the indefinable basis of knowledge, realization. A consciousness of life where the mind is not trying to grasp or define what it knows.
>
> *metaphysics*: (Greek and Western) highly abstract thought, dealing with concepts such as essence, being, matter, and form and treating them as though they were facts on a higher level of objectivity than sensually perceptive things.
>
> *theology*: an interpretation of combined myth and metaphysics in which both are treated as objective facts of the historical and scientific order.

Theologians today laboriously attempt to make God a thing, a fact (albeit the first thing and the first fact). Watts (1968) felt that such theological language and analysis destroys myth. He relates:

> In spite of the vital power of its myth, Christianity began to die the moment when theologians began to treat the divine story as history—when they mistook the story of God, of the Creation, and the Fall for a record of facts in the historical past. (p. 67)

This line of thought helps us to appreciate that once these theologians started to explain God, they began to lose all contact with him. Their obvious mistake was in regard to language. They looked upon the language of myth as the language of fact. When one attempts to label or rationalize God, it degrades Him to the level of a dead[3], fixed thing or fact. Eminent scholar and orientalist Ananda Coomaraswamy

[3] I refer to *dead* here as does Watts (1968) when he explains "…all things are past, inhabiting only the world of memory." (p. 70)

(1977) makes this comment with respect to the metaphorical language of mythology and metaphysics,

> Its 'worlds' and 'gods' are levels of reference and symbolic entities which are neither places nor individuals but states of being realizable within you. (pp. 6-7)

The language of myth, then, should not be exacted, even in interpretation, as literal. When Henrich Zimmer (as cited in Campbell, 2002) made the statement "The best things can't be told and the second best are misunderstood" (p. xxiii), it moved noted mythologist Campbell to make this reference to the misleading effects of using myth's language as fact:

> The second best are misunderstood because, as metaphors poetically of that which cannot be told, they are misunderstood prosaically as referring to tangible facts. The connotated messages are thus lost in the symbols, the elementary ideas in local 'ethnic' inflections. (p. xxiii)

From its early beginnings, Christianity has insisted that the divine revelation be scientific rather than metaphysical or mythical. True, this could have been due to the time period during which Christianity began its rise. This was during the Graeco/Roman era, when all, even the Hebrew culture, was extremely preoccupied with personal salvation and immortality[4].

Taking the language of myth as the language of fact, only serves to confuse and alienate, and sets science above mythology, and empirical proof above faith. With the power of a living, working myth being replaced by the need for scientific evidence, a person could find himself relying on archaeologists, for example, to find for them the Shroud of Turin to prove that Jesus existed. Can that be classified as true faith? The myth then ceases to be a vibrant, grounding connection to the person's place in the metaphysical scheme of things—the very foundations of human life. In this view, then, it can be concluded that theology, by means of its reliance on science and empirical evidence, takes a staunch stand in opposition to myths and the good they serve.

Misuse of Myth

To find physical proofs of Christian doctrine, to substantiate or validate one's faith may be an honest endeavor. On the other hand, the insistence on such proven facts can be intentionally misleading and self-serving. For instance, Christian theologians are insistent on a literal interpretation of the myth of "God the Father." Such adamant adherence can be interpreted as manipulation (whether intentional or innocuous) in order to genderize God as male.

What purpose and whose interests would be served by such an application of the myth of "God the Father?" Those who would attempt to perpetuate the subservient and inferior position of the female in the male dominated hierarchy of a patriarchal society. Those same self-serving individuals might point to the theological language of the Bible to prove man's dominant position, highlighting the *order* of creation, in Genesis 1:27, (American Bible Society, 1976) "So God created human beings… male and female." And Genesis 2:18 "…I will make a suitable *companion to help him,*" or Genesis 2:21-22,

> Then the Lord God made the man fall into a deep sleep, and while he was sleeping, he took out one of the man's ribs…formed a woman out of the rib and *brought her to the man.*

In both passages, the interpretation is rendered as justification of genderfication. To those individuals adhering to the myth of "God the Father" uncritically, without thinking it forward, the preceding interpretation allows for manipulation of ideals, and in some instances, control of behavior by those perpetuating the myth.

Another example of the use of myth as an authoritarian control mechanism is passivity in the face of violent persecution (turn the other cheek). Horrendous barbaric butchery and bondage have been heaped upon entire races of people while they consciously and unconsciously adhered to the language of Christian scripture. These people were made to view their persecution as either a test of their faithful adherence, or as purification, as with fire, of the quality of their faith (American Bible Society, 1976, Matthew 5:38-42).

At this juncture, it may still be difficult for some to see a myth as being misused or misapplied. For clarification assistance, I turn again to the scholar who spent his entire life extensively studying myths worldwide, Joseph Campbell. He reiterates the point that these myths are not to be promoted as fact, and I say, thereby cannot literally be misused or misapplied to propagandize a particular ideology. Campbell (2002) writes:

> For some reason which I have not yet found anywhere explained, the popular, unenlightened practice of prosaic reification of metaphoric imagery has been the fundamental method of the most

[4] This is the point at which I take issue. If the concern (even today) is for immortality (personal salvation), should the effort not be to align one's self (i.e. ego) with the metaphysical and not the empirical? To transcend the natural world and get in touch with one's essence would more efficiently accomplish this alignment with God. It is apparent that during this time period, this way of thinking was not only unacceptable but was not considered progressive. Does this not reflect early inklings of the theory of denial of death offered by Becker (1973)?

> influential exegetes of the whole Judeo-Christian-Islamic mythic complex. The Virgin Birth, for example is argued as historical fact, where as in practically every mythology of the world instances have appeared of this elementary idea. American Indian mythologies abound in virgin births. Therefore, the intended reference of the archetypal image cannot possibly have been to a supposed occurrence in the Near East in the first century B.C. (p. xxiv)

Does this not give body and substance to myth as something that can indeed be misused, the power of which can be manipulated? I think so. Especially in that one of the intentions of myth is to bring a community together, to encapsulate it. This research contends that if given an intelligent chance, myths can accomplish just that. One effort that would assist myths in accomplishing this goal would be their modification.

The Need for New Myths

In today's intelligent thought, myths are not used as effective narratives for relating to and coping with modern problems. At the outset we established that "myths are significant in explaining those existential questions of life." This is not the case in today's society. Not due to the loss of the power of myths, but due to the lack of conscious use of myths in our daily lives. May (1991) expounds on the condition of myths in our present day:

> We in the twentieth century are in a similar situation as the classical Greeks of the third and second centuries, of 'aching hearts' and 'repining.' Our myths no longer serve their function of making sense of existence, the citizens of our day are left without direction or purpose in life, and people are at a loss to control their anxiety. (p. 16)

Part of the "aching of hearts" is reflected in statistics on suicide in America. The American Association of Suicidology (AAS) tracks and records suicides in the United States. The figures are alarming: 31,655 individuals decided that life was not worth living in 2002; 12% of those were between the ages of 15 and 24 (Kochanek, 2004, p. 53). What would make our young people, a historical indicator of the health and mental state of our society, feel so lost and hopeless? May (1991) paraphrases a student speaker at Stanford University:

> …the student speaker described his class as not knowing how it relates to the past or the future, having little sense of the present, no life-sustaining beliefs, secular or religious, and as consequently having no goal and no path of effective action. (p. 21)

Even at this time, this dilemma was not new. As curator of the Boston Museum of Fine Arts, Ananda Coomaraswamy extensively researched mythological and anthropological thought in his time. In *Am I my Brother's Keeper?* (1947), he helped us to appreciate that such thought had outgrown the provincialism of the nineteenth century and had ceased to equate wisdom, progress, and culture with the peculiar abnormalities and agitations of the modern West. He showed that extremely sophisticated and profound cultures have existed quite apart from the apparatus that we think are essential—such as writing, building in brick or stone, or the employment of machinery. These cultures, and here is the point I wish to make, did not pursue or attain the life/goals which we consider important. They would have "other goals out of all relation to the peculiar desires and 'goods' of modern man" (Coomaraswamy, p. 8). This modern man, in effect, confesses that he has no life/goal. Progress, as conceived by him, is dedicated to the "frantic pursuit of a tomorrow that never comes" (Coomaraswamy, p. 8). Coomaraswamy (as cited in Watts, 1968, p. 14) pointed out that in this respect our Western culture is historically abnormal. His work provided vast documentation of the fact that in almost every other culture there has existed a unanimous, common, and perennial philosophy of man's nature and destiny—differing from place to place only in terminology and points of emphasis and technique. We, on the other hand, as the Stanford student alluded to, are without goals or a clear path of effective action. This is the myth-less situation we find ourselves in today.

Without myths, which express lessons for life, belief systems, and moral education, there will be depression and "aching hearts," evident by the climbing suicide rate. Where there is no mythological thought, there can be no mythological communication to begin to address such issues. As long as the ultimate goal is making money, as long as we teach practically no ethics by example in home and government, as long as the role models and heroes are sports, movie, and music celebrities, as long as there is no inspiration to subscribe to a higher philosophy of life, and there are no mentors in learning to love, we will see the continual rise of those seeking psychological help and those "repining" and giving up.

Suicide is not the only indicator of a society searching for answers. The recent resurgence in cult activity is also indicative of a need to have questions answered and a need to belong. The International Cultic Studies Association, according to Rudin (1991), is calling for help in stemming the tide of "cult recruitment on college and university campuses in the United States" (Introduction). The lure of any group

is that it can promise bliss and love and some inside information on god and what the future holds. The mass suicide of 980 followers of Jim Jones in Guyana, simply because he told them to, is evidence that people can be lead and controlled if they are desperate to belong and be loved.

What, then, can be done? Are we here advocating such a tremendous task be assigned to mythmaking? Campbell (2002) alludes to new myths as a start:

> In the new mythology, which is to be of the whole human race, the old Near Eastern desacralization of nature by way of the doctrine of the Fall will be rejected; so that any such limiting sentiment as that expressed in 2 Kings 5: 15, "There is no God in all the earth but in Israel," will be (to use a biblical term) an abomination. The image of the universe will no longer be the old Sumero-Babylonian, locally centered, three-layer affair, of a heaven above and abyss below, with an ocean encircled bit of earth between….(p. xxi)

Rather than new myths, this research introduces a concept that has already begun to be employed, I refer to it as *modified myth adoption*.

Modified Myth Adoption

This concept, in as simple a term as possible, is the *mythologization* of the histories, stories, and folklore of various cultures for the sake of understanding, harmony, and peaceful co-existence.

According to Dr. Raphael Israeli (2001) of the Hebrew University of Jerusalem, there is a very exciting undertaking at work today in China to accomplish just such harmony. Because of the large population of Muslims in China and the past resistance to Islam, the peaceful people of various regions found it necessary to commence an effort that would eventually lead to harmonious cohabitation. In Chinese society, memory depends on the wisdom passed down through generations by the sages. In the Islamic tradition, one has to either relate to divine revelation via the Prophet as outlined in the Holy Qur'an or to the Prophet's own doings and utterances. As related by Israeli, it was decided to use memory and history to "collaborate, to inspire one another, and to justify and sustain each other by the power of myth" (p. 185). Israeli acknowledges the difficulty, but persistence of the task at hand:

> To be sure, the past few centuries of Muslim rebellion and Chinese repression were not particularly conducive to memory building for the construction of solace and rapprochement, the bricks being too venomous and porous. Nonetheless, the process of myth-creating, as a reinforcement of collective memory, continues. (p. 185)

By way of example, let us examine one of the modified myths as described by Israeli (2001). Here, the creation myths of both the Chinese and the Muslims are intertwined, using characters from both cultures and slightly modifying some events so as to include aspects of each.

When the world was created, there was only Allah but no human beings. Later, the Lord created a human being with fire-colored earth, named Adan. The Lord decreed that Adan could only lay down but never stand up. One day, when the Lord was not around, Adan tried to stand up, but as soon as he did, his head cracked and from it sprung out gold, copper and iron; birds and animals; fish, insects, crabs, and shrimps. Adan, with his nails, immediately cut off a piece of flesh from the underside of the arch of his foot to mend the crack in his head. Under his left rib grew a big bulge. When it broke, a human being fell down from it. This person was Hai-er-ma. With the Lord's consent they got married (Israeli, 2001, p. 187).

The story does continue, however, enough is related here to examine the corroboration. According to Israeli (2001), the message is the universality of the origin of man, although the very attempt to graft the Islamic creation narrative onto the Chinese produces some awkward results. One of the characteristics that was immediately apparent to me was that without saying so, the myth refers to the Chinese myth of Pan Gu, where the mysterious creature is depicted as the link between chaos and order. Notice, that unlike the biblical story which depicts the creation of Adam and Eve as the apogee of the Lord's endeavor to make man the ruler of the earth and its fauna, here the physical and the animal creation of the world are generated, like in the Pan Gu story, from the first man on earth. Another point is highlighted by Israeli:

> The difference persists, however, in that Allah made him from earth while the Chinese version of creation does not specify his origin. Also, while the Chinese creation is immanent in Pan Gu, in the case of Adam (A-dan in Chinese), the Muslim legend wants the creation to happen by accident, not by the design of the Lord, when Adam took advantage of the fact that the Lord "was not around" (again, a cute Muslim concession to the Chinese regarding the omnipotence and omnipresence of God), in order to produce precious metals and animal species, and ultimately, also Eve from his rib. (p. 179)

There are many other similarities, concessions, and name changes throughout this and other stories and yet, they all agree upon and consistently maintain the universal message of both cultures.

The Chinese and the Muslims have also been able to graft myth onto history. Though admittedly shaky at times, says Israeli, when it comes to the firmer ground of history, myth-making persists and even gains momentum to the point that these combined myths are now solidly anchored in well-known and universally accepted events, names, and places and, therefore, gain more historical credibility. This is true modified myth adoption at work.

Conclusion

It can be said that myths *are* significant in explaining the existential questions of life and that they have the power to ground us and connect us to the universe around us. It can also be said that we sometimes unconsciously adhere to various myths in our daily lives. However, of the many points of discussion concerning myths and their origin, their effect on our relationships, and how they are viewed by certain elements of our society, I would stress the following three points more than any others.

Firstly, the definition of myth is more correctly intended as *deep numinous narratives that figuratively express the very foundations of human life*, as possessing life lessons and moral education, and personal truth to be extracted upon critical reflection. Secondly, there is a need to be more critical and aware of the myths we do adopt. By thinking the myths forward, we can stall those efforts to mislead us due to lack of knowledge. And finally, we need myths. We need to continue to discuss their relevance in today's world community and how, if modified to suit our lives today, they can be a binding and uniting force universally. As extolled by Max Muller (1873) over 130 years ago:

> Mythology is inevitable, it is natural, it is an inherent necessity of language….Mythology, no doubt, breaks out more fiercely during the earlier periods of human thought, but it never disappears altogether. Depend on it, there is mythology now as it was in the time of Homer, only we do not perceive it, and because we all shrink from the full meridian of light of truth… mythology, in the highest sense, is power exercised by language on thought in every possible sphere of mental activity. (p. 353)

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The New Guinea Campaign: A New Perspective Through the Use of Oral Histories

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Abstract
Over the past two decades, historians have begun using oral histories to reinterpret the history of World War II. Earlier historians have relied heavily on official documents, journalists' accounts and the letters, diaries, and memoirs of commanders and staff officers, leaving out the experiences of the common soldier. Oral histories have provided more detailed, personal, and emotional accounts of WWII than the written records. My research combines the oral histories of the 32nd Infantry Division, the Red Arrow Division, with written sources in order to gain new perspectives and insight into the soldiers' experiences in WWII during the New Guinea campaign.

The New Guinea Campaign: A New Perspective Through the Use of Oral Histories

> As I was walking through the dense jungle, I hiked through the kunai grass; it was razor sharp grass that grew from two to twelve feet high. I was leading men on a mission to take a Japanese pillbox, and I saw a path that was cut through the kunai grass. I thought, "Why am I going through this tall grass? I'll go where I can see," so I went down the path. Then all of a sudden it dawned on me that this was a pre-cut fire lane and that a Japanese machine gun was training in on me from the other side. I instinctively dove for the other side and as I did they cut loose with their machine guns. A bullet hit me in my arm and leg and another ricocheted off the stock of my rifle that luckily lay across my chest. All I could think about was that I knew I was hit.[1]

This is an account from an oral history with Sergeant Robert Hartmen of the 126th Infantry Regiment in the 32nd Infantry Division. He is recalling the Battle of Buna, which began in November of 1942 and was part of the New Guinea Campaign, one of the longest and most grueling campaigns fought by United States ground forces in World War II. It began on September 20, 1942 and lasted until November 10, 1944.[2] New Guinea's location off the northern coast of Australia and its status as the second largest island in the world made it an ideal location for Japanese attack, and the hard-won Allied victory there helped to make the final victory possible.[3] Despite its importance, the New Guinea Campaign has become one of WWII's forgotten episodes. The use

[1] Robert Hartmen, oral history, Michigan Military History Institute (MMHI).
[2] The 32nd Division Veteran Association, 32nd Infantry Division, *The Red Arrow in World War II*, http: //www.32nd-division.org/history/ww2/32ww2.html.
[3] Harry A. Gailey, *MacArthur Strikes Back: Decision at Buna, New Guinea 1942-1943* (Novato, CA: Presidio, 2000), 9.

of oral histories makes it possible to do justice to the New Guinea campaign and the efforts of the men who fought it.

Over the past two decades, historians have begun to utilize oral histories to reinterpret the events of World War II. The Veterans History Project (VHP), established in 2000 by the Library of Congress (LOC), has expanded these efforts by promoting the collection and preservation of the memories of America's wartime veterans. Oral histories provide personal details that are not found in written records. The oral histories of the 32nd Infantry Division, more commonly known as the Red Arrow Division, add a personal perspective to aspects of the campaign that have been typically ignored or overlooked in the existing written histories. These new details help to explain the course and outcome of the campaign. Above all, the oral histories shed light on the soldiers' training, their incessant struggles with the difficult terrain, their relationships with the Australian allies, and their sufferings from tropical diseases. They not only add detail to existing accounts, but also correct distortions and outright errors in those accounts, making it possible to produce a more complete and accurate picture of the campaign.

The Red Arrow Division, which fought in World War I and World War II, originally began as a blended National Guard unit with men from Michigan and Wisconsin. The Division had three regiments that fought during the New Guinea Campaign: the 126th, 127th, and 128th Infantry Regiments. According to an oral history with Sergeant Robert Hartmen of the 126th Infantry Regiment, the division had twelve companies in it from across Michigan, from Coldwater to Grand Rapids and Grand Haven to Ionia.[4] The Red Arrow Division was reactivated in October 1940, and the men were sent to train at Camp Beauregard, Louisiana. In February 1941, they were sent to Camp Livingston, Louisiana.[5] The Red Arrow Division was one of the first National Guard units to be called up to active federal service. As a National Guard unit, they were not required to serve outside of the western hemisphere or for more than twelve months anywhere else. It took a congressional bill to relax the restrictions and extend the service dates of the Red Arrow Division. This bill was passed in August 1941, by a slim one-vote margin.[6] After the attack on Pearl Harbor, the United States began preparations to send troops overseas to fight. The Red Arrow Division was shipped to Fort Devens, Massachusetts to prepare for an early departure to Northern Ireland, but shortly after arrival at Fort Devens, their orders changed. Instead, the Red Arrow Division was sent to California and on April 22, 1942, it set sail for Australia.[7] The division landed in Adelaide, South Australia and was transported halfway across the continent to Camp Cable in Brisbane for more training before it was ordered to New Guinea on September 13, 1942.[8] The Red Arrow Division ended World War II with a total of 654 days in combat, which rivaled any other combat unit in America's history.[9]

There are discrepancies between the written texts and Red Arrow veterans' oral histories when examining whether the men had training, and how much of it they had. According to the majority of written histories, the men received little general training and no jungle warfare training before being sent to New Guinea. An official Army commentary stated,

> It was largely an army of amateurs in which many officers were occupied chiefly in learning how to be officers, and the men were being trained with scant equipment, and without realization, on their part, of the dead seriousness of the task ahead.[10]

According to Harry Gailey, author of *MacArthur Strikes Back Decision at Buna: New Guinea 1942-1943*, the 32nd Division was unlucky to be selected to operate in New Guinea because none of their training prepared them for the environment.[11] The official division history notes, "The 32d Division's composition as it began its field training was basically the same as it had been during World War I."[12]

On the other hand, the oral histories from the Red Arrow veterans who served in the New Guinea Campaign reveal that the soldiers did receive jungle warfare training once they arrived in Australia and New Guinea. Red Arrow veteran Wellington Francis Homminga explains that the training was similar in both places, but the change in the terrain made a significant impact on their training. While in Brisbane, they were training at Sandy Creek, and they had general training with rifles, machine guns, grenades, terrain maneuvers, and jungle warfare. He explains that the jungle warfare training increased once they

[4] Robert Hartmen.
[5] Public Relations Office, 32nd Infantry Division, *13,000 Hours*, 4.
[6] Major General H. W. Blakeley, *The 32nd Infantry Division in World War II* (Nashville: The Battery Press, 1957), 10-11.
[7] Blakeley, 20.
[8] Blakeley, 33.
[9] Blakeley, inside cover.
[10] Blakeley, 9.
[11] Gailey, 102.
[12] Blakeley, 10.

arrived in Brisbane, Australia. There they were sent out into the Blue Gum woods with a series of compass readings, and they had to find their way back. They used the compass to find a specific area or person that was designated as their goal. In his oral history, Homminga compares this training to the training the soldiers received immediately after arriving in New Guinea. He states, "You walked into the jungle and you immediately did not know where you were, the only thing you had to go by was the compass headings."[13] He says that in Australia the soldiers at least had some sense of where they were going, but in New Guinea they could wander around for hours in the jungle without knowing where they were. Homminga's oral history reveals that the men did receive training that was related to jungle warfare and that they were trained on how to venture through the jungles of New Guinea. These insights, revealed through oral histories, at least partially contradict what the written histories, such as the official history, assert about the men's training.

The second issue that the text draws attention to is in the official written history of the 32nd Infantry Division where it examines General Eichelberger's (Commander of the Eighth Army of which the 32nd was a part) controversial book, *Our Jungle Road to Tokyo* where he writes:

> In Washington I had read General MacArthur's estimates of his two infantry divisions, [32nd and 41st] and these reports and our own inspections had convinced my staff and me that the American troops were in no sense ready for jungle warfare. I told Generals MacArthur and Sutherland, MacArthur's Chief of Staff, that I thought the 32d Division was not sufficiently trained to meet the Japanese veterans on equal terms.[14]

According to an oral history with Red Arrow veteran Stephen Janicki, while the soldiers were not fully trained for jungle warfare, they were somewhat prepared for Japanese tactics because of the instructions they received from the Australians. While the soldiers were in Brisbane, Australian officers came to their camp and trained them on Japanese tactics and operations. Janicki recalls the Australian officers telling them to be on alert because the Japanese were cunning, ruthless, and that they were everywhere, including in the trees. The officers explained that the Japanese would tie themselves to trees, which meant that the soldiers had to watch both the ground and the jungle canopy in order to defend themselves from the cunning Japanese. Later in Janicki's oral history, he refers to his training and recalls that they realized that what the Australians had told them was true, that the Japanese were in the trees, so they began to fire upon the trees while in combat.[15] Janicki's oral history adds new insight into the wartime experiences of the Red Arrow Division. While the written histories portray the troops as lacking and incapable because of insufficient training, the oral histories reveal that the training the men received helped them while they were involved in action. This shows that while the soldiers may have been undertrained, the limited jungle training that they did have was of value to them.

There are two main examples seen in the descriptions of the jungle terrain that lack detail, oversimplify, and do not draw conclusions about how it affected the soldiers while in battle. First, written histories tend to generalize the hardships of the terrain, glossing over the effects it had on the soldiers' fighting conditions. Authors like Samuel Milner in his book *Victory in Papua, The War in the Pacific* fail to recognize how the terrain affected the men. He writes, "The terrain, as varied as it is difficult, is a military nightmare. Towering saw-toothed mountains, densely covered by mountain forest and rain forest…"[16] This statement draws attention to the problematic terrain, but it fails to recognize and make any connections to how it affected the soldiers who were fighting a war in the middle of it. Author Harry Gailey also uses such broad statements in his book, *MacArthur Strikes Back Decision at Buna: New Guinea 1942-1943* when he writes:

> The area around Buna was dominated by the Girua River, which emptied into the bay through several channels. One of these, Entrance Creek, wound its way between the village and the government station. To the east was a huge swamp formed by the backup of the river over the low-lying ground. These natural obstacles alone would make it difficult for troops moving toward Buna from the interior.[17]

This written account observes that the terrain caused problems for the troops, but it does not explain how the terrain

[13] Wellington Francis Homminga, oral history, MMHI.
[14] Blakeley, 25.
[15] Stephen Janicki, oral history, MMHI.
[16] Samuel Milner, *Victory in Papua, The War in the Pacific*, (Washington, D.C.: Center of Military History, 1957), 56.
[17] Gailey, 37.

affected the soldiers themselves. Milner also over generalizes why the terrain was a military nightmare. He writes,

> It rained steadily during the preceding few weeks, and the heavy tropical downpour continued….Except for a few abandoned plantations and mission stations, the corridor was a sodden welter of jungle and swamp, an utter nightmare for any force operating in it.[18]

With details such as these, the reader is left questioning what sort of a nightmare was it for the actual common soldiers, and what were their experiences like in this nightmare? The written texts document that the terrain was so miserable that it could be explained as a military nightmare, but they do not examine how it directly affected the soldiers.

Through the use of the Red Arrow accounts the necessary details that are not seen in the written histories are used to help interpret how the hardships of the terrain affected the men while in battle. For example, according to the veterans, the rivers caused several problems. Hartmen explains that crossing the rivers in New Guinea could be easy, but was often quite difficult. He describes the river during flood season as being especially dangerous because it was easy to lose one's balance with a full pack and rifle. Hartmen also describes the troubles of being in a watery terrain in regards to their foxholes. His description is that it would rain two times a day, and they were between the mountains and the ocean in a spot where the land was low and the jungle was thick. There they would dig their foxholes when the tide was out, and when it came back in their holes would fill up with six to seven inches of water.[19] Homminga also tells about the trouble the soldiers incurred because of swampy conditions that they had to deal with, recalling that they were in swamps with water up to their knees for three to four days at a time and that they would sleep in them, eat in them, and relieve themselves in them because they had nowhere else to go. He also explains how at one point after spending days going through the swamps he stopped on dry land, and when he took his shoes off for the first time after being soaked through for days on end, his skin came off with them.[20] The oral histories thus reveal more detailed information than the written histories do, going beyond simply stating that the rivers and swamps caused difficulties to showing how they did.

The second major discrepancy seen between the written and oral histories is an oversimplification on the hardships and negative effects of the jungle terrain and the soldiers' continuing ability to fight. Written histories typically oversimplify the problems of hiking through the terrain. In *MacArthur's Jungle War: The 1944 New Guinea Campaign* Stephen Taaffe states:

> New Guinea's remote and hostile terrain challenged an American military establishment that emphasized firepower, technology, simplicity, mobility, and material superiority. In order to win the campaign, MacArthur had to overcome not only the Japanese but also the big island's horrendous topography and climate.[21]

This statement identifies general problems, but Taaffe does not explain these problems specifically. The oral histories again reveal what such problems meant to the soldiers and how they affected the course of the campaign. For example, when dealing with the issue of mobility, Red Arrow veteran Homminga explains that the jungle trails were extremely muddy and went up and down cliffs that were at seventy-five degree angles.[22] Hartmen also describes the difficulties of these muddy cliffs. He states, "It was a nightmare. We would take three steps forward and we would slide two steps back."[23] Both men also describe the difficulties of sight in a dense jungle. Hartmen says that the troops could not see twenty to thirty feet in front of them and that this caused problems because they never knew who was shooting at them or whom they were shooting at. Veteran Stephen Janicki also goes into detail about how the lack of visibility because of the terrain affected their mobility. He describes the field of vision as being limited to two feet and that the jungle was overgrown. He said that the soldiers never knew which way the bullets were coming from, and they would holler out to each other, "It is coming from the right!" or "It is coming from the left!"[24] These oral history accounts provide richer descriptions of how the terrain affected the troops while in action. The written histories state that there were problems, but they do not explain how these problems arose, or how the men coped with them. Through the use of oral histories the reasoning and evidence for why the troop's mobility was hindered becomes clear.

[18] Milner, 82.
[19] Hartmen.
[20] Homminga.
[21] Stephen Taaffe, *MacArthur's Jungle War: The 1944 New Guinea Campaign* (Lawrence, Kansas: University Press of Kansas, 1998), 5.
[22] Homminga.
[23] Hartmen.
[24] Janicki.

While most written histories do not utilize oral history accounts, Gailey does effectively use a total of five oral histories in *MacArthur Strikes Back*. In an interview with First Sergeant Paul Lutjens describing how the effects of the terrain impeded the soldiers when they were hiking to Jaure, a location in New Guinea, Gailey writes:

> It was one green hell to Jaure. We went up and down continuously; the company would be stretched over two to three miles. We'd start at six every morning by cooking rice or trying to. Two guys would work together. If they could start a fire, which was hard because the wood was wet even when you cut deep into the center of the log, they'd mix a little bully beef into a canteen cup with rice, to get the starchy taste out of it. Sometimes we'd take turns blowing on sparks trying to start a fire, and keep it up for two hours without success. I could hardly describe the country. It would take five or six hours to go a mile; edging along cliff walls, hanging on to vines, up and down, up and down. The men got weaker; guys began to lag back….An officer stayed at the end of the line to keep driving the stragglers. There wasn't any way of evacuating to the rear. Men with sprained ankles hobbled along as well as they could, driven on by fear of being left behind.[25]

Gailey's use of this oral history gives personal details about why the men had troubles with mobility. It shows how the watery conditions made it difficult on the men, not only physically, but with the tasks of cooking as well. This oral history gives the necessary narrative for the reader to understand why the terrain was difficult for the troops to maneuver. Gailey's use of oral histories and interviews are exceptional, and they help provide richer context in regards to how events or obstacles such as the terrain affected the troops while in combat. While Gailey does not cite oral histories often in his account of the New Guinea Campaign, the small number of examples he does cite clearly demonstrate the value of oral histories. The oral histories offer evidence on why the terrain caused problems in mobility. They describe why the obstacles in the terrain such as steep cliffs, mud, water, swamps, and overgrown jungle slowed the men down, which affected their fighting conditions. The oral history excerpt that Gailey used provides evidence that these personal accounts add new perspectives and insight into why the terrain affected the troops and how it affected them.

Through the use of first-hand oral history accounts a new perspective is also given in regards to the American and Australian soldiers' relationships. The oral histories of the Red Arrow veterans provide a more accurate, clearer picture when examining the complex nature of the American and Australian soldiers' interactions. Written histories like Gailey's *MacArthur Strikes Back* tend to focus on the friction between the Australian and American soldiers. Gailey writes that the relation between off-duty American and Australian servicemen was vexing.[26] His book focuses on such incidents as one which occurred on November 26, 1942 when U.S. Military Police and Australian soldiers clashed outside of Brisbane, Australia. The result was that one Australian solider was killed and nine were wounded. The following day, Australian troops randomly attacked American soldiers, which ended with twenty-one injured. This written text emphasizes, "The blending together of U.S. and Australian systems did not work well."[27] When Gailey examines the American and Australian officers' and soldiers' attitudes toward each other, he uses secondary sources to conclude that the antipathy felt by individual soldiers extended to the officers as well.[28] In addition Gailey writes, "Contrary to the myths that developed in the years after the war, they [off-duty American and Australian servicemen] did not like one another."[29] On the other hand, oral histories expose a different primary perspective. They reveal that the relationships were positive, rather than the vexing relationships that the written texts portray.

The Red Arrow veteran's oral histories have provided a more accurate, clearer picture when examining the complex nature of the American and Australian soldiers' relationships. The oral histories reveal that the common everyday soldiers did get along well with each other and were even helpful to one another. Hartmen's oral history examines their interactions, and he concludes that the Auzzies were good people, they were terrific fighters, and they got along well with the soldiers, especially in New Guinea. He states, "They were darn good men."[30] He also goes into depth about how the Australians and Americans worked well together, unlike

[25] Gailey, 108-109.
[26] Gailey, 155.
[27] Gailey, 156.
[28] Gailey, 156.
[29] Gailey, 155.
[30] Hartmen.

what the written texts document. Hartmen tells how the Australians gave the Americans advice on how to fight. They told them to keep their heads down and to follow their common sense. Red Arrow veteran Erwin Veneklase also goes into depth on the Australian soldiers. Veneklase describes how the Australians gave them helpful advice. At one point in New Guinea, an Australian soldier told him, "Don't shoot the Japanese, let him go by and then you hit them in the back of the head with a gun…take your knife and cut their throat, that don't make a sound."[31] This may sound like gruesome advice, but it was something that could save the American soldiers' lives. The oral histories show that the relation between the Americans and their Australian allies was amiable and helpful. Janicki says, "We went into Brisbane and the Australian officers came in and told us how the Japanese operated."[32] Janicki also explains how the Australian's advice helped save their lives. He says that while they were training in Australia, the Australians had given them life saving advice about the necessity of watching both ahead of them and above them. After active combat in New Guinea he recalls, "They realized what the Australians had told them was true about the Japanese tying themselves in the trees."[33] Many of the Red Arrow veterans respected the Australians because they recognized the hardships they were going through without receiving much repayment. Veneklase states, "I would say I have the highest regards for the Australian people. I was making more in the service than the guys in Australia were making working seven days a week."[34] This also shows that the two systems, as Gailey refers to them, got along well, were helpful to one another, respected one another, and saved each other's lives by sharing information. By utilizing oral histories, new perspectives and new insights have been added to what the written texts document. The written texts look at legitimate points during which the soldiers may not have gotten along, but they fail to recognize the whole story. They do not show that the two groups did get along the majority of the time. The oral histories do recognize that while the Australians and Americans had reasons not to get along together, they still did. These first-hand accounts show that they were friendly and even helpful to one another, which is something that the written texts fail to document.

The effects of various tropical diseases in the New Guinea Campaign are also characterized more accurately and in more detail in the oral histories than in the written histories, which tend to be vague and inaccurate. These discrepancies between the written and oral histories can be seen in the descriptions of the tropical diseases, dysentery, the physical effects of malaria, and in the number of cases of malaria. The pamphlet *New Guinea*, issued by the U.S. Army shortly after the war, is a prime example of how the written texts are too vague when describing tropical diseases in the New Guinea Campaign. It says:

> Disease thrived on New Guinea. Malaria was the greatest debilitator, but dengue fever, dysentery, scrub, typhus, and a host of other tropical sickness awaited unwary soldiers in the jungle. Scattered tiny coastal settlements dotted the flat malarial north coastline, but inland the lush tropical jungle swallowed men and equipment.[35]

After this statement, which is lacking in detail, the text goes on to describe aspects of the terrain. It does not examine the details of the various diseases or the effects of the disease on the soldiers and their abilities to fight while in combat.

Dysentery is also vaguely addressed in *MacArthur Strikes Back*. Gailey inadequately addresses the issue of the many tropical diseases. He writes, "Intestinal disorders and skin diseases were epidemic. Severe diarrheas and dysentery could not be treated adequately given the conditions along the trail…"[36] Milner also explains the problem of dysentery with insufficient detail. Milner writes, "Dysentery was the most widespread affliction."[37] Gailey and Milner refer to the vastness of the various diseases, but neither one examines indepth the effects that these tropical diseases had on the men.

The Red Arrow veterans' oral histories provide the dramatic descriptions and necessary information on the effects of the various diseases on the soldiers' ability to fight, and they provide the necessary context to understanding the written records. In Hartmen's oral history, he says that there were flies all over the food, and the men were getting dysentery because of it. He explains that they were all passing blood, and the medics did not know what to do about it because it was not a couple of men, but the whole regiment of two to three thousand men.[38] Janicki also describes the effects of dysentery on him. He says

[31] Erwin Veneklase.
[32] Janicki, oral history.
[33] Janicki, oral history.
[34] Veneklase, oral history.
[35] *U.S. Army Campaigns of World War II*, "New Guinea," 1.
[36] Gailey, 51-52.
[37] Milner, 197.
[38] Hartmen.

that he entered the war weighing one hundred and eighty pounds and he left the hospital weighing one hundred and twenty pounds because of dysentery.[39] Descriptive details such as these add new insight into what the effects of dysentery were on the men. Rather than plainly stating that it was a large problem, these oral histories show that the men who were suffering from these tropical diseases, especially dysentery, were impeded by the effects while fighting a war. They were physically exhausted, they were passing blood, and they were losing an extensive amount of weight, which crippled them while trying to march through a dense, mountainous jungle, fighting a war.

Malaria is another example of a tropical disease that is not adequately described by the written histories in terms of its physical effects. Malaria is generally addressed, but not with the sufficient details of what it is, or how it affected the troops. On the other hand, the Red Arrow veterans' oral histories provide these necessary details, which the written histories tend to gloss over. In *MacArthur Strikes Back*, Gailey states, "Malaria was a scourge, and the hard pressed officers, faced with an increasing number of battle casualties, could do little to aid those who had the debilitating disease."[40] This statement raises the questions: what are the symptoms of malaria and how did they affect the men? Author Samuel Milner also uses vague descriptions when describing malaria. He writes, "Some of the men picked up malaria in the mosquito-infested swamps along the Musa, and the weakening effects of the march were apparent in the subsequent operations of the battalion."[41] This written statement does not describe what the weakening effects were or what malaria did to the men who were trying to fight a war in the dense New Guinea jungle while being infected with this horrific tropical disease.

The Red Arrow personal narratives thoroughly examine the physical effects of malaria, giving a different perspective on the "debilitating disease" and its "weakening effects."

Red Arrow veteran Robert Hartmen goes into more detail about how malaria physically affected him while fighting in New Guinea. In his oral history he states:

> [I] had a 103-degree/104 degree fever, and I went to the medics. There they gave me twenty-five grams of quinine, and they lay me down on the ground. They put a cover over me and twenty-four hours later my fever broke, and they sent me back to the front lines.[42]

This description gives a different perspective on how it directly affected the common soldier. It shows how severe their fevers were and what little medical help was available to aid them. Red Arrow veteran Homminga also describes malaria in a more detailed way that gives a new perspective on the disease. He states,

> Malaria is a disease that is transmitted by the mosquito and it enters your system in your liver and kidneys. You get an extremely high fever and you get the chills. You could shake a bed across the floor….It takes days to get over an episode, but you always have the bug in your system.[43]

Veteran Stephen Janicki also explains the symptoms of malaria. In his oral history he says, "you got a high fever, and you became soaking wet with sweat, and then you would suddenly be absolutely freezing."[44] He explains that you would go from hot to cold, and that you became delirious and eventually passed out.[45] These descriptions also give a different look into the disease malaria than the written histories do. They describe how malaria infected the men, and they explain the symptoms of the disease. By utilizing oral histories, a detailed description of the disease is given rather than the simple vague statements in the written histories such as, "Malaria and exhaustion were taking a toll on the men inside and outside the block."[46] Oral histories give a more vivid description and definition of malaria than the written texts. By utilizing these oral histories, malaria can be understood in a more detailed manner, and through the use of oral histories, many aspects of malaria that are in the written histories and are wrong can be corrected.

The written histories also give inaccurate information in terms of the number of cases of malaria in the New Guinea Campaign. Had the authors utilized oral histories, these false descriptions would not have occurred. Stephen Taaffe writes in *MacArthur's Jungle War*,

> Malaria initially caused SWPA [South Pacific Area] problems. In February 1943, for example, 23 out of every 1000 SWPA personnel were in hospital with malaria at any given time, and the average stay the following month was twenty-eight days per afflicted patient."[47]

[39] Janicki.
[40] Gailey, 52.
[41] Milner, 107.
[42] Hartmen.
[43] Homminga.
[44] Janicki.
[45] Janicki.
[46] Gailey, 185.
[47] Taaffe, 117.

He then adds:

> MacArthur appointed Colonel Howard Smith, a former public health officer who had been the Philippines' chief of quarantine service, to bring malaria under control. Smith and other SWPA health officers introduced DDT, repellent cream, atabrine (a synthetic quinine), mosquito netting, and other suppressant and prevention measures to the theatre….Such stringent measures worked. In March 1944, only 2 per 1000 SWPA personnel were in the hospital for malaria at any given time, and the average stay was nine days. In fact, as of 1 April 1944, there were only 751 malaria cases throughout the entire theatre.[48]

Taaffe researches the malaria problem by utilizing medical records from the U.S. Army forces in the Southwest Pacific Area. He does not utilize oral histories or examine first-person accounts. This leads to problems because the common soldiers, those who were infected with malaria, are not being consulted. Only second-hand written medical reports are used, and, in this case, they tend to be inaccurate, portraying malaria as an improving problem with fewer men contracting malaria after 1944 because of new medical improvements and preventions. By utilizing the soldiers' oral histories, a different story is told.

The oral histories from Red Arrow veterans like Janicki, Homminga, and Hartmen demonstrate that malaria was a much larger problem than Taaffe's sources indicated. Homminga explains, "It was a one hundred percent killer, everyone had malaria."[49] He also goes on to describe the severity of the problem, which also explains how inaccurate the numbers in written texts were. Homminga describes the conditions in regards to malaria:

> After being in combat for a little bit they had too many people getting malaria so they wouldn't let you go to the medics, hospital, whatever unless you had a one hundred and five degree fever or passed out…. They were pretty picky about whether you had a one hundred and five degree fever or not.[50]

This evidence, revealed through an oral history, contradicts the written texts. By utilizing oral histories, the inaccuracies in the written texts can be corrected. While improvements may have been made by 1944, the problem was not solved. Many men had previously contracted malaria, and once it entered their systems, they always had it. Also, despite medical improvements, Taaffe fails to recognize the severe conditions the men had to be in, before they could leave the front lines to see a medic, which explains why the U.S. medical records showed such a small number of cases, which in turn made the malaria problem look like it had undergone vast improvements between 1943 and 1944. Had the medical records recognized that men on the front lines were suffering from malaria, or had Taaffe utilized oral histories, his analysis would not have been so far off.

By only utilizing the medical records, Taaffe is not only getting inaccurate numbers, he is failing to get the full picture on why the men had to have one hundred and five degree fevers in order to be sent to the hospital. Oral histories reveal this perspective. Sergeant Hartmen explains, "We were getting to the point where we couldn't afford to lose another man to malaria. We were outfitted by the Japanese as it was."[51] Red Arrow veteran Janicki also offers further insight into the number of malaria-infected soldiers. In his oral history, he explains that there were nearly fifty to one hundred men on the front lines at any given time, all of whom were suffering from malaria, yet they were still forced to fight unless their fevers reached one hundred and five degrees or they fainted.[52] Through these oral histories a new perspective on the high number of soldiers infected with malaria is seen. The Red Arrow veterans' oral histories divulge the truth about the campaign. They correct the written text, revealing that the number of infected men was not down, rather the troop's fevers had to reach one hundred and five degrees or they had to faint in order to be sent to a medical facility. This is one aspect of the problem that the written texts have failed to recognize making those texts inaccurate. By only researching malaria through the medical records, Taaffe is failing to understand the full problem that the Red Arrow veterans' oral histories divulge.

[48] Taaffe, 117.
[49] Homminga.
[50] Homminga.
[51] Hartmen.
[52] Janicki.

In conclusion, personal narratives clearly play an important part in understanding the history of the New Guinea Campaign. Oral histories provide personal accounts from the viewpoints of both the officers and common soldiers. This adds a new perspective to what the written histories have documented in terms of training, terrain, allies' relationships, and tropical diseases. They question the accuracy of some written texts, and they clarify other areas of the campaigns that the written texts have only vaguely examined. By utilizing oral histories, the story of the everyday individual soldier is told, which gives a different perspective and new insights into the New Guinea Campaign that cannot be seen in the written records. They collect and preserve the recorded memories of our veterans, which is a valuable and irreplaceable resource.

In the words of one soldier, Wellington Francis Homminga, "The entire story comes together when oral histories are a part of it."[53] He also offers valuable insight into the positive effects of using oral histories. He remarks, "When we are gone history is gone with us, unless it is recorded, so I am glad you did this."[54] The Red Arrow veterans' oral histories are a valuable resource that offers a different view than the written texts. They preserve our past, and in doing so, they clarify, correct, and increase the necessary descriptions in the New Guinea Campaign.

[53] Homminga.
[54] Homminga.

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Attention Deficit Hyperactivity Disorder (ADHD) and ethnicity: A literature review

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Abstract

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most expensive mental disorders, costing U.S. citizens $77 billion every year (Reinberg, 2004). Although ADHD effects between 3-7% of U.S. children (American Psychiatric Association [APA], 2000), there are many misconceptions about the disorder and concerns have been raised regarding appropriate diagnosis and treatment in children, adolescents, and adults. In addition to these concerns, several authors have noted that there is a lack of research regarding ethnicity and ADHD. The limited research that has been done is confusing with some studies indicating that there is no difference in rates of ADHD diagnoses (Nigg, 2001) and other studies indicating that African American children are placed in behaviorally disordered classrooms at higher rates (Maddox & Wilson, 2004). Reid, Casat, Norton, Anastopoulus, and Temple (2001) found that teachers were more likely to exhibit a bias in their rating scales if their students were African American. The purpose of this paper is to review the literature on ADHD, with a particular focus on the research of ethnicity and ADHD.

Introduction

Attention Deficit Hyperactivity Disorder, or ADHD, is one of the most commonly diagnosed child clinical syndromes (Ferguson, 2000; Molina & Pelham, 2003; Nigg, 2001). According to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR), approximately 3-7% of U.S. children have ADHD (American Psychiatric Association [APA], 2000, p. 92-93). This disorder is broken down into three subtypes, each with nine symptoms: predominantly inattentive type, predominantly hyperactive/impulsive type, and the combined type. To qualify for any of the three subtypes, a person must have six of the nine symptoms in one subtype (see Appendix A). Other stipulations are that the symptoms must be present before the age of 7, must occur for at least 6 months, must take place in 2 or more settings (e.g. home, school, or neighborhood), and must cause clinically significant impairment in social, academic, or occupational functioning. Likewise, the symptoms may not be better accounted for by any other disorder (Brown, 2000; Gamarra, 2003; Hallahan & Kauffman, 2005; Hartnett, Nelson, & Rinn, 2004; Maddox & Wilson, 2004; Nigg, 2001; Root & Resnick, 2003; Samuel, Biederman, Faraone, & George, 1998; Semrud-Clikeman et al., 1999; Wilens et al., 2002; Wilkin Bloch, 2002).

The first of the three subtypes is the inattentive type. Individuals in this subtype are not able to get focused or stay focused on a task or activity, and they do not pay close attention to details. Organization is a challenge because people in this group are often distracted by everything around them. While playing or completing school or homework, these children often lose things such as toys, papers, and books; they may even forget to bring their books home or when they do remember, they bring the wrong ones.

If these students do complete their homework, it is often full of errors or erasures. Children in this category have difficulty processing information as quickly and accurately as others, so they are just seen as spacey, easily confused, daydreamers, and lethargic (National Institute of Mental Health [NIMH], n.d.; Root & Resnick, 2003; Wilens et al., 2002).

Children in the second subtype, hyperactive/impulsive, are very active and often talk without thinking. They often blurt out answers before questions have been completed and have trouble playing quietly. This is the easiest subtype to recognize because being too active is the most visible sign of ADHD. A child does this by running around or climbing constantly, fidgeting and squirming, or noisily tapping pencils. Since children who are hyperactive need to be in motion, they have difficulty staying seated in their chairs during class time (NIMH, n.d.; Root & Resnick, 2003; Wilens et al., 2002).

Lastly, the combined subtype brings together all the characteristics of the inattentive and the hyperactive/impulsive subtypes. Children with the hyperactive/impulsive or combined subtype cannot sit still or are otherwise disruptive, thus they will most likely be noticed in school, but the inattentive daydreamers may be overlooked. The impulsive child who acts before thinking may be considered just a "discipline problem," while the child who is passive or sluggish may be viewed as merely unmotivated. So when the child's hyperactivity, distractibility, poor concentration, or impulsivity begin to affect performance in school, social relationships with other children, or behavior at home, ADHD may be suspected (NIMH, n.d.). However, it is important to note that most children demonstrate all of these behaviors at times, so frequency and intensity of these behaviors need to be thoroughly assessed. Moreover, these behaviors may be the result of depression, anxiety, boredom, poor instruction, or other environmental issues. This is why appropriate assessment and diagnosis is so critical and so controversial (Hartnett et al., 2004; Nigg, 2001). Skeptics note that ADHD is not a true diagnosis, but rather the result of poor parenting and a failing educational system (Hallahan & Kauffman, 2005). Others have speculated that the higher rates of behavioral disorders noted in African-American children may be due to cultural differences rather than neurobiological differences (Livingston, 1999).

Prevalence

ADHD is one of the most frequent reasons children are referred to guidance clinics (Hallahan & Kauffman, 2005). Since 3-7% of school age children have the diagnosis of ADHD, this means approximately 2 million children in the United States have the disorder; therefore in every classroom with 25 to 30 students at least one child will have ADHD (APA, 2000; Brown, 2000; Bussing, Schoenberng, Rogers, Zima, & Angus, 1998; Ferguson, 2000; Gamarra, 2003; Gingerich, Turnock, Litfin, & Rosen, 1998; Hallahan & Kauffman, 2005; Hartnett et al., 2004; Maddox & Wilson, 2004; Molina & Pelham, 2003; National Dissemination Center for Children with Disabilities, 2004; NIMH, n.d.; Redden et al., 2003; Reid et al., 2000; Reid, Casat, Norton, Anastopoulos, & Temple, 2001; Root & Resnick, 2003; Samuel, et al., 1999; Weiler, Bellinger, Marmor, Rancier, & Waber, 1999; Wilkin Bloch, 2002). In terms of gender, boys are diagnosed at a rate of 4 to 9 for every one girl. This occurs because boys are referred more often for behavioral problems, while girls are referred more for learning problems (Reid et al., 2000). Recent studies have shown that girls may be at an increased risk of remaining underdetected and untreated. A common explanation for this is that girls are presumed to have ADHD with the subtype inattentiveness, which may be less obvious to parents and less likely to prompt help seeking (Bussing et al.). Therefore, gender-correlated behavioral problems may be identified more as ADHD in boys than in girls due to the frequency of disruptive classroom behavior exhibited by boys (Reid et al., 2000). Likewise, almost 50% of children with ADHD will be placed in special education programs for learning disabilities and behavioral disorders (Reid et al., 2001). Since special education programs are found in elementary and middle schools, ADHD was believed to be a childhood disorder that was outgrown around mid-to late-adolescence. Yet 50%-80% of children will continue to have symptoms of ADHD into adolescence. Also about 3%-7% of adults have ADHD, yet only 15% of them know they have ADHD (Barkley, Fischer, Fletcher, & Kenneth, 2002; Steinhausen, Dreschsler, Foldenyi, Imhof, & Brandeis, 2003). This may be due to the fact that they were not diagnosed with ADHD as a child and that behaviors are exhibited differently in adulthood. For example, instead of disrupting classrooms, adults tend to have poorer work records, more marital problems, additional car accidents, and do things impulsively such as smoke, shop, and talk (Maddox & Wilson, 2004).

Etiology

Medical

The exact cause of ADHD is unknown, yet many researchers offer different ideas as to the source of this disorder. A widely accepted view centers on the medical model which poses that ADHD is the result of neurological abnormalities, brain injuries, and/or genetics. The behavior of children with ADHD is thought by some researchers to be caused by a structural anomaly in the prefrontal cortex of the brain and/or neurotransmitter abnormalities (Brown, 2000; Gamarra, 2003). Yet other

researchers feel that it is other parts of the brain where the dysfunction lies including the basal ganglia, cerebellum, striatal regions of the cortex, or anterior cortical regions (Hallahan & Kauffman, 2005; Hartnett et al., 2004; Samuel et al., 1999). In regard to neurotransmitter dysfunction, those with ADHD may have more dopamine transporters than those without ADHD (Gamarra; Hallahan & Kauffman). Thus even though some researchers feel that the cause lies in neurological abnormalities, there is not a consensus on where the dysfunction is located. Scientists at the National Institute of Mental Health (NIMH) suggest that ADHD has a biological basis that serves as a link between a person's ability to pay close attention to detail and his or her level of brain activity. These researchers feel this has to do with the level of glucose used by the areas of the brain that inhibit impulses and control attention (Maddox & Wilson, 2004).

According to the medical model, another possible cause of ADHD is brain injury (NIMH, n.d.). Earlier theories were based on studies of brain injured children who exhibited signs or behaviors similar to those in a child with ADHD. In fact, one of the early terms for ADHD was Minimal Brain Dysfunction or MBD. Yet only a small percentage of children with ADHD have suffered significant traumatic brain injuries, therefore there is no specific evidence for this cause (NIMH) in a majority of cases. As for genetics, attention disorders often run in families, so there are likely genetic influences (NIMH). Research indicates that 25% of close relatives in families of ADHD children also have ADHD, whereas the rate is about 5% in the general population. Twin studies have also demonstrated strong evidence for a link between genetics and ADHD (Maddox & Wilson, 2004; NIMH). Therefore, these studies suggest that there may be a moderately strong genetic link for the disorder (Gamarra, 2003).

Environmental

On the other hand, some researchers, especially mental health professionals, feel that ADHD is not simply a medical issue, but is influenced by the environment. According to Gingerich, et al. (1998), the environmental situation provides a lens for a person with ADHD to understand and be treated. Therefore, an appropriate "fit" between individual and environmental characteristics is necessary to minimize distress due to the disorder (Gingerich et al.). Many factors go into the environmental situation, including family life, society, and culture. Under the category of family life are subcategories of research that include: food additives and sugar, television viewing, lead, and substance abuses during pregnancy. Beginning in the 1970s, a number of theories emerged in literature concerning the contribution of foods and other dietary factors (such as sugar intake) to the development of ADHD (Gamarra, 2003). A few researchers have concluded that sugar intake and food additives (in things such as pop, cake, and candies) make a child more hyperactive, however improved research has concluded that additives do not cause ADHD. Furthermore, children may be more hyperactive depending on the setting in which they are receiving sugary foods, such as a party (Hallahan et al., 2005; NIMH, n.d.), which can make determining cause and effect difficult.

Some professionals feel that there are possible correlations between the use of cigarettes and alcohol during pregnancy and the risk of ADHD or high levels of lead in the body and ADHD (NIMH, n.d.). In terms of cigarettes, a recent twin study conducted by researchers at London's Institute of psychiatry found a "small but significant" link between maternal smoking during pregnancy and conduct disorder and ADHD ("Bad Behavior", 2005). Mothers that drink during pregnancy place their babies at risk for developing Fetal Alcohol Syndrome (FAS). One of the hallmark symptoms of this disorder is ADHD. The amount of alcohol intake that causes FAS or another less severe disorder known as Alcohol Related Neurodevelopmental Disorder is unknown, so all alcohol should be avoided during pregnancy (Burden & Croxford, 2005). Finally, according to the Center for Children's Health and the Environment (2002), lead exposure has been linked to IQ deficits, disruptive behavior, and inattention in school children. It has also been linked to ongoing behavioral problems in adults.

According to Hallahan and Kauffman (2005), some analysts believe that by watching too much television and playing too many video games, kids will develop ADHD. To date there is limited evidence that watching TV increases ADHD behaviors. However, one recent study found that the amount of television exposure between the ages of 1 and 3 increases the chances that a child will develop attentional problems at age 7 by 10% for every hour of television watched (Hecht & Hecht, 2004). It is important to note that this recent research is correlational in nature, which makes it difficult to rule out that parents who let their children watch more TV contribute in some other ways to their children's inattentive behaviors, perhaps because they provide less supervision. In the same way, poor parenting skills or family environments probably do not cause ADHD, but could make a situation worse. For example, poor parenting could result in a child being unprepared for school, this could lead to misbehavior and a higher likelihood of referrals by the teacher. If the professional conducting the referred evaluation does not do a thorough job, it is possible that the child will

be misdiagnosed and unnecessarily medicated (Hallahan & Kauffman). A similar hypothesis is made that teachers in poor, inner city schools over identify some students as having ADHD, thus they are blaming the children rather than their poor training or the absence of the appropriate tools for inattentive, behaviorally disordered students (Hallahan & Kauffman). Finally there are sociocultural misunderstandings that can occur. In other words, different cultures may have different standards for what is and is not acceptable behavior. For example, African-American boys are allowed to be more aggressive than Caucasian boys in society and school, and Asian-American students are seen as more disciplined and studious than any other ethnic group. There is no conclusive medical method for identifying ADHD, neither is there a conclusive environmental cause for it, thus controversy about ADHD exists and many wonder if children are being over diagnosed and overmedicated (Hartnett, et al., 2004; Zavadenko, 2002).

Assessment

Despite the fact that the cause is unclear, the proper way to assess ADHD is known. The assessment process should include a physical exam, interviewing at least three sources (parent(s), teacher(s), and child), the use of child behavior rating scales (by parents and teachers), a review of a child's complete school and health records, psychological testing, and behavioral observations of the child as well as parent and child interactions (Gamarra, 2003; HaileMariam, Bradley-Johnson, & Johnson, 2002; Hallahan & Kauffman, 2005; Root & Resnick, 2003; Weiler et al., 1999; and Wilkin Bloch, 2002). A physical exam is needed to rule out other medical problems that may cause or relate to ADHD symptomatology, while psychological testing looks to see if there are any other psychological disorders that could better account for the problems. Interviewing sources is a critical part of the assessment because they provide information about a child's physical and psychological characteristics as well as his or her home life and how they interact with peers. A complete review of a child's records consists of looking at report cards, achievement tests, psychoeducational assessments, and medical/psychological treatment records to determine if a child's hyperactive and/or inattentive behavior was observed early on in the child's life. Structured diagnostic interviews and Child Behavior Checklists (CBCL) are often the primary focus of assessment, yet if a checklist is used as the only means of determining ADHD, the possibility of confusing ADHD with other disorders increases (Hartnett et al., 2004; Maddox & Wilson, 2004; Reid et al., 2001; Stein, Roizen, & Leventhal, 1999). Often times these checklists address only the expressions of the behavior, which can be biased or inaccurate.

According to Perry (1998), to help in assessing ADHD, specialists must consider the following questions: "Are these behaviors excessive, long-term, and pervasive and do they occur more often than in kids the same age? Are they a continuous problem, not just a response to a temporary situation? Does the behavior occur in several settings or only in one specific place like the playground or classroom?" (p. 113). Once these questions are addressed, the person's pattern of behavior is compared against the criteria listed in the DSM-IV-TR for ADHD. It is very important when comparing individuals with ADHD with others to make sure that people of their ethnicity are included. According to Gamarra (2003), the instruments used in evaluating the client should measure the same constructs in different cultures to avoid systematic bias. Because the assessment of ADHD is not a simple matter, it should be left to specialists who should have sufficient time to conduct careful evaluations and be well acquainted with all the disorders that share characteristics of ADHD (Perry). The process of assessing ADHD may be time consuming; yet gathering as much information about the client is critical in accurately concluding if a child or an adult has the disorder.

Diagnosis

Since ADHD symptoms vary across settings, ADHD can be difficult to diagnose (NIMH, n.d.). It is also not uncommon to hear of misdiagnosis of ADHD, wherein a child's behaviors are attributed to ADHD when in actuality they are caused by or related to some other conditions or traits, such as giftedness (Hartnett et al., 2004). Given that ADHD tends to affect functioning most strongly at school, teachers may be the first to recognize a child's hyperactive and inattentive symptoms and may point it out to parents or consult with the school psychologist (NIMH). Therefore having a teacher involved in the assessment of ADHD is vital, yet at times doctors and psychologists may be influenced by a teacher's subjectivity and preconceived notion about the child, and this may result in the over diagnosis of ADHD. Also, if the disorder is not thoroughly assessed, it may be confused with such things as anxiety, depression, giftedness, a learning disability, bipolar disorder, conduct disorder, and oppositional defiant disorder. Misdiagnosis also has potentially harmful consequences (Hartnett et al., 2004). Once an ADHD diagnosis is placed on the child it may be very difficult to perceive his or her behavior any other way but within that framework (Hartnett et al.). Also, stimulant medication given unnecessarily leads to appetite suppression, insomnia, irritability, anxiety, sadness, and nightmares

(Hartnett et al.). Unnecessary pill-popping as a child can even possibly lead to depression in adulthood (Wren, 2005). In the same way, missing the diagnosis of ADHD can incapacitate a person from functioning at his or her fullest potential (Hartnett et al.).

Some medical doctors and psychologists tend to think ADHD diagnosis is not very difficult or they may be influenced by a teacher's subjectivity and preconceived notion about the child; this results in ADHD over-diagnosis and misdiagnosis (Zavadenko, 2002). A case study by Wolston and Caracansi (1999) provides the first published report of undiagnosed comorbid Graves disease complicating the treatment of Tourette's disorder and ADHD. This case report provides an example of the deleterious interaction between metabolic and psychiatric disorders in childhood. In the case study, a young boy was sent to a pediatrician, neurologist, and special education teachers for testing. The pediatrician focused on the diabetes mellitus (DM) type one, the neurologist attempted to treat the ADHD and Tourette's disorder, and the special education staff grappled with his behavioral problems. Since the three care providers had only minimal contact with one another, no effort was made to integrate the clinical understanding of the child's worsening symptoms or to view this deterioration as a signal for further medical evaluation. Therefore, fragmented medical care for children with complex psychiatric and medical disorders significantly increases the risk for missed diagnosis and subsequent mistreatment (Wolston & Caracansi).

Research has also been conducted comparing the frequency of diagnosis of ADHD in the U.S., versus countries such as England (Gamarra, 2003). By examining clinical records including drug prescription records, case registries, and epidemiological studies, it was estimated that the diagnosis was about 20 times higher in the United States than in England. It was concluded that it occurred more in the U.S. because of different diagnostic criteria used and differences in cultural training of the professionals making the diagnosis across and within countries (Gamarra). Effective treatment options do exist, but a correct diagnosis must first be given (Hartnett et al., 2004).

Treatment

Once the diagnosis of ADHD is given there are two treatment options: the medication-only approach and the combination of the medication with the behavioral or psychosocial treatment. The combination of the medication and treatment has been proven the most effective because it not only gives clients medication, but it gives them time to talk about what is going on with them and how their behaviors can be adjusted (Ferguson, 2000; Redden et al., 2003). On the other hand, skeptics have noted that the amount of methylphenidate prescribed in the United States is much higher than any other country and they feel it is because those prescribing the medications are doing so inappropriately (Jensen et al., 1999). In prevalence studies, African-American children have less psychiatric medication use relative to Caucasian children (Stevens, Harman, & Kelleher, 2005). Therefore, even though African Americans are being diagnosed with ADHD more, they are being treated for ADHD less often. On the other hand, once an ADHD diagnosis is given, there is no difference in care found between Caucasians and Hispanics (Stevens et al.). About 80% of children who need medication for ADHD still need it as teenagers and over 50% need the medication as adults (NIMH, n.d.). Thus the stimulant medication given for ADHD is something that is often needed for a lifetime and the cost of it can add up quickly, so it should not be wasted on people who do not need it at all.

Treatment plans should be tailored to the specific needs of the child and his or her family (Maddox & Wilson, 2004). The daily class schedules, length of school day, and homework demands all should be investigated in the process of the treatment planning for ADHD as well (Livingston, 1999). There are differences in overall demands of the school environment between private religious schools, other private schools, and public schools, and this must be taken into account as well. Private and public schools also vary as to the knowledge of the staff about ADHD and tolerance for imperfect behavior (Livingston). According to Maddox and Wilson, the treatment of ADHD requires medical, educational, behavioral, and psychological treatment. This involves parent training, behavior intervention strategies, an appropriate educational program, education regarding ADHD, individual and family counseling, and medication when required (Arnold et al., 2003; Maddox & Wilson).

Ethnicity

Even though there is a wealth of information available on ADHD, the vast majority of research on these individuals has been carried out on white, male, middle-class subjects (Gamarra, 2003; Gingerich et al., 1998; Maddox & Wilson, 2004; Samuel et al., 1999). Diversity variables have been generally overlooked in assessment, diagnosis, and treatment of individuals with ADHD in the United States; yet the disorder is looked on in a different light internationally. Gingerich, et al., noted that in most cultures, some children display disruptive behavior that is considered by adults to be unacceptable; however, important differences exist between cultures in regard to symptom terminology, diagnostic criteria, and treatment

modalities (Gingerich, et al.). In other words, what adults in one culture may tolerate behaviorally may not be tolerated in another one. Gingerich, et al., also noted that beliefs about etiology vary widely internationally and there is a lack of uniformity in assessment instruments. For example, professional psychologists and pediatricians from the United States and Italy were given a case description of a boy with disruptive behavior and the professionals did not differ in the frequency of diagnosing ADHD. However, they did significantly differ in the assessment to diagnose ADHD. Americans used more assessment procedures than Italians, and they also differed in their beliefs regarding etiology: Italians cited environmental influences and Americans more frequently cited organic influences (Gingerich, et al.). The prevalence rates of ADHD internationally also vary from country to country. In Canada, the rate for boys is 9% and 3.3% for girls. In China, the rates range from 1.3% to 13.6%, depending on the assessment instruments utilized. In Puerto Rico, the prevalence rates are around 9.5%. On the other hand, in Israel the rate is 3.9% (Gingerich, et al.).

Not only does the ADHD diagnosis vary internationally, it varies across the races in the United States as well. A study was conducted in 1974 by Blunden (as cited in Gingerich et al., 1998) that compared 1,300 African-American, Hispanic, and Asian-American children to the "white norms" using the hyperactivity rating scale. It was reported that African-American children had the highest mean hyperactivity rating, Asian-Americans had the lowest, and the mean ratings for Hispanics were around that of the white norm's average. A similar study was conducted in 1977 by Anderson (as cited in Gingerich, et al.) reached the same findings.

More recent research has found that there are differences in the rate of hyperactivity as well. Compared to Caucasians, African-American children have the highest rate of hyperactivity and Asian Americans have the lowest rate (APA, 2000; Brown, 2000; Bussing et al., 1998; Ferguson, 2000; Gamarra, 2003; Gingerich et al., 1998; Hallahan & Kauffman, 2005; Hartnett et al., 2004; Maddox & Wilson, 2004; Molina & Pelham, 2003; NIMH, n.d.; Redden et al., 2003; Reid et al., 2000; Reid et al., 2001; Root & Resnick, 2003; Samuel et al., 1999; Weiler et al., 1999; Wilkin Bloch, 2002). Yet the problem is that we are uncertain whether these differences are due to real differences among the groups, rater bias due to ethnicity, or a combination of the two (Hallahan & Kauffman; Reid et al., 2000; Reid et al., 2001). Reid, et al. (2001) addressed the issue of rater bias with teachers and found that teachers do exhibit a bias in their ratings if their students are African American. The study showed that teachers considered African-American males 2.5 times more likely than Caucasian males to have ADHD and African-American females 3.5 times more likely to have the disorder. Caucasian teachers rated African Americans higher than white students; however, African-American teachers on average rated African-American students somewhat lower. African-American teachers tended to perceive less difference between African-American and white students than did white teachers. Thus, African-American students were more likely to be rated higher if they were rated by a white teacher as opposed to an African-American one (Reid et al., 2001). In 1991, African-American children constituted 16% nation's school population and 35% of the special education population. Teacher bias in the referral process combined with biases in the assessment of ADHD contributes greatly to overrepresentation of African-American children in special education classes. African-American males are particularly overrepresented in certain special education programs, as well as more likely to experience certain disciplinary practices (e.g. recipients of corporal punishment and suspension).

It is possible that these differences are a result of stereotypes. In a 2000 survey by Williams (as cited in Maddox & Wilson, 2004), research on stereotypes revealed many whites view African Americans negatively. Twenty-nine percent of whites felt blacks were unintelligent, 44% felt they were lazy, and 56% felt blacks preferred to live on welfare. Only a small percentage of whites reported positive views of blacks. Only 20% believed blacks were intelligent, 17% felt most blacks were hard working, 13% felt blacks prefer to be self supporting, and 15% felt most blacks were not prone to violence (Maddox & Wilson).

Despite the fact that African-American children are diagnosed as behaviorally disordered at much higher rates, they are unlikely to receive treatment. Research conducted by Bussing, et al. (1998) showed that African-American families are less likely to receive information or education about ADHD from health-care providers and reported using fewer health services for their children with ADHD. Also it revealed that African-American parents were less likely to apply behavioral problem labels or imply their child had ADHD, but they simply considered their child to be "bad." Furthermore, Arnold, et al. (2003) reported that African Americans more often use such coping strategies as "counting one's blessings" or religiosity rather than seeking services. If the above notion is true, those who are seeking services are those with more severe disorders, who are more impaired, and have greater comorbidity (Arnold et al.).

It is clear that there are important cultural differences in the demands of the environment in the homes, schools, and communities of people from different ethnic and cultural groups (Livingston, 1999). In regard to socioeconomic status SES, poor rural areas are found to have higher rates of ADHD versus urban areas (Gamarra, 2003). Also cultural variations exist in attitudes and beliefs about illness, choice of care, access to care, degree of trust toward majority institutions and authority figures, and tolerance for certain behaviors. Failure to have ADHD diagnosed earlier in life does not appear to be rare, but may be partly a function of ethnicity (Livingston). Culturally specific health beliefs and health behavior may explain a significant amount of care-seeking and adherence, patterns, but very little is known about whether and how ethnicity influences health perceptions and practices concerning ADHD (Bussing et al., 1998). Cultural differences in parent perceptions, teacher perceptions, and socioeconomic status all play a role in determining if a child is hyperactive. Stevens et al., (2005) found that Hispanics and African Americans were less likely to be diagnosed with ADHD by parent report than white children. In this study, the Hispanic group had the lowest level of reported ADHD symptomology. The authors suggest that one reason for the decreased rate of hyperactivity in Hispanics could be because of acculturation, which has been associated with maternal reports of ADHD symptomatic children. This occurs because as the rate of acculturation increases, the rate of ADHD maternal reports decreases (Stevens et al.).

Moreover, low SES has been identified as a risk factor for developing ADHD for several possible reasons (Reid et al., 2001). SES may be associated with other ADHD risk factors (e.g. marital discord, large family size, and foster care placement). Low SES may expose kids to environmental or psychosocial stressors and may help explain why these children are more hyperactive than those children who come from families higher in status. Given that minorities are more likely to have a lower socioeconomic status and that 50% of unserved children with ADHD are African American (Maddox & Wilson, 2004), it is possible that ethnic differences in ADHD symptomology are really economic differences.

Conclusion

A pediatrician once stated "ADHD has become a wastebasket diagnosis for any child demonstrating inappropriate behavior…a renewal of the mindset of parents, teachers, and physicians is essential for the correct diagnosis and treatment of all childhood behaviors" (HaileMariam et al., 2002, p. 99). Attention deficit hyperactivity disorder across the lifespan costs the United States billions of dollars, thus early and accurate diagnosis is important. It is equally important to find out if practitioners are exhibiting biases on the basis of ethnicity and to correct it as quickly as possible. Given the biopsychological nature of ADHD and the evidence that ethnic bias exists, it is surprising that more research has not been conducted regarding the perceptions of individuals who may diagnosis or treat ADHD. Future research should examine the potential for bias in these professionals. Finally, more research is needed regarding the increased likelihood of special education placement for African American children. This fact conflicts with growing evidence that these children are not always perceived as behaviorally disordered by their parents, nor in cases where an ADHD diagnosis is accurate, are they receiving the appropriate treatment. For those African American children who do indeed have ADHD, the lack of medication and therapy may result in lifelong consequences.

Appendix A: *Diagnostic Criteria for Attention-deficit hyperactivity disorder (ADHD)*

A. Six or more of the following symptoms of **inattention** must have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental levels:

Inattention

1. often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
2. often has difficulty sustaining attention in tasks or play activities
3. often does not seem to listen when spoken to directly
4. often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace
5. often has difficulty organizing tasks and activities
6. often avoids, dislikes, or reluctant to engage in tasks that require sustained mental effort
7. often loses things necessary for tasks or activities
8. is often easily distracted by extraneous stimuli
9. is often forgetful in daily activities

Six or more of the following symptoms of **hyperactivity-impulsivity** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental levels:

Hyperactivity

10. often fidgets with hands and feet or squirms in seat
11. often leaves seat in classroom or in other situations in which remaining seated is expected
12. often runs about or climbs excessively in situations in which it is inappropriate
13. often has difficulty playing or engaging in leisure activities quietly
14. is often "on the go" or often acts as if "driven by a motor"
15. often talks excessively

Impulsivity

16. often blurts out answers to questions before they have been completed
17. often has difficulty awaiting turn
18. often interrupts or intrudes on others

B. Onset before the age of 7.

C. Some impairment from the symptoms is present in two or more settings.

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorders and are not better accounted for by another mental disorder.

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Second language acquisition programs: An assessment of the bilingual education debate

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Abstract
Second language acquisition programs are frequently misunderstood, as various programs are often mistakenly labeled as bilingual education. Inaccurate labeling creates confusion and fuels the already heated bilingual education debate. The purpose of this research is to clearly define different second language acquisition programs, assess major arguments on opposing sides of this nationwide debate, and discuss program evaluations from the 1991 Ramirez investigation and the Rossell and Baker study (1996). In so doing, important issues regarding the world of second language acquisition programs will surface. Expectantly, this research will generate, or continue, further discussion addressing these concerns in an effort to ameliorate the confusion surrounding second language acquisition programs.

Introduction

In the United States, bilingual education has been the focus of a heated nationwide debate since the 1968 implementation of the Bilingual Education Act, Title VII of the Elementary and Secondary Education Act of 1965 (Ambert & Melendez, 1985; Padilla, 1983). Today, thirty-seven years later, bilingual education continues to generate controversy, as linguistically diverse students are the fastest growing group of students in the United States (Samway & McKeon, 1999). Different parts of the country have had their own responses to the increase of non-native English speakers. California, for example, passed Proposition 227, an anti-bilingual education amendment, in 1998 while other parts of the country further developed and enhanced previous bilingual education program models (Adamson, 2005).

Bilingual education may be the center of the debate, but the debate is the center of field research. Numerous investigations have been executed to test the efficacy of individual second language acquisition programs including bilingual education programs; however, the validity of these studies is the focus of yet another dispute. The battle seems never ending; each argument is continuously supported or refuted by both sides of the debate. The goal in this research is not to conclude who is right and who is wrong, nor is it simply to explain the rationale behind the two opposing sides of this debate. Instead, the objective is to examine the dynamics of the debate itself. An analysis of the debate's structure will help unveil underlying issues, which may prevent the perpetuation of this deliberation. The analysis will begin with a detailed description of major second language acquisition programs, followed by an explanation of the rationale behind the support for different programs on opposing sides of the debate. Having

done so, new insight will be revealed concerning the debate about bilingual education efficacy.

Methodology

The variation amongst second language acquisition programs happens to be the center of an extremely controversial debate currently taking place across the nation. Professionals within the field, program participants, and concerned parents all have differing opinions. Unfortunately, many of those opinions lack a solid educational foundation, as not all are truly aware of the differences and similarities between programs. Hence, I will begin my study by exploring the uniqueness of individual second language acquisition programs. Furthermore, in an effort to increase accurate program awareness, a definition and a description of the three major program models of second language acquisition (immersion, English as a Second Language, and bilingual education) will be provided in the form of a brief literature review.

After describing the three major program models of second language acquisition programs, the assessment of the national debate will begin. Although the programs can be categorized differently depending on the underlying issue being addressed within the debate, I have decided to focus specifically on the issue of the use of the native language as an instruction tool. Doing so will force the study to concentrate particularly on arguments for and against bilingual education because the use of the native language within the classroom is bilingual education's defining factor. Following these guidelines, the debate will be broken up into two groups: one against and one in favor of bilingual education, each containing different second language acquisition programs as supporting subgroups.

Once the major categories of second language acquisition programs are correctly distributed as subgroups for the debate, the most controversial matters will be addressed. These matters will include the dynamics and the history of this significant debate. Segregation, cognitive development, the assimilation versus acculturation debate, and language acquisition theories used to support specific programs will be addressed as well. In addition to these issues, I will also include a section discussing program evaluations concerning the academic achievement and success rates of linguistically diverse students, or non-native English speaking children. The 1991 Ramirez investigation will undoubtedly be one of the evaluations discussed, but the Rossell and Baker study (1996) will also be included in order to provide an opposing perspective. After comparing and contrasting second language acquisition programs, considering both sides of the debate, and analyzing current available data furnished by these various programs and experts in the field, a deductive reasoning may be formed regarding which program is most beneficial for linguistically diverse students. In doing so, I hope to shed light on the issue of efficacy with regards to second language acquisition programs in the United States.

Second Language Acquisition Programs: An Overview of Available Literature

Before beginning the assessment of the debate, one must first be familiar with second language acquisition programs themselves, their unique approaches to language acquisition, and their stated objectives. For instance, there are three general types of programs: *immersion, English as a Second Language (ESL),* and *bilingual education*. In immersion programs, also known as submersion programs, linguistically diverse students are expected to follow the traditional "sink or swim" method—a method through which the student is expected to perform at a level equivalent to that of his or her classmates without receiving additional help. The fact that the student is not capable of comprehending the English language is not taken into consideration. Instead, a linguistically diverse student is simply exposed to the target language, English, through the instruction of academic content in that language (Brisk, 1998). It is important to remember that native languages are not incorporated into immersion programs. Immersion's main objective is to have students acquire English proficiency as soon as possible through continuous and constant submersion within the language (Brisk; Baker & Jones, 1998).

In the second program, English as a Second Language, or ESL, the needs of linguistically diverse students are recognized. Although this program uses English as the sole language of instruction, it acknowledges the needs of linguistically diverse children by using a simplified version of the English language, pictures, and gestures to facilitate and ensure effective communication between the students and the teacher. This program is typically referred to as ESL Pullout because it often removes a child from the mainstream English-only classroom for a period of the day to provide target language instruction (Baker & Jones, 1998). After this instruction takes place, the child is returned to the mainstream classroom. ESL's purpose is to have the student become proficient in the English language and participate in a mainstream English-only classroom without an ESL Pullout component as soon as possible (Ambert & Melendez, 1985).

The third program, bilingual education, is the only second language acquisition program employing the native language as an instruction tool. Bilingual education is implemented in a variety of ways, yet these programs

typically fall under one of bilingual education's major subgroups, *transitional bilingual education* or *developmental bilingual education* (Baker & Jones, 1998). Transitional bilingual education is the most commonly used form of bilingual education programs. In transitional programs, the native language is used as an instruction tool to facilitate intense English language instruction as well as to prevent the child from falling behind in academic areas such as mathematics or science (Castro Feinberg, 2002). Ideally, participants of this program are expected to make a transition from bilingual education to the mainstream English-only instruction within a few years. In developmental bilingual education, the native language is not simply used to facilitate intense English language instruction. Instead, it is employed in an effort to produce bilingualism within its participants. The main focus of developmental programs is to develop as well as maintain cognitive skills in the native language while acquiring English proficiency and fluency (Watts, 2005). The program's goal is therefore to develop bilingualism and acculturation instead of monolingualism and accelerated assimilation into the mainstream English-only classroom, as is the case with the other second language acquisition programs.

While immersion, ESL, and bilingual education are the major program models for second language acquisition, many other models are also implemented throughout the United States. Programs such as structured immersion, for example, are a combination of immersion and ESL because measures are taken to ensure communication between the teacher and the student, yet the student's native language is not used as an instruction tool (Brisk, 1998). Unlike ESL, participants are not pulled out of the mainstream English-only classroom. Instead, students are simply placed and kept in one classroom with other linguistically diverse students for the entire day (Baker & Jones, 1998). In a sense, structured immersion can be viewed as an extension of ESL.

The Bilingual Education Debate

Most educators as well as parents of linguistically diverse children agree that the main goal of second language acquisition programs is the concurrent mastery of English language proficiency and subsequent academic success. Unfortunately, not many agree on how programs are to carry out their purpose nor is there a consensus on whether second language acquisition programs are, or should be, addressing the linguistic and cultural needs of non-English speaking minorities (Samway & McKeon, 1999). This along with the previously mentioned Bilingual Education Act of 1968 has led to a nationwide debate, which has been ongoing because the Act's goal was never clearly defined (Padilla, 1983).

Debate Dynamics and Format

On one side of the debate, we have what I will refer to as Group A. This group is completely against bilingual education, but not second language acquisition programs, because they are against the use of the native language for classroom instruction, which is exactly what bilingual education is. Second language acquisition programs, however, also include programs that *do not* use a language other than English as an instructional medium. Therefore, although Group A may be against bilingual education itself, it is not necessarily against second language acquisition programs in general. In fact, Group A branches off into two separate subgroups, each favoring a different second language acquisition program—immersion or ESL.

On the other side of the debate, we have Group B, which is in favor of bilingual education, i.e. the use of the native language as an instruction tool. As was the case with Group A, Group B also branches off into two separate subgroups, each favoring a different type of second language acquisition program, which in this case are bilingual programs. The two supporting second language acquisition subgroups for Group B are transitional and developmental bilingual education.

Before beginning the assessment of the debate's rationale, it is important to note that although ESL and transitional bilingual education lie on opposite sides of the bilingual education debate, they often have more similarities than differences. As will be discussed later, ESL and transitional bilingual education tend to yield similar results when evaluated for participant academic success (Rossell & Baker, 1996). The reason for this may be that both programs have a common goal—the assimilation of the recipients into the mainstream English-only classroom and thus society as soon as possible. However, each program employs different methods in achieving this objective. Because the main stylistic difference stems from the use of the native language for instruction, the two programs are categorized in opposition to one another within the bilingual education debate.

Foundational Arguments

The first disagreement between the two groups is, of course, the use of a language other than English for classroom instruction; the second foundational argument concerns the history of bilingual education. Although this is truer for supporters of immersion than for supporters of ESL, Group A believes that if past immigrants succeeded in the United State of America without bilingual education, then current immigrants should be expected to do the same

(Crawford, 1998). Bilingual programs are also believed to produce segregation since linguistically diverse students are taken out of the mainstream English-only classroom and placed in a different, separate classroom in which the student only has contact with other linguistically diverse students (Guzman, 2002; Baker, 1996).

Group B, on the other hand, affirms that although the Bilingual Education Act was implemented in 1968, it did not mark bilingual education's birth (Baker, 1996). It merely provided funding for previously implemented programs. Bilingual education in reality existed long before 1968. In fact, in 1863 a German high school was established in Pittsburgh, Pennsylvania and a bilingual institute was founded by Cuban exiles in 1871 (Castro Feinberg, 2002; Duignan, 2002). Group B also negates Group A's second argument regarding segregation. While some bilingual education programs such as ESL and transitional bilingual programs do indeed segregate its participants, developmental bilingual programs do not. In developmental bilingual education, programs such as dual or two-way language immersion place in the same classroom students who speak only English and students who have yet to learn English. These classrooms unite all students regardless of linguistic backgrounds. Dual or two-way immersion programs help native English speakers learn the linguistically diverse students' native language while non-native English students, in turn, learn English. This dual language instruction is an effort to induce bilingualism and acceptance of other languages and cultures, not racism or segregation (Brisk, 1998).

Cognitive Development

Cognitive development is a highly discussed matter within this debate. Group A believes the simultaneous development of the native and target languages will inevitably cause cognitive delays in participants of bilingual education programs. This belief is based on the underlying idea that the simultaneous development of two languages, or bilingualism in general, creates cognitive confusion because the child will have to constantly differentiate between two languages (Brisk, 1998). Group B, however, argues that cognitive confusion and delay are actually the greatest misunderstanding in the world of second language acquisition. Since the 1960s, research has continually shown that bilingual and even multilingual students display far more cognitive advantages than monolingual students, once the child's mind is well developed. In 1962, psychologists Peale and Lambert conducted a groundbreaking study regarding the association between bilingualism and cognitive ability and found that bilingualism does indeed positively affect intelligence; these results were later confirmed by Nandita in 1984 and by Bochner in 1996 through the use of modern experimental techniques (qtd. in Guzman, 2002)

Assimilation versus Acculturation

Supporters of immersion and ESL believe assimilation is the key to success in this country. They believe that by assimilating into the dominant culture, linguistically diverse students will have access to the same opportunities as native English speakers (Baker & Jones, 1998). Therefore, a child who is placed in an English-only classroom will assimilate into the dominant culture sooner, which will allow the linguistically diverse student to succeed in the United States before his or her bilingual education counterparts. Accordingly, Group A believes English should be the only language used within the United States. English-only is favored by this group not only because they believe it will accelerate assimilation, but also because this group views bilingualism as a means of linguistic segregation. In their opinion, bilingualism will only further segregate this country through linguistic and cultural categorization, thus reinforcing discrimination rather than racial harmony and unity under one common language (Crawford, 1998).

As for Group B, while transitional bilingual education does aim for assimilation, it nonetheless accepts the value of the native language and recognizes the benefits of bilingualism, unlike immersion or ESL programs. However, correctly implemented developmental bilingual education programs do in fact lead to acculturation, or the addition of a foreign culture onto one's own. This philosophy is far more accepting of other cultures than is assimilation because assimilation is the replacement of a native culture with the dominant one (Baker & Jones, 1998). Expectedly, Group B is against English-only within the United States because this group considers monolingualism to be a practice of intolerance based on the fear of the unknown.

Language Acquisition Theories

Second language acquisition programs conveniently use language acquisition theories for support. For example, immersion programs will often refer to the Sink or Swim or Time on Task theories. The Sink or Swim Theory simply states that if a child is surrounded by the target language twenty-four hours a day, seven days a week, the child will pick up the language (Brisk, 1998). This theory is further supported by the Time on Task Theory which states that the more time spent on a given task within a classroom, the faster the child will accomplish the task (Rossell & Baker, 1996). The combination of these two theories justifies the structure, or lack thereof, in immersion programs.

English as a Second Language programs also use the Time on Task Theory because this program does not utilize the native language as an instruction tool, yet ESL does have an additional theory—the Comprehension of Target Language Input Theory. This theory argues that in order for the child to learn the target language, the child must first be able to comprehend the information (s)he is receiving. After all, time spent on any given task is of no value if input is incomprehensible. In the words of Krashen, a well-known linguistic researcher and professor of the University of Southern California, it is a matter of quality not quantity (qtd. in Cromwell, 1998). Hence, ESL's use of a simplified version of the English language, gestures, pictures, and any other methods helping to ensure communication are justified through the Comprehension of Target Language Input Theory.

As mentioned earlier, ESL and transitional bilingual education have more similarities than they do differences because both have the same goal, assimilation into the mainstream English-only classroom as soon as possible. Therefore, it is not at all shocking for transitional bilingual education to use the same theories as ESL for support. However, because transitional bilingual education employs the native language while ESL does not, time spent on task is decreased and comprehension of target language input is increased in transitional bilingual education programs.

Developmental bilingual education not only uses theories to support its program approaches, but it also refutes the arguments of the Sink or Swim Theory used by immersion programs. Supporters of this program argue that linguistically diverse students do not just pick up a language by being immersed within it; language input must be comprehensible (Krashen, 1996). Furthermore, when students do begin to acquire a degree of target language competency through immersion programs, they learn the vernacular, or familiar, version of the target language, for this version is highly contextualized thus helping the input become comprehensible to the child. The vernacular version of the target language, however, is not enough to suffice because academic language is decontextualized, which forces the student to comprehend the input with less contextual help (Krashen).

Developmental bilingual education uses the Time on Task and Comprehension of Target Language theories for support. However, the time spent on the task of learning the English language is decreased and comprehension of target language input is increased even more than in transitional bilingual education because more time is spent on the native language in developmental than in transitional programs. This is due to the fact that developmental programs include both 90-10 and 50-50 program models (Baker & Jones, 1998). The 90-10 model begins with 90% native language instruction and 10% English language instruction during the first year, then 80% native language instruction and 20% English language instruction during the second year, and so on until 50-50 is reached. The 50-50 model, however, simply begins with 50% instruction of both languages; there is no continual change, the model remains constant for its entire duration (Baker & Jones). Finally, developmental bilingual education programs also gain support from the Facilitation Theory, which states that when cognitive abilities are developed, language acquisition becomes much easier because an educational foundation has been set for language instruction. Once a student knows and understands the concept of literacy, the child will apply the newly learned concept to all languages (Rossell & Baker, 1996). This theory also states that cognitive abilities are best developed in the native language and are readily transferable into additionally acquired languages. It, therefore, makes sense to develop skills in the native language in order to best develop the child's cognitive abilities as well as to facilitate additional language acquisition (Watts, 2005). It is for this reason that developmental bilingual education focuses on both developing and maintaining a linguistically diverse student's native language while acquiring English.

Conceptual Assessment of Existing Programs

Evaluations fuel the on-going controversy surrounding bilingual education because results are inconsistent from study to study; some studies are in favor of bilingual education while others are not. The purpose here is not to conclude which studies are valid and reliable, but rather to outline some of the major issues pertaining to this topic by examining two examples of controversial studies.

The Ramirez Report

In 1991, a national longitudinal study supported by the U.S. Department of Education reported its long-awaited results. The Ramirez Report, as it is informally referred to after its primary investigator, compared the academic progress of Latino elementary school children participating in different bilingual education programs such as structured English immersion, early-exit transitional bilingual education (exit after approximately two years), and late-exit transitional bilingual education (exit after approximately four to five years). The data was collected over a period of four years from over 2,300 Spanish-speaking students in 554 classrooms (K-6) in New York, New

Jersey, Florida, Texas, and California (Samway & McKeon, 1999). The study concluded that linguistically diverse students in immersion and early-exit transitional programs progressed academically at the same rate as students from the general population. However, the gap between participants and general population students remained large. Furthermore, program participants did not fall further behind, but the gap between the two student populations was not bridged. This finding refutes the belief that increased English instruction leads to improved English language achievement because early-exit transition students had less English instruction, yet performed at the same level as immersion participants (Cummins, 1992). In contrast, according to the study,

> as in mathematics and English language, it seems that those students who received the strongest opportunity to develop their primary language skills, realized a growth in their English reading skills that was greater than that of the norming population used in this study. If sustained, in time these students would be expected to catch up and approximate the average achievement level of this norming population. (qtd. in Cummins & Genzuk, 1991 p. 2)

Overall, the study concluded the following:

> students who were provided with a substantial and consistent primary language development program learned mathematics, English language, and English reading skills as fast or faster than the norming population in this study. As their growth in these academic skills is atypical of disadvantaged youth, it provides support for efficacy of primary language development in facilitating the acquisition of English language skills. (qtd. in Cummins, & Genzuk, 1991, p. 3)

Rossell and Baker

An example of a study against bilingual education is that of Rossell and Baker. The study attempted to answer the question, "Is transitional bilingual education (TBE) the best method for teaching limited English proficient (LEP) students?" In an effort to assess the educational effectiveness of transitional bilingual education, Rossell and Baker compared it to other second language acquisition programs including immersion/submersion, ESL, and structured immersion. This study did not collect original data; instead it reviewed data from previous studies which Rossell and Baker found to be acceptable. Of a total 500 studies read, 300 of which were evaluations, 72 were found to be methodologically acceptable. This constituted a mere 25% of the total studies read (Rossell & Baker, 1996).

When comparing TBE to immersion/submersion, or doing nothing, 22% of the studies showed TBE to be superior, 33% showed it to be worse, and 45% showed no difference. A comparison between TBE and ESL showed TBE to be superior 0% of the time, worse 29% of the time, and no different 71% of the time (Rossell & Baker, 1996). Furthermore, since immersion programs also have an ESL component, Rossell and Baker compared TBE to submersion/ESL. The findings were very similar to the previous ones; TBE was better in 19% of the studies, worse in 33%, and no different in 48% (Rossell & Baker). The next two programs compared were TBE and structured immersion. TBE was shown to be better than bilingual education in 0% of the studies, worse in 83%, and no different in 17% (Rossell & Baker). Structured immersion was then compared to ESL. The results demonstrated structured immersion to be better in 100% of the studies, but only three studies were evaluated. Finally, the last comparison was between TBE and maintenance bilingual education. In this comparison, TBE was shown to be better in 100% percent of the studies (Rossell & Baker). However, only one study was used for this comparison.

This data suggests that the ideal program for second language acquisition is structured immersion where instruction is in English, in a self-contained classroom consisting entirely of LEP students, and at an appropriate level for students to understand. It therefore supports the Time on Task and Comprehension of Target Language Input Theories, but refutes the Facilitation Theory. While Rossell and Baker (1996) state that structured immersion appears to be more effective, Krashen (1999) suggests that further methodologically sound research needs be conducted in order to make intelligent decisions.

Discussion

This debate may have its origins in the Bilingual Education Act of 1968, but misconceptions about bilingual education, bilingualism (or multilingualism for that matter), and the inconsistencies in program evaluations have kept the dispute alive. Misconceptions will always be present, but why are there inconsistencies within data furnished by these programs? One explanation may be the lack of terminological consensus within the field. Certain second language acquisition programs have a number of names or aliases, which can create confusion amongst the public and professionals. Given the abundance of titles for identical programs, studies should always include an accurate and detailed description of the program(s)

evaluated. Doing so will prevent confusion or misinterpretation of gathered data as has been the case in past studies.

Often times, certain programs will purposely be mislabeled for funding purposes. ESL, for example, was often labeled as bilingual education as a tactic to obtain federal funding since the Bilingual Education Act provided funding for programs using a language other than English for classroom instruction, a characteristic not shared by ESL program models. This tactic, however, only caused misunderstandings and therefore misinterpretations of data because data gathered from so-called bilingual programs were actually gathered from ESL programs. The inclusion of accurate descriptions of program models in studies and a consensus amongst professionals regarding terminology within the field will help generate valid conclusions from reliable experiments. These conclusions can then be generalized to similar program models in an effort to address the issue of bilingual education efficacy.

While mislabeling and lack of terminological consensus are issues in need of urgent attention, the layout of the debate must also be taken into consideration. According to the debate's usual format, supporters of bilingual education, or the use of the native language in the classroom, are against those opposing bilingual education. This may not necessarily be the case, especially in reference to ESL and transitional bilingual education (TBE). As previously mentioned, ESL and TBE have more similarities than differences, a fact that is often overlooked. While the nature of ESL may seem contradictory to that of TBE due to the fact that one employs the native language while the other does not, the two programs have the same objective -- to assimilate the linguistically diverse child into the mainstream English-only classroom as soon as possible without developing or maintaining the child's native language. This similarity actually places these programs on the same side of many of the issues addressed within the debate, as demonstrated by their positions on the assimilation versus acculturation discussion. Furthermore, the nature of the ESL and TBE may be against developmental bilingual education, but the implementers of these two programs may actually be in favor of the developmental model. Many times ESL and TBE programs are implemented instead of developmental programs for financial reasons because developmental bilingual education is both rare and costly. Therefore, when developmental programs are fiscally impossible, TBE becomes the next best option. The same is true for situations in which TBE is not a possibility; ESL becomes the next best option for those who oppose immersion. Although the two programs by definition may be against developmental bilingual education, their implementers may not be. In fact, implementers of ESL or TBE may be in favor of acculturation rather than assimilation, but this is far from obvious when solely examining the programs themselves. Therefore, the debate is by no means always an accurate description of implementers' true feelings.

Conclusion

Programs showing respect for the native language yield the most favorable results not only because multilingualism is favorable for cognitive development, but also for cultural reasons. When a child's native language is not incorporated into the curriculum, the child is indirectly receiving a message stating that his or her native language is inferior to the dominant language. Linguistically diverse children are thus culturally empowered by the use of the native language within a classroom. This inclusion therefore relays a message of worthiness and equivalence, for the dominant language is no longer superior to the minority, or native, language.

In general, literature seems to be in favor of *correctly* implemented bilingual education programs, regardless of the label placed upon program models. On the other hand, research shows that bilingual education programs are not as effective as they could be (Adamson, 2005). Further development is needed in order for students to fully experience all of bilingual education's benefits. Yet, in order to avoid prolonging the already impassioned debate, the lack of terminological consensus and the effects of the debate's dynamics should all be considered as well as further analyzed. Doing so will ensure a desperately needed positive progression, as this debate has become stagnant from the constant refuting.

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Infrared Laser-based Method for Measuring Isotope Ratios

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Abstract

The purpose of this research is to build an inexpensive, compact, and precise spectrometer that will measure the $^{13}C/^{12}C$ ratio in a sample of carbon dioxide gas. The infrared diode laser-based apparatus operates by modulating the laser frequency as it scans. The frequency modulation is then converted to amplitude modulation in the signal. A ratio of signal intensities for $^{13}CO_2$ and $^{12}CO_2$ can be converted to a measurement of the samples' isotope ratio. The analysis of the $^{13}CO_2/^{12}CO_2$ ratio can be used for the detection of stomach ulcers and in various environmental applications.

Introduction

Isotopes of the same element have a different number of neutrons within the nucleus. The purpose of this research is to build a device that will measure an isotope ratio, which is the relative amount of two or more isotopes of the same element in a sample. The isotope ratio that we are currently focusing on is the ratio of $^{13}CO_2/^{12}CO_2$ within a sample of CO_2 gas. We will exploit the spectral separation of the different rotational/vibrational peaks in the infrared spectrum of these two molecules to measure the isotope ratio in a gas sample.

There are numerous applications for a device that could measure the $^{13}C/^{12}C$ isotope ratio. We seek to develop a device that could improve on previous technology that has been used to measure this ratio. The current method that is widely used to determine the isotope ratio of a sample is called mass spectroscopy. This device works by charging particles in a sample and determining the weight of the particles. The device uses an electric field that launches the charged particle. Then a magnetic field causes the particle to move in a curved path, whose curvature is determined by the mass to charge ratio. The mass spectrometer determines the mass of the particle according to the location at which the particle strikes a detector. Using the fact that most molecules possess a unique set of masses, the mass spectrometer determines molecular concentrations in a sample. To obtain very good precision, one must increase the paths of the charged particles and to do this one must use a larger magnetic and/or electric field. This has caused the development of mass spectrometers that include very bulky magnets. As a result, high-resolution mass spectroscopy is a very precise method but one that is expensive and not easily portable. We seek to develop an alternative method with lower costs and greater portability.

Isotope determination is used in numerous applications. Detection of stomach ulcers is one medical application. A person is given a C^{13} doped urea shake. Helicobacter pylori bacteria will digest the carbon within the shake and release two products, ammonia and $^{13}CO_2$.[1] Our apparatus would be able to detect the change in the $^{13}C/^{12}C$ ratio and detect the presence of the helicobacter pylori bacteria, which has been linked to stomach ulcers. There are also numerous environmental applications. Wassenaar and Hobson have developed a stable isotope approach to delineate geographical locations of birds.[2] A tracing system was devised in order to track the different species in North America using the $^{13}C/^{12}C$ found on the birds' feathers. By setting up migration monitoring stations across the continent, the researchers have devised a way to observe migration trends of endangered species. Another study used isotope measurements of carbon dioxide to measure the pollution off the Pakistani coast.[3] Annual wood tissue $^{13}C/^{12}C$ ratios could potentially be useful in estimating historic changes in soil water potential and basal area growth in mature forest ecosystems.[4] Finally, the $^{13}C/^{12}C$ ratio has applications in quality control. Analysis of the $^{13}C/^{12}C$ ratio has been proven as a means of characterization of the geographical origin of Pecorino Sardo cheese.[5] In addition, the $^{13}C/^{12}C$ ratio can be used to determine the authenticity of Mexican tequila.[6] Our device would be able to make the same isotope measurements with greater precision, more portability, and cheaper cost than the current standard of the mass spectrometer.

While mass spectroscopy uses charged particles and the measuring of molecular weights, our method involves absorption of infrared light. If perfected, this method could offer much to isotope ratio determination. Using spectroscopy could eliminate the sample preparation needed for mass spectroscopy. In addition, lasers are becoming both more compact and powerful, whereas magnetic fields only become more powerful with more electricity and larger magnets.

In infrared absorption spectroscopy, infrared laser light is sent through a sample. As the light passes through the sample, some of the light is absorbed. Each quantized or specific energy absorbed produces a different vibration or rotation of the molecule. CO_2 exhibits three types of molecular vibrations. First is the symmetric stretch in which the oxygen molecules oscillate outward together from the central carbon atom. Next is the asymmetric stretch in which the oxygen molecules stretch out at different times. Then there are two degenerate bends in which the two oxygen molecules bend up and down or forward and backward away from the carbon atom. The specific vibration we are using for the $^{13}CO_2/^{12}CO_2$ ratio is an overtone, with 3 quanta in the symmetric stretch, 0 quanta in the bend, and 1 quantum in the asymmetric stretch. Within this vibrational manifold, we are comparing two specific rotational lines in the spectrum. The light that goes into the vibration and rotation of molecules is absorbed by the sample, resulting in an intensity change that can be measured by a detector. The amount of light absorbed is proportional to the number of molecules in the sample. The central wavelength of the absorbed light indicates which molecule is absorbing the light. A comparison of the amount of light absorbed by $^{12}CO_2$ and $^{13}CO_2$ will give the relative amounts of these two molecules in the sample.

The technique used in this research is called wavelength modulation spectroscopy (WMS) and is a form of absorption spectroscopy. This technique has been used by Chaux and Lavorel.[7] The main problem with absorption spectroscopy is that the amount of light that is absorbed by the gas sample is relatively small when compared to the original strength of the laser. In order to overcome the hindrance of weak signals, WMS uses a device called a lock-in amplifier. The lock-in amplifier singles out the component of the signal at a specific reference frequency then amplifies the signal. The lock-in amplifier produces an output that looks like a first derivative; however, in order to see changes in the signal more clearly, we will view the second derivative of the signal. The lock-in amplifier filters out electronic noise, allowing us to detect a very small absorbance.

Finally, after the lock-in amplifier produces the output, the areas of the two second derivative curves have to be compared to get the isotope ratio. If we were to just take the area of the $^{13}CO_2$ peak and divide this by the area of $^{12}CO_2$ peak, then this ratio would be proportional to the $^{13}CO_2/^{12}CO_2$ ratio but not equal the exact isotope ratio. The ratio of areas does not account for the Boltzmann population distributions or the intrinsic line strengths of the two molecules. The Boltzmann distribution describes the relative populations of different states at thermal equilibrium. Intrinsic line strengths describe the strengths of the transition dipole moments for specific molecular absorptions. Previously, our method had been to calculate a weighting factor using Boltzmann's formula [8] and the intrinsic lines strengths obtained from the HITRAN Database.[9] We can multiply the peak areas by this quantity to account for these parameters. The weighting factor that we calculated was 0.2024. When using this number, our results did not agree with measurements taken by a high resolution mass spectrometer.[10] In order to obtain results that are more accurate, we attempted the use of standard addition.

In the standard addition technique, incremental amounts of an unknown sample are added to a sample whose isotope ratio is known. In our research, the known is CO_2 gas that has mostly $^{12}CO_2$ and some $^{13}CO_2$. The known gas has been previously analyzed by mass spectroscopy and has an $^{13}CO_2/^{12}CO_2$ isotope ratio of 0.010735.[10] The unknown gas tank was prepared to have roughly double the amount of $^{13}CO_2$. The $^{13}CO_2$ doped tank is the one we want to analyze in this technique. The linear best-fit line is shown in Eq. 1.

Eq. 1. *Linear best-fit line.*

$$S_x = aR_s + a(R_u - R_s)x_u$$

In this equation, S_x is the ratio of the peak areas, a is the scaling factor that accounts for Boltzmann distribution and intrinsic line strength, x_u is the mole fraction of the unknown gas in the total sample, R_u is the isotope ratio of the unknown gas, and R_s is the isotope ratio of the standard. The intercept in this equation is aR_s and the slope is $a(R_u-R_s)$. The final step is to take the slope and solve for R_u, the isotope ratio of the unknown.

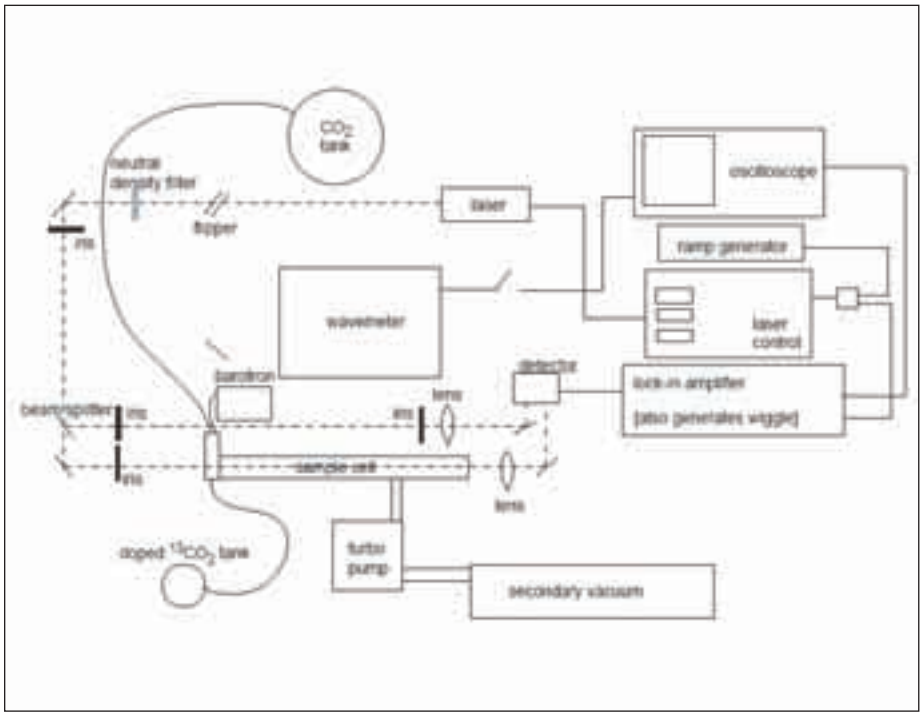
Experimental Section

We are using standard addition along with WMS. As previously stated, in a standard addition incremental amounts of unknown are added to a known. In this case, we must keep the pressure the same in all the additions in order to eliminate pressure-broadening effects. We chose to use 30 Torr as our constant pressure because of the results of a pressure broadening study that showed that this pressure is where the effects started to occur. The pressure amounts used to fill the sample cell are outlined in Table 1.

Table 1: *Pressures used in standard addition*

Standard Addition Gas Pressures		
Pressure Phase	Known Gas Tank (Torr)	Unknown Gas Tank (Torr)
1	30	0
2	25	5
3	20	10
4	15	15
5	10	20
6	5	25
7	0	30

Figure 1: *Diagram of WMS apparatus. The dotted line is the path of the laser beam. The solid lines are connections between electronic equipment.*



The WMS set-up is shown in Fig. 1. The sample cell is filled with one phase of the pressures outlined in Table 1. A B. K. Precision 4011 function generator produces the scanning range that encompasses about two wavenumbers (cm^{-1}). The SR830 lock-in amplifier produces the modulation frequency at about 2 kHz. The two signals are combined and sent to the laser control box. This combined signal controls a piezzo electric motor, which moves a grating at different angles to change the wavelength of the photons emitted. The laser beam is emitted from the laser (Lasertechnik TEC 500 with center wavelength of 1.6 μm) and focused through the gas sample cell using ir mirrors. Irises and a neutral density filter are placed into the beam path in order to reduce the intensity of the beam.

Another device that minimizes the electronic noise is a Nirvana Detector 2017 auto-balancing detector which uses two photodiodes. One photodiode is used to collect the sample and the other is used to collect a reference beam. The reference beam is the same beam that comes from the laser but is split off before reaching the sample. The Nirvana detector takes the signal and balances it with the reference. This device isolates the section of the apparatus that occurs after the signal beam is split from the reference. Essentially, this auto-balancing eliminates etalon effects and laser instability from the signal.

The signal is then sent to the lock-in amplifier (SRS 830). The main function of the lock-in amplifier is to filter out anything that does not modulate at the same frequency as the one at which the laser is modulating. Any slow drifts in the laser or random noise are filtered out. The lock-in amplifier also has various noise filters that it uses on the signal. The signal is then amplified and the final processed signal is sent to a LeCroy 9310A digital oscilloscope, which collects the signal. The oscilloscope takes an average of 100 spectra as another filtering technique to average out random noise.

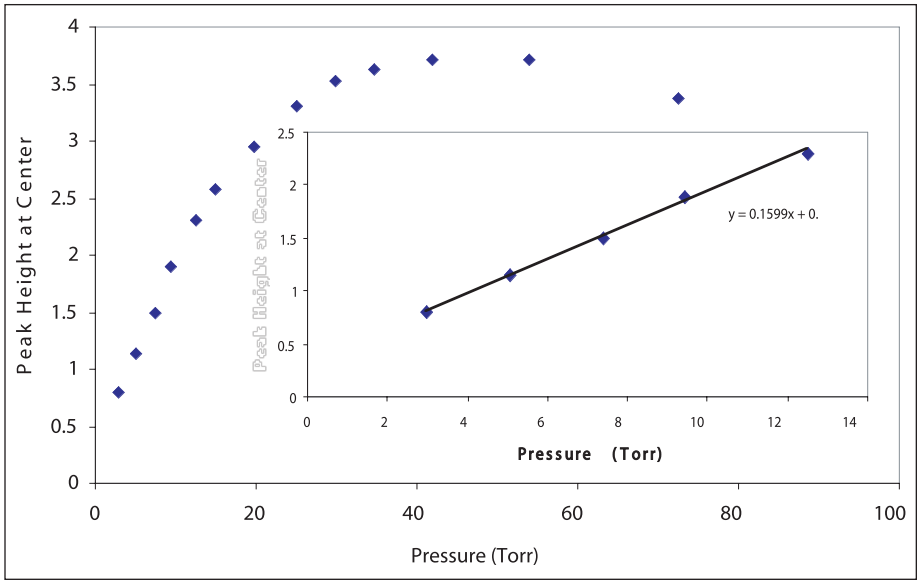
In Eq. 2, the data from the oscilloscope is fit to the second derivative of a Gaussian,

Eq. 2. *The second derivative of a Gaussian curve.*

$$\frac{d^2G}{d\alpha^2} = \frac{A}{\alpha^3}\left[e^{\frac{-\ln 2(\nu-\nu_0)^2}{\alpha^2}}\right]\left[\frac{-2\ln 2(\nu-\nu_0)^2}{\alpha^2}+1\right]$$

with A and α as fitting parameters. A is the top-to-bottom height of the peak; α is the full width at half maximum height; ν_0 is the center frequency, or x-axis position at maximum height. A and α are used as empirical fitting parameters, while ν_0 is read from the spectral data. Next, we used the A and α parameters found from the nonlinear fit in the equation of a Gaussian which is analytically integrated to obtain the area. We repeated this process of calculating the proportional areas for all the phases in the standard addition. Next we plotted the S_x for each phase against the mole fraction. This plot was then fit to the line described in Eq. 1 to find the isotope ratio in the unknown sample.

Fig. 2: *Peak height at center versus sample pressure for a CO_2 sample. Peak height was taken for a $^{12}CO_2$ peak at 6253.6 cm $^{-1}$. The insert shows an expanded view of the linear portion of the data.*



Results

Pressure Broadening

The results of a pressure broadening study show that after 30 Torr, the $^{12}CO_2$ peak height at center does not increase linearly with the increase in pressure, as seen in Fig. 2. The graph looks linear until approximately 25 Torr, and then the change in peak height flattens out. In order to decrease the effects of pressure broadening but still have enough pressure to get good signal, we chose 30 Torr as the pressure to use in the standard additions.

Laser Diagnostics

In this research, we are very interested in finding out how our laser behaves. Unexpected factors that affect the isotope ratio have prompted some specific studies. One study investigated the effect of modulation frequency on the isotope ratio. In theory, changing the modulation frequency should not significantly affect the signal to noise ratio of the peaks. Fig. 3 shows spectra when the modulation frequency is changed from 1592 Hz to 1720 Hz. This change in modulation frequency affects the signal sizes. As seen in Fig. 3, there is a significant size change in the $^{12}CO_2$ peak. The peak heights decreased by more than a factor of eight; this caused the $^{13}CO_2$ peak to be too small to measure. One possible explanation for this behavior is that mechanical coupling in the laser's tuning mechanism could result in a situation in which the modulation depth is unintentionally changed along with the modulation frequency. Changing the modulation depth is expected to change the peak size. Although such unintended coupling is undesirable for our purposes, correcting it is technically difficult. We have chosen to simply work at a modulation frequency that gives a good signal to noise ratio.

Time also plays a factor in the size and shape of signals that we have observed in our research. For instance, after long periods between laser use, we would notice that the read out would have interferences in the places where we recorded our spectra. These interferences would have random line shapes with some that look like first or second derivative curves. Although some looked like signals that would be produced by absorbance, these line shapes were not pressure dependent. The interferences were apparent even when there was a vacuum in the sample cell. We believe that a cause for this behavior is mode hops. A mode hop happens when the laser wavelength changes abruptly. We also believe that mode hops become more frequent after long periods without using the laser. These mod hops have become a factor that affects the $^{13}CO_2/^{12}CO_2$ ratio.

In addition to infrequent use of the laser, another factor that creates interferences in the signal is the temperature of the laser. We have noticed that the signal looks different at different temperatures. At some temperatures, the peaks, which we want to analyze, are not even visible. Furthermore, we have noticed that one day a temperature setting will contain erroneous peaks and the next day it will not. We also believe that mode hops are more frequent at different laser temperatures.

Fig. 3: *Sample spectra taken at two different modulation frequencies. The thin line spectrum at 1720 Hz and the thick line spectrum at 1592 Hz. The larger peak in each spectrum is a 12CO2 peak at 6253.6 cm-1 and the smaller peak is a 13CO2 peak at 6253.9 cm-1. The two spectra are offset for visual purposes.*

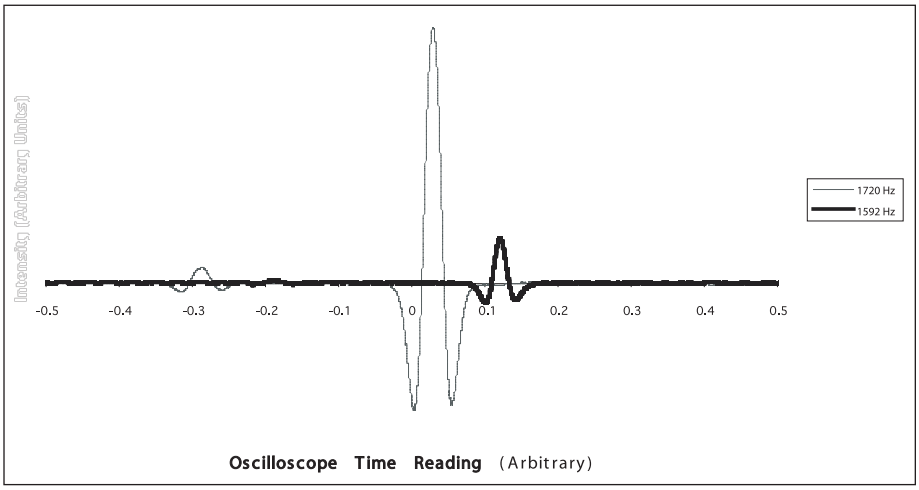
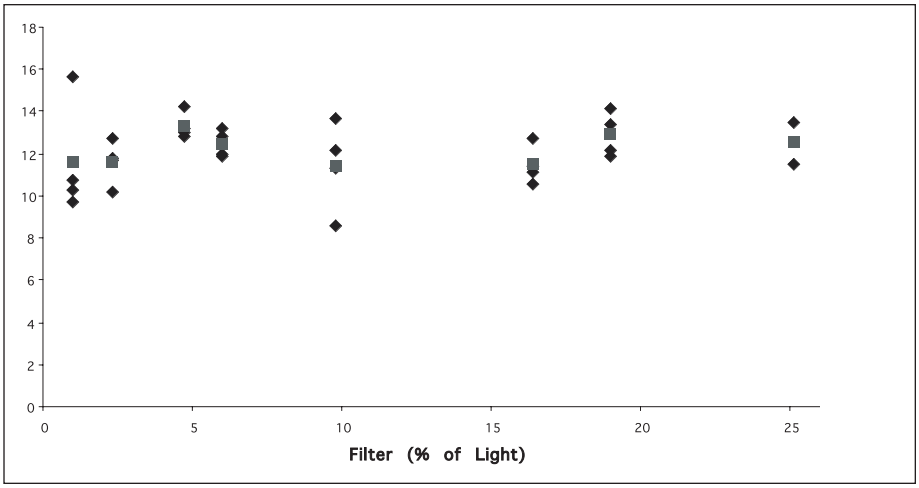


Fig. 4: *Neutral density filter study results of the 13CO2/12CO2 ratio. 13CO2 is at 6253.9 cm-1 and 12CO2 is at 6253.6 cm-1. Diamonds are individual trials run. Square is the average ratio for that filter.*



Another unforeseen factor that plays a part in ratio modification is the effect of the optical devices that are in the path of our laser beam. We use neutral density, iris, mirrors and beam splitters. We performed a study in which we took spectra with different neutral density filters using only the standard gas tank. We found a subtle change in the $^{13}CO_2/^{12}CO_2$ ratio. The filters seemed to affect the size of the $^{13}CO_2$ peak as seen in Fig. 4.

Standard Addition

The $^{13}CO_2$ gas tank has not been analyzed yet by an outside source, therefore we cannot comment on the accuracy of our technique. Nevertheless, our efforts to analyze the $^{13}CO_2$ doped gas tank have not been reproducible. Fig. 5 shows four standard additions performed. Each gave a different slope and intercept. Fig. 6 shows an expanded view of one of the trials shown in Fig. 5. In the four standard additions already performed, we can see some trends in the data. Fig. 7 and Fig. 8 show Gaussian fits to $^{12}CO_2$ and $^{13}CO_2$ peaks in the most recent standard addition. These fits make up the third data point in Fig. 6. These two Gaussian fits do not match up perfectly. The $^{13}CO_2/^{12}CO_2$ ratio calculated from the fit line found from all the data points shown in Fig. 6 was 0.219541. We assume that the ratio should be roughly double that of the known, which was 0.010735. The ratio that we calculated yields a 20-fold increase. This could be caused because the Gaussian fits are not as accurate for the $^{13}CO_2$ peaks.

Another trend that we see in all the data is one that appears in all the standard additions so far. The first three data points in Fig. 6 show no change in the isotope ratio. This is a concern because there should be a linear increase of the isotope ratio. With the first points showing no change in the isotope ratio, our linear fit has been false. Therefore, the overall ratio of the gas tank is undeterminable. The equipment is not sufficiently sensitive to detect the small changes in the first two steps of the standard addition which causes little to no change in the ratio. If these points do not fall into the linear fit, then our ratio cannot be accurate. The rest of the data points in the other trials all show a linear relationship. Without the first points, the slope is similar, as shown in Fig. 9. Unfortunately, the intercept also governs what the ratio is; if the intercept is too high or too low, then the ratio of the unknown will be inaccurate.

Fig. 5: *Comparison of previous standard additions performed.*

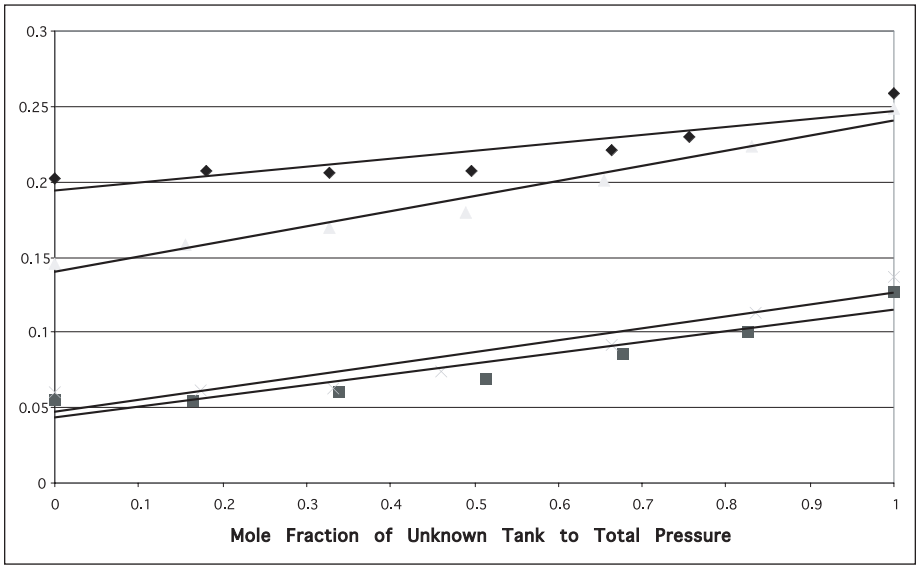


Fig. 6: *Standard addition results of the $^{13}CO_2/^{12}CO_2$ ratio. $^{13}CO_2$ at 6253.9 cm^{-1} and $^{12}CO^2$ at 6253.6 cm^{-1}. Total pressure 30 Torr.*

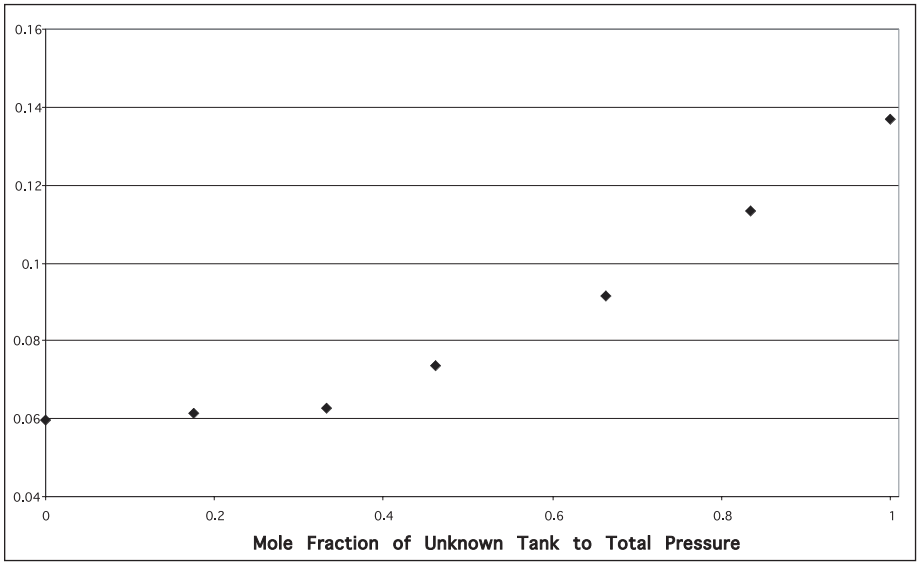


Fig. 7: *$^{12}CO_2$ peak at 6253.6 cm^{-1} fit to 2nd derivative of Gaussian.*

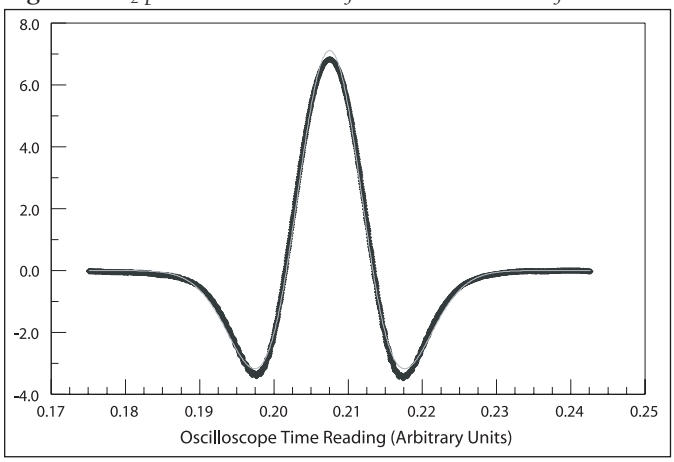


Fig. 8: *$^{13}CO_2$ peak at 6253.9 cm^{-1} fit to 2nd derivative of Gaussian.*

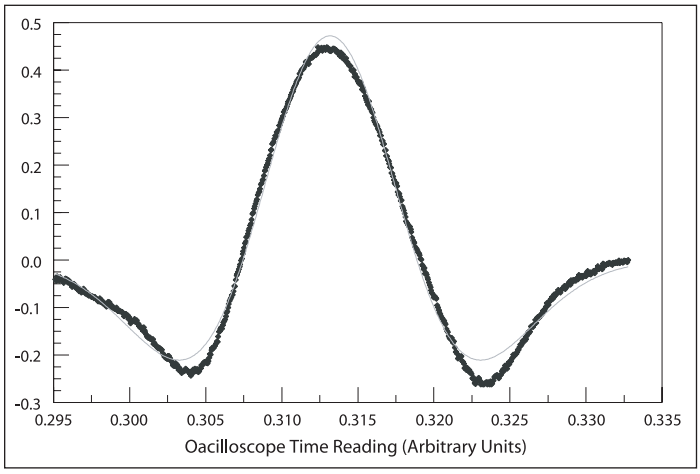
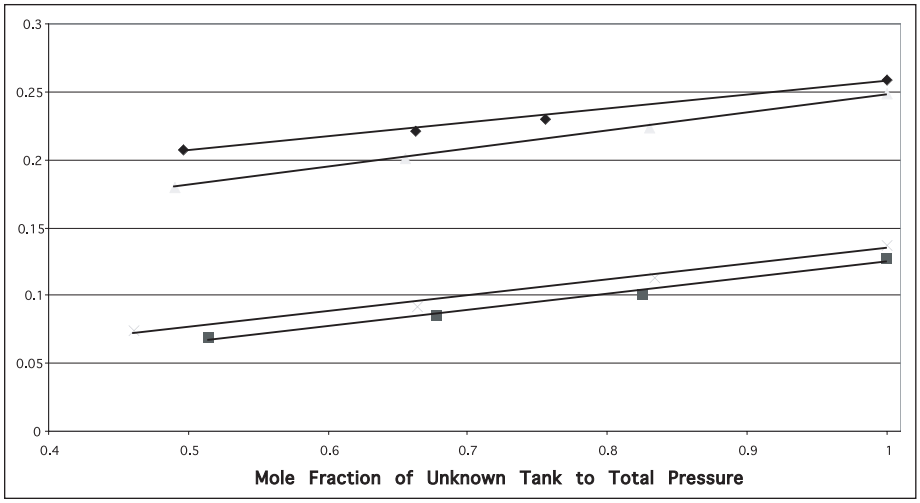


Fig. 9: *Comparison of previous standard additions performed with the first three data points removed.*



As shown in Fig. 5, the intercept is a different value in every standard addition. According to Eq. 1, the intercept in every standard addition should be constant and equal to the ratio of the standard. Excluding the first two points in the performed standard additions shows a similar slope in all three trials. All the standard additions were taken under the same conditions and the intercept should not change to this degree. In using the standard addition technique, the only thing that must be accurate is the ratio of the standard. Everything else, if held constant, would be factored into the constants given in the intercept and slope.

Discussion

The pressure broadening study tells us that we have to work at low pressures so we do not get skewed results. This means that we cannot, in our current setup, take a ratio of CO_2 in air because there is less than 1% of carbon dioxide in air. This means that our sample tank would have to be at much higher pressure than what our pressure study allows. We are currently examining ways to measure the ratio at higher pressures so that our final apparatus would not need a high-powered vacuum attached to get pressures low enough for precise measurements.

The next step is to better understand the laser and incorporate our findings into the apparatus. Methods have been refined to create a more stable diode laser. Use of these methods will probably be the next step in our pursuit to perfect the apparatus. There are many aspects of the laser that must be explored. Diode lasers are prone to have frequent mode hops. Is there anything that we can manufacture or that has already been created that we can put to use in our experiment to get better results while still maintaining our goal to create a compact inexpensive device that measures isotope ratios? We need to explore whether our specific laser has

technology built into it that suppresses mode hops. If so, would a different laser have the ability to better stabilize itself?

We would also like to decrease power jumps that occur during our experiment. We are also exploring whether our laser's power output is constant with input voltage. If our laser's intensity changes drastically between absorption peaks, problems could result. Since absorption does depend on input light intensity, a drastic change in light intensity between peaks would affect the peak ratio. We are currently working on normalizing the spectra to input light intensity.

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From the Delta to Chicago: Muddy Waters' Downhome Blues and the Shaping of African-American Urban Identity in Post World War II Chicago

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ABSTRACT
African Americans developed the blues as a reaction to the harsh living conditions in the Mississippi Delta. The music found a new home during the first half of the twentieth century when thousands of African Americans migrated to Chicago. The purpose of this research is to understand how migration and the urban environment shaped the Black experience. Blues music, specifically the music of Muddy Waters, will be the focus of this study. His Downhome Blues, which grew in popularity following WW II, both shaped and reflected the emergence of an Urban African-American identity in Chicago.

It is not surprising that in 1903 the infamous "father of the blues," W.C. Handy, a traveling musician, first heard the "primitive music" known today as the Blues while waiting for a train in Tutwiler, Mississippi. Robert Palmer, author of *Deep Blues*, notes that the first words Handy heard the ragged man sing were, "Goin' where the Southern cross the Dog," a reference to the intersection of two trains.[1] In fact, Lawrence Levine, in *Black Culture and Black Consciousness*, describes the blues as "an ode to movement and mobility."[2] Having been bound to the land for centuries, African Americans viewed the ability to move as the greatest manifestation of their American right to self-determination.[3] By the 1870s thousands of African-American migrant workers and wanderers—mostly male—traversed the South.[4] The unknown bluesman that Handy described most likely moved from plantation to plantation across the Delta—guitar in tow—looking for work. This assertion of mobility broadened the American landscape and expanded the African-American experience; thus, "[setting] the stage for the evolution of the country blues."[5] This paper examines the role of Blues Music as part of the African-American experience and consciousness and argues that the blues played a vital role in the development of a Black urban identity.

Until the First World War, African Americans rarely traveled north of the Mason-Dixon line, but the growing number of vacant industrial positions in the North coupled with the intolerable cruelty of the South inspired thousands of African Americans to head to the Promised Land. Historians often gravitate towards this first wave of migration, referred to now as the Great Migration; however, following World

[1] Robert Palmer, *Deep Blues*. (New York: Penguin Books, 1982), 45.
[2] Lawrence Levine, *Black Culture, Black Consciousness: Afro-American Folk Thought from Slavery to Freedom*. (New York: Oxford University Press, 1977), 262.
[3] Ibid., 262.
[4] LeRoi Jones, *Blues People: Negro Music in White America*. (New York: Perennial, 2002), 61.
[5] Angela Y. Davis, *Blues Legacies and Black Feminism*. (New York: Pantheon Books, 1998),

War II, 200,000 African Americans, the majority Mississippians, migrated to Chicago.[6] Much can be understood about the relationship between migration and identity formation by examining the function of the blues, specifically Muddy Waters' recordings, during this tumultuous period of transition in African-American history. As a bluesman, Waters convened the community, conjured up safe spaces amidst the unusual urban landscape, and assisted those who came with him from the Delta in renegotiating their past, their home, and their identity. His lyrics vividly addressed the issues that confronted both the pre-migrant and post-migrant psyche. Thus, by examining Waters' lyrics, it is possible to understand the abstract processes of reshaping the collective identity of a generation of African-American migrants.

The blues, according to Houston A. Baker, author of *Blues, Ideology, and Afro-American Literature*, "constitute an amalgam that seems always to have been in motion in America—always becoming, shaping, transforming, displacing the peculiar experiences of Africans in the New World."[7] Baker's unique definition implies then, that the blues music that enveloped the Delta for the first half of the twentieth century reflected the African-American rural experience while the blues that enlivened Chicago's South side following the migration reflected the African-American urban experience. Jones supports this idea, claiming, "the most expressive Negro music of any given period will be an exact reflection of what the Negro himself is. It will be a portrait of the Negro in America at that particular time."[8] Some historians question the validity of the blues that migrated to the urban North. However, blues music remained a reflection of the folk experience, despite its migration, because as Levine explains:

> The personalized, solo elements of the blues may indicate a decisive move into the twentieth-century American consciousness, but the musical style of the blues indicates a holding on to the old roots at the very time when the dispersion of Negroes throughout the country and the rise of the radio and the phonograph could have spelled the demise of a distinctive Afro-American musical style. While it is undoubtedly true that work songs and field hollers were close to the West African musical archetype, so much of which had survived the centuries of slavery, blues with its emphasis upon improvisation, its retention to call and response pattern, its polyrhythmic effects, and its methods of vocal production which included slides, slurs, vocal leaps, and the use of falsetto, was a definite assertion of central elements of the traditional communal musical style.[9]

The fact that the blues remained wholly traditional, yet forward looking at the same time is reflective of the collective African-American identity which Farah Jasmine, author of *Who Set You Flowin'?*, describes as "at once modern and premodern."[10]

In 1941, thirty-eight years after W. C. Handy first heard the blues, two folksong collectors traveled to Coahoma County, Mississippi—not far from Tutwiler—to research and record the unique African-American folk music. Located in the heart of the Mississippi Delta and populated by a large majority of African-American cotton sharecroppers, Coahoma County, with its long tradition of African-American music, proved a near perfect destination for John Work, a member of the Fisk University Music Department, and Alan Lomax, a folklorist for the Library of Congress. That summer, they had hoped to record the legendary, but illusive, bluesman Robert Johnson, but another popular delta bluesman Son House informed them of Johnson's untimely death and sent them in search of a young bluesman called Muddy Waters instead.

When Lomax and Work arrived at the Stovall Plantation, Muddy Waters, born McKinley Morganfield, was working as a tractor driver. On the weekends, Waters, then twenty-six, turned his modest cabin into a juke joint to supplement his meager income and make a name for himself as a bluesman. African Americans living in the Delta often gathered at juke joints or county picnics; whether in the deep woods or a cramped one-room shack, they found they could let loose in the absence of their oppressor's gaze. Waters' moonshine warmed the aching bones of men and women who spent their days in sun-drenched cotton fields, and his blues soothed the soul that undoubtedly ached for something more. The presence of the bluesman was vital to these gatherings; it was he who, from behind his guitar, orchestrated the eating, drinking, and dancing that eased the tension caused by the ruthless

[6] Mike Rowe. *Blues Chicago: The City and the Music*. (New York: Da Capo Press, 1975), 174.
[7] Houston A. Baker Jr. *Blues, Ideology, and Afro-American Literature* (Chicago: University of Chicago Press, 1984)
[8] Jones, 137.
[9] Levine, 223-224.
[10] Farah Jasmine Griffin. *Who Set You Flowin'?* (New York: Oxford University Press, 1995), 82.

humiliation and backbreaking work that characterized Delta life.

In the Delta, the overwhelming desire to be free from oppression connected the pre-migrant psyche to the bluesman who commonly invoked mobility as an assertion of freedom and an escape from mistreatment. Levine suggests that just the possibility of movement "operated as a safety valve for millions of Negroes who without the alternative of migration would have felt trapped and hopeless."[11] This is exemplified in the first verse from "I Be's Troubled," recorded on the Stovall Plantation in 1941 when Waters sings:

> Well, if I feel tomorrow
> Like I feel today,
> I'm gonna pack my suitcase
> And make my getaway.
> I be troubled, I'm all worried in mind,
> And I never be satisfied,
> And I just can't keep from cryin.[12]

In the verses that follow, Waters goes on to describe the mistreatment he endured at the hands of a no-good woman. In *Downhome Blues Lyrics*, Jeff Todd Titon suggests that blues singers often assumed the role of the victim so they could "express their desire for freedom more concretely."[13] In "I Be's Troubled" Waters told the common tale of a fickle woman in order to stress his overall dissatisfaction with the continuous cloud of oppression that hung over the Delta. In his 1941 version of the Delta standard "Country Blues," recorded on the Stovall Plantation, he resolves to "ride the blinds"—hitch a train—rather than endure more misery; he sings:

> Well, I'm leaving this morning,
> if I have to ride the blinds
> I feel mistreated, girl, you know
> now, I don't mind dyin.[14]

By invoking the train, "long a symbol of freedom in the African-American oral tradition," Waters provided an answer for those looking to escape the harsh Mississippi Delta.[15] The train, with its magnificent strength and rhythmic splendor represented freedom from the Jim' Crow South. Although African Americans left the station in segregated passenger cars, engulfed in the stench of inequality, perhaps as the train rolled further north, they felt the strangling grasp of Jim Crow weaken as Viethel Wills, in the documentary *Goin' to Chicago* suggests:

> I came to Chicago on the train,
> what I remember most about it
> was the conductor when we got to
> Cable, Illinois said, okay, you can
> through down that yassir' and no
> sir' and say yes and no now.[16]

Waters used the image of the train to call upon the desire for freedom shared by the Delta community. By doing so he tweaked the collective consciousness of African Americans whose identity had been shaped by years of Southern oppression and prepared them for the transition from rural sharecroppers, bound to the land, to migrants, ready to conquer the North. On a rainy day in 1943, two years after he heard his voice played back to him for the first time by the two song-collectors, Waters joined the exodus. As the Delta faded in the distance, so too did his rural identity leaving the necessary space for a more urban identity to develop.

For African Americans who spent most of their lives in the Delta, the urban landscape was unnatural. Many of the new migrants traded the strenuous sharecropping system that sustained them in the Delta for the most grueling industrial jobs Chicago had to offer. The stench of the slaughterhouses or the choking fumes of the foundries filled their noses and replaced the scent of freshly plowed dirt or warm spring rain. Hard pavement rather than dirt roads greeted their feet, massive steel structures instead of tall trees emblazoned the horizon, and bright lights rather than brilliant stars lit the way for the new urbanites. Amidst this strange industrial environment, a familiar character emerged carrying with him the sound of the Delta. The bluesman, the "wandering stranger" of the South, the embodiment of mobility, became the personification of home in the big city.[17]

Historians often use the terms *urban* and *country* as well as *downhome* to describe the blues that Waters made popular in Chicago during the 40s and 50s. While the terms *urban* and *country* fit logically, the term *downhome* fits psychologically. More than just the fact that they originated in the country or that they were popularized in an urban environment, it is the power of the blues to evoke the South for the throngs of African Americans attempting to adjust to city life that is most significant. When examining the blues as a function of identity formation, it makes sense to utilize the term *downhome* because as Titon explains:

[11] Levine, 265.
[12] Lomax, *The Land Where the Blues Began*. (New York: The New Press, 2002), 417.
[13] Jeff Todd Titon, ed., *Downhome Blues Lyrics: An Anthology from the Post-World War II Era*, 2nd ed. (Illinois: University of Illinois Press, 1990), 10.
[14] Lomax, 417.
[15] Griffin, 19.
[16] George King, Prod. *Goin' to Chicago*. (Mississippi: University of Mississippi, 1994) Viewed November 27, 2004.
[17] Griffin, 55.

> The term *downhome* is evocative, calling up not so much an actual, physical place (the rural South), but the *spirit* of the place, the Southern root, that moved with the music and the culture as African Americans carried their downhome way of life into the twentieth-century cities.[18]

The supreme function of the blues in Chicago at this time was to guide the consciousness of newly arrived migrants out of the rural South safely into the urban North. The bluesman, by invoking the soul that sustained the Black community in the South, carved a path out of the Delta as powerful and as promising as the tracks of the Illinois Central Railway.

Conveniently traversing the intolerable Delta, the Illinois Central brought thousands of African Americans to the city's South Side during the 1940s. Waters downhome blues grew in popularity among the freshest arrivals that gathered at after-hour joints and rent parties. Rich in southern tradition and lacking the sophistication that the growing African-American middle class was becoming accustomed to, such get-togethers appealed to bluesmen as well as the city's young new audience. Waters' sound, although amplified in the city, remained distinctly Delta in style. The rent parties, reminiscent of southern country picnics, were significant in that they created safe spaces, best defined by Griffin as:

> sites where the South is invoked—not just in its horror, terror, and exploitation, but a place that housed the values and memories that sustained black people. The South emerges as a home of the ancestor, the place where community and history are valued over the Northern individualism.[19]

Before African Americans could collectively move towards an urban identity, they first had to renegotiate their collective rural identity. Waters' downhome blues facilitated this re-examination. Newcomers, comforted by the safe space that surrounded the blues and the nostalgic memories evoked in Water' songs, renegotiated their Southern history, molded a collective memory, and passed through the first phase in the transition from rural to urban identity.

Newly transplanted bluesman were especially drawn to rent parties, described by Waters' biographer Robert Gordon as "a get-together in someone's home where the drinks were cheaper, the food more plentiful, and the audience nearer the band, and where musicians could establish their reputations."[20] There, bluesmen found an audience uninspired by the "bluebird beat," a mixture of earlier classic blues and jazz that dominated the music scene.[21] Pete Welding, Waters' friend and the founder of Testament Records, described what Waters called "sweet jazz" as a "refined, polished, and institutionalized" version of the country-based blues that arrived in Chicago following the first wave of migration. Since the 1920s, Welding suggests, the music "had been progressively emasculated."[22] Perhaps initially the popular blues of the 1920s similarly functioned to soften the hard edges of the city and provide the new migrants a transitional space to renegotiate their collective identity. However, acclimatization and the development of an African-American middle class led African Americans who rode the first wave of migration to view the downhome blues that accompanied the second-generation migrants as old-fashioned.

The downhome blues may have appeared old-fashioned to the older generation, but the unfamiliar sense of homesickness drew the new arrivals to the bluesman because, as Titon suggests, the familiarity of the southern music steadied them.[23] The sound of strings moaning under the pressure of a bottleneck and the locomotive rhythm of the harp invoked an image of the South "tinted with nostalgia."[24] A number of popular blues tunes during this period revolved around returning to the South. Waters, in "I Can't Be Satisfied," his 1948 version of "I Be's Troubled," resolves to return to the South, the oppressive setting that drove him and thousands of other African Americans to the North, he sings:

> Well, I'm going away to leave;
> won't be back no more.
> Going back down South, child;
> don't you want to go?
> Woman I'm troubled;
> I be all worried in mind.
> Well babe, I just can't be satisfied,
> and I just can't keep from crying.[25]

Waters' resolve, although hypothetical, symbolized the new African-American Chicagoans vision of the South as home,

[18] Titon, 1.
[19] Griffin, 9.
[20] Robert Gordon, *Can't Be Satisfied: The Life and Times of Muddy Waters*. (Massachusetts: Little, Brown and Company, 2002), 71.
[21] Robert Palmer, *Deep Blues*. (New York: Penguin Books, 1982), 135.
[22] Gordon, 97.
[23] Titon, 10.
[24] Griffin, 53.
[25] Titon, 148.

and as such, a place worthy of missing. As they did in the South, bluesmen continued to express the attitudes of African Americans in the North. Perhaps this traditional style, which combined themes of mistreatment and mobility, comforted the migrants not only because of its nostalgic pulse but because so many African Americans felt disillusioned by urban life. In 1949, when Chicago's South and near West sides swelled with new arrivals, Waters' "Train Fare Home" soothed the homesickness that spread like a cold in a cramped kitchenette. He sings:

> Blues and trouble just keep on worrying me
> Blues and trouble just keep on worrying me
> They bother me so bad, I just can't stay here, no peace
> If I could get lucky and win my train fare home
> If I could get lucky and win my train fare home
> I believe I'll go back down in Clarksdale, little girl that's where I belong.[26]

Again Waters invokes the powerful symbol of the train. In the Delta, the sound of a train in the distance reminded African Americans that there was somewhere besides the heartbreaking plantations that stained the American South. However, Chicago did not prove to be the Promised Land it had been in the minds of those dreaming to escape the cotton fields. Waters, by claiming Clarksdale as his home, ameliorated some of the homesickness felt by the recent migrants.

Along with offering nostalgic images of the South for the newly arrived, bluesmen like Waters' often incorporated symbols of Southern African-American traditions; one of the most popular being hoodoo. Naturally, in the midst of dramatic change, African Americans welcomed tradition with open arms. Waters explained to Robert Palmer why he sang about hoodoo so often, saying "you know, when you writin' them songs that are coming from down that way, you can't leave out somethin' about that mojo thing. Because that is what people believed in at that time."[27] A perfect example of this is Waters' 1950 hit "Louisiana Blues," in which he sings:

> I'm goin' down to Louisiana
> Baby, behind the sun
> I'm goin' down to Louisiana
> Honey, behind the sun
> Well, you know I just found out
> My trouble's just begun
> I'm goin' down to New Orleans
> Get me a mojo hand
> I'm goin' down to New Orleans, umm-hmmm
> Get me a mojo hand
> I'm gonna show all you good-lookin' women
> Just how to treat your man[28]

In "Louisiana Blues," Waters again begins with a hypothetical journey south, this time to New Orleans, whose forbidding and mysterious bayous are home to hoodoo. In much the same way that juke joints, and later rent parties, provided African Americans with a safe space that nurtured their identity, the well-insulated swamps of New Orleans offered African Americans refuge as well.[29] Of these spiritual gatherings, Julio Finn, author of *The Bluesman*, suggests:

> There, on the ground where their people had come together to be reunited with the gods of Africa, their spirits were able to free themselves from the slavers' bondage and soar, and out of these stolen flights would come the music and words which became the blues, jazz, creole and cajun music.[30]

Finn quotes W. E. B. Dubois' description of the Root Doctor, one of the most important figures in the hoodoo tradition, also called the Medicine Man or Hootchie Cootchie man. Dubois describes him as,

> the healer of the sick, the interpreter of the Unknown, the comforter of the sorrowing, the supernatural avenger of wrong, and the one who rudely but picturesquely expressed the longing, disappointment, and resentment of a stolen and oppressed people.[31]

Ironically, this is nothing other than a concise definition of a bluesman; perhaps the recent migrants viewed Waters as the modern Root Doctor of the city; Waters himself seems to. While this may appear to be a metaphorical analogy, Waters did comfort those transplanted from Delta soil in much the same way that the Root Doctor did those transplanted from African soil. In his 1954 hit "I'm Your Hoochie Coochie Man," Waters illuminates this connection. He sings:

[26] Gordon, 97.
[27] Palmer, 97.
[28] Palmer, 98.
[29] Julio Finn, *The Bluesman: The Musical Heritage of Black Men and Women in the Americas*. (New York: Interlink Books, 1992), 110.
[30] Ibid., 111.
[31] Ibid., 5.

I got a black cat bone
I got a mojo too
I got the John the Conqueroo
I'm gonna mess with you
I'm gonna make you girls
Lead me by the hand
Then the world'll know
The Hoochie Coochie man[32]

The hoodoo charms that Waters claims to have in this verse, the "black cat bone," the "mojo," and the "John the Conqueroo" are described by Finn as the "material manifestations of power."[33] These amulets, composed of "any number of objects: cats' claws, hair, teeth, roots, herbs, etc… sealed in a small bag or cloth," obtained their power from the Root Doctor.[34] By claiming to possess such charms, Waters is in fact claiming to have the ability to empower his people. In hoodoo blues songs like "Louisiana Blues" and "Hoochie Coochie Man," both the hoodoo tradition and blues music "come together to function as a source of strength, to set off a reaction and bring about a desired effect. They act as magic—perhaps the first function music ever had."

Waters' downhome blues not only soothed and strengthened the post-migrant psyche; it transformed it as well. Once steadied by the blues, the urban identity of the new arrivals began taking shape. One major distinction between the rural and urban identity of African-American males specifically is the mannish behavior that characterized their identity in the city. Bluesman, like Waters, radiated masculinity and exuded confidence. This combination excited the male migrants who had witnessed the perfection with which the Delta stifled African-American masculinity. When Alan Lomax recalled meeting Waters on the Stovall Plantation, he described the young bluesman as a "Delta wallflower." This image sharply contrasts with Lomax's later depiction of Waters as a "sharply dressed, supervirile dude, with money in his pocket, [and all] the women in town on his trail."[35] Waters' projected this new overtly masculine image in lyrics like these taken from his 1955 hit "Mannish Boy."

I'm a man, I spell mmm,
aaa child, nnn
That represents man.
No B, O child, Y
That mean mannish boy
I'm a man, I'm a full grown man
I'm a man, I'm a natural born
lovers man
I'm a man, I'm a rollin' stone
I'm a man, I'm a hoochie
coochie man[36]

In "Mannish Boy," Waters flaunts his masculinity, something the oppressive hierarchy of the Delta never would have allowed. He expresses his manliness in terms of his sexual prowess, his freedom of mobility, and his deep connection to African-American tradition. This powerful combination both liberated and elevated the collective African-American male identity.

Considering that prior to the Emancipation most African Americans lived and died bound to the land, the assertion of their natural American right to mobility undoubtedly expanded their collective consciousness. Angela Y. Davis, author of *Blues Legacies and Black Feminism*, suggests that the personal journeys that African Americans began post-emancipation "were occasioned by psychological repositionings." Examining the impetus for, and the progression of, such "psychological repositionings"[37] is necessary to understanding the effect of migration on African-American identity formation on Post World War II Chicago. The popularity of downhome blues among the newly relocated Mississippians reflects a period of transition for African Americans in which their rural identity evolved into a more urban identity.

However, the blues not only reflected the new urban identity of African Americans but also was an active ingredient in the alteration itself. It soothed the heartache heaped on the tired shoulders of sharecroppers in the Delta, inspired them to assert their right to search for a freer place, nurtured their post-migrant psyche, and strengthened their urban identity in Chicago.

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[32] Eric Sackheim, ed. *The Blues Line: Blues Lyrics form Leadbelly to Muddy Waters*. (New York: Thunder's Mouth Press, 1969), 432.
[33] Ibid., 128.
[34] Ibid., 128.
[35] Lomax, 419
[36] "Muddy Waters - Mannish Boy Lyrics" http://lyrics.rare-lyrics.com/M/Muddy-Waters/Mannish-Boy.html. Viewed: June 23, 2005.
[37] Davis, 68.

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Between Religion and Honor: Charles Colcock Jones and a Discussion of Antebellum Southern Values

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Abstract
The ethic of honor among Southern white men encouraged violence, excess, and public displays of manhood. Conversely, evangelical religion compelled Christians toward abstinence and self-control, ideas usually incompatible with the expectations of honor. An elite plantation owner and a prominent Presbyterian minister, Charles Colcock Jones, acted on both these opposite ideals during the Secession Crisis and Civil War. An examination and analysis of his and other Jones family letters and correspondence will demonstrate how Jones incorporated the ethic of honor as the threat of disunion materialized, only to turn back toward evangelical Christianity following the outbreak of war.

On August 26th, 1861 Charles Colcock Jones, a prominent Presbyterian and an elite Georgia plantation owner, wrote an irate letter to a former employee and fellow minister. After citing his credentials as a Christian gentleman, Jones accused the man of "debauch[ing] a young Negro girl...," who happened to be a slave belonging to Jones, and fathering her child. Jones angrily told his former assistant he had violated the principles of Christian benevolence and betrayed Jones's trust. Jones declared that, "You, [sir], are the only man who ever dared to offer...so vile and so infamous an insult to me personally and to my family!" Disgusted, Jones finished, "How you have wounded the Saviour [sic], and brought disgrace upon religion."[1]

As Jones made clear, he believed that the offense was a crime against both himself and his slave. In making his claim, Jones drew upon two distinct ethical belief systems that dominated the antebellum South to justify his position—honor and evangelical Christianity. Jones based his personal umbrage on the Southern ethic of honor and took it as an insult that a former employee would enter his household under the pretense of Christian service only to commit such an ungodly act. In addition, Jones believed that his former guest had compromised the principles of Christian duty towards others. By using the two together, Jones created an amalgamation that might seem unexpected or, at the very least, unorthodox. Yet Jones accomplished this task with relative effortlessness. Upon closer examination, however, in moments of personal crisis, Jones seems to have used his evangelical beliefs more so than the ethic of honor.

At first glance, Jones's simultaneous use of the ethic of honor and the precepts of evangelical Christianity might appear to be antithetical. Indeed, scholars of honor and evangelical Christianity have often been inclined

[1] Rec. C.C. Jones to Mr._____, Aug. 26, 1861, in Robert Manson Myers ed. *The Children of Pride*, (New Haven, CT: Yale University Press, 1972), 741-742.

to note the differences between the two rather than the potential for cooperation. Historian Bertram Wyatt-Brown suggests that because the church population of the antebellum South was only a small portion of the entire population, "Churchmen either were themselves involved or stood quietly aside, recognizing the superior moral force of the circle of honor itself."[2] In an examination of post-bellum Southern culture, historian Ted Ownby argues that Southern men vacillated between the worlds of manly honor and pious evangelicalism in a binge and purge cycle of excess and denial.[3] Even when the two did converge, historian Christine Leigh Heyrman suggests that evangelicals bent to the will of honor, coming to "accept the most basic assumption of the code of honor…behavior in the company of other masters."[4] Jones, however, provides an excellent example of one person bound to both standards of Southern ethics and time and again, he relied on both to inform his actions as a Southerner. As Jones dealt with issues relating to parenthood, secession, and slavery, he was guided by both honor and evangelical Christianity. Yet while he acted on the influences of each, particularly during moments of crisis, Jones seems to have been influenced more by his evangelical beliefs than his status as a man of honor.

As a prominent white Southerner, Jones lived within the Southern culture of honor. Several key factors distinguished the Southern ethic of honor. First, when Southerners spoke of and acted upon honor, they believed only white men could possess it. Women, minors, and blacks of both sexes, regardless of their status as free or enslaved, were excluded from the world of honor.[5] Second, Southerners defined honor in terms of a man's relationship with the community. Society's opinion determined his worth and standing, and this public assessment was the most important aspect of a man's character. Third, the very nature of the community's expectations required men to act independently. This translated into aggressive behavior in an attempt for self-assertion. By acting in such a manner, Southern white men hoped to prove their masculinity and gain community esteem and public acceptance. Elites often expressed their honor through seeking political office, oratory, gambling, and dueling. Members of the lower classes resorted to more crude methods including brawling, profanity, acts of miscegenation, and other boorish activities. Nevertheless, each was an attempt to earn credibility and acceptance in the eyes of others. Thus, when Southern white men acted out, they were submitting to the community's expectations. To do otherwise signified a complete lack of honor. Although Jones was not one to indulge in worldly pleasures or excesses like most other men of honor, he was concerned about his status within the community, the most important aspect of honor.

Just as the ethic of honor displayed several distinct characteristics, evangelical Christianity possessed certain distinctive attributes. One prerequisite upon which all evangelicals insisted was conversion. Conversion symbolized the rejection of one's own will and ceded control to God. In addition, evangelicals stressed the personal relationship with God. They hoped that this could prevent worldly influences from corrupting the individual and thereby maintain the personal piety essential to the evangelical view of Christianity. Another view to which evangelicals subscribed was a missionary ethos, which required all Christians to convert others. By doing this, Jones fulfilled the mandate to all Christians first given by Christ. Finally, although much dissimilarity existed between evangelicalism and honor, evangelicals like Jones believed in submission before God, just as those of an honor–bound society bent to the will of the community. Wyatt–Brown notes that the graceful element of Christianity, in which God conveyed mercy upon humanity, lent itself well to a hierarchy in which honor was central.[6] Evangelical submission, however, was unique in that, at least theoretically, all were equal before God.[7] This belief could potentially lend itself toward an egalitarian view of society, and it did to some degree in the Northern

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[2] Bertram Wyatt-Brown, *Southern Honor: Ethics and Behavior in the Old South*, (New York: Oxford University Press, 1982), xvii.
[3] Ted Ownby, *Subduing Satan: Religion, Recreation, and Manhood in the Rural South, 1865-1920*, (Chapel Hill, NC: University of North Carolina Press, 1990), 31.
[4] Christine Leigh Heyrman, *Southern Cross: The Beginnings of the Bible Belt*, (New York: Alfred A. Knopf, 1997), 252. Heryman suggests that a key feature of early 19th century evangelicals was to demonstrate "self-mastery" and that doing so was a means for demonstrating their worth in Southern culture.
[5] Steven M. Stowe, *Intimacy and Power in the Old South*, (Baltimore: Johns Hopkins University Press, 1988), 14; Edward L. Ayers, *Vengeance and Justice: Crime and Punishment in the 19th-Century American South*, (New York: Oxford University Press, 1983), 13.
[6] Bertram Wyatt-Brown, *The Shaping of Southern Culture: Honor, Grace, and War, 1760s-1880s*, (Chapel Hill: University of North Carolina Press, 2001), xii.
[7] A number of historians have provided descriptions of evangelical Christianity. For those I have found particularly helpful, see: Heyrman, 4-5; Anne C. Loveland, *Evangelicals and the Social Order: 1800-1860*, (Baton Rouge, 1980), 1-90; Donald G. Mathews, *Religion in the Old South*, (Chicago, 1977), xvi-xvii; also Steven Elliot Tripp, *Yankee Town Southern City*, (New York: NYU Press, 1997), 50.

states. However, as historian Eugene Genovese notes with his usual expertise, the egalitarian aspects of evangelical Christianity were not so powerful by themselves as to threaten the status quo within the antebellum South.[8]

A closer analysis of the case of the debauched slave reveals an example of how Jones used honor and evangelical Christianity simultaneously. As it developed, the incident began to take on several important aspects of an affair of honor. Central to such development was the correspondence between Jones, the accused, and officials from another Presbyterian church who became involved at the behest of the accused. When confronted with the charges, the accused denied Jones's claim in an enclosure to a letter from the aforementioned officials to Jones, stating,

> Charges have been made against me by Rev. C.C. Jones embracing adultery and therewith un-Christian conduct. I hereby deny…such charges and pronounce them to be false and unfounded.[9]

Clearly, the accused attempted to defend his reputation. Yet, he was careful to avoid questioning Jones's honor as a man of a higher social standing, particularly in the presence of church officials who would have regarded Jones as a social equal. Calling Jones a liar would have indeed been a serious affront. As historian Kenneth Greenberg argues, calling a fellow man a liar often escalated trivial disputes into duels.[10] While Jones would likely not have been inclined to engage in a duel, the accused clearly selected his words carefully when dealing with so prominent a man as Jones.

Hon. John Johnson and A.G. Redd, the officials from the Presbyterian Church of Columbus, Georgia, also used the language of honor when coming to the defense of the accused. They based their position on their belief in a lack of credibility on the part of the female slave especially when compared with the accused, a white male with considerable standing in the community. They snidely remarked that, "the fact is apparent that your woman…has departed from the rules of chastity." They further asserted,

> [He] is a member of the church... it is…our duty to protect and defend innocent members…[His] character is in great jeopardy, and with his character goes his prospects for success even in his secular vocation.[11]

Clearly, the defenders of the accused perceived a threat to white male honor; namely, that a woman, a slave, no less, could challenge a white's status in society. As Wyatt–Brown points out, the south was a true patriarchal society in that it placed white men at the top of the hierarchy and institutionally assaulted female identity.[12] As such, these officials felt compelled to defend the honor of the accused, an embattled white man of standing. Yet just as they did, they began an affair of honor between themselves and Jones. In subsequent letters, Jones lamented the fact that sometimes the guilty are exonerated and that the product of the infidelity, the child of the slave, unmistakably resembled the accused. In addition, he reaffirmed his support of the female slave and pointed out that the argument against her had likely been informed by racist tendencies. He argued, "If my servant were a white woman…she would carry a prosecution for bastardy against him in any common court."[13] In so doing, Jones clearly deviated from the norms of the antebellum South. Moreover, Jones hoped to encourage his colleagues to put aside their prejudices and consider the charges against the accused before defending him.

The advocates of the accused pointed out that in a world based on male honor, taking the word of a debased slave was a violation of the social hierarchy. Even though they recognized Jones's status as an elite, they remained committed to defending the accused. Still, Jones staunchly pursued the case. Thus, while this incident exemplifies many characteristics of an affair of honor, it also demonstrates that Jones believed in the primacy of evangelical Christianity within the Southern culture. While Jones did not see the slave as an equal with whites, the fact that he

[8] Eugene Genovese, *Roll, Jordan, Roll: The World the Slaves Made*, (New York: Vintage Books, 1974), 167-173.
[9] Hon. John Johnson to Rev. C.C. Jones, Nov. 18th, 1861 enclosure of Mr._____; Myers, 800.
[10] Kenneth Greenberg, *Honor and Slavery,* (Princeton, NJ: Princeton University Press, 1996), 8-9.
[11] Hon. John Johnson and A.G. Redd to Rev. C.C. Jones, Sept. 24th, 1860; Myers, 754.
[12] Wyatt-Brown, 226, 246; Also see: Wilber J. Cash, *The Mind of the South*, (New York: Vintage Books, 1991; reprint), 29-58. In his dated but still valuable examination of Southern history, *The Mind of the South*, Cash argues that the central character of antebellum Southern society was the white male, and it was his word and action which stood paramount above all others.
[13] C.C. Jones to Hon. John Johnson and Mr. A.G. Redd, Oct. 16, 1861; Myers, 774-776.

reduced the word of a white to that of a slave suggests, in terms of the sinful nature of man, Jones believed all were equally susceptible to temptation. Although the dynamics of master and slave relations often permitted similar cases of miscegenation among white men as that of the alleged debauchery mentioned by Jones, he believed the accused had committed a greater offense than violation of Jones' honor. Rather, he had committed a morally indefensible act to which any evangelically conscious master would object. As an evangelical and a member of the master class, Jones felt compelled to address the issue.

In making his argument, Jones did more than take the word of a female slave over a white man. Historian Steven Stowe argues that in affairs of honor, men of elite status "invoked…a moral force" to justify their claims.[14] While this no doubt influenced Jones's thinking, he took this event a step further than most others among his social strata. Jones reduced the word of a man of considerable esteem to that of a slave. As Greenberg points out, Southerners associated slavery with a lack of personal autonomy. While white of elite standing were free to do as they chose to assert themselves among their peers, a slave was limited to submitting to the will of others.[15] Misuse or mistreatment of another man's property was a considerable offense in an honor–bound society; however, in most cases an infringement of this nature would not be so severe as to entirely remove a white man's honor. Yet Jones's rejection of white solidarity is significant in that it reflects a sense of moral equality for the slave. While white men could and did get away with such treatment toward black women on countless occasions, Jones would have no part of it as a patriarchal master who felt responsible for the moral condition of a slave. It is on this point that Jones revealed his evangelical foundations.

This was not the first time Jones ran afoul of the South's racial orthodoxy because of his evangelical beliefs. As a young theology student at Princeton Theological Seminary, he dabbled with antislavery sentiments. As historian Donald Mathews argues, the minister–in–training harbored misgivings about slavery because he was, "saddened and embarrassed by the contrast between southern society and the northern society he had come to admire."[16] Yet as historian Erskine Clarke suggests, Jones's contempt for slavery was not the deep antipathy of abolitionism which regarded it as sin. Rather, Jones viewed it as an evil which could be purged through gradual emancipation. While such a distinction might seem confusing at first, it was significant in that Jones would not have believed that slaveholders were sinning per se. Instead, they were simply actors in a system beyond their control. Thus for Jones during his youth, it could be argued that he believed in slavery as a "necessary evil," a socially undesirable aspect of the South about which little could be done to fully eradicate, at least in the short term.[17]

Upon returning to the South, however, Jones became more conservative in his views toward slavery. As he became more firmly established in the ministry, Jones contributed to what Mathews calls a "slaveholding ethic" which "emphasized the moral responsibility of both master and slave and was concerned with securing the benefits of both." Moreover, Jones argued that to leave the system of slavery as it was would have been in negligence of Christian duty, but with Christianity, it could be vastly improved.[18] Clearly, by 1842, when Jones wrote a treatise on Christianity and slavery, he had no intentions of eliminating slavery. In *The Religious Instruction of the Negroes in the United States*, Jones urged masters to convert their slaves to Christianity as means for providing earthly benefits as well as heavenly rewards for those bound in servitude. At the same time, he emphasized that conversion would be beneficial to the master class. He argued that by bringing Christianity to the unconverted slave population, "*There would be a better relation of master and servant: and of their reciprocal duties.*" (italics by Jones) Thus, just as masters fulfilled their responsibilities by offering the benefits of Christianity, slaves in turn, at least in theory, would be better equipped to accept their station in life if they became Christians.[19] Such sentiments deviated from those of his youth in that instead of bemoaning slavery, he attempted to both purify and support it. Yet as he wrote of the acceptable treatment of masters toward slaves, Jones never strayed from his central purpose of ensuring that the relationship be Christian in nature. Moreover, Jones implied that if slavery were to continue, slaveholders should be required to recognize and accommodate for the evangelical needs of the enslaved. In making such an implication, Jones clearly places evangelical objectives at the center of his agenda.

[14] Stowe, 33.
[15] Greenberg, *Honor and Slavery*, 103-104.
[16] Donald G. Mathews, "Charles Colcock Jones and the Southern Evangelical Crusade to Form a Biracial Community," *Journal of Southern History*, Vol. 41, No. 3 (Aug., 1975), 301.
[17] Erskine Clarke, *Wrestlin' Jacob: A Portrait of Religion in Antebellum Georgia and the South Carolina Low Country*, (Tuscaloosa, AL: University of Alabama Press, 1999), 12.
[18] Mathews, *Religion in the Old South*, 173, 141.
[19] Charles Colcock Jones, *The Religious Instruction of the Negroes in the United States*, (New York: Negro Universities Press, 1969), 158-163, 206.

Just as Jones applied both the ethics of honor and evangelical Christianity to his stance on issues of race and slavery, he acted on these models to guide his approach in the realm of parenting. And here again, while acting on the principles of honor, Jones acted more closely in line with his evangelical beliefs. While Jones had three children, two sons and a daughter, we know the most about his relationship with his oldest son, Charles Colcock Jones, Jr, because of their extensive correspondence with one another. A graduate of Harvard Law School, Charles C. Jones Jr. ran a law practice in Savannah, Georgia. In 1860, Jones Jr. took up an active interest in politics. In October of that year, he notified his father of his election as mayor of the city.[20] "It is a high honor, coming unsolicited, and the expression of the confidence of the majority of your fellow citizens," his father responded, "[we] are gratified that your conduct and character have been such to attract you their suffrages and place you in the highest office in their gift." Jones even compared his son with Socrates, but noted that he had an even greater likelihood of success than "that great and excellent heathen." Yet he also warned his son to be wary of popular demands and implied that he could only be assured of honor by holding a steadfast position.[21] As Greenberg suggests, by resisting such demands, Southern politicians demonstrated their ability to act independently from outside influence, proving that they deserved honor.[22] In encouraging Charles C. Jones, Jr. to be wary of the pitfalls of popular politics, Jones advised his son on the proper conduct of a Southern political elite. He furthermore urged him to read his Bible and pray constantly as he exercised the mayoralty of Savannah. Such language suggests Jones believed that honor and evangelical Christianity could not only coexist but cooperate as well. Just as Jones expected his son to behave in an honorable fashion regarding politics, he also emphasized the religious elements involved.

In addition to advising Charles C. Jones, Jr. on his political ascendancy, Jones also considered his son's other public achievements, a distinguishing characteristic of a man bound to the Southern ethic of honor among elites. Following a speech given at a secession meeting, Jones praised his son's performance in a letter written to his daughter, Mary S. Mallard. Happily acknowledging the community's approval he wrote, "Your brother presided with ease and dignity, and delivered an admirable opening address…rapturously applauded."[23] While any proud father might have noted the "ease and dignity" with which a son spoke to an audience, a man of honor took special occasion to draw attention to the way an audience "rapturously applauded" a speaker. In so doing, Jones noted the community's role in assessing his son's achievements, essential to the world of honor.

Jones also praised his children for their military service, another element often associated with the world of honor. While Jones was too old and frail to serve, he repeatedly expressed satisfaction toward both his sons for their contributions to the Southern cause. "Our only sons—and both in the army! ...There is true nobility in their action," he wrote to his daughter Mary. Clearly he believed public opinion would recognize their contributions. Jones also believed his sons would serve honorably because "the current cause exceeds in character that of our first revolution." Is so doing, Jones attempted to associate the actions of his son with the ethic of honor.[24] Just as heroes like George Washington, a fellow Southerner, had manfully resisted the British, Southerners in 1861 must do the same against a Northern contingent they viewed as bent on a policy of subjugation. Surely, he believed, his sons would act appropriately for men of their social standing during such times.

Despite his satisfaction with Charles C. Jones Jr.'s services as mayor of Savannah and later as a Confederate Army officer, Jones expressed displeasure with his son on certain occasions. While the two undoubtedly had a healthy relationship, they apparently disagreed, at least periodically, over the question of salvation. Although Jones figured to be one of the South's most prominent evangelicals, his son resisted conversion until 1861. Jones expressed these concerns to his son numerous times. On many occasions, Jones exhorted his son to accept Christ and save himself from eternal darkness. Interestingly, however, Charles C. Jones Jr. did not respond to these demands. While he often spoke of God's aid and the dealings of Providence, when his father pressed him about becoming a Christian, he remained silent on the issue. Not until the illness and death of both his wife and young daughter in the summer of

[20] Charles C. Jones Jr. to Rev. and Mrs. C.C. Jones, Oct. 9th, 1860; Myers, 613.
[21] Rev. C. C. Jones to Hon. Charles C. Jones Jr., Oct. 15th, 1860; Ibid, 615
[22] Kenneth Greenberg, *Masters and Statesmen; The Political Culture of American Slavery*, (Baltimore: Johns Hopkins University Press, 1985), 19.
[23] Rev. C.C. Jones to Mrs. Mary S. Mallard, Dec. 13th, 1860; Myers, 634.
[24] Rev. C.C. Jones to Mrs. Mary S. Mallard, Oct. 26th, 1861; Ibid, 781.

1861 did Charles C. Jones Jr. heed his father's demands for conversion.

While some might see Jones's attempts to convert his son as a patriarchal dispute of honor between father and son, closer analysis reveals Jones's true motivations. He urged his son to convert because his evangelical beliefs required it. Moreover, Jones went so far as to tell his son to reject worldly attractions. Of the temptations the world had to offer, Jones wrote that

> there is nothing to draw you back, but much to draw you on, in them. You have but very few friends who have your present and eternal interests at heart.[25]

When using such language, Jones emphasized the eternal implications, a keystone of evangelical rhetoric.

By the time Charles C. Jones Jr. decided to convert, Jones, in light of the deaths of his daughter–in–law and granddaughter, told his son that salvation was even more essential at this moment of loss. Reminding his son that he would not be reunited with his departed wife and child if he remained unconverted, Jones wrote:

> There is such a thing as substituting imaginations for realities; and unless you have a real interest in the merits and intercession of the Lord Jesus Christ…you will never meet her in heaven…your immortal soul will be eternally lost! Nothing short [of conversion] will satisfy me…the emptiness of pleasure and honor and of wealth and all else earthly… perhaps you would never have so fully realized as by the affliction.[26]

After such a poignant plea, Charles C. Jones Jr. finally chose to address his eternal affairs. He wrote,

> I would not have you believe that I am trifling with God's dealings with me…Those realities are too sacred, too awful, too heartening, to admit…vain imaginations… my wish is…to embrace that salvation…and peace made with God. All else is valueless."[27]

From the sources that exist, it seems clear that Jones believed his son's uncertain eternal affairs presented a greater threat than any political or military adversary he would ever have to face. While he could be a man of honor, wealth, or worldly esteem, all would be for naught if he did not secure his eternal future. Thus, while Jones complemented his son on his honorable achievements, he viewed worldly acclaim as superficial in comparison to religious security.

While Jones used both the ethic of honor and evangelical Christianity extensively in the spheres of race and fatherhood, he took a unique position during the Secession Crisis and Civil War. Instead of relying on the standards of the honor code, Jones based the defense of the South on his evangelical beliefs. Although Jones had distinguished himself by combining the precepts of evangelicalism and honor on other occasions, his actions during the Sectional Conflict demonstrated Jones's commitment to Christian convictions. Instead of using the ethic of honor to defend the South like most fellow Southerners, Jones relied heavily on his evangelical beliefs when defending the Confederacy. Even when he called on the ethic of honor during this time, such usage was sparse and framed within a larger context as a defense of evangelical precepts.

Even when Jones used honor to defend the South, he combined it with a defense of Christianity. On one occasion, Jones wrote to fellow minister David H. Porter regarding the split of the Presbyterian Church. Of the eminent divide he wrote his colleague,

> The inauguration of war upon the South by the Black Republican government, backed by the entire North, is sufficient reason [for the separation].

Jones leveled this charge because he wanted to call attention to what he believed was a North devoid of Christianity. If Southern Christians were true to their beliefs, they would defend themselves against a Northern contingent they saw as imposing and oppressive. Furthermore he argued, "Ecclesiastical connections conform to civil and political…our being citizens of separate confederacies will but tend to bring up the question."[28] While such language contains elements of honorable Southern assertion, notably self–defense when faced with an assault, Jones relegated the ethic of honor to a supporting rather than primary role. If honor were dominant, Jones would have spoken of being *personally* violated. Instead, he believed that Northern Republicanism threatened the South's Christianity.

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[25] Rev. C.C. Jones to Mr. Charles C. Jones Jr., March 17th, 1860; Ibid, 568.
[26] Rev. C.C. Jones to Hon. Charles C. Jones, Sept. 27th, 1861; Ibid, 755-756.
[27] Hon. Charles C. Jones to Rev. C.C. Jones, Oct. 1st, 1861; Ibid, 757.
[28] Rev. C.C. Jones to Rev. David H. Porter, April 30th, 1861; Ibid, 670.

Although Jones believed the South's actions were an honorable defense of Christianity, he justified the war as a matter of divine purpose. He reminded son Charles C. Jones Jr., who by November 1861 was lieutenant in a Confederate artillery division, that,

> If it should please God to enable us to repel the invading fleet, it will greatly strengthen our cause… we must hope and believe that God will not suffer before their boasted power.[29]

Moreover, when criticizing the North, Jones suggested that its leaders behaved in a reckless manner, describing the Republican Party as

> destitute of justice and mercy, without the fear of God, supremely selfish and arrogant…The conduct of the old United States…is an outrage upon Christianity…No man can even conjecture where this strife is to end. Yet it is under the control of God...we can but cast his care upon him and humbly await his interposition.[30]

A close analysis of Jones's language reveals a twofold purpose. When criticizing the North, Jones questioned the attributes of haughtiness and assertion, aspects which would be viewed favorably in the South. As Greenberg and Wyatt–Brown demonstrate, manly pride and aggressiveness were essential characteristics in the Southern culture of honor. If Jones were an ordinary Southerner, he might have relished the opportunity for the South to compete with the North and assert its honor. Greenberg points out, some Southerners even admired the assertive and dangerous John Brown despite his attempted slave insurrection.[31] Instead, Jones offered a harsh rebuke for a North he viewed as threatening to true Christianity. In so doing, Jones associated the South with Christianity and transformed the conflict into an issue that invoked the Almighty's aid. As his sons served the Confederate cause, he justified the war not in terms of honor, but rather as an event which would demonstrate the South's Christian virtues.

Jones also repeatedly expressed his belief that God, not human agency would determine the outcome of the war. As such, he refused to place much faith in European intervention. Early in the war Jones declared, "We must let England and France go…and depend on ourselves, trusting in God."[32] Such language was a clear indication that Jones believed the Southern cause was in God's hands. If the South was indeed worthy of honor, God would deal justly with the North. Even when things were going badly, Jones maintained a higher power was at work. Jones wrote to his son on December 25, 1861,

> With the shadow of God's judgment…and no ray of absolute light…I do not know that we can greet each other with a 'Merry Christmas.' But…His judgments are right…and so rest upon him to keep and to sustain and bless us.[33]

Clearly, Jones received true consolation in believing that God controlled all things when he could not rely on the ethics of his elite standing to affirm his beliefs.

From the fervor of the Secession Crisis through some of the darkest moments in the Confederacy's existence, Jones associated the South with evangelicalism, only using honor to defend Christianity. In November of 1860, he admitted some concern about the prospect of war with the North. In such an event, Jones declared, "Certainly we do need 'the prayers of the pious.'" Still, Jones confidently asserted, "I do not fear it (war) if the Southern states are united." After a Confederate victory at Fort Sumter, Jones supported the Palmetto State's valor and hoped Georgia could emulate such behavior. Yet following a particularly disastrous Confederate showing at the Battle of Antietam, Jones woefully wrote his son,

> What a judgment is falling upon our country!…it is enough to sober the most inconsiderate and soften the obdurate and bring our whole people to humiliation before God.[34]

While we may find such language to be contradictory, the Reverend Jones saw no conflict between the defiant words he used before the war to the humble tone he took during its darkest hours. Rather, Jones believed the South to be truly Christian in nature. Thus, when the South came under assault by an entity he saw as lacking in Christian virtues, Jones felt bound to defend it. Only then did honor come into play and in a distinctively supportive role.

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[29] Rev. C. C. Jones to Lt. Charles C. Jones, Jr., Nov. 4th, 1861; Ibid, 786.
[30] Rev. C.C. Jones to Hon. Charles C. Jones, Jr., Apr. 20th, 1861; Ibid, 667.
[31] Greenberg, *Honor and Slavery*, 104-107.
[32] Rev. C.C. Jones to Lt. Charles C. Jones, Jr., Dec. 20th, 1861; Ibid, 823, 838.
[33] Rev. C.C. Jones to Lt. Charles C. Jones, Jr., Dec. 25th, 1861; Ibid, 823, 826.
[34] C.C. Jones to Hon. Charles C. Jones, Jr., Nov. 15th, 1860; C.C. Jones to C.C. Jones, Jr., Apr. 20th, 1861; C.C. Jones to C.C. Jones, Jr., Oct. 2nd, 1862; Ibid, 629, 666, 971.

With the lone exception of urging his son to convert, no other event seems to have spurred Jones toward invoking the aid of the Almighty more than the tension with the North. While Jones undoubtedly believed in and acted upon the ethic of honor, by associating the South with Christianity, he placed evangelical Christianity at the center of his worldview. When the Southern system in which he experienced evangelical success became embattled, Jones wielded the ethic of honor to defend his evangelical foundation. Following the war, one observer described Liberty County, Georgia, Jones's home, as socially and morally destitute.[35] Had Jones lived to witness the South's defeat, such conditions would not have surprised him. Jones might have expected that with the demise of the Southern social system, the Christianity, which Jones had created, was also bound to suffer. Thus, it seems clear that when Jones married the South to Christianity, he placed all other beliefs in a supporting role to his primary evangelical ethics.

Jones, like many other Southern Christians, clearly valued both the ethics of honor and social hierarchy alongside evangelical Christianity. As such, he acted on the precepts of each throughout his changing circumstances and experiences combining various each to varying degrees. As war and poor health threatened his worldly security, however, he turned increasingly toward evangelical Christianity. Yet he spoke in a distinctly Southern tone, and believed to his death that the ethic of honor was fully compatible with evangelical expectations.[36] Still, there were occasions where honor took a back seat to evangelicalism. With this in mind, it may be possible to view Jones as a forerunner for a South on the verge of transformation. While he embraced both the traditions of honor and evangelicalism, traditions that historians have seen as increasingly compatible, evangelical Christianity was clearly ascendant. Southerners resisted change in many ways before the Civil War, but initial resistance to evangelicals faded into acceptance. The emergence of the biblical defense of the Confederacy and the Lost Cause following the war further suggests an increasing tendency among Southerners to identify with evangelicalism. Still, the vestiges of honor remained strong in Southern society and postwar Southerners used such language to support often distorted views of evangelical purity.

As theological historian Samuel S. Hill Jr. argues, Southern evangelicals believed in an ethic of "social responsibility." Yet instead of taking a progressive form as it did within Northern churches, it became, "the preservation of orthodoxy, primarily religious, but with social orthodoxy in a supporting role."[37] For Jones, this portrait, though accurate in some regards, does not fully explain his behavior. While Jones did become a Southern conservative by the late antebellum period, he did not view his relationship with Southern society as a one way street. Instead a mutual reciprocity existed between the worlds of honor and evangelicalism. When Southern Christians became conservative, and therefore non–threatening, they gained greater religious liberties within Southern society. Conversely, when the culture of honor conceded these freedoms to Southern evangelicals, it allowed men of honor to point out that they could be both religiously pious and honorable at the same time. When attacked by Northern reformers on social issues, Southerners of both honorable and evangelical persuasions had a means for defense on which they could rely. For example, when Northern critics attacked slavery for its ungodliness, Southerners called on men like Jones to refute this claim. In turn, after being attacked as hypocritical, Southern Christians defended themselves and the Southern system with the language of honor. Jones, it seems, offered an example of this process of reciprocity and how each side benefited from the other.

Yet the two were not always perfectly harmonious either. Just as Jones used the two seamlessly, he also bent the rules of honor to conform to his Christian beliefs. While in some ways, Christianity was, by the time of the Civil War, adapting and conforming to the rules of an honor–bound society, Jones offers an interesting example of an evangelical who adapted the rules of honor to conform to a different set of ethical standards. And while Jones did not speak for all Southern evangelicals of his day, he was one of the group's most eloquent voices. Moreover, Jones's apparent tendency to reshape the rules of honor to conform to evangelical Christianity seems to suggest a far more complex relationship between the two than has heretofore been previously understood. By studying Jones and looking for similar examples it might be possible to better understand how Southern evangelicals dealt with the culture of honor and how Christianity has since emerged as such a dominant factor in Southern society.

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[35] Eric Foner, *Reconstruction: America's Unfinished Revolution*, (New York: Harper Collins, 2005), 537.
[36] Heyrman, 27.
[37] Samuel S. Hill, Jr. et al, *Religion and the Solid South*, (Nashville: Abingdon Press, 1972), 28.

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Resistance to U.S. economic hegemony in Latin America: Hugo Chávez and Venezuela

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Abstract
Recent years have seen increasing opposition to U.S. political and economic influence in Latin America. Venezuela is a key player in the South American economy. This project researches the country's history from the 1950s to the present and the role of the U.S. in its formation. Through political economy, this study asks if recent political changes are due to the effects of U.S. policies in Venezuela. The research examines the relationship between the two nations and the development models proposed by the Chávez government. The paper considers alternative models of economic development, independent from U.S. political hegemony.

Introduction

On April 11, 2002, a group of senior military officers stormed the presidential palace in Caracas, the capital of Venezuela. They ousted the leftist president, Hugo Chávez, and replaced him with the more conservative Pedro Carmona. The coup had the support of the business community, the upper classes, the mass media, and tacit support from the U.S.; however, the de-facto government was short lived (Cooper, 2002; Hellinger, 2003; García-Guadilla, 2003; Parenti, 2005). Thousands of the nation's poor filled the streets demanding that Chávez be restored to office while, in a surprising move, branches of the Venezuelan military acted to support rather than suppress the movement. After two days of massive protests, Carmona stepped down and Chávez returned to power. Scholars Steve Ellner and Daniel Hellinger (2003) claim that this scenario "has no equivalent in Latin American history" (p. ix). No equivalent in Latin American history? Such a strong assertion, as well as the media controversy over Chávez and his "Bolivarian Revolution," are what spur research on this topic. What has happened in Venezuela to create such controversy, and what does it mean?

The goals of this project are two-fold. The first is to investigate recent changes in Venezuelan society since the election of Hugo Chávez, putting them in a historical context that reveals their root causes. This enables one to see beyond the rhetoric and romanticism of street protests and coups, making sense of social and economic changes that may appear at a glance to be chaotic. The second goal is to develop a theoretical interpretation of these national changes that is grounded in a global framework. Globalization has been changing the way people understand the concepts of community and economy; therefore focusing on the national level alone is

insufficient. Careful attention has been paid here to the colonial history of Latin American countries – this history continues to shape development and politics of power in the region, and it is my belief that present-day inequalities stem from its legacy. Upon looking at the case of Venezuela, I argue that the revolutionary program proposed by Chávez is not so shocking given the history and structure of Venezuela's political-economic system. I also submit that, despite its shortcomings, the program offers policy changes that are necessary for the development of regional sovereignty for South America and for a sustainable system that is inclusive of previously marginalized Venezuelans. The "revolution" that Chávez brought with his presidency may well be a middle-road model that defies both traditional capitalist *and* state-socialist models.

History

Traditional democracy: The Punto Fijo system

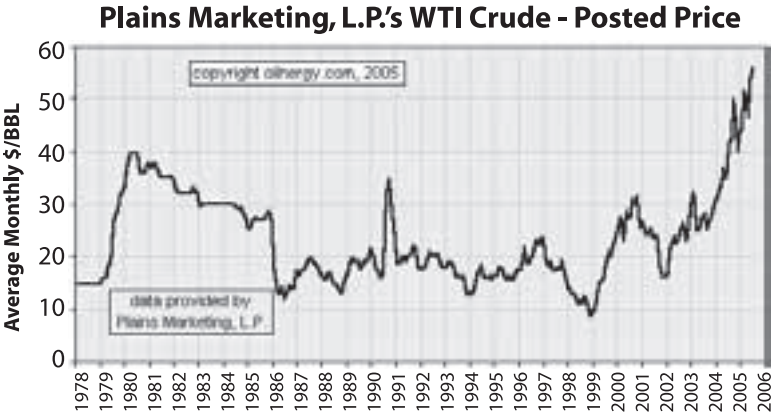
For decades, Venezuela was considered by many to be an "exceptional" nation, both because of its prosperous economy and because of its governmental system similar to that of the United States (Coronil, 2000; Ellner, 2003; Kelly & Romero, 2002). The political structure was founded in 1958 with the Pact of Punto Fijo, an agreement that established an electoral democratic system after years of dictatorship and coups. The new arrangement was designed to bring together democracy, oil nationalism, and economic development in a project that cast the state as distributor of oil rent money (Coronil, 2000; Hellinger, 2003). In the electoral system, two dominant parties shared power – the social democratic *Acción Democratica* (AD) and Christian democratic *Comité de Organización Política Electoral Independiente* (COPEI). The two parties alternated in power uninterrupted for nearly four decades.

According to historian-anthropologist Fernando Coronil (1997), Venezuelan democracy was distinctive because of its fusion of resource wealth with political power. With this combination, he says, citizens could expect to both participate in the political system and benefit from the natural wealth of the country's resources. Furthermore, he describes how the nation could be thought of as having two parts: a "social body" made of its people and political organization, and a "natural body" made of its physical resources. This split was significant because it aligned political power with *nature*, rather than with the *people*: "the nation's social body became more marked as the passive beneficiary of its natural body, seen now as the main source of the nation's powers" (Coronil, 1997, p. 168). It is in this context that one can understand Venezuela's economic system of *statism*. Such systems, internally-focused and less open to foreign investment, were common from the 1930s to 1960s in Latin America and the United States. Statist philosophy maintains that the state should create the conditions for industrial development and strategic strength (Kelly & Romero, 2002). This was the goal of the Pact of Punto Fijo, which organized the state to be the manager of its natural resource wealth.

The close relationship between the state and industry in this model meant that the government derived most of its revenue from the oil industry. Oil drilling had begun in 1914, expanded quickly throughout the 1950s, and when Venezuela nationalized its oil industry in 1976, it represented the culmination of the Punto Fijo project (Hellinger, 2003). After the oil embargo by the Arab states of OPEC, global oil prices skyrocketed, making for windfall revenues to oil-exporting nations world-wide. (See Figure 1.) Indeed, Venezuela received more money during this boom than all of Europe did under the Marshall Plan (Coronil, 1997). The surge in income allowed the Venezuelan government to further its statist agenda. It increased spending on social programs and infrastructure projects, and from the oil industry grew a prosperous middle class.

A sharp decline in oil prices after the 1970s began to erode the middle class and forced the government to borrow heavily to maintain its social spending. This caused Venezuela (and numerous other Latin American export-based economies) to accumulate massive debts, the effects of which are still felt today.

Figure 1. *International crude oil prices from 1978 to 2005 (Source: Oil Energy)*



It is critical to understand how the bond between governmental institutions and oil money shapes the economic and social progress of the country. Statism and Import Substitution Industrialization were common in other Latin American countries as well, but the high revenues brought in by oil (as opposed to other primary-good exports) were what had helped to bolster Venezuela's exceptional image.

The demise of Punto Fijo and the statist model: Long-term causes

The exceptionality was not an inherent national characteristic, however, and in the last decade Venezuelans watched as their system of 40 years came apart at the seams. There are both long-term and immediate reasons for the decline, both of which must be acknowledged to understand the current situation. The long-term economic and political factors leading to the demise of *puntofijismo* have to do with the efficacy and legitimacy of the system. Scholars disagree over which factors were most important, though there is a general consensus that the system was in decay. Some believe that the main cause was a matter of economic mismanagement. Terry Karl (as cited in Hellinger, 2001; as cited in Ellner, 2003) blames Venezuela's economic failure on the reliance on oil to sustain the economy. She argues that oil-exporting nations suffer a phenomenon known as the "Dutch Disease," a problem that occurs when booms overvalue currency and weaken other sectors in a domestic market. A single-export based economy is also vulnerable to fluctuations in market prices, which can be disastrous when they fall.

As Kelly and Romero (2002) point out, high prices can also be disastrous. High revenues can lead to over-confidence ("an atmosphere of easy money") and corruption (Kelly & Romero, p. 149). The boom's impact in Venezuela was to create a society in which the population expected the state to distribute the wealth of its export, despite the lack of productivity and organization on the part of the population (Parenti, 2005; Kelly & Romero). Ever since 1936, the government has touted its goal of "sowing the oil," the phrase for using the nation's oil wealth to establish productive enterprises in other sectors.

The country's failure to "sow the oil" does not surprise Coronil (1997), however, who argues that Dutch Disease is a misnomer. He says that it should be renamed the "Third World" or "Neo-colonial Disease," pointing out that it is "an epidemic in the monocrop economies of the third world" that seldom afflicts nations of first-world status (Coronil, 1997, p. 7). He also argues that the Dutch Disease does not give a satisfactory explanation of the decline of the economy because the real causes are beyond mere mismanagement. The economic and social downturn that took place after the boom of the 70s had to do with over-reliance on oil, but the overall decline was the result of structural and cultural deficiencies in the country. The Punto Fijo government was not really a democratic revolution that eliminated the oligarchs of the past, as the national mythology led people to believe. Rather, Coronil (1997, 2000) claims, it was a compromise on the part of the elite to transfer political power to the electorate while maintaining the privileges of wealth and influence.

> Just as oil wealth had allowed the concentration of political power in the figure of the president during [previous military dictatorships], it made it possible for the ruling democratic parties to monopolize political and economic power and to exert extraordinary influence over society. (Coronil, 2000, p. 35)

If the Punto Fijo system is analyzed in this light, the failure of Venezuela to create a sustainable economy did not result only from mismanagement by party leaders, but also from the structure of the political-economic system itself. It is well-documented that the system was marred by corruption, and the struggle to be rid of it continues (Maya, 2003; Roberts, 2003; Gott 2001; Coronil, 1997; Munckton, 2005; Parenti, 2005). Corruption was visible when Carlos Andres Pérez, president for the first time during the late-seventies oil boom, suffered two separate coup attempts during his second term in 1992. The coups failed, but Pérez was impeached on counts of corruption the following year. In the 1993 presidential elections, the abstention rate was 39%, the highest in Venezuelan history (Buxton, 2003). These events, and others to follow, served to reinforce a widespread discontent with the party system, which had caused them in the first place (Coronil, 2000).

Partly as a result of the corruption, the benefits of oil money were not enjoyed equally by all Venezuelans. Political power in the democracy was strictly centralized in the two parties and was distributed on the basis of patron-client relationships. Unlike the ideology that cast each citizen as part land-owner (Coronil, 2000), not all of the population shared in the prosperity of oil sales. The biggest beneficiaries of national wealth were those who were best positioned to take advantage of political institutions in the patronage system – these tend to be urban dwellers of upper-class status and White/European ethnic origins. Political access has been especially difficult for Indigenous and Black Venezuelans, minorities who were not protected by the constitution prior to 1999 (Becker, 2004). Even in 2000, the top 10 percent of the population received half of the national income (Gott, 2001).

Acknowledging the sources of the economic decline, it must be emphasized that the erosion of living standards began far in advance of the tumultuous events of the 1990s. After international oil prices plummeted in the 1980s, Venezuela had borrowed heavily to maintain its funding for social programs and services. Loans did not secure social spending, however. During the neoliberal economic adjustments of the late 1980s, countries aimed to decentralize the government and economy through financial deregulation and privatization of state enterprises. However, these measures only exacerbated poor conditions. In Venezuela, social spending decreased from 8 percent of GDP to 4.3 percent (Roberts, 2003), and with the decreased national income came impoverishment and a widening income gap. Julia Buxton (2003) reports that poverty grew from 36% to 66% from the mid 80s to mid 90s, shooting from 43.9% to 66.5% in the year between 1988 and 1989. At the height of political crisis in the mid 1990s, the general poverty rate was at 86% (Buxton). The middle class had shrunk and civil society increasingly lacked organization. This was especially true of organized labor; as the economy grew less formal, the traditional, more productive enterprises of industry and agriculture waned while service jobs, short-term and informal employment had become prominent. These trends show that the economic decline came in a number of ways and occurred over an extended period of time.

The demise of Punto Fijo and the statist model: Immediate causes

Immediate factors signaled the fall of the traditional system as well. The coups of 1992 and impeachment of Carlos Andres Pérez were not the only visible evidence of the decline; other events illustrated the increasing social unrest and disillusionment. In 1989, Pérez had been elected for another term by Venezuelans who opposed free-market or neoliberal reforms (Buxton, 2003; Márquez, 2003). Contrary to his social democratic platform, Pérez shocked the nation by embracing the policies he had decried in the 1970s. In what has been dubbed "The Great U-Turn," he announced on February 16 that he had already made an agreement with the International Monetary Fund (IMF) to implement liberalization measures.

Shortly after his announcement the *Bolivar* was deregulated and the price of petroleum shot up by 100%. This placed an immediate burden on bus drivers living in the crowded shanty towns around Caracas. To cover costs, they doubled bus fares, and on February 27, commuters rioted in response, sending a wave of protests through the countryside in a matter of days. It took five days to quell the revolt, known as the *Caracazo*, and this single event has had a lasting impact on Venezuelan society. Pérez later explained that his decision was due to the desperate need for foreign investment. Acknowledging that the decision was unpopular, he said that Venezuelans "…must understand that these are unavoidable. There was no other way out" (Gott, 2001, p. 51). The riots were the country's first mass expression of class-based unrest since the 1930s and marked the end of passivity on the part of the public.

Like the *Caracazo*, the failed coups of 1992 were also turning points. The first attempt was led by Hugo Chávez Frías, a young officer who had been involved in revolutionary organizing within the military academy. When he and the coup supporters were arrested for treason, he made a one-minute televised statement in which he told his comrades to put down their arms and took responsibility for the failure. He declared to the public that *por ahora* (for the time being), their objectives had not been reached. This phrase signaled a continuing commitment to the anti-party cause, and his apology left an impression in the minds of the public, who were not accustomed to hearing political figures accept blame for their failures (Parenti, 2005; Gott, 2001).

While the military coup tactics failed, Chávez returned after his release from prison to organize a coalition that could oust the dominant parties in a presidential electoral bid. As the Punto Fijo regime faded, various smaller parties came on board to form the *Polo Patriótico* (Patriotic Pole), a coalition for what had become the *Movimiento Quinta República* or Movement for the Fifth Republic (MVR). In 1998, Chávez ran on the platform of writing a new constitution and leading the nations of South America in an original direction that would unite and strengthen the region (Gott, 2001). After the MVR did well in local elections, COPEI and AD desperately moved to endorse the independent Salas Römer one week before the election. It was not enough to sway the election, and Chávez won the presidency by a 56 to 39.9 percent margin (Hellinger, 2003). The new constitution was drafted by a constituent assembly and approved by a referendum vote in 1999.

Politics and policy in the era of Chavismo

Using legitimate means to take power has not guaranteed an easy time for Chávez and his administration. The opposition has been fierce since his first election, marching en masse afterward to demand both his ouster and a recall vote on the basis that the election had been rigged. Supporters have also turned out to fill the streets, marching in defense of Chávez's legitimacy and celebrating the anniversary of his inauguration. Both opponents and supporters continue to protest, voicing opinions about *chavista* policies and programs. The stark split between those who revere the president and those who despise him makes for a

polarized and volatile political climate (Ellner & Hellinger, 2003; García-Guadilla, 2003; Roberts, 2003).

Increased polarization can be seen in political parties, labor groups and civil organizations, but class divisions are what most clearly distinguish pro- from anti-governmental factions. Chávez's support comes predominantly from the peasant and working classes. According to a Datanalysis poll, in the 1998 presidential campaign Chávez received the strongest support from youth, men and lower classes (as cited in Hellinger, 2003). In a subsequent race against Francisco Arias Cárdenas, the class distinction was again very clear, with Arias receiving support from 2/3 of the wealthy and middle-class sectors, Chávez from a majority of the poorest social sectors (Hellinger, 2003). And as noted, the reversal of the 2002 coup was due in large part to the immediate response of crowds from the poor barrios (Hellinger, 2003).

As Chávez continues to pay particular attention to the poor and to the Indigenous and Black communities, his approval ratings have grown immensely. The 1999 constitution brought changes by offering protection of land and resources for Indigenous communities, official status for Indigenous languages, and the reservation of three deputy seats in the National Assembly for Indigenous representatives (Becker, 2004). In two polls, Chávez's support has grown to a range of 53% to 70% and support for the opposition has shrunk to a range of 10% to 27% ("And now your," 2005).

Conversely, it is in the ranks of the middle and upper classes that the most opposition is found. The opposition rallies and marches during the brief 2002 coup were organized in the more affluent areas of eastern Caracas. The coup itself showed where opposition lay: it was supported by a faction of military officers, business elites and the privately-owned mass media (Cooper, 2002; Hellinger, 2003). Pedro Carmona, the man chosen as interim president during the coup, had been the head of *Fedecámaras*, the nation's leading business association. Even during the anti-government oil strike/lockout of 2001, the majority of worker organizing was done by unionized labor, which is imbedded in the clientelist political system; workers in the informal sectors continued working (Hellinger, 2003). A *New York Times* editorial affirms the source of opposition, saying that Chávez' opponents do not speak for the majority of the population. Referencing his victory in the 2004 recall referendum, the editorial attributes Chávez' victory to the fact that his programs address the concerns of the poor, who have "felt like the neglected stepchildren of the country's oil boom" ("Hugo Chávez wins," 2004). The referendum had been called for by opponents on the basis of fraud, but after auditing the results Chávez's win was endorsed by both the Organization of American States and the U.S.-based Carter Center (Forero, 2004).

Domestic agenda in the new order: The Missiónes

Despite the fierce opposition, the administration has won seven national referendums, succeeding in passing a new constitution and initiating a number of social programs. With the stated goal of forming its own model of "21st century socialism" or a "social, humanist, egalitarian economy" ("Oil, Missions," 2005), the government's purpose with the projects is to give more Venezuelans access to land, education, health care and a means of livelihood (Parenti, 2005; "Oil, Missions," 2005).

One of the first major projects was "Plan Bolívar 2000," a civil-military public works project in which military personnel worked to improve sanitation, health, transportation, housing, and other public infrastructures. It was both a practical attempt to provide jobs and services and a political attempt to show the MVR party as a joint civil-military organization (Buxton, 2003; Hellinger, 2003; Roberts, 2003). A series of other projects, or *missions as* they are called, have been initiated more recently, addressing the foundations for social welfare and a sustainable economy.

Two of the most successful missions have been for health care and education. *Misión Barrio Adentro* (Inner-City Mission, roughly) has been providing health care with the help of over 20,000 Cuban medics; it is reported to have done over 185 million consultations and saved over 25,000 lives (Munckton, 2005). The program has been criticized by Venezuelans who fear the influence of Cuban communism; others regard it as nothing more than social work ("Oil, missions," 2005). Social work in the realm of education is being provided by *Misión Ribas* (Mission Robinson), a program that offers free adult education. It serves Venezuelans who haven't been able to attend high school due to economic hardship; it offers stipends to poor students and flexible hours for those who are working. The program graduated over 20,000 people in June, and 210,000 people are expected to have been graduated by the end of this year. Most have already enrolled in *Misión Sucre*, which provides people with free university education (Munckton).

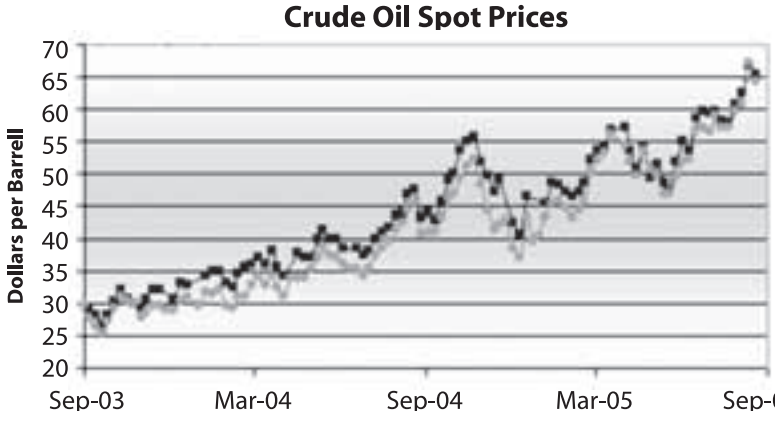
Other missions address issues of food, land reform and housing. Food sovereignty is the goal of *Misión Mercal*, a project of state-run supermarkets. Twenty five thousand *Mercal* stores hold 60% of the food market and source food from government-owned cooperatives. This is a strategic move toward food sovereignty for a country that imports the vast majority of its food (Munckton, 2005).

Likewise, land reform is a crucial component of food sovereignty. Government projects have been started

to address rural land access issues, which is urgent in a land where the population is concentrated in urban centers. The situation is precarious; according to *The Economist*, 75% of farmland is owned by less than 5% of landowners ("And now your," 2005). The government claims that the country cannot grow enough food to feed its citizens, and its newly-created National Lands Institute has begun a review of *latifundio*, or large estates, for possible redistribution (Bruce, Apr 29, 2005). The government has asked hundreds of firms to provide proof of title back to 1848; failure to do so may result in distribution of plots of land to *campesinos* for small-scale agriculture and farming cooperatives. At the time of this publication only two estates have had land expropriated, one of which is a cattle ranch owned by the British Vestey Group. Parts of the ranch have been occupied by peasants for several years. In March of this year, however, the government declared failure of the firm to provide adequate proof of title. This clears the way for the government to provide permanent titles to dozens of families already living on the land under provisional titles. The move is opposed by ranchers, who have 60 days to legally contest the government's decision. According to Bruce (Apr 29, 2005), officials in charge of the reform say that the goal is "effective but peaceful land reform" (para. 23), which involves only partial expropriation; the government says that it would like for the ranchers to continue using part of the land for cattle ranching.

The Chávez administration is also trying to address urban land issues. The Housing Mission is giving titles to poor Venezuelans who have been living on plots for years, often in homes they built themselves ("Venezuela to offer," 2005; Munckton, 2005). Additionally, the government is building low-cost housing and providing subsidies and credits to help pay for the homes. Chávez has promised to build half a million homes by next year, with hopes of completely solving the housing crisis in 17 years. He has admitted, however, that so far they have fallen short of the mark, saying that housing "is one of the most serious [problems] that Venezuela faces. Our revolution has provided some answers but they're really not enough" ("Venezuela to offer," 2005). In the last five years, only 91,000 homes have been built, not enough to house the 26 million who have inadequate housing.

Figure 2. *Global crude oil prices over 2-year span (Source: U.S. Department of Energy)*



Note: WTI (West Texas Intermediate) and Brent are particular types of crude oil that are used as references for quality (Elf, 2005).

As part of the broader Project PAIS (*Poblaciones Agro-Industrialies Sustentables*, or Sustainable Agro-Industrial Populations), Chávez is combining the missions with job training and the formation of worker cooperatives. The goal is to encourage re-settlement of the countryside by creating centers of development that contain clinics, schools, and workshops for the production of goods ("Oil, missions," 2005; Gott, 2001; Munckton, 2005; Parenti, 2005). The projects are reported to have benefited 70% of the population thus far ("Venezuela politics," 2005; Munckton, 2005). However, all of Chávez's projects have been made possible by unusually high international oil prices, over $65US per barrel at the time of this paper. (See Figure 2.) Time will tell if the projects have succeeded in "sowing" the oil money, or if they have merely spent it. The future of Chávez's agenda remains uncertain.

Chávez's programs may also appear inadequate because poverty rates have not decreased since reforms began. The statistic from the *Miami Herald* (as cited in Weisbrot, 2005) is often quoted by opponents that the poverty rate grew from 49% in 1998 to 53% in 2004. The figures are correct, but they do not necessarily depict what is taking place in society as a whole. Others counter that the poverty rate had begun to decline in 2003, and living standards for the lowest 84% of the population have increased by one third after accounting for inflation (Datos Information Resources, as cited in Munckton, 2005). According to Weisbrot (2005), statistics on household poverty do not include non-cash income of the poor such as subsidized food, health care and housing. Furthermore, he says that these kinds of subsidies have dramatically improved quality of life for the majority of Venezuelans. Because of this, he argues, one must take into account the

different kinds of changes in resource distribution that are happening in Venezuela in order to compare the effectiveness of Chávez's policies.

International agenda

The *misiónes* are attempting to improve quality of life for Venezuelans on the domestic front. As a direct result of the *misiónes*, millions of Venezuelans are receiving food and land, forming worker cooperatives for production of goods for the domestic market, and have more access to a high school and college-level education. But international relations also play an important role in Chávez's Bolivarian vision. When he ran for president, Chávez promised changes that would protect the country from the negative effects of globalization (Kelly & Romero, 2002). A key part of his plan to revive the nation is encouraging cooperation among countries in South America and the Caribbean, outside of the influence of the United States. Venezuela's increasing involvement in the Andean Community, OPEC, and neighboring countries shows his commitment to regional integration and international trade, though moves such as oil contracts with Cuba have not been well-received by the U.S. Even yet, Venezuela has remained a reliable supplier of oil to the United States and is still a major importer of U.S. goods.

Economic integration is just one part of the plan to strengthen the region; cultural and political coordination form the other. This summer the government (along with Argentina, Uruguay, and Cuba) launched a new Latin American television network, *Telesur*, which is meant to provide a venue for media from a Latin American perspective. Andres Izarra, *Telesur's* president, describes the project as "an initiative to integrate through communication the different countries of the region [and] an essential pre-requisite for closer political and economic links across Latin America" (Bruce, Jun 28, 2005, para. 16). Chávez has also used the Organization of American States and the United Nations as sounding boards for building regional unity and for defense of political actions. In an hopeful statement in a March meeting between Chávez and heads of state from Brazil, Colombia, and Spain, Chávez said that "a new geopolitical map is forming on the horizon," one "without confrontations" ("Presidente Chávez," 2005, para. 8).

Discussion

Class relations within Venezuelan society

It seems quite possible that a new geopolitical map is on the horizon for Latin America, though it is not likely to be free of confrontations. As illustrated, a fierce debate rages between supporters and opponents of Chávez. Both sides have claims that are legitimate; thus in order to understand the situation it is not enough to take a side, one must understand *what is at stake* for those on different sides of the debate. Also, the struggle is taking place in both the national and international arenas.

As discussed above, most of Chávez's opponents are of privileged social status and class. As a result, their privilege is at risk with the success of the MVR's policies. The Punto Fijo government, while far more democratic than the dictators and military regimes that preceded it, was a system that remained by and for the wealthy. The reason that Chávez was able to gain power and that his revolutionary programs have been relatively well-received is that the majority of the population was and is seeking radical change (Hellinger, 2003). Coronil's observation (1997, 2000) that the system appeared, but was not fully inclusive is important. Political power has consistently been reserved for the upper class status and people of European descent – never for Indigenous or mixed ethnicity, until Chávez (Becker, 2004). What Chávez did with his electoral bid was bring class issues to the forefront of political dialogue in Venezuela. Because the traditional balance of power has been unequal, the creation of a more inclusive system will necessarily require the political elite to sacrifice some privilege. Land reform, proportional representation and government-subsidized social services are just a few examples of how a better balance of power may be created. If productive enterprises such as worker cooperatives can be sustained, they may also be the key to the country's sustainable non-oil economy.

Most Venezuelans were prosperous during the oil boom of the 20th century. The problem was that it was not a sustainable prosperity nor was it, as many had believed, the reward for their exceptional self-governance. With citizens content to rely on the government for distribution of resources, they were not required to be active beyond participating in elections. This poses a problem today as the country tries to wean itself off of its reliance on oil and spur productivity in other areas. As the planning and development minister, Jorge Giordani, told *The Nation*:

> We've been fighting political battles for most of our time in office. Many people have learned to read in the last few years, but how long will it take for them to work in high technology, or medicine, or services? Three years? A generation? We are fighting a very individualistic, rentier culture. Everything has been 'Mama state, Papa state, give me oil money.' To organize people is extremely hard. (as cited in Parenti, 2005, p. 5)

This problem is not easily placed on any one individual or institution, but on a confluence of factors in Venezuela's history. The root causes of economic decline were many, and as a result solutions will necessarily take time. Chávez seems to be trying to address

this by requiring that communities organize in order to receive aid from the government. One attempt at this organization is the proliferation of "Bolivarian circles," which are small, civilian-led local groups formed to broaden participation in and support for the Bolivarian cause (Maya, 2003; García-Guadilla, 2003; Parenti). In order for there to be true and long-lasting transformation, however, local community organizing must continue by Venezuelans of *all* political bents. Education as well will play a key role, if the educational *misiónes* are carried out in a way that cultivates active and non-partisan citizenship.

Changes in global dynamics of power

Because no nation exists in complete isolation in today's world, power relationships must be transformed on the global level as well. The relationship between nations of first- and third-world status has historically been one of inequality, and for all its wealth as an oil-exporting nation, Venezuela has not managed to escape this. Extraction of resources by colonial powers was followed by extraction of resources by first-world consumer markets, and finally loans that required radical structural adjustments ravaged the fragile society. For economic development to benefit everyone in South American nations, serious strides must be made to give the poor access to institutions of power and democratic decision-making. How Venezuela is represented in international forums, institutions, and in mass media will do much to determine the role the country will have in determining its development agenda.

Though it is often portrayed as such, *chavismo* cannot be easily dismissed as anti-globalization, anti-capitalist or even anti-American. Kelly and Romero (2002) cite regional integration in the form of the Andean Community and Mercosur as an "alternative to globalization" (p. 39). This is only accurate if globalization is defined narrowly, as what has been dubbed the "Washington Consensus" or the model of U.S.-led neoliberal capitalism. Globalization should not be limited to the design of first-world schools of thought, however. Chávez has said that his project is "neither statist nor neo-liberal," that they are "exploring the middle ground, where the invisible hand of the market joins up with the visible hand of the state: as much state as necessary, and as much market as possible" (Gott, 2001, p. 172). It is clear both by the government's efforts to strengthen ties with neighboring nations and its enthusiastic involvement with international trade that it is not opposed to globalization. It cannot be anti-capitalist either, as evidenced by the way that Chávez has maintained constitutional protection for capitalist elements such as private property rights and foreign collaboration with the state oil industry.

What seems more likely is that Chávez is seeking a model of involvement in the global economy that *puts Venezuela first* – a model that will raise the standard of living for the poor and empower the country and region, rather than continue the failed neoliberal model that was destructive in its implementation. It should come as no surprise that most Venezuelans have rejected the orthodox economic model championed by the United States, because it did not benefit them.

Once this distinction is made, it becomes easier to understand Chávez's harsh treatment of the U.S. in his rhetoric. His inflammatory anti-Americanism is often the focus of media attention, as with his denunciation of a U.S. memo to the nations of CARICOM in June. The memo asked CARICOM nations to encourage Chávez to respect democratic institutions, accusing his government of using oil money to "destabilize its democratic neighbors" while "financing extremist and antidemocratic groups" in the region ("E*EUU envió informes,*" 2005). Chávez was quick to rebuke the United States, defending his commitment to democracy. Citing the history of U.S. intervention in the region, he called the memorandum "a slap in the face" ("*EEUU envió informes*").

Despite this tension, Chávez has not completely rejected nor attacked the historical ally of his country. He is critical of U.S. intervention, as he is seeking ways for nations in the region to resolve their own conflicts and determine their own style of involvement in global affairs. Given that there is a well-documented history of U.S. involvement in Latin American affairs, including the coup attempt on Chávez in 2002, his wariness is perhaps justified. Relations were not helped by the recent television broadcast of U.S. Reverend Pat Robertson, who called for the assassination of Chávez on the basis that he had "destroyed the Venezuelan economy" and will make the continent "a launching pad for communist infiltration and Muslim extremism" (Borger & Campbell, 2005, p. 1). But the condemnations of these statements already voiced by citizens of the United States will hopefully serve to ameliorate the situation.

Certainly problems exist with Chávez's authoritarian tendencies; for the sake of limiting the scope of this paper, I have not attempted to elaborate on his reported disrespect for the civil rights of his opponents and members of the private media. What I do assert is that we must be careful not to think that the scenario is simply one of democracy versus dictatorship, because this is misleading; it obscures the problem of poverty and political exclusion that was the impetus for the changes Chávez promises.

The extent of the "Revolution"

The pressure that South American countries face to modernize by the same model as the United States and Western Europe has created a clash of cultures that has yet to be reconciled because as of yet no one side has prevailed. This seems to be the question posed by Venezuela's "revolution." Chávez's policies for economics, international relations, and development have serious implications both for Venezuelans and for how the world conceives of development. They have similar implications for how the U.S. conceives of its role in the hemisphere as a leader and mediator. In the interest of sustainability and more egalitarian models, people who have been held in third-world status will need to have more leadership roles in development. Venezuela today is pioneering a model of economic development that breaks with the past orthodox models of statism *and* capitalism. Those who live in the "first-world" would do well to glean fresh insights from the experiments of communities to the South. Not only are they sure to impact the future of global economic relations, but their experiments may provide helpful models for even the most successful nations, as all countries will face rapid change and uncertainty in the globalizing world.

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Solid Phase Peptide Synthesis: Analysis and Identification of Protein Kinase Substrates

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Abstract

This research study examines the synthesis of tyrosine containing peptides based on the protein paxillin. Paxillin is a proposed substrate of the Focal Adhesion Kinase (FAK) protein tyrosine kinase. FAK is overexpressed in tumor cells; therefore, its abnormal function is associated with several cancer types. The peptides designed here are based on the substrate sequence FAK preferably binds to and phosphorylates. Solid Phase Peptide Synthesis (SPPS) provided substrate compounds which were then tested via biological assays with FAK. The synthesis of large peptides provides an accurate method to determine kinase amino acid phosphorylation preference to confirm paxillin as a FAK substrate.

Introduction

Cancer is the second leading cause of death in the United States. About 570,280 Americans are expected to die of cancer in 2005, more than 1,500 people per day.[1] There are numerous factors which contribute to the oncogenesis of cells and a better understanding of these variables may one day lead to improved cancer treatments. One such factor is abnormal, over expression of certain types of enzymes called protein tyrosine kinases (PTK). A kinase may be thought of as a "chemical switch" since it chemically alters its substrates by covalently attaching a phosphate ($PO3^{-2}$) group to them. Once phosphorylated, these substrate enzymes may be turned "on" or turned "off." A specific kinase is FAK[2] (See Figure 1.) FAK, located in the mammalian cell membrane, has been associated with several cancer types, including lung and breast cancer[3-4] (See Figure 2.) A proposed substrate for FAK is paxillin. A substrate can be thought of as a key which fits a kinase lock. The protein paxillin is a ligand that binds to membrane bound receptors that trigger cellular transduction pathways. FAK functions in regulation of cell adhesion and that trigger cellular transduction pathways. FAK functions in regulation of cell adhesion and migration by phosphorylating a tyrosine residue (**Y**) in paxillin (See Figure 3.) Within the amino acid sequence of paxillin, there are many possible tyrosines, which can be phosphorylated by FAK (See Figure 4.) The aim of this project is to focus on the tyrosine in paxillin and synthesize short versions of the paxillin protein around this targeted residue. While proteins are larger (longer) chains of amino acids, peptides are short chains of 2-100 amino acids (See Figure 5.) The peptides for this research project include a specific

Abbreviations: FAK, focal adhesion kinase; PTK, protein tyrosine kinase, ATP, adenosine triphosphate; SPPS, solid phase peptide synthesis; Fmoc, 9-fluorenylmethoxycarbonyl; HOBt, hydroxybenzotriazole hydride; HBTU, 2-(1 H-Benzotriazole-1-yl)-1,1,3,3-tetramethyluronium hexafluorophosphate; TFA, trifluroacetic acid; TIS, triisopropylsaline

tyrosine from the paxillin sequence, Y^{118} (Residue number 118). This was chosen based on previous Western blots using anti-paxillin antibody indicating that phosphorylation may occur at this tyrosine location.[5-7] This study synthesized, via SPPS, tyrosine containing paxillin peptides.[8] A general tyrosine peptide sequence is:

H_2N-aa_7-aa_6-aa_5-**Y**-aa_3-aa_2-aa_1-COOH.
H_2N = N-terminal
COOH = C-terminal

Testing a synthesized peptide with the kinase FAK will provide a more accurate quantitative determination of the extent of phosphorylation instead of the qualitative Western blot analysis. This study will also investigate varying lengths of peptides surrounding tyrosine 118; the range of sizes is from 12-30 amino acids in length. Testing with FAK will determine if it is possible to have 12 amino acid peptides act as a substrate for this kinase.

Methods

Solid Phase Peptide Synthesis (SPPS)
The peptide synthesis was automated with an Advanced Chemtech peptide synthesizer. Table 1 shows the target peptides for this study.

Polylysine (K) tails were attached to the C-terminal end of each peptide for adhesion to the negatively charged phosphocellulose paper disks used during assaying.[9] The γ-phosphate is transferred to the tyrosine residue from ATP to produce the phosphorylated tyrosine $\mathbf{Y}^{p}$, and ADP. This is measured quantitatively with γ-P^{32} ATP. The C-terminal of each peptide is bonded to a 90μm diameter polymer resin bead called Wang (100-200 mesh).[10] Each amino acid attached to the peptide initially contains an N-α-Fmoc protection group and amino acids may also contain side chain protecting groups[11-12] (See Figure 6 for chemical structures of reagents) and (See Figure 7 for steps of SPPS.) To ensure successive amino acid coupling before Fmoc deprotection, a three-fold excess of each amino acid was used. The Fmoc group was "deprotected" or removed with piperidine before each coupling step. Activation of the amino acid's carboxy group was done with HOBt and HBTU. A ninhydrin test was performed to confirm complete lysine coupling to the resin.[13] Each peptide used 0.25 g of the polylysine resin. All of the other amino acids were attached as described above by the automated Advanced Chemtech peptide synthesizer. The continuous, computerized process handles larger peptides without compromising either purity or the product yield. Upon completion, the Wang resin and any amino acid side chain protecting groups were cleaved and deprotected by TFA and scavengers.[14-15] Once cleaved, the solid peptides were obtained, rinsed, and dried. The amounts and percent yield are shown in Table 2.

Table 1. *Description of Target Peptides*

Target Peptide	Sequence	Molecular Weight	Length
Peptide #1	E^{114}EHV**Y**^{118}SFPN^{122}KKK	MW: 1249.5847 g/mol	12-mer
Peptide #2	V^{111}GEEEHV**Y**^{118}SFPNKQK^{125}KK	MW: 2047.0607 g/mol	17-mer
Peptide #3	G^{105}SPCSRVGEEEHV**Y**^{118}SFPNKQKSAEPSP^{131}KKK	MW: 3330.6535 g/mol	30-mer

Results

Table 2. *Analysis of Peptides*

Target Peptide	Grams Obtained	Percent Yield
Peptide #1	0.160	76.4%
Peptide #2	0.135	39.4%
Peptide #3	02.63	47.1%

Discussion

Three peptides were successfully synthesized by SPPS on an automated peptide synthesizer. The peptides are in 3 successively increasing lengths that are identical to the structure in paxillin around Y^{118}. The purpose is to determine, through biological assaying, which peptide best represents an actual substitution for paxillin. If the rates of phosphorylation on Y^{118} are indistinguishable between the 12-mer and 30-mer peptides, then it is reasonable to synthesize smaller peptides for future research. Future research using these peptides will be a confirmation of the peptide structure by Edman sequencing and mass spectrometry. Biological assaying against FAK, using γ-ATP^{32}, will quantify the phosphorylation rate on Y^{118}. The numerical results would help determine if Y^{118} is the tyrosine FAK preferably binds to within paxillin.

Knowledge gained through research such as this would assist the pharmaceutical industry by providing a tool that could be used to screen thousands of possible drug molecules. Although these peptides are neither drugs nor treatments, therapeutic agents could be developed for FAK-related cancers.

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Figure 1. *A 3-dimensional crystal structure of FAK in ribbon structure. The peptide substrate is absent but ATP is shown in the center in ball & stick notation.*

Figure 2. *Location of FAK within a cell and a cellular process it participates in.*

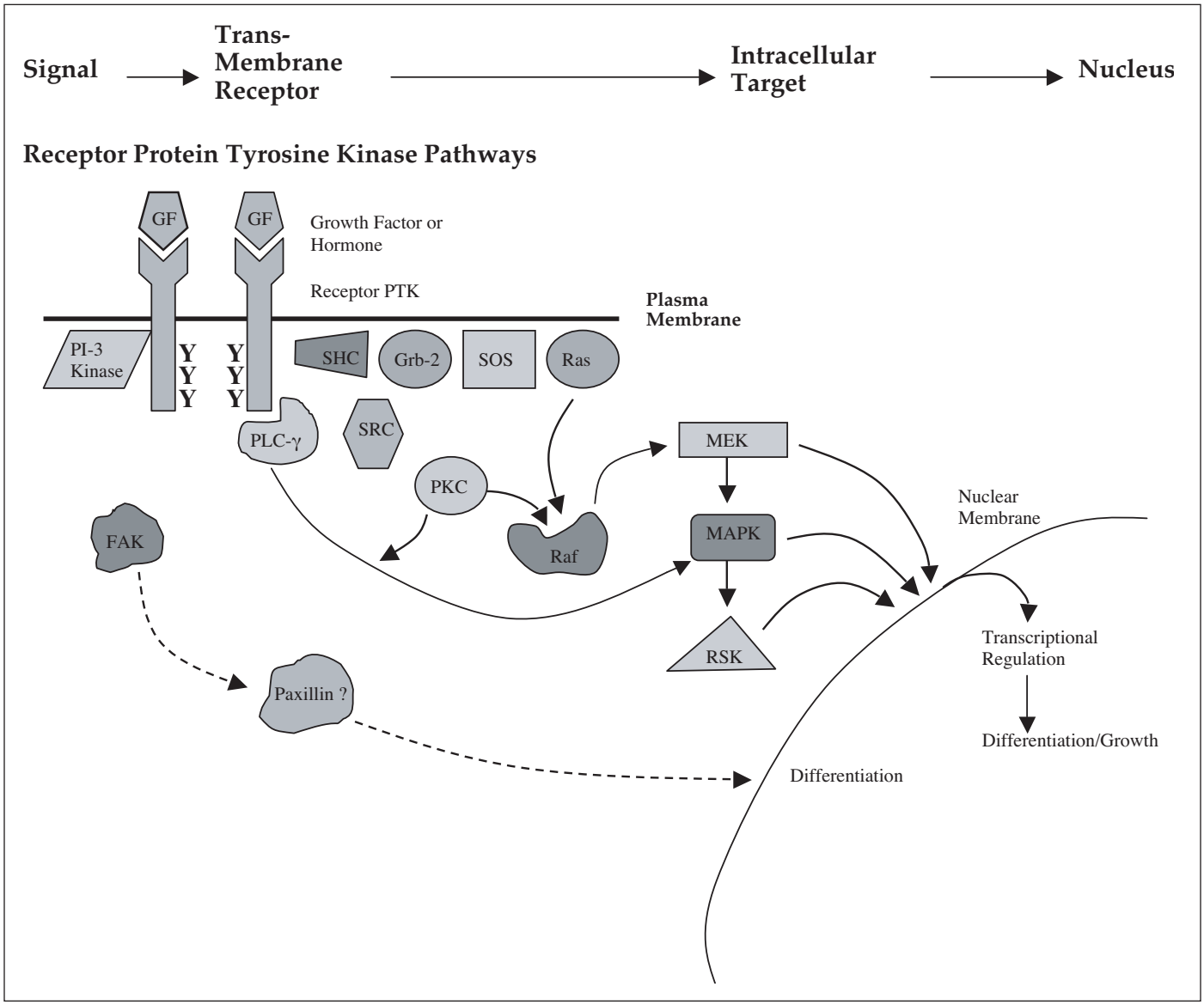


Figure 3. *Cartoon representation of a tyrosine kinase phosphorylation reaction.*

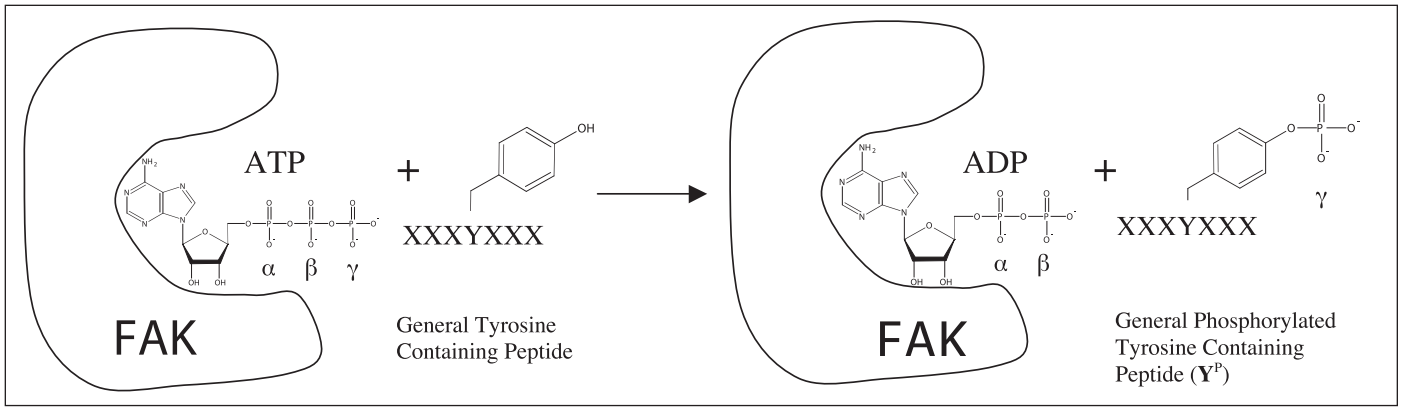


Figure 4. *This full amino acid sequence of the paxillin protein was used to derive the synthesized peptides. The 30 amino acids underlined above correspond to peptide #3 in Table 1.*

PAXILLIN

Proposed FAK protein substrate:

```
1    MDDLDALLAD LESTTSHISK RPVFLSEETP YSYPTGNHTY QEIAVPPPVP PPPSSEALNG
61   TILDPLDQWQ PSGSRFIHQQ PQSSSPVYGS SAKTSSVSNP QDSVGSPCSR VGEEEHVYSF
121  PNKQKSAEPS PTVMSTSLGS NLSELDRLLL ELNAVQHNPP GFPADEANSS PPLPGALSPL
181  YGVPETNSPL GGKAGPLTKE KPKRNGGRGL EDVRPSVESL LDELESSVPS PVPAITVNQG
241  EMSSPQRVTS TQQQTRISAS SATRELDELM ASLSDFKFMA QGKTGSSSPP GGPPKPGSQL
301  DSMLGSLQSD LNKLGVATVA KGVCGACKKP IAGQVVTAMG KTWHPEHFVC THCQEEIGSR
361  NFFERDGQPY CEKDYHNLFS PRCYYCNGPI LDKVVTALDR TWHPEHFFCA QCGAFFGPEG
421  FHEKDGKAYC RKDYFDMFAP KCGGCARAIL ENYISALNTL WHPECFVCRE CFTPFVNGSF
481  FEHDGQPYCE VHYHERRGSL CSGCQKPITG RCITAMAKKF HPEHFVCAFC LKQLNKGTFK
541  EQNDKPYCQN CFLKLFC
```

Tyrosine = (**Y**)

Figure 5. *A general amino acid structure is shown on the left and a dipeptide structure is shown on the right. Peptides are chains of repeating units (amino acids) connected together by amide bonds (circled).*

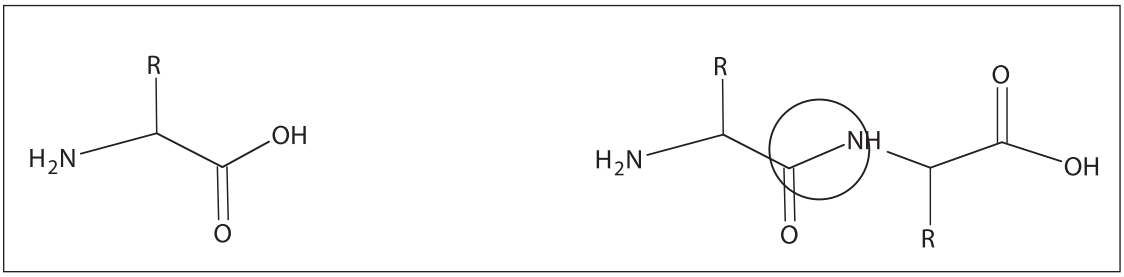


Figure 6. *Chemical structures of reagents used during peptide synthesis via SPPS.*

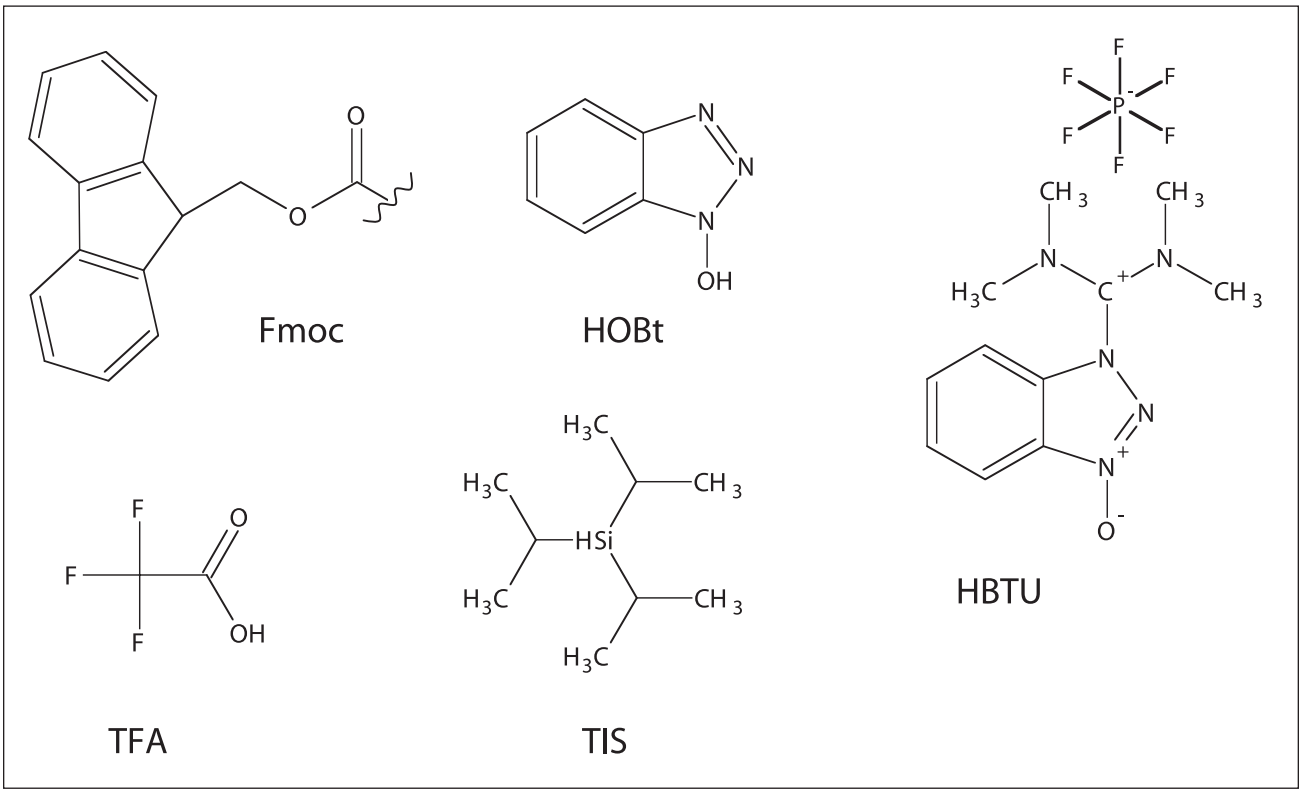
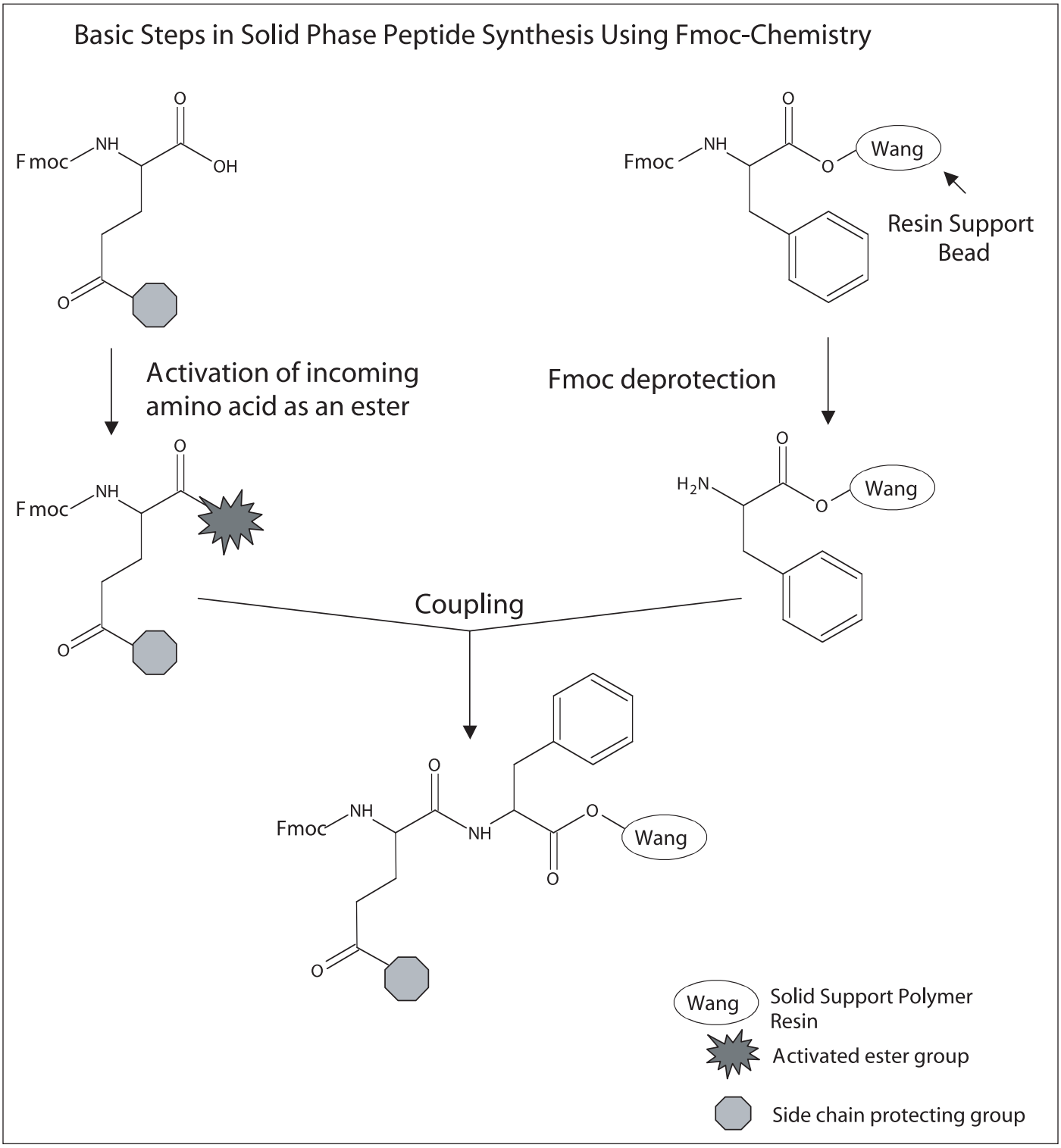


Figure 7. *Chemical structures of reagents used during peptide synthesis via SPPS.*



The relationship between parole and recidivism in the criminal justice system

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Abstract
From 1990 to 1999 the criminal justice system experienced a fifty percent increase in the inmate population, which included recidivated parolees. Critics claimed the parole process was not working and lobbied legislature to take action. The system responded by decreasing parole agency budgets, increasing prison sentences, and reducing rehabilitation services for paroled inmates. Research pertaining to parole and recidivism indicates two variables: there is or isn't a direct association. The objective of this study is to compare the data and decide if parole is a viable solution for decreasing recidivism rates.

Introduction

In July 1965, President Lyndon Johnson appointed the National Crime Commission to make the most comprehensive study of crime in the history of our country at that time. This report took over two years to develop and when completed, it so frequently referred to all the components involved (law enforcement, judicial, and correctional) as the "system" that it created the concept of a criminal justice system. The report, *The challenge of crime in a free society*, gave us an exceptional insight into the nature of crime and criminal justice in America. Also outlined in the report was the basic sequence of events in the criminal justice process. It also illustrated that relationships between the police, courts, and corrections are interrelated and interdependent. The report included a reference to the importance of and need for a far broader, and more profound, range of treatment. *The challenge of crime in a free society* was considered, at that time, the blueprint for building a successful crime prevention system. Even though it suggested that the need was for all ages, it insisted treatment was especially crucial for the young. President Johnson's report explained that the generation of teenagers during that time was the largest in U.S. history, and he foresaw a rise in juvenile delinquency in the decade to follow unless drastic changes were implemented in the effectiveness of the criminal justice system, as well as in economic and social conditions of the United States.

One specific component in the report that caught my attention was recidivism of offenders on parole. The report stated that many offenders, the young most of all, stood a better chance of being rehabilitated in their home communities, rather than in ordinary confinement. Included in the report were the findings of a study completed by the California Youth Authority. This

study concluded a five year experiment, which tested various methods of treatment. In this research, the convicted juvenile delinquents were assigned to two groups. One cohort consisted of community placement. The other cohort consisted of placement in a regular institution of confinement. Only 28 percent of the experimental group from community placement had their parole revoked. More than half of those in the group assigned to prison later had their paroles revoked and were returned to confinement (Johnson, 1966).

In the nearly 40 years since the report was published, the problem of recidivism hasn't changed nor has there been any decrease. In fact, the rising numbers in the prison systems suggest an increase in recidivism. The Bureau of Justice Statistics estimates that parolees are currently responsible for between 10 to 12 percent of all arrests for serious crimes in the United States (cited in Petersila, 2003). Also in 1999, 22 percent of those in state prisons reported being on parole at the time they committed the crime that landed them in prison. It is now well-documented that the high parole revocation rate is one of the major contributing factors to the growing U.S. prison population (Travis & Lawrence, 2002).

Parole is the status of an offender who has been conditionally released from prison prior to the expiration of his or her sentence. This conditional freedom is granted by a paroling agency to a convicted offender, as long as the person meets certain conditions of behavior while incarcerated (Schmalleger, 2003, p. 753). The concept of rewarding well-behaved prisoners with a reduction in sentence was first formalized in 1817 by the New York State legislature. In that year, the first "good time" law was passed. This law authorized a 25 percent reduction in length of term for those inmates serving five years or more who were well-behaved and demonstrated industry in their prison work. By 1869, twenty-three states had good time laws, and prison administrators supported the concept as a method of keeping order and controlling the prison population size (Serrill as cited in Allen, Eskridge, Latessa, & Vito, 1985).

The first parole systems were controlled by state legislatures that, in general, rigidly defined which prisoners could be paroled. Most legislation authorizing parole release restricted it to first time offenders convicted of less serious crimes. Through the passage of time and a gradual acceptance of the idea of discretionary early release, the privilege was eventually extended to serious offenders. By the late nineteenth and early twentieth century, criticism of parole practices began to surface. The basic arguments against parole were the lack of supervision of parolees, which put the community in danger, and the parole authorities who were not following proper procedures in releasing deserving inmates (Allen, Eskridge, Latessa, & Vito, p. 30-31).

Parole has a long history in the criminal justice system but along with the decision to parole there must also be the discussion of parolee recidivating. This idea of recidivism runs concurrent with parole. The Bureau of Justice Statistics compared the data from two studies which came the closest to providing national recidivism rates for the United States. One tracked 108,580 state prisoners released from prison in eleven states in 1983. The other tracked 272,111 prisoners released from prison in fifteen states in 1994. The prisoners tracked in these studies represented two-thirds of all prisoners released in the United States for those years. Sixty-seven percent of prisoners released in 1994 were rearrested within three years, an increase over the 62.5% for those released in 1983 (Bureau of Justice Statistics).

According to Joan Petersila (2000), in *Crime: Public policies for crime control* at the end of 1999 6.4 million adults were under some form of correctional supervision, and only 1.9 million of that number were in actual physical custody. In 1990, the number under correctional supervision was 4.3 million, which is an increase of 46.5 percent in only 10 years (Petersila, 2000, p. 483-484). Scholarly articles written by academics are filled with terms such as *best practice, effective practice*, and *what works*; these terms show that the critics are insisting that correctional services be more accountable and provide evidence of their effectiveness (Burnett & Roberts, 2004)

Literature Review

This literature review probes what we know about parole and recidivism and determines if there is, or is not, a direct association between parole and recidivism. It also presents factors affecting the recidivism of offenders on parole. Research on recidivism is scattered in three different disciplines: criminology, sociology, and psychology. This brief literature review is based on the findings in the scholarly journals and books from those disciplines. In the surveyed literature, it appears one can find support for a relationship between parole and recidivism. However, the strength of that correlation is controlled by other variables such as: community cohesion, social disorganization, employment, economic well-being, family support, mental and physical health, political alienation, housing, and homelessness (Petersila, June 2000).

Analysis

The method of study for this analysis was to focus on the findings of previous studies and make a decision based on those findings. Prior research indicates that the success rates of parolees are highly dependent upon the conditions

under which they are released. Although different models and characteristics were used in the studies that were reviewed, the underlying connection is the variables that appeared most significantly. It has been hypothesized that offenders who are released with a continued service plan for reentry are less likely to recidivate at the rates that are currently experienced by the criminal justice system.

Does Parole Work?

To assess the relationship between parole and recidivism, we have to look not only at when a prisoner was released, but also how they were released and the other variables that are involved in that release. Petersila (June 2000) looked at different conditions such as community cohesion, social disorganization, employment, economic well-being, family support, mental and physical health, political alienation, housing, and homelessness and their effect on parolees. These "unfortunate collateral consequences" of parole, as she referred to them, can and most likely will dictate whether a parolee is successful or not. Of the 500,000 parolees who leave U.S. prisons annually, 17.2%, or nearly 1 in 5, live in California (Petersila, June 2000).

Research has long documented how the social organization of neighborhoods particularly poverty, ethnic composition, and residential stability influences crime. Researchers have also written about *tipping points*, when communities are no longer able to exert stable influences over the behavior of residents. When these *tipping points* exist, the structure of a community changes, disorder and incivilities increase, out-migration follows, and crime and violence increase (Wilson as cited in Petersila, November 2000). The majority of inmates leave prison with poor prospects for employment. Survey data indicate that one year after being released, as many as 60% of former inmates are not employed in the regular labor market (Holzer as cited in Petersila, November 2000). Unemployment directly influences crime, as well as two other social pathologies closely related to both violence and property crime: drug and alcohol abuse. Those who study life-course trajectories of criminal careers show that losing a job can lead to substance abuse, which in turn is related to child and family violence (National Research Council as cited in Petersila, June 2000).

Inmates with mental illnesses are also being imprisoned at higher rates and ultimately are released back into the community on parole. In 1998, the Bureau of Justice Statistics (1999) estimated that 16% of jail or prison inmates reported a mental condition or an overnight stay in a mental hospital. More to the point concerning mental illness and prisons is that mental illness can be agitated by incarceration, particularly chronic anxiety and depression. Psychologists believe that incarceration often breeds *global rage*, an impulsive and explosive anger so great that a minor incident can trigger an uncontrolled response. Lastly, mentioned in this report were the effects of homelessness on the crime continuum. While homelessness certainly affects homeless individuals and the rest of their families, transients, panhandlers, and vagrants also increase citizen fear, and that fear ultimately contributes to increased crime and violence. This phenomenon originally labeled *broken windows* by Wilson and Kelling (as cited in Petersila, June 2000), theorized that increased crime often results from a cycle of fear-induced behavior. For example, when law-abiding citizens begin to avoid using streets filled with transients, loitering youth, graffiti, and other signs of property damage, they are effectively yielding control of the streets to those who are not frightened by such signs of urban decay. As *broken windows* spread, businesses and law-abiding citizens move from the area, disorder escalates, and serious crime often continues (Petersila, June 2000).

Petersila (June 2000) highlights the conditions that parolees are finding upon release into the community. Most are being released to parole systems that provide few services and impose conditions that more than likely guaranteed failure. Even though monitoring systems are getting better, the public tolerance for failure on parole is decreasing. The result is that many more parolees are being returned to prison, putting pressure on states to build more facilities—which limits money available for rehabilitation of parolees while in the community. This cycle ensures that parolees will continue to receive fewer services to help them address the *unfortunate collateral consequences* of parole. The relationship between parole and recidivism in this study shows a direct association when the significant factors such as homelessness, mental illness, etc. are not addressed.

The Pennsylvania Department of Corrections (DOC), in response to concerns that parole violators were becoming a driving force behind increasing prison admissions, conducted a needs assessment of its parole violator population (Buckllen, Zajac, & Gnall, 2004). To assess the needs of parole violators, the Pennsylvania DOC conducted a survey of technical and convicted parole violators who returned to prison in twelve state correctional facilities. The study by the Pennsylvania DOC was built around a similar study done in Canada in the late 1990s, which attempted to redirect attention from the general determinants of recidivism to an investigation into the individual processes of recidivism. Approximately 600 parole violators were used in this study which covered a two-month time span. The 600 violators selected represented 75 percent of the total parole violators readmitted to the system for the two-month period.

One of the first considerations of this survey was whether technical parole violators and convicted parole violators represented two significantly different populations with unique needs. The Pennsylvania DOC study revealed compelling evidence of just the opposite and showed the two groups to be statistically similar. The Level of Service Inventory-Revised (LSI-R) scores indicated a similar distribution of risk levels for both groups (Buckllen, Zajac, & Gnall, 2004). The survey answers revealed only two differences between the groups. Convicted parole violators indicated money management problems, while technical violators reported having trouble finding a place to live once released from incarceration. These two differences were marginal in importance and had no effect on the results of the survey (Buckllen, Zajac, & Gnall). The findings from this study were divided into four primary sections, basically the same ones used in the prior study: living arrangements, employment, financial situation, and drug and alcohol use. Nearly three-fourths of parole violators indicated they lived in low crime areas while out but this perception of low crime areas may have been influenced by their individual tolerance for crime levels. This group also reported encouraging information concerning employment. Eighty-two percent of parole violators indicated they were legally employed while seventeen percent reported difficulties in finding a job once out on parole. Some complained of available jobs being unsuitable and not sufficient to live on. Even though this could have been a legitimate complaint, further data revealed unreasonable expectations when it came to accepting jobs offered to some parole violators. According to the parole violators surveyed, money management problems was one of the strongest contributors to their recidivism. Survey results revealed a great number of parole violators also had a problem with alcohol and drug abuse while on parole. For some violators, alcohol and other drug abuse proved to be a major obstacle and contributed greatly to their recidivism. However, those who participated in a prison substance abuse program before being released reported being able to better cope with substance abuse problems (Buckllen, Zajac, & Gnall).

Another strong contributor to recidivism revealed by the Pennsylvania DOC survey was emotional problems, such as stress, depression, frustration, and worry. Examination of the data revealed three more important factors. First, many parole violators held unrealistic expectations about what life would be like outside of prison. Second, the majority of parole violators indicated strong antisocial attitudes. Thirdly, the most prevalent theme identified throughout the entire study was that parole violators indicated poor self-management, self-control, and problem-solving skills in the face of every day problems. This study supported programming specifically focused on cognitive-behavioral treatment as the deterrent to recidivism rates. Also, re-entry programs should focus on teaching parole violators life skills such as money management and financial responsibility. In addition, drug and alcohol abuse treatment programs should be intensely reinforced for those who have an obvious abuse problem. Finally, this study suggested parole violators should stay "rooted in reality" and maintain realistic post-release expectations (Buckllen, Zajac, & Gnall).

This study focused on addressing the needs of the parole violators through self-reported experiences of the recidivated parolees. Although there was definitely a relationship indicated, the approach of this study focused on needs assessment to prevent future parolees from recidivating. In reviewing this study, we have to consider that the participants had the opportunity to give the information from their perception and view point.

Jeremy Travis (May 2000), in a study reported by the National Institute of Justice, concluded that parole does not reduce recidivism but does just the opposite. The numbers increase in the criminal justice system when parole is not successful and the parolee is returned to the system. He stated that most states still had and maintained some form of parole supervision; fourteen had actually abolished parole boards who previously had the responsibility to release parolees. This study attempted to compare the value of incarceration to the value of parole. In this author's view, the offender had the obligation to society to serve the sentence given and demonstrate an ability to live according to society's rules. They also felt, at the time of this study, that parole had been significantly weakened, and the system of parole supervision was struggling to find purpose (Travis, May 2000).

Travis (May 2000) found that rehabilitation programs are ineffective, along with faulty parole decisions. Parole supervision, no matter how intensive, was found not to be a contributor to reducing recidivism (Glaser as cited in Travis, May 2000). Further analysis revealed admissions resulting from parole violations are now the driving force behind prison growth. Parole violators constitute 34% of all admissions, a figure that almost doubled from 1980 to 1995 (Bureau of Justice Statistics, 1996). In 1984, 70% of those who left parole status were determined to be successful; but in 1996 less than half were successful in completing their parole terms (Petersila as cited in Travis, May 2000). Travis (May 2000) recommended, from his findings, that new ways had to be created to manage the parolee's successful re-entry into society.

Instead of treatment and programming being separate entities in correctional institutions and parole, the two should mix and become one process. For example, according to Travis and Lawrence (2000), the drug treatment continuum would combine treatment with the criminal justice process under one umbrella for a united effort at reducing drug use and recidivism. The basis for their report was that the challenge of reducing the numbers of returning parolees would build interagency relationships. This interagency relationship would be a conglomerate between incarceration and parole and probation.

Discussion

The goal of this brief literature review is to assess at an aggregate level whether the relationship between parole and recidivism is of any significance. As stated earlier, Travis and Lawrence (2000) showed a direct association between parole and recidivism. As the parole rates continued to go up so did the recidivism rates. I can only conclude that there is a definite relationship of significance between the two variables. Parole, when coupled with the unfortunate consequences of drug and alcohol abuse, unemployment, homelessness, and mental and physical illnesses, create the conditions for recidivism.

The three studies used for this report, out of the 50 surveyed, were chosen because of the variables included in reporting the major areas of interest and as examples of the literature surveyed. Although at this time, parole supervision is shown to have little effect on the recidivism rates, criminal justice scholars realize something must be developed to combat crime and recidivism. President Lyndon Johnson attempted to address the idea of a combined effort to win in this "war on crime" 40 years ago. Maybe it's time for it to be achieved.

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Diel summer movement patterns of fish in Sickle Creek, Manistee County, Michigan

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Abstract

This study investigated the location, habitat preferences, and diel movements of burbot (lota lota) and salmonids in a small tributary stream in late spring, early summer. The research provides base-line information on fish distribution prior to the replacement of a culvert and reconnection of upstream reaches. The tributary was divided into six 100-meter reaches using blocker nets and data was collected using mark-recapture and electrofishing techniques. The community was dominated by coho (Oncorhynchus kisutch) and chinook salmon (Oncorhynchus tshawytscha), rainbow trout (Salmo gairdneri), northern mottled sculpin (Cottus bairdii bairdii), brook lamprey (Ichthyomyzon fosser), and the burbot. Salmonids favored undercut banks during the day (p=0.014) and woody debris at night (p=0.017, ANOVA). Substrate was dominated by sand thus the bulk of aquatic macroinvertebrate production was likely occurring on large woody debris—the area preferred by the fish at dusk and at night. In addition, water depth was positively correlated to fish density (R^2 = 0.73; p=0.031, step-wise MLR). Like the salmonids, burbot preferred undercut banks and abundance appeared to increase at night—a pattern observed in all major fish species with the exception of the chinook salmon, although trends were not significant for any species. The majority of captured fish were juvenile, and we hypothesize that at these early life-history stages, the fish are moving into the tributary system at dusk to avoid predation pressure in the main channel. The coho population decreased through time (p=0.034) while rainbow trout YOY increased (p=0.039). There was no recapture of fin-clipped rainbow trout (year one plus) indicating a high degree of turnover with the main channel, likely as a result of the culvert.

Introduction

Much research has been done on the topic of fish migration, particularly in regards to spring spawning patterns (Soloman and Templeton 1976; Young 1994, 1996). In addition, focus is often placed on larger river systems. However, there are countless smaller stream systems that have an important ecological role (White 2003; Schrank and Rahel 2004), including low-order tributaries. Both main channel and tributary systems represent viable habitat that fish can potentially select. The main channel may be a necessary habitat from a feeding standpoint (Shrank and Rahel 2004) but also typically has higher velocities and may contain more competitors or potential predators than a smaller tributary system. As such, tributary streams represent a potentially important area of refuge that maintains often slower velocities and cooler temperatures (Osborne and Wiley 1992). The salmonids investigated by Kahler et al. (2001) showed preference for pools. An advantage of greater depth is protection provided from avian predation (Kahler 2001), in addition to cooler temperatures. Kruzic et al. (2001) also noted that there is increased mortality in riffles versus pools. Therefore, the main channel has its benefits in regards to feeding but the tributary should also be a highly sought after habitat due to the advantages its pools confer via reduced velocities and cooler temperatures.

It has been shown that salmonids existing in even small streams are migratory in order to find spawning sites (Soloman and Templeton 1976; Young 1994, 1996). After spring spawning, salmonids stop extensive movement when an appropriate summer habitat is located (Schrank and Rahel 2004). The fish do continue to travel, but at reduced distances, as indicated by research done with Bonneville cutthroat trout (Schrank and Rahel 2004) and

other studies that have detected such a pattern for salmonids (Swanberg 1997; Hilderbrand and Kershner 2000; Schmetterling 2001). The amount of movement is generally dependent on the location of food and proper habitat (Schrank and Rahel 2004; Schlosser 1995). Theoretically, an organism will only travel as far as necessary in order to obtain resources because any additional, avoidable movement will result in wasted energy. In a study conducted by Shrank and Rahel (2004) it was determined that the trout often moved less than 0.5 kilometers.

Diel patterns of fish movement are driven mainly by the intensity of sunlight, although no fish are strictly nocturnal or diurnal (Railsback et al. 2005). Fish are primarily visual creatures and thus have the most success feeding in daylight. It has been estimated that nighttime feeding efficiencies are less than 35% of that during the daytime (Fraser and Metcalfe 1997). Thus, salmonids tend to feed during the day and hide at night (e.g., Young et al. 1997, Bradford and Higgins 2001). Dawn and dusk are also significant in that there is sufficient sunlight for foraging yet a degree of encroaching darkness that aids in protection from predators (Alanara et al. 2001). For example, mottled sculpin (*Cottus bairdi*) foraging reaches its peak intensity at dusk (Becker 2001). The choice between day and night-time foraging is based upon the fact that during the day prey is easier to see, yet the forager itself is also easily seen by potential predators (Metcalfe et al. 1999). It is also important to note that this tradeoff is weighed differently depending on the age-class of the fish. It has been observed that adult salmonids feed less frequently during the day than juveniles (e.g., Gries and Juanes 1998, Bradford and Higgins 2001). One possible explanation for this is the need for juvenile fish to gain sufficient resources to grow in preparation for the winter months and particularly for those who are preparing to migrate (Railback et al. 2005). Thus, the need to increase in size in the hopes of reaching the pinnacle of sexual maturity may very well outweigh the desire to strictly avoid predation.

Habitat is clearly a determining factor in where an organism chooses to reside. It is important to note however that the utility of a specific habitat can fluctuate based on the time of day or year, and the activity the animal is performing. Heggenes et al. (1999) and Hiscock et al. (2002) made observations of salmonids that suggest the fish use different habitats for feeding and hiding. The features of a habitat will often determine when during a 24-hour time period it is utilized by a fish species (Bradford and Higgins 2001). For example, it has been observed that habitats with lower depths and velocities are used primarily by salmonids for nighttime feeding as opposed to daytime feeding (Harwood et al. 2001; Jakober et al. 2000; Valdimarsson and Metcalfe 1999). In addition, levels of competition can also vary on a diel basis (Valdimarsson and Metcalfe 2000). At night there is no benefit for an organism to defend the same-sized territory that it does during the day for such an expanse cannot be utilized due to the diminished feeding efficiency at dark (Railsback et al. 2005). Naturally then, it has been observed that at night there is often a higher local density of organisms (Valdimarsson and Metcalfe 2000).

Movement patterns seen by fish may very well differ between species, size, and age. Burbot are a particular fish of interest because of limited distribution and population size, and this species is shown to be nocturnal in July through February while day-active March through early July (Paakkonen et al. 2000). Thus, July is the transitional period and there is little difference between day and night activity (Paakkonen et al. 2000). Juvenile burbot shelter during the day under rocks, weeds, and under cut banks (Robins and Deubler 1955; Hanson and Qudri 1980). Thus, this age class may be more nocturnal than the adults. It is also of note that in northern rivers burbot often were found in main channels and seemed to thus prefer turbid waters (Chen 1969; Hatfield et al. 1972; Breeser et al. 1988).

Discrepancies in movement patterns between age classes also exist in salmonids. Smithson and Johnson (1999) noted that juvenile salmonids exhibit what is called "exploratory" movement in which they move more than once in all possible directions and return to the original location. Size can also influence movement patterns for larger fish. Larger salmonids, such as brown trout, have been shown to travel further distances (Clapp et al. 1990; Young 1994; Bunnell et al. 1998), particularly downstream (Clapp et al. 1990; Behnke 1992; Bunnell et al. 1998). This is thought to be due to the abundance of small prey fishes that exist downstream that would provide food for larger piscivorous trout (Colyer 2002). Upstream movement is also quite common (Kahler et al. 2001) thus making the presence of any upstream obstacle or impediment, such as a dam or perched culvert, a significant disruption to upstream movement.

It is the aim of this project to investigate the movement patterns of salmonids, primarily rainbow trout (*Salmo gairdneri*), coho salmon (*Oncorhynchus kisutch*), and chinook salmon (*Oncorhynchus tshawytscha*), during their post-spawning/summer portion of their life history. The main focus will be to monitor diel patterns in relation to how these species move within a 750-meter segment of a tributary stream, and their exchange with the receiving river system. The tributary in question is very small

(1st order) and we hope to shed light on the ecological role of these often overlooked tributary channels. Attention will also be focused on burbot, a species of concern and a native resident. This is of interest from a conservation viewpoint given the narrow focus of this study on a tributary system. This study also calls into attention anthropogenic disturbances, as there is a perched road culvert at the upstream end of the segment being investigated. Objectives of this study are: 1) to investigate the location of fish, particularly salmonids and burbot, within the Sickle Creek tributary and their exchange with the main channel on a diel basis, 2) to conduct a mark and recapture study using the fin clip method on the rainbow trout to further understand movement patterns between the main channel and the tributary, and 3) to provide base-line information on fish distribution prior to the replacement of the culvert and subsequent reconnection of the upstream portions of the tributary system.

Methods

Research took place in twenty-four-hour blocks with a sample being taken during the daytime and a repeated procedure at night. Sampling was conducted on June 2 and 3, June 24 and 25, and July 8 and 9, 2005. The 750-meter reach of the Sickle Creek tributary that was utilized for this study was divided into approximately 100-meter reaches using blocker nets. Blocker nets (0.5 cm minnow seines) were used to isolate the reaches and were put into place during midday for the daytime samplings and just prior to dawn for the nighttime samplings.

Electrofishing was conducted in each reach using a backpack unit (AbP-3™ pulsed DC electrofishing backpack unit manufactured by the University of Wisconsin) following standard procedures as outlined in Reynolds (1983) and Nickum (1988). One-pass electrofishing was performed at a voltage of 250 watts, duty cycle of 35%, and frequency of 90 Hz. These settings remained relatively constant throughout the three sampling blocks. All captured fish were measured and identified and released to the appropriate stream reach as soon as possible. The nets were then removed. Just prior to dawn the following morning nets were again placed at the boundaries of each reach to prohibit the passage of fish. Once enough daylight was present, each individual reach was again electrofished in the same manner as the previous day.

The first collection on June 2, 2005 also entailed clipping the left pectoral fin of all rainbow trout collected that were over 10 cm in length. This procedure allowed us to monitor the exchange patterns between the tributary and main channel of the age-I rainbow trout. Data collected was analyzed using both presence/absence and abundance data to determine diel movement patterns. In addition, catch per unit area was quantified for each electrofishing reach, data for each reach sampled was pooled among sample dates, and statistical comparisons were conducted using analysis of variance (ANOVA).

Additional data also consisted of monitoring basic chemical and physical properties of the reaches. Measurements of velocity, depth, degree of right and left undercut banks, percent of large woody debris, and the classification of substrate were collected randomly fifty times in each reach. The measurements of pH, temperature, dissolved solids, and dissolved oxygen were taken close to the culvert during each of the three sampling periods, in addition to discharge data at the culvert and the mouth of the tributary. A Stepwise multiple linear regression (MLR) analysis was conducted to compare the physical data of each reach to the combined quantity of fish collected in that reach for both day and night-time samples. This allowed us to determine which physical parameters had the most influence on where the fish were located within the tributary and if habitat requirements changed on a diel basis. No reference species were collected for this study.

Site Description

The study system is located in the northwestern region of the lower peninsula of Michigan. Sickle Creek is a part of the Manistee River watershed and flows south into the Manistee River. It is relatively small (1st order) and has a low water velocity that can rapidly increase at times of heavy rain. Riparian woody vegetation consists of white cedar, American basswood, maple, poison ivy, and willow, in addition to dense coverage of herbaceous species, particularly in the open meadow reaches. This vegetation provides canopy cover at a magnitude of approximately 80% and also contributes to moderate woody debris within the tributary. The substrate is primarily sand and silt with occasional areas of pebble and gravel.

Results

All taxa combined

With all fish taxa combined, water depth appeared to be the only variable with a strong positive correlation to fish abundance (r^2=0.73, p=0.03; step-wise multiple linear regression) (Table 1).

Tukey's post-hoc multiple comparison test (ANOVA) was utilized to determine by what degree the reaches differed from each other in relation to depth. This analysis revealed that only reaches 3 and 5 were significantly different from each other (p=0.084).

Salmonids

An analysis using combined day and night abundances revealed that depth was the most significant physical parameter (r^2=0.76, p=0.023) (Table 1). However, the nighttime distributions indicated that large woody debris (LWD) was preferred (r^2=0.79, p=0.017) (Table 1). The daytime analysis showed that the degree of undercut banks was the most influential physical parameter (r^2=0.81, p=0.014) (Table 1). In both the night and day-time analyses, including depth as a second independent variable greatly strengthened the predictive power of the model (Table 1).

Individual fish taxa

When analyzed separately, coho salmon abundance was positively correlated to water depth (r^2=0.73, p=0.031) (Table 1), burbot preferred undercut banks (r^2=0.92, p=0.01) (Table 1), the Chinook salmon and mottled sculpin revealed no significant preference, and all rainbow trout (regardless of size class or day/night) preferred large woody debris. A correlation was run comparing the physical parameters to each species/m^2 in addition to the total fish/m^2 (Table 2).

Table 1. *Summary of step-wise multiple linear regression comparing fish densities (all sampling periods combined) to physical habitat data*

Dependent variable	Independent variable	n	r	r2	S.E.	Sum Sq.	Mean Sq.	F	p
total fish/m2	depth	6	0.85	0.73	0.022	0.005	0.005	10.6	0.031
coho/m2	depth	6	0.85	0.73	0.013	0.002	0.002	10.6	0.031
burbot/m2	undercut banks	6	0.92	0.84	0.006	0.001	0.001	21.1	0.01
rainbow trout/m2	% large woody debris	6	0.82	0.68	0.006	0	0	8.4	0.044
rainbow trout<7cm/m2	% large woody debris	6	0.85	0.71	0.007	0	0	10.0	0.034
RBT<7cm/m2 (night)	% large woody debris	6	0.87	0.76	0.008	0.001	0.001	12.8	0.023
RBT>7cm/m2 (night)	% large woody debris	6	0.93	0.87	0.001	0	0	26.0	0.007
salmonids+RBT/m2	depth	6	0.87	0.76	0.012	0.002	0.002	12.9	0.023
salmonids+RBT/m2 (night)	% large woody debris	6	0.89	0.79	0.013	0.002	0.002	15.3	0.017
salmonids+RBT/m2 (night)	% large woody debris+depth	6	0.99	0.98	0.005	0.003	0.001	57.5	0.004
salmonids+RBT/m2 (day)	undercut banks	6	0.9	0.81	0.012	0.002	0.002	17.5	0.014
salmonids+RBT/m2 (day)	undercut banks+depth	6	0.99	0.97	0.005	0.003	0.001	52.9	0.005

Table 2. *Significant rank correlation values (p > 0.733) between physical habitat data and fish densities (all sampling periods combined)*

species	Mean depth (cm)	Mean velocity (m/s)	Mean LWD (%)	Mean left/right undercut banks (%)	sand (%)	gravel/ wood/ detritus (%)	Mean substrate imbeddedness (%)
chinook salmon/m2			0.735				0.735
coho salmon/m2	0.852		0.744	0.733			
burbot/m2	0.833			0.917			
mottled sculpin/m2							
rainbow trout/m2	0.823						0.765
total fish/m2	0.851			0.822			

Diel patterns in fish abundance (all taxa combined)

The data obtained in each of the three sampling blocks (Table A, Appendix) were averaged to generate a mean value representing the number of fish/m^2 caught during the day vs. night in each reach (Figure 1).

Although results of this analysis indicated no significant differences, there was a trend particularly in reaches 1 and 5 for the nighttime abundance to increase relative to the daytime sample. There is also a marginal increase at night in reaches 4 and 6. This is supported by the fact that all but one of the major fish species found within the Sickle Creek tributary increased in number from day to night (Figure 2).

Percentages of increase ranged from 114.3% (rainbow trout) to 146.2% (northern brook lamprey). The Chinook salmon population decreased by 67.3% and was the only species to decline in number from day to night. These patterns can be seen for specific reaches for both chinook, coho (Figure 3) and rainbow trout (Figure 4).

Burbot

Burbot abundance appeared to increase at night on average by 120% (Figure 2). Overall, however, the number of burbot captured in all reaches decreased by 81.7% from the first sampling date in early June to the last sample collected in early July. The extent of undercut banks was the most important physical habitat characteristic positively correlated to burbot densities (r^2=0.92, p=0.01; day and night included in analysis) (Table 1). Similarly, a correlation analysis indicated that the burbot density was strongly correlated to both undercut banks (0.92) and depth (0.83) (Table 2).

Rainbow trout

The dominant fish species, based on size, in the tributary were the rainbow trout and these were fin-clipped

Figure 1. *Average # of fish/m2 in Sickle Creek*

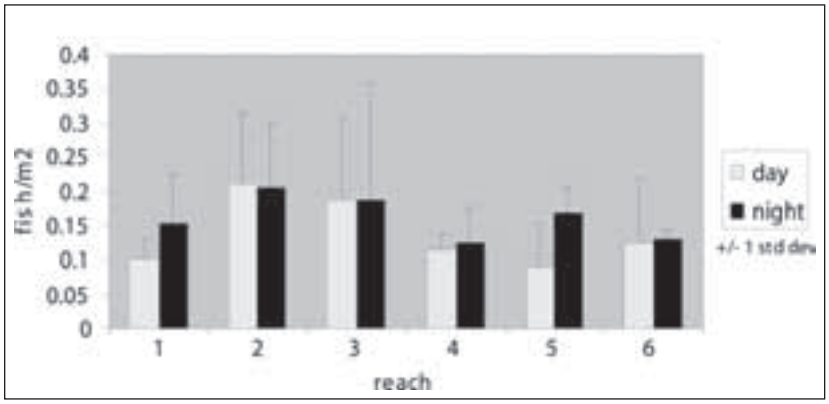
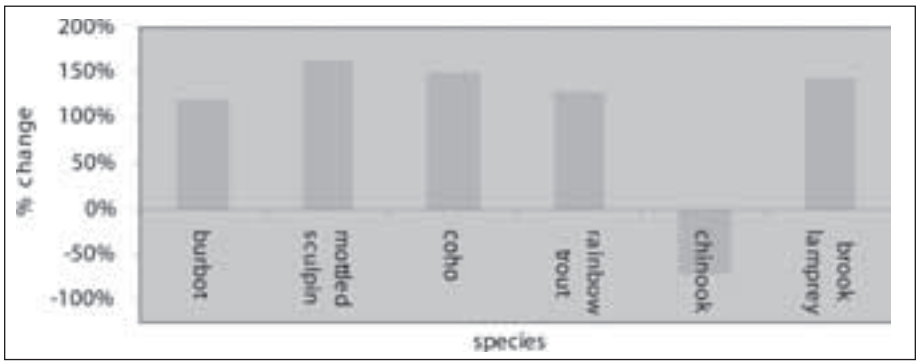


Figure 2. *% change in abundances of major species from daytime to nighttime samplings. Three sampling periods combined.*



to further understand movement patterns between the main channel and the Sickle Creek tributary. In the initial daytime sampling period seven rainbow trout were caught and fin-clipped. The lengths of these fish were 9.6, 11.2, 12.2, 12.5, 13.0, 16.0, and 16.5 cm, respectively. The subsequent nighttime sampling period resulted in a catch of 3 of these fin-clipped fish. None were captured in the following two sampling times.

Abundance of young of the year (YOY) rainbow trout increased significantly as the summer progressed in both the day and night samples. The bulk of these were located in the reaches closest to the mouth (reaches 1 and 2) (Figure 4). As with the other fish species, there was a nonsignificant trend for more YOY rainbow trout to be caught at night vs. day. LWD was the preferred habitat type for this age class of rainbow trout (r^2=0.85, p=0.034; regression analysis) (Table 1).

YOY sculpin were collected, but only in the third sampling period. Eleven were found during the daytime sampling (average size of 1.5 cm) and 60 were found during the nighttime sampling (average size of 1.4 cm). Their size suggests that they are roughly 3-4 weeks of age (Becker 2001).

Discussion

One of the primary focuses of this study was to determine if diel movement occurs between the tributary and the main channel of the Manistee River. While the trends vary somewhat

depending on the species, overall the data reveals no significant statistical evidence of diel fish movement in and out of the tributary. However, it is certainly intriguing to note that the data suggests a variation in habitat selection according to the time of day. This has been suggested by Heggenes et al. (1999) and Hiscock et al. (2002) who recognized that salmonids use different habitat for different activites. Railsback et al. (2005) developed a theory for diel activity and habitat use based upon this observation and others. This study differs from previous studies in that a much smaller study stream is being utilized (average width of 2.1 meters); and these sorts of first-order tributaries are often overlooked. The presence of the culvert reflects fish behavior in light of anthropogenic influences. In addition, exchange with the main channel on a diel basis was also studied.

A separate analysis was performed on only the salmonids (both YOY and year one). This was done because it is these species that have proven to be the most mobile (Swanberg 1997; Hilderbrand and Kershner 2000; Schmetterling 2001; Shrank and Rahel 2002; Becker 2001) and will thus be most likely to reveal movement patterns. Even though this study was conducted on a first order tributary stream, we hypothesized that there could be significant movement given that Shrank and Rahel (2001) found that trout movement was generally confined to 0.5 km. The portion of Sickle Creek examined in this study was 0.75 km. Burbot, while a major species, was analyzed separately in order to focus on this less understood group individually. The mottled sculpin is a benthic species (Hubbs and Lagler 2004) with limited migration.

The stepwise multiple linear regression analysis of the salmonids demonstrate that during the day these fish are choosing habitat based on the degree of undercut banks, while during the night it is the presence of large woody debris that encourages the fish to reside in a specific habitat. The analysis also reveals that depth is the second most influential habitat parameter during both the day and night. This is logical given the size class of the fish that composes the majority of this group—namely YOY. During the day it would be natural for these small fry to seek protection conferred by the undercut banks from terrestrial and aquatic predators. In addition, it is also possible that the undercut banks offer slightly cooler temperatures given the lack of direct sun exposure. However, this pattern shifted to a preference for LWD at night or at dusk, which was included in the nighttime sampling, when the fish are more likely to be foraging (Alanara et al. 2001). Rainbow trout are most active at times of low light, such as dusk (Becker 2001). Both the coho salmon and rainbow trout feed on aquatic invertebrates (Hubbs and Lagler 2004), which are often concentrated on woody debris especially in systems that are dominated by sand, as is the case in Sickle Creek. The young chinook salmon, on the other hand, feeds primarily on plankton (Hubbs and Lagler 2004). In this case, it is likely that these fish are able to feed more efficiently in the open channel (where the woody debris is mostly located), for velocities are higher here than in the undercut banks. Therefore, the higher velocities would provide a greater abundance of planktonic organisms than the more

Figure 3. *Abundances of Chinook and Coho salmon on June 2 (day) and June 3 (night)*

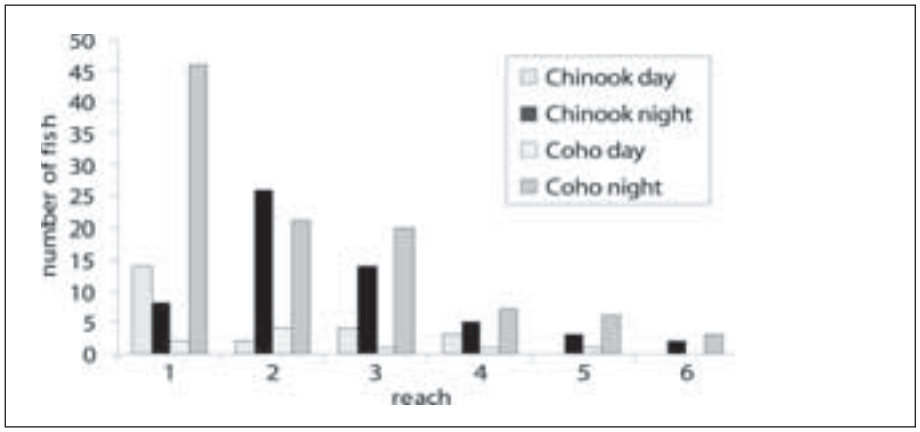
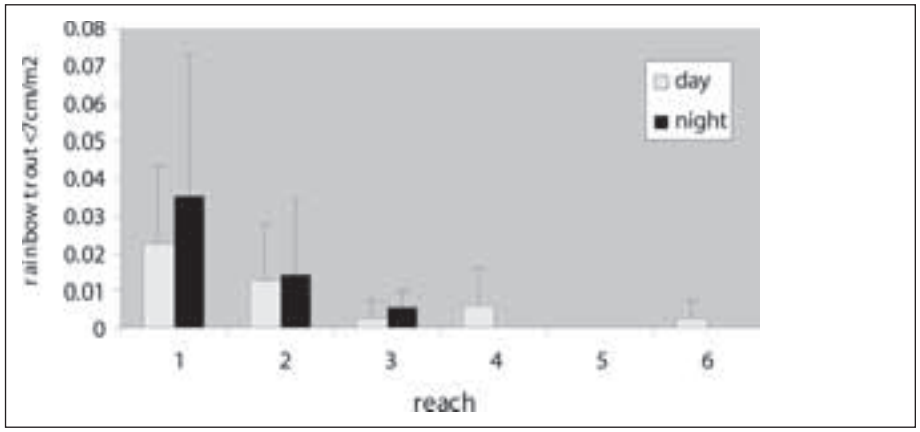


Figure 4. *Average density of YOY Rainbow trout. Three sampling periods combined.*



stagnant waters found under the banks. In addition, these fish may be utilizing woody debris as foraging areas for the protective benefits the debris may be conferring.

In the analyses with all fish taxa combined and also with coho salmon alone, depth was the primary determinant of fish location. This is supported by Kahler et al. (2001) who noted that depth was a significant factor motivating salmonid movement. However, it is interesting to note that in the analyses of rainbow trout, it was the percentage of woody debris that proved the most significant, at least at night, regardless of size class. Regardless, the trout are most likely using the woody debris as feeding sites for invertebrates at dusk/night. During the day the inconclusive results demonstrate that the rainbow trout are likely tending to other survival tasks, such as hiding from predators or locating areas of cooler temperatures. These results suggest that the salmonids are changing habitat preferences on a diel basis.

In the fin-clip analysis using the larger rainbow trout, the fact that only 3 of the 7 fin-clipped fish were re-captured in the subsequent sampling period and then none in the next two sampling times suggests that the older age classes are using the tributary only temporarily. These larger trout are most likely residing in the tributary for short time periods for feeding, cooler temperatures, and/or refuge from the larger predators and faster velocities in the main channel and then returning back to the Manistee River. The fish might be migrating back out into the larger main channel due to the feeding opportunities these systems present. It has been shown by Shrank and Rahel (2004) that the main channel is an important habitat from a feeding standpoint. In addition, movement down the Manistee River may be motivated by the greater abundance of small prey fishes existing in downstream habitats (Colver 2002). However, it is interesting to notice that reach 6, which is furthest from the main channel, had the greatest abundance of the year-one rainbow trout. This is supported by Kahler et al. (2001) who suggests that upstream movement is also quite common. Therefore, the presence of the culvert restricted this pattern and may be a factor in the returning of these fish to the main channel.

The year-one rainbow trout are not the only fish that appear to exchange with the main channel to some degree. Although not statistically significant, trends suggest that YOY rainbow trout utilize the lower reaches at night (Figure 4). There is a slight increase in the number of YOY rainbow trout at night versus the daytime abundances. These fish have a strong affinity for downstream movement (Becker 2001), and thus may be using the tributary as refuge from larger predators and higher velocities in the main channel and feeding opportunities (as suggested by their habitat selection of woody debris). It is a reasonable trend for more fish to be found in the nighttime sampling because they may be escaping the predators feeding at dusk in the main channel, with an added benefit of being able to feed themselves in the tributary. These fish were found mainly in the lower reaches (1-3), which were also the reaches with the highest amount of woody debris (Table 3), and presumably an ample supply of macroinvertebrates. These reaches are also the closest in proximity to the main channel, and thus may be found most concentrated here for that reason alone.

The regression analysis of the coho salmon revealed that depth is the major determinant of the location of this species (p=0.031). Taylor (1991) noted that coho salmon use pools to a greater extent than their counterpart, the chinook salmon. In this study, the chinook salmon showed no significant preference for a habitat parameter. Taylor (1991) suggested that in streams where both coexist, such as Sickle Creek, the chinook is dominated by the coho and thus does not always have access to its favored habitat. The chinook salmon prefer areas of greater depth, and always are often found in riffles regardless of the presence of coho (Taylor 1991). It has been suggested that these two species have genetic differences that result in the selection of different habitats (Taylor 1991), a divergence that is certainly beneficial to both. Regardless, it was noted by Taylor that greater chinook emigration took place when coho were present. This was also observed in the first sampling block of this study. While the change in the number of either chinook or coho from day to night was statistically significant, a trend existed in which the number of coho increased in the tributary at night while the number of chinook decreased

Table 3. *Physical habitat data for Sickle Creek*

reach	Mean depth (cm)	Mean velocity (m/s)	Mean LWD (%)	Mean left/right undercut banks (%)	sand (%)	gravel/ wood/ detritus (%)	Mean substrate imbeddedness (%)
1	13.10	0.19	13.4	3.81	75.6	24.4	54.2
2	14.66	0.23	11.06	11.19	86.0	14.0	50.0
3	14.78	0.18	11.53	14.86	77.6	22.4	26.7
4	11.67	0.18	9.57	8.22	79.6	20.4	20.0
5	11.47	0.19	9.67	6.18	69.4	30.6	0.0
6	13.02	0.16	8.06	3.78	55.1	44.9	44.0

(Appendix, Table B). This could be due to different habitat requirements or the fact that coho do indeed out-compete the chinook (Taylor 1991). Again, this trend was only noted in the first sampling block, which could be a result of the declining numbers of the coho salmon from the first to the third sampling period. The number of coho decreased during both the daytime samplings ($p=0.034$) and nighttime samplings ($p=0.005$) (Appendix, Table B). The reasons for this are somewhat unclear given that these fish are age-0. Coho of this age are known to spend the first year of their life in the tributary in which their parents spawned (Becker 2001). However, these fish appear to be leaving the tributary, likely their natal stream, and migrating into the more dangerous Manistee River. Becker (2001) noted that coho travel up a tributary as far as physically possible, and perhaps the sudden blockage produced by the culvert is causing these fish to emigrate.

The coho salmon and, as mentioned earlier the rainbow trout parr, are not the only species to display significant fluctuations in population size through time. The analysis of burbot revealed that for the daytime samplings abundance increased from the first to the third sampling period. All of the burbot captured in this study were juveniles who often shelter during the day (Robins and Deubler 1955; Hanson and Qudri 1980), as supported by the fact that the regression analysis revealed that undercut banks were the major determining factor in where the burbot were locating. Therefore, it could be presumed that they are more nocturnal creatures and thus are moving into the tributary at night. The inconclusive results could also be a result of the transitional time period between nocturnal and diurnal behavior, which occurs in early July (Paakkonen et al. 2000). This shift in behavioral patterns could also be the reason why less burbot were captured overall from sampling block one to three.

Limitations

Limitations of this study include the bias inherent in electrofishing and variation in capture efficiency from reach to reach. For example, netting efficiency was compromised in areas of dense woody debris and overhanging riparian vegetation that decreased visibility of the water.

Conclusion

In conclusion, this study provides support for the claim that tributaries are an important habitat within the river system. They provide important areas of refuge and feeding for small fry, who made up the majority of the fish present. In accordance with Southwood's habitat template theory (1977) this study supports the importance of habitat on species distribution and demonstrates that habitat selection varies according to species, life-history stage, and time of day. In this study, we found that habitat suitable for hiding was being utilized during the daylight hours while foraging habitats were sought during the dusk/night hours. Interestingly velocity, often considered an important habitat variable, seemingly did not have a noticeable impact on habitat selection, despite the fact that significant variation in average velocity existed from reach to reach. The equations generated using the MLR (Appendix, Table C) allow for predictions of fish abundance to be made as depth, degree of undercut banks, and amount of LWD vary. These equations could only be used for a stream of similar size and in a similar location as Sickle Creek, yet could certainly be useful in the planning of developments around such systems. The presence of the perched culvert seemed to prevent upstream movement of species that have a tendency to do so and thus may be a factor in the returning of these fish to the main channel. A future study that would certainly address this would be one either on Sickle Creek after the culvert is removed, or in a study stream similar to that of Sickle Creek that lacks a culvert. While the culvert impedes further movement of the fish upstream, the tributary is still serving as an important habitat for the younger life-history stages of salmonids and burbot.

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Appendix

Appendix Table A. *General fish abundance data of all species collected*

Species	June 2 (day)		June 3 (night)		June 24 (day)		June 25 (night)		July 8 (day)		July 9 (night)	
	#	Average size (cm)	#	Average size (cm)	#	Average size (cm)	#	Average size (cm)	#	Average size (cm)	#	Average size (cm)
chinook salmon	23	4.9	9	4.4	19	6.9	8	6.2	10	6.4	17	6 8
coho salmon	58	5.3	103	5.4	20	6.3	10	6.0	2	8.8	2	5.9
rainbow trout<7cm	0	/	0	/	5	3.0	10	3.9	24	4.1	30	4 5
rainbow trout>7cm	7	13	7	12.2	11	13.1	2	11.5	2	13.1	7	13.3
burbot	37	11.3	45	12.5	24	12.5	22	10.5	4	9.7	11	11.4
mottled sculpin > 2cm	61	8.1	99	7.9	123	9.4	64	8.3	32	7.9	60	8.0
mottled sculpin < 2 cm	0	/	0	/	0	/	0	/	11	1.5	60	1.4
northern brook lamprey	3	9.3	8	10.4	8	8.9	4	10.3	2	10.8	6	11.2
brook stickleback	1	4.5	1	5.4	0	/	0	/	0	/	0	/
green sunfish	1	7	0	/	0	/	0	/	0	/	0	/
johnny darter	0	/	0	/	2	4.5	2	4.6	2	5.6	3	5.9
brown trout	0	/	0	/	3	13.2	2	11.3	1	14.2	0	/
northern red dace	0	/	0	/	0	/	1	5.1	0	/	0	/
brown nose dace	0	/	0	/	0	/	0	/	0	/	1	5.1

Appendix Table B. *General fish abundance data of all species collected*

	June 2 and 3 avg. # of fish/m^2 (+/- 1 stdev)			June 24 and 25 avg. # of fish/m^2 (+/- 1 stdev)			July 8 and 9 avg. # of fish/m^2 (+/- 1 stdev)			Comparison of all Day and Night samplings	
species	day	night	p-value	day	night	p-value	day	night	p-value	day p-value	night p-value
chinook	0.019 (0.02)	0.007 (0.01)	0.23	0.017 (0.01)	0.007 (0.01)	0.12	0.008 (0.01)	0.012 (0.01)	0.43	0.413	0.431
coho	0.051 (0.05)	0.085 (0.07)	0.34	0.017 (0.02)	0.009 (0.01)	0.48	0.002 (0.00)	0.002 (0.00)	1.00	0.034	0.005
RBT<7cm	na	na	na	0.006 (0.01)	0.007 (0.01)	0.85	0.018 (0.02)	0.020 (0.03)	0.85	0.039	0.208
RBT>7cm	0.007 (0.01)	0.006 (0.01)	0.86	0.006 (0.01)	0.002 (0.00)	0.19	0.002 (0.00)	0.005 (0.01)	0.26	0.193	0.468
burbot	0.033 (0.03)	0.041 (0.04)	0.72	0.022 (0.01)	0.017 (0.02)	0.57	0.003(0.00)	0.009 (0.01)	0.13	0.059	0.100
mottled sculpin	0.049 (0.03)	0.084 (0.04)	0.10	0.096 (0.03)	0.054 (0.02)	0.11	0.038 (0.02)	0.100 (0.04)	0.01	0.021	0.122
salmonids	0.077 (0.06)	0.099 (0.07)	0.56	0.040 (0.02)	0.018 (0.01)	0.07	0.011 (0.01)	0.019 (0.01)	0.20	0.021	0.004

Appendix Table C. *Multiple linear regression: Predictive equations*

# of fish/m2=0.023(depth)-0.162
# of burbot/m2=0.003(undercut banks)-0.002
# of coho/m2=0.013(depth)-0.147
# of RBT=0.004(% large woody debis)-0.028
# of RBT>7cm/m2(night)=-0.001(% large woody debris)+0.02
# of RBT<7cm/m2=0.005(%LWD)-0.045
# of RBT<7cm/m2(night)=0.007(%LWD)-0.06
# of salmonids and trout=0.014(depth)-0.141
# of salmonids and trout(night)=0.012(%LWD)-0.079 or # of salmonids and trout(night)=0.009(%LWD)+0.008(depth)-0.159
# of salmonids and trout(day)=0.005(undercut banks)+0.003 or # of salmonids and trout(day)=0.003(undercut banks)+0.009(depth)-0.097

Education for Democracy: Discovering Civic Engagement

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Abstract
Exploring the concepts of an experiential education promotes transformative connections between the academic classroom and other domains of student life. Therefore, this research aims to discover the capacity that education has to change the world. It explores Jane Addams' work, her efforts to encourage democracy, and her educational philosophy that emphasizes learning from life experiences. Additionally, her philosophy of social ethics is intertwined with the writings of John Dewey, Charlene Haddock Siegfried, Ira Shor, and various other theorists. My analysis uses feminist and critical theory to formulate a learning foundation that fosters civic engagement for students and educators.

Introduction

In recent years, the educational landscape has changed dramatically, especially in post-secondary education. Since more high school students have gained access to college, more women, individuals of color, people from diverse cultural origins, and economically disadvantaged students comprise post-secondary education's frontier. As the terrain of American colleges continue to become more diverse, it is necessary to address how post-secondary educators can reform their pedagogical methods within the classroom to effectively reach all of these students.

The current world of academia gradually erodes students' essential need for participatory learning over time by focusing on knowledge transfer instead of transformation. Because of this lack of experiential learning, educators need to focus on how to create a classroom that proposes active participation, sharing of common experiences, and a commitment to social change. This idea came about when I started doing research on feminist and liberatory pedagogies and reflecting on my own education. During my exploration, I found that the road has been paved for creating a classroom environment that stimulates and incorporates life experiences. Over the years these progressive methods and theories have faded from educators' eyes. I want to bring back the voices of educators who have become invisible, therefore, I am focusing on the methods of Jane Addams, who until recently has not been acknowledged for her efforts to incorporate various educational methods to achieve a rich and diversified educational process.

Jane Addams is best known for founding Hull House in 1889, a social settlement in Chicago. Addams began her journey with concerns for immigrant neighbors and over time began reflecting on their shared

experiences. She is most often noted as a women who "captured the dreams, ideals, imagination, and sometimes hatred of many people in the United States" as a social reformer, organizer, and peacemaker.[1] During her time at Hull House, Addams developed a theory of social democracy that became influential in the world-wide peace movement, for which she was awarded the Nobel Peace Prize in 1931.

Addams' views on education stem from her understanding of democracy. She argued that democracy rests on our mutual understanding and willingness to listen to others, appreciating others' perspectives in light of their ways of living, and working cooperatively with those individuals we may disagree with. The central view of democracy that Addams developed at Hull House "was a vision of society in which all individuals, regardless of gender, ethnicity, race, or economic status, would have the opportunity to fully express and to develop their talents, interests, and ambitions."[2] By incorporating Addams' thoughts on education, her social philosophy, and her deep conviction in the importance of experiential learning with educational goals today, a new ground for classroom discourse and the exploration of knowledge can be created. I propose that through the integration of Addams' methods, a community of learners will be produced that stimulates democracy and civic engagement.

Methodology

Jane Addams' educational methods focused on learning from life, thus, I do not believe researching her theories through one method would allow for her efforts to be applicable to all areas of education. I have decided to use an interdisciplinary approach for this research project. By using this approach, I am able to transcend structural boundaries between disciplines and achieve a more complete method of inquiry. For my research, I am combining feminist and critical theory approaches of inquiry.

At the heart of much feminist research is the aspiration, even the responsibility, of taking action and bringing about change for the condition of women. Feminist research is not simply a stance against male chauvinism or a movement for women's equal rights, but the lasting commitment to alleviate the ideology of domination that permeates Western culture on various levels. As John Dewey stated, "When women who are not mere students of other persons' philosophy set out to write it, we cannot conceive that it will be the same in view point or tenor as that composed from the standpoint of the different masculine experience of things."[3] Feminism offers new ways of viewing human values, decision-making, and the very nature of human experience. Feminist methods allow one to see the indispensable component of human diversity. At the most nominal level, feminist research simply attempts to integrate the female perspective into social reality. Because of the feminist insistence that the particulars of women's lives are significant in the public sphere, feminist research encourages the incorporation of individual experiences, which are used to help authenticate and validate the scholarship.[4]

Critical theory as a research methodology adopts an overtly critical stance to inquiry. Critical theory researchers attempt to understand the ideologically distorted situation of some individual or group, to discover the forces that have caused that situation, and to show that these forces can be overcome through awareness. Thus, critical theory research is based on the conviction that societal conditions are historically created and deeply influenced by the imbalance of power and special interests. Because of this, critical theory insists upon an awareness of the political nature of a social phenomenon.

For my research, I use both feminist and critical theory methods to illustrate Addams' social philosophy and how her methods can be used to create an educational environment that is transforming, thus formulating a foundation for an interactive, engaged pedagogy that opens up the door to empowerment. Within critical theory, I analyze the various perplexities that Addams worked through during her time at Hull House. Some of the issues I will be addressing are dialogue, diversity, cooperative learning, and empowerment. In addition, through the use of feminist and critical theory, I will explore how Addams applied her methods to the conditions she encountered. By reviewing Addams' application of her educational methods I want to effectively compose an agenda for contemporary classroom dynamics.

By combining feminist and critical theory methods, I am able to holistically address Addams' thoughts on education. For instance, Addams' efforts represent feminist methods by presenting new ways to view human

[1] Karen Shafer Lundblad, "Jane Addams and Social Reform: A Role Model for the 1990s," *Social Work 40*, (September 1995): 661-669.
[2] Ellen Condliffe Lagemann, "Jane Addams: An Educational Biography," *On Education*, (New Brunswick, NJ: Transaction Publishers, 1994), 2
[3] John Dewey, "Democracy and Education," *The Collected Works of John Dewey*, Edited by Jo Ann Boydston. (Edwardsville, IL: Southern Illinois University Press, 1969-1991), Middle Works 11, 41-53.
[4] University of Texas, "Four Feminist Themes," *Academic Information System*, <http://www.edb.utexas.edu/faculty/scheurich/proj5/temes.htm> (12 August 2005).

values and the very nature of human experiences. In addition, she advocates that we must recognize and cultivate the essential component of human diversity. Addams' philosophy integrates various critical theory or liberating methods by calling for individuals to recognize the situation of some individual or group, discover the forces or situations that have caused the individual's predicament, and to overcome those forces through awareness.

Searching for the Right Social Philosophy

Jane Addams worked the majority of her life refining the methods she used to create and uphold democratic relations at Hull House. When Addams set out on her mission at Hull House, she defined a settlement as "an attempt to express the meaning of life in terms of life itself, in forms of activity."[5] Addams' definition of a settlement anticipated a ground for exploring life that promoted growth and constant interaction among the members of the community. For Addams, democracy was the foundation she used to explore and define the very meaning of the settlement. Her comprehension of democracy "is not merely a way to structure government; it is more broadly a way of living together that enables individual abilities and social life to flourish."[6] As we can see, Addams' conception of democracy and her definition of a settlement parallel each other in many ways. She states, "The social and educational activities of a settlement are but differing manifestations of the attempt to socialize democracy, as is the existence of the settlement itself."[7] Through continuous interaction and experience in diverse and new situations, social intercourse between classes and races becomes a way of life. More progress and transformation arises, as each member becomes part of the community.

Addams conceived society or community as a social organism, with all parts necessary for the whole and dependent on the whole. In order to create a social organism that incorporates everyone's ideals, Addams focused many of her efforts on democratic ways of life. In her book, *Democracy and Social Ethics*, she stated that she thought of democracy, "not merely as a sentiment which desires the well-being of all men, nor yet as a creed which believes in the essential dignity and equality of all men, but as that which affords the rule of living as well as a test of faith."[8] Before the introduction of Hull House to the city of Chicago, individuals from different ways of life had minimal interaction. In the Social Darwinist thought of Addams' era, people often saw themselves pitted against others in competitive modes, both individually and in terms of class, therefore, democratic thought allowed for a broadened and humanizing perspective of the community. Addams once stated, "A democracy modifies our conception of life, it constantly raises the value and function of each member of the community, however, humble he may be."[9]

The main objective of the settlement was to bring into the circle of knowledge individuals who may have been left out or who felt that they had no significant function within the community. Thus, it is not surprising that "her view of democracy was built on the insistent conviction that all people could be led to see that they had a self-interest—a self-interest that was also a common social interest—in the protection and fulfillment of the interests of others."[10] Addams worked to ignite the common interests of the community members by offering kindergarten classes, reading clubs, drama clubs, alternative classroom settings, and various other educational and engaging activities. The clubs and groups that Addams helped foster at Hull House may have had different objectives, however, all of them were formulated to civically engage and reveal the common interests of individuals within the community.

The activities at Hull House encouraged Addams to continually reflect and refine her social philosophy. Addams aspired to create a social philosophy centered on a diverse community that fostered a sense of citizenship essential for a continual reciprocity of thinking and action. Within this constant reciprocity, individuals were urged on towards a social and individual life of democracy as a social ethic.

Jane Addams and American Pragmatism

The guiding vigor in Addams' social philosophy is pragmatism. Charlene Haddock Seigfried in her book *Pragmatist Feminism* defines,

> *pragmatism*, as a philosophy that stresses the relation of theory to praxis, takes the continuity of experience and nature as revealed through the outcome of directed action as the starting point of reflection. Experience is the ongoing transaction of organism and

[5] Jane Addams, *A Centennial Reader*, (New York, NY: The Macmillan Company, 1960), 25.
[6] Marilyn Fischer, *Wadsworth Philosophers Series on Addams*, (Toronto, Canada: Thomas Learning, 2004), 14.
[7] Jane Addams, "The Subjective Necessity for Social Settlements," *Philanthropy and Social Progress*, Edited by Henry Carter Adams, (Montclair, NJ: Patterson Smith Publishing Corporation, 1970),
[8] Jane Addams, *Democracy and Social Ethics*, (Chicago, IL: University of Illinois Press, 1990), 7.
[9] Addams, *A Centennial Reader*, 145.
[10] Lagemann, 4.

environment; in other words, both subject and object are constituted in the process.[11]

However, it is imperative to note that Addams was often forgotten as a pragmatist philosopher, even though John Dewey credited her influence, because she was a woman and not in academia. The inherent principle of pragmatism, which Addams demonstrates in her work at Hull House, is a strong conviction for anti-absolutism. In Addams' social philosophy, she viewed truth as a never-ending, back-and-forth process between thought and action.

Beginnings of Pragmatism

American pragmatism became very popular during the late nineteenth to early twentieth centuries, better known as the Progressive Era. The innovative idea of pragmatism originated at Harvard University with Charles Pierce and William James. However, soon after philosophers at the University of Chicago quickly generated an approach called the Chicago School of Pragmatism. "This new school was first noted by James in his correspondence with John Dewey in 1904 when referring to the recently published *Studies Logical Theory*."[12] In addition, during this time the first generation of women were attending college and entering discussions on the problems with industrialization and urbanization. On the other hand, even though women were finally achieving access to education, the feminist perspective was restricted in the field of philosophy.

William James

Seigfried points out in her book that James and Dewey took measures that promoted individual women and causes of equality. For example, "Lucy Sprague (Mitchell), Gertrude Stein, and Mary Whiton Calkins all studied with James."[13] Even though these women studied and interacted at the university level with James, he still practiced the theory of "separate spheres." Since James maintained this notion, he contradicted his own philosophical pleas for pluralism, tolerance, and openness to change. Thus, James' philosophy should be very accepting of the feminist perspective, but in his practice he systematically affirms difference between men and women. Even though James assigns differences to women, he recognizes that multiple viewpoints are needed in order to correct dominant views. For example, "while he mistakenly assigns sympathy as something natural in women, he does take the bold step of suggesting it is an important moral attribute that all should develop."[14]

John Dewey

Dewey is most often recognized as the most influential pragmatist philosopher in education. He did not hold the direct anti-feminist sentiments that James did in his work. For Dewey, "we are all conscious beings whose capacities for interactional awareness are coextensive with our ways of being alive."[15] In his work, he focused on the importance of reflecting on our experiences in order to be open minded and conscious of different views. Similar to Addams, Dewey's major thoughts about the structure of society were based on democracy and education. In Dewey's work, he advocated that "in order to understand both *that* and *how* all of [our] experiences, including those we call intellectual, are grounded in transactional [relations]—is for philosophy to achieve the significance of a method."[16] Thus, philosophy needed a method that rejected dualistic thinking and recognized that ignoring perspectives was oppressive.

Even though Dewey's philosophy and work did not have anti-feminist notions, "it can be argued that [he] did not go far enough to imagine how the philosophical engagement of women might look and how it would transform philosophy."[17] Furthermore, it can be said that he often did not sufficiently acknowledge the influence of certain women in his work. As a male philosopher, it appears that he did not feel that academia would discredit him for not acknowledging certain ideas by women. For instance, when he credited women, like Addams, those credits have faded away and diminished the voice of women in the pragmatist movement almost entirely.

Dewey and Addams

As noted previously, Addams is often forgotten as a pragmatist philosopher, even though John Dewey credited her influence. Some may ask, why is this important? Recovering the heritage of women in philosophy is necessary because "as long as thinkers and issues sanctioned by the canon dominated philosophy, women were discouraged from seeing themselves in the role of academic philosophers and had little

[11] Charlene Haddock Seigfried, *Pragmatism and Feminism*, (Chicago, IL: University of Chicago Press, 1996), 6.
[12] Mary Jo Deegan, *Jane Addams and the Men of the Chicago School, 1892-1918*, (New Brunswick, NJ: Transaction Publishers, 1990), 248.
[13] Erin McKenna, "Pragmatism and Feminism: Engaged Philosophy," *American Journal of Theology and Philosophy*, (January 2003, 24, 1), 5.
[14] Ibid., 7.
[15] Elizabeth Kamarck Minnich, "Experiential Education: Democratizing Educational Philosophies," *Liberal Learning*, Association of American Colleges and Universities, (Summer 1999), 12.
[16] Ibid, 10.
[17] McKenna, 7.

incentive to look to philosophy for guidance in their lives as women."[18] As previously stated, Dewey first discussed The Chicago School of Pragmatism idea formally with James in 1904, but by this time Hull House had been open for five years and Addams had already published her book *Democracy and Social Ethics* (1902). Since Addams was a woman, there is often a misconception about who developed central ideas first. When in fact, "Dewey credits Addams with developing the thesis that democracy is a way of life, a position that is central to his own theorizing."[19] Overall, pragmatism uses the essential component of democracy to create a social philosophy focused on the importance of human connections and the understanding of differences.

Jane Addams Pragmatism

The three main ideas of pragmatism that Addams developed through her work at Hull House were the importance of experience, emphasis on continual growth, and the essential need for diversity. Addams emphasized the importance of experience because she believed that all truth, all-knowing, comes from interaction with others in the community, thus, pragmatist experimentation is transactive, changing both the investigator (teacher) and the object of investigation (student). Secondly, continual growth and the ability that humans have to adapt themselves and their societies stems from our reflections of our experiences. For instance, in Addams' analogy of society as an organism, all the parts of an organism are necessary for the whole and dependent on the whole. Therefore, when we interact responsively with one another, we must adjust in order for our organism to continue functioning. As a result, when we experience something we act upon it, we do something with it, and then we undergo change. Diversity is needed in order for the inclusion of multiple voices and points of view. In pragmatism one never knows truth unless one hears all sides, for Addams, hearing multiple voices and the under-represented people is a necessity for knowing truth and for taking the right action.

Looking Back and Thinking Forward

Jane Addams opened Hull House "on the theory that the dependence of classes on each other is reciprocal; and that as the social relation is essentially a reciprocal relation, it gave form of expression that has peculiar value."[20] The settlement was designed as an alternative method of education, which promoted clubs for the awareness of social and cultural problems. She realized that class and ethnic lines divided American society, which presented unequal opportunities for individuals to cultivate their educational abilities. In addition, these dualistic divisions within society discouraged individuals from crossing and engaging in relationships outside of their class or race. The second motivation for the settlement that Addams discusses in her essay, "The Subjective Necessity for Social Settlements," is "the impulse to share the [human] race of life, and to bring as much as possible of social energy and the accumulation of civilization to those portions of the race which have little."[21] The very idea of Hull House makes Addams different from William James and John Dewey because she opened up boundaries by presenting an alternative view of education based entirely on understanding others' experiences and cultivating those relationships in a communal setting.

Hull House opened at a time when the first generations of American women were graduating from college, thus, it provided a forum for these women to use and combine their knowledge. Florence Kelley, an influential Progressive reformer, understood that "personal changes were never enough. [Women's] significance lay in the ways they led to changes in group life, particularly changes in the highest expression of group life—the state."[22] Furthermore, participation in public life was necessary for social reform; thus, women began organizing and working together locally and nationally to stimulate social change. Therefore, from the beginning, "pragmatism appealed to women thinkers and activists who found in it a movement within which they could work for a new intellectual and social order."[23]

Was Addams a Feminist?

The term feminism was not coined until later in the Progressive Era and was not widely used until 1913. Addams did not call herself a *feminist* most likely because the term was not used during the majority of her work. By the time feminism became an appropriate term for women working for equal rights, the suffragist movement had been divided into two different realms. However, when looking back we can evaluate how

[18] Charlene Haddock Seigfried, "Feminism and the Writings of American Women," *Pragmatism and Classical American Philosophy*, Ed. By John J. Stuhr, (New York, NY: Oxford University Press, 2000), 626.
[19] Ibid.,628.
[20] Addams, "The Subjective Necessity for Social Settlements," 1-2.
[21] Ibid, 15.
[22] Kathryn Kish Sklar, *Florence Kelley and the Nation's Work: the Rise of Women's Political Culture, 1830-1900*, (New Haven, Connecticut: Yale University Press, 1995), 315.
[23] Seigfried, *Pragmatism and Feminism*, 19.

Addams' social philosophy includes the feminist perspective and how that perspective influenced the methods she used at Hull House. Nancy Cott describes that the modern feminist agenda "enable[s] female individuals with several loyalties to say we and to achieve sexual equality while making room for sexual difference between women and men."[24] Therefore, when reviewing the definition of feminism in relation to the social philosophy that Addams promoted at Hull House and in her life, we must take into consideration how her influence as a woman affected her pedagogical/pragmatism methods.

Liberatory and Feminist Pedagogies

When thinking forward we can trace Addams' methods to show unique parallels to liberatory and feminist pedagogy. The objective of liberatory or critical pedagogy is to provide a scope through which educators are more capable of examining and interacting with the politics of education. In this instance, politics does not define any political party, but refers to "how we make meaning of commonplace events [or] the purpose and goals of public education."[25] Like Addams' philosophies, the primary goal of liberatory pedagogy is to challenge educators, students, and administrators to recognize, engage, and critically examine undemocratic practices and institutions that maintain inequality and oppressive identities. This goal promotes the development of educational practices that encourage teachers and students to critically examine and identify relationships of power, ideology, and culture thus, creating an environment focused on active emancipation through awareness. In this sense, "[culture] is shaped by the lived experiences and institutional forms organized around diverse elements of struggle and domination."[26] Through this process, the student's experiences within the sphere of popular culture (such as television, music, news, and movies) aid the process of understanding and reflecting on classroom material. Hence, in order to examine the diverse histories and perceptions of race, class, gender, ethnicity, and sexuality, it is inherent that both the students' and teachers' voices be heard. By engaging both the students' and teacher's voices in classroom discussions, educators are able to unchain themselves from the traditional relationship restraints with students. As the traditional relational chains are broken between students and educators, the classroom environment provides a ground for the crossing and engaging of multiple interconnected relationships. However, "the mere removal of constraints or a mere relaxation of controls will not ensure the emergence of free and creative human beings."[27] Instead, liberatory pedagogy encourages the plurality of American voices to be heard in the classroom and for new relationships to be forged from engaging dialogue.

The pedagogy of feminist teachers is based "on the certain assumptions about knowledge, power, and political action that can be traced beyond the academy to the political activism of the women's movement in the 1960s."[28] Feminist pedagogy is grounded in social change; therefore, the foundations of feminist pedagogy can be unlocked by looking at its origins in grassroots political activity. Women's consciousness groups that formed in the late 1960s were based on friendships, common political commitments, and discussion of shared experiences, much like the clubs at Hull House. Furthermore, they emphasized reliance on experience and feeling, sharing common experiences in collective leaderless groups, and the shared assumption that understanding and theoretical analysis were the first steps to revolutionary change. As the main goal of feminism was infused into feminist classrooms, the need for social change became relevant to students and educators. As a result, the call for social change and activism within the feminist classroom has been essential to transforming the classroom environment and the students' learning process.

Finding the Connections

In Addams' writings, she frequently stressed the idea of cross-cultured contact, which leads to individual growth and sympathetic understanding. She stated, "that we may get, and should get something of that revivifying and upspringing of culture from our contact with the groups who come to us from foreign counties, and that we can get it in no other way."[29] Her main goal in education was to create an environment where individuals of different backgrounds, classes, and races could learn from each other's experiences. Addams believed that the public schools held the power to recognize and cherish culture, however,

[24] Ibid, 10.
[25] Pepi Leistyna and Arlie Woodrum, "Context and Culture: What is Critical Pedaogy," *Breaking Free: The Trasnformative Power of Critical Pedagogy*, Edited by Pepi Leistyna, Arlie Woodrum, and Stephen Sherblom, (Cambridge, MA: Harvard Educational Review, 1999), 3.
[26] Ibid, 3.
[27] Maxine Greene, "In Search of a Critical Pedagogy," *Breaking Free: The Transformative Power of Critical Pedagogy*, Edited by Pepi Leistyna, Arlie Woodrum, and Stephen Sherblom, (Cambridge, MA: Harvard Educational Review, 1999), 28.
[28] Kathleen Weiler, "Freire and a Feminist Pedagogy of Difference," *Harvard Educational Review* 61, (1991), 456.
[29] Jane Addams, *Second Twenty Years at Hull House*, (New York, NY: Macmillan, 1930), 409-410.

she "criticized the schools because their culture had become entirely detached from experience."[30] Similar to liberatory and feminist pedagogy, Addams' methods recognize the need for multiple viewpoints to change students, teachers, and the world we live in, thus, promoting a classroom environment that encourages the transformation of knowledge and active participation within the community.

For Addams, "education encompassed all the ways of equipping people with the knowledge, skills, and moral and emotional sensitivities they need for democratic participation."[31] She discovered that it was hard to find an educational process that would work for uneducated adults because many were working in factories and sweatshops in industrial Chicago in the 1890s. Extended college classes proved to be unpromising and only added more stress to individuals' day. In addition, the "adding of evening classes and social entertainments as a mere frill to a day filled with monotonous and deadening drudgery constantly became more apparent."[32] Despite the constant failures, Addams continued to pursue her interest in finding opportunities for reciprocity in teaching and learning. She thought "that public schools should be neighborhood centers, connecting people to each other and the life of the city rather than functioning as a place apart."[33] She suggested using kitchens and workshops as classrooms in order to overcome the unnatural feeling of being cramped in desks and learning from books. I believe that this technique allowed Addams to create conditions in which individuals could feel comfortable. By creating an environment that was empowering, individuals were gradually encouraged to step out of their boxes and recognize the importance they served in the community.

During Addams' time at Hull House, her methods were not regarded as an educational pedagogy, however, when looking at liberatory and feminist pedagogy today, it is quite easy to see how her methods strove for the same goal. Addams wanted to kindle individuals' dreams by widening the circle of knowledge and by stressing the importance of personal experience. In addition, she wanted people to realize that truth is not absolute, but instead it is forever changing. By introducing multiple viewpoints through democratic dialogue and sympathetic understanding, the bridge between life and learning can be formed by producing a community of learners. Addams stated,

> We have learned to say that the good must be extended to all of society before it can be held secure by any one person or any one class; but we have not yet learned to add to that statement, that unless all men and all classes contribute to a good, we cannot even be sure that it is worth having.[34]

Hull House was an attempt to cultivate and share common experiences, with the hope of finding the good that all of society wished to contribute to. By sharing common experiences, Hull House's various activities aimed to spark a fire in people's hearts to contribute to the cause of humanity.

Setting the Stage for Education Today

Throughout this paper, I have discussed Addams' techniques in education, thus, the next step is to find a way to intertwine her methods with education today. In order to effectively assess how her ideas can be fused with education today, we must first understand the importance that civic engagement or citizenship has for education. Citizenship to most individuals is thought of as distinctively political and defined in terms of government; however, in Addams' view we see a different view of citizenship. We must realize that government is only a small portion of life. Today, we find that most of our problems cannot be solved through legislation, but instead through sympathy and understanding of common experiences. John Dewey, stated that "the content of the term citizenship is broadening; it is coming to mean all the relationships of all sorts that are involved in membership in a community."[35] When we take to heart the meaning of citizenship, we can understand how important democracy is in education. Hence, Addams' comprehension of democracy as a way of living together that encourages and fosters social intercourse can aid in the reconstruction of pedagogical methods in post-secondary education.

In academia, there have been two intense shifts: "first, at the level of practice, as excluded and formerly silenced groups challenge dominant approaches to learning and to definitions

[30] John C. Farrell, Beloved Lady: *A History of Jane Addams' Ideas on Reform and Peace*, (Baltimore, Maryland: The John Hopkins Press, 1967), 85.
[31] Fischer, 32.
[32] Addams, *Democracy and Social Ethics*, 84-85.
[33] Fischer, 44.
[34] Addams, *Democracy and Social Ethics*, 97.
[35] John Dewey, "The School as a Social Center," *National Education Association Proceedings*, (Chicago, IL: University of Chicago Press, 1902), 373-383.

of knowledge; and second, at the level of theory, as modernist claims to universal truths are called into questions."[36] Addams has addressed these dramatics shifts by focusing on a need for personal experience and a critical, reawakened awareness of issues of power, ideology, and culture. Using Addams' comprehension of democracy and her pragmatist approach, I will highlight certain areas that her philosophy can help expand and broaden for education today: (1) the importance of experience; (2) the role of authority; (3) diversity; and (4) empowerment.

Personal Experience as a Source of Knowledge and Truth

Like scholarly knowledge, personal experience can be an invaluable fountain of knowing. Experience allows for an exploration of the gap between students' and teachers' life experiences and learning experiences inside the educational realm. Early women's consciousness-raising groups saw feelings "as the source of a 'true' knowledge of the world for women living in a society that denied the value of their perceptions."[37] Nevertheless, women in the early consciousness-raising groups viewed feelings and emotions as a way of testing the accepted truths within knowledge. Addams thought "we can only discover truth by rational and democratic interest in life."[38] Truth was a never-ending, back-and-forth process between thought and action, thus as educators, students, and citizens, it important to recognize that no one's life experiences are more important than another's, but rather a way of helping each individual link new information to prior knowledge. Often for students to see the relevance of class material, they need to connect that knowledge to their own experiences through reflection and dialogue. As for myself, connecting knowledge learned within the classroom with outside experiences helps me understand the material more clearly.

Since truth is not absolute, but only partial and relative, students and teachers can become aware of how their positions affect others. Addams believed, "The democratic ideal demands of the school that it shall give the child's own experiences a social value; that it shall teach [them] to direct [their] own activities and adjust them to those of other people."[39] Therefore, Addams not only asks for individuals to own their experiences, but also to recognize the oppressor within us through exploring our emotions, feelings, and personal experiences. The very process of using life experiences to link new information to prior knowledge is not knowledge transfer, but knowledge transformation.

The Role of Authority

The role of authority within the classroom undoubtedly sets the tone for teacher-student and student-peer relationships. Ira Shor states,

> Students who play dumb have learned in traditional classrooms that their role is to answer questions, not to question answers… [therefore, they are] unable to perceive purpose or community in the curriculum, they grow unequipped to analyze and transform their world.[40]

Addams frequently recognized that the figure of authority should also be a teachable role, whether that figure is a parent or a teacher. In addition, she believed that recognizing the responsibility that we have for the well-being of others would only follow when individuals first realized how they depend on others. Certainly, "those who are less well-off in society are made acutely aware of their dependency on those who have the power to deprive them of the necessities of life, those in positions of power find it more difficult to recognize or acknowledge their dependency on others."[41] The goal here is not to degrade the role of a teacher, but to get away from the dominant view of teachers as mere transferors of knowledge because without questioning one's own position of authority, obtaining a nonhierarchical vision is often difficult for educators.

The role of authority continues to be one that is hard to translate into a classroom setting that encourages reflection of one's own personal experiences. For example, bell hooks states, "I am troubled by the term 'authority of experience,' accurately aware of the way it is used to silence and exclude."[42] Additionally, for women teachers in any academic position, maintaining a stance of authority is sometimes necessary in order to refute the idea that male professors are more competent than female professors. Much like Addams, Henry Giroux and Peter McLaren have suggested that a form of "emanicpatory authority needs to be developed, one that can illuminate the connection and importance of…teacher education programs."[43] When teachers

[36] Weiler, 450.
[37] Ibid, 463.
[38] Addams, *Democracy and Social Ethics*, 7.
[39] Ibid, 81.
[40] Ira Shor, *Empowering Education: Critical Teaching for Social Change*, (Chicago, IL: The University of Chicago Press, 1992), 137.
[41] Charlene Haddock Seigfried, "Introduction to the Illinois Edition," *Democracy and Social Ethics*, (Chicago, IL: University of Illinois Press, 2002), xxi.
[42] bell hooks, *Teaching to Transgress: Education as the Practice of Freedom*, (New York, NY: Routledge, 1994), 90.
[43] Henry Giroux and Peter McLaren, "Teacher Education and the Politics of Engagement: The Case for Democratic Schooling," *Breaking Free: The Transformative Power of Critical Pedagogy*, Edited by Pepi Leistyna, Arlie Woodrum, and Stephen Sherblom, (Cambridge, MA: Harvard Educational Review, 1999), 313.

initiate a form of emancipatory authority into the classroom, students are able to engage in critical thinking, to decide what forms of knowledge are best suited for living in a just and democratic society. Thus,

> a reconstituted notion of emancipatory authority suggests, in this case, that teachers are bearers of critical knowledge, rules, and values through which they consciously articulate and problematize their relationship to each other, to students, to subject matter, and to the wider community.[44]

Giroux and McLaren's idea of emancipatory authority confronts the dominant view of teachers as the transferors of knowledge, therefore, positioning teachers to reject any ideology that constrains them from providing a transformative education. The emancipatory authority that Giroux and McLaren call for is very similar to the idea of authority that Addams wanted. In Second Twenty Years at Hull House, Addams stated, "Democracy believes that the [individuals] at the bottom may realize [his/her] aim only through an unfolding of [his/her] own being, and that [he/she] must have an efficacious share in the regulation of [his/her] own life."[45] Addams' hope was that the settlements would work with individuals to show them how to break free from their constraints and recognize their roles in the community.

Diversity

As education is embedded with so-called characteristics of "cultural norms," it is very simple to see that education is related to race, class, gender, and sexuality. For example, "if education is viewed as preparation for carrying on processes historically associated with males, it will inculcate traits the culture considers masculine."[46] The environment of the classroom is the most important phase for opening up new ways of thought and crossing and engaging in multiple relationships, however, it is often the most difficult to transform.

Addams developed the Labor Museum in 1900 to help area residents understand different cultural practices and to create a sense of unity amongst the community. In doing so, she bridged the divide between thought and practice, which "fulfilled Addams' vision for Hull House as a place to express the meaning of life through life itself, and to unite people in solidarity, recognizing their common humanity."[47] If education is molded as an opportunity for everyone's lives to be part of a learning experience, then we create appreciation for different cultures, races, and genders. Addams once said, "It was the function of the settlements to bring into the circle of knowledge and fuller life, men and women who otherwise might be left out."[48] Understanding multiple identities within the classroom is best when personal experience is presented for others to reflect and understand dominant structures of oppression. The Labor Museum created conditions that allowed for the environment to transcend structural and hierarchical boundaries to create relationships, bonds, and an understanding of each other's common experiences.

Empowerment

For me, as a woman student, empowerment in the classroom is often the key for opening doors to a transformative education. I have decided to analyze empowerment last because the importance of experience, the role of authority, and diversity are essential components for empowerment. The basis of empowerment can be traced back to Freire, whose ideas were developed from his experiences in Brazil during the 1920s. Even though Freire's work emerged from his connection to class oppression, his ideals have been expanded to aid in the empowerment of women and other minorities. Freire also believed that "one cannot empower others but can create conditions that make it possible for others to reflect and act on their reality."[49] Understanding that one cannot empower others, demonstrates that as educators we cannot explicitly believe that the classroom environment empowers individuals, but we can evaluate how we uphold an environment that stimulates self-reflexive thinking among students.

Feminist theories have added a gendered view to the overall conceptualization of empowerment. This gendered view of empowerment began in the early women's consciousness-raising groups that focused on sharing common experiences of sexuality, work, family, and participation in a male-dominated society through collective, leaderless groups. These groups functioned similar to the clubs at Hull House, as creative and enriching outlets for the participants. Therefore, feminist pedagogy adds the notion that empowerment is relational in nature.

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[44] Ibid, 313.
[45] Addams, *Second Twenty Years at Hull House*, 383.
[46] Jane Roland Martin, *Changing the Educational Landscape: Philosophy, Women, and Curriculum*, (London: Routledge, 1994), 206.
[47] Fischer, 46.
[48] Addams, *Second Twenty Years at Hull House*, 404.
[49] Falk-Rafael, Adeline, Chinn, Anderson, Laschinger, and Robotzky, "The Effectiveness of Feminist Pedagogy in Empowering a Community of Learners," *Journal of Nursing* 16, (1996), 108.

Addams' methods, feminist pedagogy, and liberatory pedagogy emphasize classrooms based on participation they respect and encourage students to be connected or hands-on-learners. Ira Shor states, "people begin life as motivated learners, not as passive beings. Children naturally join the world around them. They learn by interacting, by experimenting, and by using play to internalize the meaning of words and experience."[50] However, our current educational systems erode students' essential need for participatory learning by focusing on knowledge transfer. When I look back on my education, the cornerstone of my success and educational endeavors has been found in environments that have challenged and empowered me. Hence, by integrating pedagogies that propose active participation amongst diverse backgrounds, sharing of common experiences, and a commitment to social change, we will find ourselves in an environment that promotes freedom and active emancipation.

Culminating our Journey

Becoming a teacher gives one power to open up the world of possibilities, knowledge, and self-reflection. Therefore, a teacher has the possibility to create an empowering environment where all participants are interconnected. I do not want to imply that teachers are perfect individuals who cannot make mistakes, but instead that teachers – even those who stumble along the way – can increase awareness, passion, and inspiration to create an environment that is transforming. My research has aimed to discover the capacity that education has to change the world.

Finding a transformative pedagogy that engages students and teachers will hopefully promote an academic environment that stimulates individuals to become active participants not only in the classroom, but also in society. I believe that the foundations needed for a transformative pedagogy already exist, but need to be brought together as one method and not as separate methods. By analyzing Addams' social philosophy, I have revealed ideas that promote a new ground for the exploration of knowledge, which is neither oppressive nor suppressive of the development of personal experiences as a legitimate starting place for learning.

As we culminate our journey, I urge individuals to think about Jane Addams and her efforts to encourage learning from life. Most importantly, we need to recognize that as we begin thinking forward into the future of education, finding the necessary elements that engage students and teachers will be the key to a curriculum that encourages democratic learning and discovers the power of civic engagement. Therefore, as students and educators, we must recognize that "transformation is a journey of hope, humor, setbacks, breakthroughs, and creative life, on a long and winding road paved with dreams whose time is overdue."[51] The light at the beginning of the journey has been ignited, and now it is our choice to keep it lit or let it burn out.

[50] Shor, 17.
[51] Shor, 263.

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The effects of infant age on parental vocalizations about object categories in a play-type setting

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Abstract
Previous studies have examined the role of various perceptual features of objects on an infant's ability to effectively categorize the object. Few, if any studies have examined the role of parents in the formation of categories early in infancy and the effect of the infants' age on the type of categorical information provided by the parents. In two studies, parental vocalizations directed to their infants (3- to 12-months of age) about objects were videotaped and analyzed. In Study 1 the proportion of superordinate labels used by parents increased as a function of the infant's age while the proportion of basic level labels decreased with age. In Study 2, parental attempts at label elicitation increased as a function of the infant's age. The results show definite age-related patterns in parental vocalizations about objects and their categories. The results indicate that parents are a source of categorical information early in infancy.

From the moment of birth, infants are bombarded with novel sensations and perceptions. Everything they encounter has a name, and the process of learning the names of all these new objects and concepts requires a great deal of cognitive organization. Categorization of novel stimuli allows an infant to efficiently store and effectively access this new wealth of data (Quinn, 2002). If categorization were not possible, every day would be full of numerous instances of trial and error as the infant tested and retested every new object and phenomena he or she encountered, making sure the results were the same every time. Categorization saves the infant the time and energy of being a constant experimenter because it allows infants to use previous knowledge about categories and members of categories when an infant encounters new, yet similar objects. For example, if an infant is familiar with the category *dog* and what it means to be a member of that category, then he or she does not need to observe every dog wagging his tail or barking to know that he does so. The infant knows from previous experience with dogs that barking and wagging tails are typical behaviors of dogs. Therefore, he or she can confidently expect that any new dog will also exhibit similar behavior without actually observing the behavior firsthand. This process of using previous knowledge to infer or expect a similar response from previously unknown stimuli is known as *generalization*.

Object categories

Categorization is defined as equivalent responding to a set of discriminably different instances (Quinn, 2002). For example, again looking at the category, *dog*, categorization treats an 80 pound, black Labrador retriever the same as a 19 pound, white and tan Jack Russell Terrier. They are both dogs even though

they are clearly different from each other.

There are three main levels of categorization to which objects and concepts belong: superordinate, basic, and subordinate. These levels of categories are arranged hierarchically, with superordinate categories being the most inclusive and subordinate categories being the least. For example, consider the category, *dog*. At the superordinate level, a dog may be considered an *animal*. At the basic level, a dog is simply a *dog*. At the subordinate level, a dog may be categorized by breed such as Jack Russell Terrier or as is more often the case, categorized as an individual.

Superordinate categories are all-encompassing categories. As mentioned earlier, *animal*, is an example of a superordinate category label. The category *animal* not only includes dogs but many other basic level categories including but not limited to: cats, horses, bears, birds, snakes, fish, insects, etc. The superordinate category, *animal*, also includes many subordinate categories that refer to specific types of animals such as Burmese pythons, panda bears, and Jack Russell Terriers. Further, Rosch, Mervis, Gray, Johnson, & Boyes-Braem (1976) found that members of the same superordinate category share very few of the same characteristics with one another. Put another way, objects within a superordinate category have the fewest things in common. Consider animals. Animals are living things that voluntarily move and do not make their own food. In addition, the characteristics used to categorize superordinates are the broadest or most non-specific characteristics used among the three category levels.

Quinn (2002) referred to the basic level as an intermediate level of inclusiveness. The characteristics used to describe basic level categories are more specific than for superordinates, and therefore basic level categories have fewer members than superordinates. For example, not only are dogs living things that voluntarily move and do not make their own food, they also bark, have four legs, fur, are warm-blooded, and give birth to live young. Because there are more characteristics used to categorize dogs as compared to animals and that these characteristics are more specific, this shrinks the number of members that fall into the basic-level category, *dog*. Also, most of the members of any basic level category, such as *dog*, share many similar characteristics without considerable overlap with other basic level categories [that are within the same superordinate] (Rosch et al., 1976). While most dogs share the characteristics of barking, having fur and four legs, other animals such as birds and snakes do not share these characteristics.

Finally, the subordinate level is the least inclusive or most specific level of categorization. Subordinate level categories use the most descriptors to designate its members. For example, Jack Russell Terriers not only have the characteristics that make them animals and dogs, they also have many characteristics such as small size (14 to 22 pounds), short tail, broad chest, and narrow snout that put them into a smaller, more specific subordinate category, *Jack Russell Terrier*. Subordinate members share many common characteristics and these characteristics often have considerable overlap with other subordinate level categories (Rosch et al., 1976). This is illustrated by the fact that most terriers share these specific characteristics while they are not members of the subordinate category of *Jack Russell Terrier*.

Categorization in infancy

Previous studies investigating categorization in infancy have found that infants as young as 3 months of age can categorize cats as separate from dogs (Quinn & Eimas, 1996), can distinguish chairs as separate from other pieces of furniture, and can categorize furniture as separate from animals (Behl-Chadha, 1996), and also categorize animals as separate from vehicles (Arteberry & Bornstein, 2001).

Quinn & Eimas (1996) used the heads of cats and dogs as the exemplars shown to infants demonstrating infants' ability to use facial information to categorize whole objects. Vidic and Haaf (2004) tested 4-month-old infants' ability to distinguish dogs from cats when body regions (face, head, and torso) were interchanged among objects. Their results indicated the importance of the torso in infants' ability to categorize the animals. In addition to facial and bodily features, Arteberry & Bornstein (2001) demonstrated that 3-month-old infants can use motion to distinguish animals from vehicles.

So even in very young infants, the ability to categorize everyday objects is present, and infants use many different perceptual features to categorize objects. However, how this ability to categorize comes about is not well understood. There is evidence to suggest that language and the information conveyed to infants through language may have an effect on an infant's ability to categorize (Balaban & Waxman, 1997).

Parents as sources of category information

One source of category information that is provided to infants through language comes from more experienced categorizers such as parents. As Sugimura (1992) suggests, acquisition of natural concepts is assumed to depend on mainly categorical information which is provided by parents and other people and children's existing knowledge for categories which may be related to their age level. Understanding that existing knowledge is often experience

dependent (Sugimara), it is meaningful to point out that very young infants often lack sufficient experience to have gained a large enough knowledge base from which they could generalize to new experiences. Jaswal (2004) writes that in every domain of human cognition that involves the acquisition of knowledge, we learn from others, often through language. The acquisition of categories in infancy is no different. As in the case of very young infants, one source of information about object categories is what parents are saying about the objects.

So just what are parents saying to their infants about objects and categories? Labeling or naming the objects is one of the most common pieces of information provided to infants about objects (Poulin-Debois, Graham, & Sippola, 1995; Callanan & Sabbagh, 2004). The majority of object labels provided by parents are at the basic level of categorization for children 24-months of age and older (Callanan, 1985, 1990, Rosch et al., 1976). Other studies have supported similar parental labeling patterns for children as young as 12-months of age (Blewitt, 1983; Poulin-Debois et al., 1995). Subordinate and superordinate labels are far less common with superordinate being the least common. Also, when teaching children about objects and the categories those objects belong to, parents will adjust their teaching strategy based on the category level they are asked to teach about (Callanan, 1985, 1990; Sugimura, 1992). When instructed to teach superordinate categories to their young children, parents tended to anchor their statements about items in the superordinate category with examples from the basic level (Callanan, 1985, 1990). The anchoring technique refers to parents using a basic level label when introducing any non-basic label such as a superordinate or subordinate label. For example, when introducing the superordinate term, vehicles, a parent may say, "This is a car, but it is also a vehicle." However, in the above Callanan studies, this anchoring technique was only observed when parents were introducing superordinate labels, but not observed when parents were teaching about subordinate categories.

Parents also provide contextual information about the objects including their relative functions and general characteristics (Callanan, 1990; Wales, Colman, & Pattison, 1983). Features and parts of objects such as color, size, shape, wing, leg, etc. were mentioned when discussing basic and subordinate categories while functions such as actions of an object (an airplane flies), actions performed on an object (you use a mixer to make cakes) and typical locations of an object (a wrench is in a tool box) were mentioned when discussing superordinate categories (Callanan, 1990). Both object labels and contextual cues provided by parents are relevant and necessary pieces of information for the children about the objects themselves and also about the categories of which the objects are members. While much work has been done examining parental influences on categorization, the above studies focused on parents of children two years of age and older. Few studies have looked at how parents facilitate categorization for infants younger than one year of age.

There is reason to expect that the types of category information parents speak about with their children might be influenced by the infant's age. Rosch et al. (1976) wrote that the less specific an object category, the more abstraction is required to understand what the category represents. Superordinate categories are the least specific and therefore require the most abstraction in order to understand their meaning. Because very young infants may not be capable of the abstract cognition required of superordinate categories, it would follow that parents would seldom label at the superordinate level because it would provide no useful information to the infant. For example, boats could be labeled at the superordinate level as *things that float*. However, if a 4-month-old infant fails to grasp the concept of floating, it would be futile for a parent to label the object as such. The more appropriate labeling behavior would contain information useful to the infant such as basic level labels. As stated earlier, the majority of object labels provided by parents are at the basic level. However, as the infant gets older and his or her cognition becomes more sophisticated, he or she will be able to understand increasingly abstract concepts, and therefore parents may begin to include more of the abstract, superordinate labels within their conversations to their infants.

The current study explored how parents, in a fairly naturalistic setting, categorized objects dependent upon the age of their infant. Specifically, this study investigated when and how parents begin to naturally discuss the more abstract superordinate level of categorization in an unstructured play-type setting. We hypothesized that as the age of the infant increased, the proportion of the utterances by parents containing superordinate level labels would also increase.

Study 1

In this study, we examined whether parents vary the amount and type of categorical information they provide to their very young infants based on the infant's age. Previous studies have researched categorization in infancy (Arterberry & Bornstein, 2001; Mareschal, Powell, & Volein, 2003; Mareschal & Quinn, 2001; Pauen, 2002; Quinn, 2004; Vidic & Haaf, 2004). However, only a few of these studies have focused on parents' involvement in categorization during infancy (Callanan

& Sabbagh, 2004; Poulin-Debois et al., 1995) and these studies only focused on infants older than one year. Many more studies of parents and categorization were done with 2- and 4-year-olds (Blewitt, 1983; Callanan, 1985, 1990; Sugimura, 1992; Wales et al., 1983). The few studies conducted that have examined the kind of categorical information provided by parents to their children have explicitly instructed the parents to teach their children about categories. Studies in which parents are instructed to teach their infants and children about object categories create a somewhat artificial situation. Few, if any, studies have explored how the parents may naturally foster their infant's ability to categorize. This current study does just that. Younger infants (3- to 12-months of age) and their parents will be studied within a naturalistic setting.

Method

Participants

Twenty-six infant-parent dyads participated in the study. The infants were between the ages of 3 months, 27 days and 11 months, 28 days (M = 8.1 months, SD = 2.0 months). Thirteen infants were female. The majority of parents participating were mothers. The participants were recruited from the wider community by mail and follow-up phone calls.

Materials

The parent-infant interactions were guided using a variety of objects and topic cards. Four baskets of objects were used along with four topic cards. Basket 1 contained baby clothes including a romper or "onesie," a pair of baby pajamas, an infant hat, and a pair of infant booties. Basket 2 contained four, small, stuffed dogs. Basket 3 contained plastic, toy fruit including an apple, a pear, a whole banana, two banana halves split vertically, and two oranges. Basket 4 contained small, yellow, plastic shapes including an oval, a triangle, a circle, a square, and a plus-sign. Each of the topic cards began with the instructions, "Please talk to your child about…" Topic Card 1 stated: Family. Topic Card 2 stated: What you and your child did yesterday. Topic Card 3 stated: How he or she is feeling. Topic Card 4 stated: The weather and/or the season. For the purposes of this study, only conversations prompted by objects were analyzed.

Design and Procedure

Each parent was asked to play with his or her infant while the researchers videotaped the interactions. Before the interactions took place, each parent was given the following instructions:

> a) Play with your infant in the same way you would play with him or her at home using the guiding materials.
>
> b) Use one basket or topic card at a time, in no particular order, however, please alternate between topic cards and baskets.
>
> c) Talk with your infant using either the card or basket until he or she, you, or both of you get bored.
>
> d) When finishing with the toys, please finish completely with the topic or objects before moving onto the next topic or basket.
>
> e) Try to play with all four baskets and discuss all four topic cards.
>
> f) There is no minimum or maximum time you have to play with your infant, however, each session usually takes approximately 8-10 minutes to complete.

After answering any questions, digital recording was begun and the parents were then told to begin playing. After the parent and infant were done playing, parents were thanked for their time and given a small gift for participation.

The parental vocalizations during the interactions were transcribed word for word. Each transcript was then coded.

Coding

Each individual statement made by the parent was referred to as an utterance. Each utterance was first coded for whether the utterance was on-topic or off-topic. Off-topic utterances were considered to be any spontaneous utterances from the parent not pertaining to playing with their infant. For example, "Mommy's not feeling well today" or "Let's move you from the bouncy seat" were considered off-topic utterances. No further coding occurred for off-topic utterances. All on-topic utterances were then coded for the following criteria:

> a) The number of object labels the utterance contained.
>
> b) The categorical level of the object label: superordinate, basic, or subordinate. Prior to coding, the researchers developed a comprehensive list of acceptable superordinate, basic, or subordinate labels for each object used in the study. (See Table 1,)
>
> c) If two or more different levels of labels were mentioned in the same utterance or two consecutive utterances, the relationship between the two labels was determined. In keeping with previous research results demonstrating that labeling begins and is rooted at the basic level, two relationships were coded (Rosch et al., 1976; Callanan, 1985). The basic-to-superordinate relationship and the basic-to-subordinate relationship were noted.
>
> d) If the utterance attempted to elicit a label by asking a question. For example, did the parent ask, "What is this?" or "What are these?"

e) If the utterance contained functional information about the object. Functional information was defined as any movement or sound-based attribute of the object such as walking, rolling, talking, honking, etc. All functional information was further coded as applying to either the whole object or only part of the object.

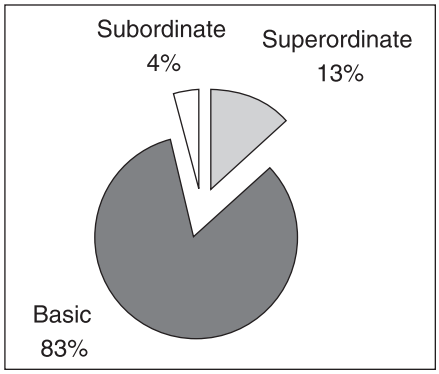
f) If the utterance contained information about the characteristics of the object. Characteristics were defined as non-movement attributes such as color, size, shape, etc. Characteristic information was also coded as applying to either the whole object or part of the object.

Results

Preliminary analysis

First, the proportion of utterances containing labels was analyzed. The results indicated that 29.4% of utterances to infants during play contained a label. Next, of the utterances containing a label, the levels of each label were analyzed (see Fig. 1).

Figure 1. *Level of label in parental utterances to infants for Study 1*



Consistent with previous studies, the results indicated an overwhelming tendency of parents to label at the basic level. Eighty-three percent of labels were at the basic level. Superordinate labels were used 13% of the time while subordinate labels were used less than 4% of the time. In addition, the proportion of utterances attempting to elicit a label was analyzed. Here 4.4% of utterances to infants were aimed at eliciting a label. Also, the proportion of utterances containing functional and characteristic information was analyzed. While only 4.7% of utterances to infants contained functional information, 12.6% of utterances contained characteristic information. Lastly, the utterances containing characteristic and functional information were analyzed to determine what proportions of those utterances applied to either the whole object or to part of the object. One hundred percent of the utterances containing functional information applied to the whole object. In contrast, only 56% of the utterances containing characteristic information applied to the whole object while 44% applied to various parts of the objects.

Main analysis

Age effects on parent utterances were examined by estimating a series of regression analyses. A marginally significant effect of age on parents' vocalizations of superordinate level labels was found (F (1, 25) = 3.42, p = 0.08) signifying that as the age of the infant increased, so did the proportion of superordinate labels. In addition, a marginally significant effect of age on parents' vocalizations of basic level labels was found (F (1, 25) = 3.83, p = 0.06) indicating that as the age of the infant increased, the proportion of basic level labels decreased. There were no other significant effects of age on parent's patterns of vocalizations to infants.

Discussion

Our results support the original hypothesis that parents change their vocalizations with regards to the superordinate categories as the infant ages. Indeed, as the infants get older, parents do increase the proportion of utterances containing superordinate labels. In addition, the proportion of utterances containing basic level labels decreased. However, each set of objects only contained objects from within a specific superordinate category. This could have limited the number of superordinate labels used by parents, an issue we investigated in Study 2.

Study 2

In Study 1, each basket contained one group of objects from within one superordinate category. In order to determine if the number of superordinate categories per basket affected the way parents label the objects, the number of types of objects per basket was changed in Study 2. Three of the baskets contained objects that could be categorized as belonging to at least two different superordinate categories. The fourth and final basket was retained from Study 1 and only contained one group of objects, all from the same superordinate category.

Method

Participants

Ten infant-parent dyads participated in the second study. The infants were between the ages of 3 months, 25 days and 8 months, 8 days (M = 5.9 months, SD = 1.4 months). Two infants were female. The majority of parents participating were mothers. The participants were recruited from the wider community by mail and follow-up phone calls.

Materials

In this second study, again four baskets of guide objects were used for the parent-infant interactions along with the four topic cards. Basket 1 contained four plastic, toy vehicles including a dump truck, a train, a car, and a bulldozer. It

also contained four plastic, toy animals including an alligator, a panda bear, a wolf, and a hippopotamus. Basket 2 contained four plastic, toy people. It also contained four, plastic, toy animals including a horse, a buffalo, a pig, and an elephant. Basket 3 contained the same plastic, toy fruit as Study 1. Basket 4 contained four, plastic, toy boats and four plastic, toy birds including a penguin, a swan, a duck and a rubber ducky. All of the plastic, toy animals used in Study 2 with exception of the rubber ducky were anatomically correct and looked similar to their larger, living counterparts. Again, the four topic cards used in Study 2 began with the instructions, "Please talk to your child about…"

a) how people in the world communicate with each other.

b) things that start with the letter 'F'.

c) the pictures on the card without showing what is on the card. The three pictures on the card were different facial expressions: happy, sad and confused.

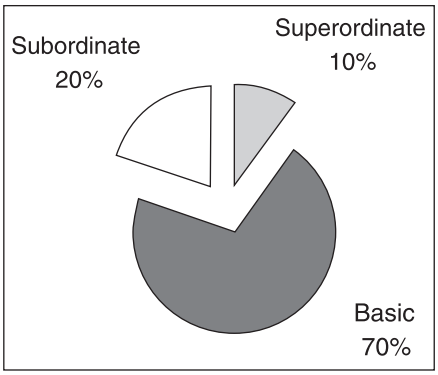
d) things in the world that moved. For the purposes of Study 2, only conversations prompted by objects were analyzed.

Design and Procedure
The procedure for Study 2 was identical to Study 1.

Coding
The same coding scheme developed for Study 1 was also used for Study 2. For classifications of superordinate, basic, and subordinate object labels for the materials used in Study 2, see Table 2.

Results
Preliminary analysis
The proportion of utterances containing labels was analyzed. The results indicated that 33.4% of utterances to infants during play contained a label. Next, of these utterances containing a label, the levels of each label were examined (see Fig. 2).

Figure 2. *Level of label in parental utterances to infants for Study 2*



As was the case in Study 1, the majority of labels uttered by parents were at the basic level. Seventy percent of the labels were at the basic level. Superordinate labels were used 10% of the time while subordinate labels were used 20% of the time. The proportion of utterances attempting to elicit a label was again analyzed. Here 3.4% of utterances to infants were aimed at eliciting a label. Also, the proportion of utterances containing functional and characteristic information was measured. Slightly more than eleven percent (11.2) of utterances to infants contained functional information and 13.2% of utterances contained characteristic information. Finally, the utterances containing characteristic and functional information were analyzed to determine what proportions of those utterances applied to either the whole object or to part of the object. Again, when mentioning functions, the large majority of utterances (98%) by parents refer to functions of the whole object. However, in the case of characteristics, only 48% of the utterances containing characteristic information applied to the whole object while 52% applied to various parts of the objects.

Main analysis
Age effects on parent utterances were again examined by estimating a series of regression analyses. A trend in the proportion of utterances containing labels was observed (F (1, 6) = 3.16, p= .11). This indicates that as the infants get older, the parents were labeling more often. There were no other significant effects of age on parent's patterns of vocalizations to infants in Study 2.

Discussion
Nearly one third (33.4%) of the proportion of utterances by parents contained a label. This is slightly higher than the 29.4% of utterances containing labels found in Study 1. This could be due, in part, to the fact that there were more categories of objects included in Study 2 versus Study 1, and therefore parents had a larger number of labels they could use in conversation to their infants. The majority of the labels were at the basic level. However, subordinate labels were the second most common type of label with fully 20% of the labels used at the subordinate level. This is in stark contrast to Study 1 where subordinate labels were used the least. Only 4 % of the labels used were at the subordinate level in Study 1. And while superordinate labels were used more often than subordinates in Study 1, the reverse was true for Study 2.

Study 1 and Study 2 Combined Data
Although both studies had relatively small sample sizes (Study 1, 26 infants and Study 2, 10 infants) and therefore low statistical power, similar patterns of parental vocalizations were observed. For this reason, we thought it reasonable to combine the two groups of subjects and to analyze the larger data set for possible age-related changes in parental vocalizations. Further support for combining the data sets came from comparing parent labeling in the two studies for the one set of objects that

was the same across both studies–the basket containing only fruit. When comparing the labeling behaviors of the parents regarding the basket of fruit, we see markedly similar patterns of behavior. The majority of the labels used by the parents were at the basic level with few superordinate labels used and subordinate labels being used the least. However, there was one slight difference. The parents in Study 2 used somewhat fewer superordinate labels than would have been predicted (X^2 (3) = 9.3, $p < 0.025$). Since there were no other differences, we concluded the parents in each study were exhibiting fairly similar labeling behaviors, and this allowed us to combine data from the two studies together for this overall analysis.

Participants

The data of all thirty-six infant-parent dyads from studies 1 and 2 were analyzed. The infants were between the ages of 3 months, 25 days and 11 months, 28 days (M = 7.5 months, SD = 2.1 months). Fifteen infants were female.

Results

Analysis

Age effects on parental utterances within the combined sample were examined by estimating a series of regression analyses. There was a significant effect of age on the proportion of parental utterances containing labels at the subordinate level (F (1, 35) = 4.6, p = .04). These findings indicated that as the age of the infant increased, the proportion of labels at the subordinate level decreased. A trend in the proportion of parents' vocalizations of superordinate level labels was found (F (1, 35) = 2.47, p = 0.13) signifying that as the age of the infant increased, so did the proportion of superordinate labels. In addition, a marginally significant effect of age on parents' attempts to elicit a label was found (F (1, 35) = 2.88, p = 0.10) indicating that as the age of the infant increased the proportion of utterances aimed at eliciting a label also increased. There were no other significant effects of age on parents' patterns of vocalizations to infants.

General Discussion

The purpose of this study was to determine if and how parents begin to discuss the superordinate level of categorization. The results partially supported the initial hypothesis that parents would use more superordinate labels as the infants get older. In Study 1, there was a trend in the proportion of superordinate labels used, indicating there were more superordinate labels used with an increase in age while at the same time the proportion of basic level labels used decreased. When combining the two studies, a similar trend of superordinate labeling was observed, indicating that, overall, parents increased the proportion of superordinate labels used as a function of the infants' age. This could indicate parents are adjusting the input they provide to their infants based on the age of the infant.

In addition, the analysis of both data sets showed a marginally significant effect in that the proportion of utterances attempting to elicit a label increased with the age of the infant. So not only are parents providing useful categorical information to their infants, they are trying to facilitate the infants' own ability to categorize objects. Obviously, the infants in our studies were unable to label the object themselves but as the infants got older and closer to the age where they would begin to speak, the parents more often attempted to elicit a label from them.

In both studies, the overwhelming majority of labels were at the basic level. In Study 1, while the proportion of superordinate labels increased, the proportion of basic levels decreased. Because the proportion must remain 100% for the total proportion of all labels, if the proportion of one label goes up, another proportion of a different label must go down. When combining the data from Studies 1 and 2, the proportion of superordinate labels increased but this time the proportion of subordinate labels decreased *instead* of basic level labels as was the case in Study 1. In order to provide more of one type of information, i.e. superordinate labels, the parents must lessen the amount of some other piece of information. In Study 1, it was the proportion of basic level labels that decreased. In Study 2, there were more labels as the infants got older but the level of labels did not change. Finally, the combined data show that the proportion of subordinate labels decreased. In future studies, we will continue to examine whether the piece of information which is given up is consistent and/or important. It may be the case that it is more important for the parents to provide increasing amounts of abstract information, such as superordinate level labels in order to further facilitate their infants' cognition, rather than which piece of information parents choose to give up.

This study is unique in that it studied how parents categorize objects for infants younger than one year of age. It is also one of the only studies that attempted to study parental influences on categorization in a more naturalistic setting. However, there were also limitations to this study. Both studies contained a small number of participants (26 and 10, respectively). In addition, the diversity of the subjects may not be representative of the population of infants between 3 and 12 months of age. Future studies will include larger sample sizes with a more representative sample of the community.

There are obvious and deliberate changes in parental speech to infants about object categories. Future studies will discern exactly what role parents play in the categorization abilities of infants and young children. In addition to perceptual features of the object observed directly by the infant, parental input could also have an effect on the infants' ability to categorize the object. If this is indeed the case, the exact role of parents in the formation of object categories for infants warrants further study. To that end, in the future, we will continue to study the parents' exact role in infant categorization. In addition, we plan to study parental categorization behavior when speaking with older children to determine if and how the labeling and categorization patterns of parents to children may change over a larger age range.

Table 1. *Potential category labels for object prompts in Study 1*

Basket	Materials	Superordinate Label	Basic Label	Subordinate Label
1	Baby Clothes	Clothes/clothing	Onsie	
		Baby Clothes	Romper	
			Outfit	
			Pajamas	
			Jammies	
			Shirt and Pants	
			Top and Bottom	
			Hat	Baseball hat
			Cap	Baseball cap
			Booties	
			Boots	
			Footies	
			Mittens	
			Sock(s)	
			Slipper(s)	
			Feets	
2	Stuffed Toy Dogs	Animal(s)	Dog	Proper name (e.g. Fido)
		Mammal(s)	Puppy	Breed (e.g. chocolate lab)
		Creature(s)	Wolf	Puppy dog
		Critter(s)	Coyote	
		Toy(s)		
		Litter		
		Living Thing(s)		
3	Toy Fruit	Fruit	Apple	Type (e.g. Macintosh)
		Food	Pear	
		Toy(s)	Orange	
			Ball	
			Banana	
			Nanna	
			Inside of Banana	
			Banana split	
4	Yellow, Plastic Blocks	Block(s)	Square	Name (e.g. Mr. Square)
		Toy(s)	Cube	
		Shape(s)	Circle	
		Piece(s)	Cross	
		Object(s)	“X”	
			Oval	
			Egg-shape	
			Triangle	
			Plus [sign]	
			Wheel	
			Sun	
			Star	

Table 2. *Potential category labels for object prompts in Study 2*

Basket	Materials	Superordinate Label	Basic Label	Subordinate Label
1	Toy Vehicles	Vehicle(s)	Truck	Dump truck
		Machine(s)	Train	
		Toy(s)	Car	
			Bulldozer	
1	Toy Animals	Animal(s)	Hippopotamus	
		Creature(s)	Hippo	
		Critter(s)	Wolf	
		Living Thing(s)	Dog	
		Toy(s)	Coyote	
			Bear	Panda bear
			Alligator	
			Crocodile	
2	Toy People	Animal(s)	Woman	Proper name
		Mammal(s)	Girl	
		Human(s)	Mom	
		Living Thing(s)	Man	
		People	Boy	
		Toy(s)	Dad	
			Guy	
2	Toy Animals	Animal(s)	Elephant	Proper Name (e.g. Mr. Pig)
		Mammal(s)	Horse	
		Living Thing(s)	Pig	
		Creature(s)	Buffalo	
		Critter(s)	Bison	
		Toy(s)		
3	Toy Fruit	Fruit	Apple	Type (e.g. Macintosh)
		Food	Pear	
		Toy(s)	Orange	
			Ball	
			Banana	
			Nanna	
			Inside of Banana	
			Banana split	
4	Toy Boats	Things that float	Boat(s)	Tug Boat
		Things that go in the water		
		Vehicle(s)		
		Machine(s)		
		Toy(s)		
4	Toy Birds	Animal(s)	Bird(s)	Rubber Duck
		Creature(s)		Swan
		Critter(s)		Duck
		Living Thing(s)		Penguin
		Things that float		
		Things that go in the water		
		Toy(s)		

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Fast Times at Ridgemont High and *Porky's*: Gender perspective in the teen comedy

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Abstract
This study examines gender representation in teen comedy with an emphasis on two films from the genre. Fast Times at Ridgemont High *(1982) was directed by a woman, Amy Heckerling.* Porky's *(1981) was directed by a man, Bob Clark. This research reveals the different ways male and female directors portray teenage girls and encourages a re-evaluation of the values conveyed to young viewers when the perspective represented in Hollywood entertainment films is predominantly male.*

Teenage boys fantasizing about teenage girls—a normal and common occurrence in everyday life, no doubt about it, and a common subject in movies as well. Consider the following scenarios from two teen comedies:

In *Fast Times at Ridgemont High* (1982), one boy, Brad, who has just returned home from his fast food job, peeks out the bathroom window. His younger sister's friend, Linda, dives into the backyard pool.

In *Porky's* (1981), another boy, Tommy, who has just crawled under the school foundation with his buddies, peeps through a hole in the wall of the locker room. The girls' gym team starts to shower.

As Brad closes the window, his point of view (the object of his gaze) is framed in the camera for the movie viewer. This framing signals that the narrative perspective has shifted into a subjective fantasy state. The film begins to move in slow motion and the soundtrack of *The Cars* "Moving in Stereo" begins thumping. Linda emerges from the pool, shimmering and beautiful, and says "Hi Brad, you know how cute I always thought you were." With that, she seductively steps out of the pool and walks toward Brad, who is suddenly looking very successful in a business suit. She unclasps her bikini top and exposes her breasts to Brad, then reaches up to kiss him. Abruptly, the film cuts away from Brad's fantasy point of view and replays the scene objectively. The music stops. Linda, bikini intact, emerges from the pool in search of a cotton swab to clean the water out of her ears. The view of the camera is now following Linda's perspective as she goes into the house and down the hall to the bathroom. She opens the door without knocking and is completely taken aback by the sight of Brad masturbating. She slams the door closed and the sequence cuts to a shot of Linda's horrified reaction. To say the least, a definite end to Brad's fantasy!

Tommy, meanwhile, is enjoying the sight of the nude girls. The viewer watches the showering from the point of view of the boys. Tommy's friend PeeWee is having trouble seeing past an obese girl who is standing in front of the peephole and, in his frustration, he inadvertently shouts out for her to move. The boys' presence is now known. Two of the girls leave the shower room quickly, but the remaining girls laugh and move closer to the peephole to flirt with the boys. The camera framing cuts back and forth from close-ups on the boys in the crawlspace to the view of the girls. The teens enjoy themselves until the gym coach breaks up the fun. The film cuts to the next scene and the boys' story continues.

At first glance, the fantasy sequences seem similar enough, but a closer look reveals obvious differences.

In the first scenario with Brad, the fantasy sequence is clearly indicated as such. Linda's exhibitionist actions are placed in the context of Brad's imagination. The slow-motion film speed, the filters, the music, and the framing depict the fantasy scene and contain it to Brad's perspective. When the film shifts to Linda's perspective, the sequence takes on a much different interpretation of the same set of events. There is a balanced perspective between male and female, fantasy and "reality."

In the second scenario with Tommy, the sequence is not clearly represented as fantasy. The sequence is from the male perspective from start to finish and the narrative is portrayed as realistic throughout. There are no indications that the scene is anything but a natural series of events. The male fantasy version of the shower room scene, with no female point of view, is unbalanced yet represented in this film as the male and female perspective. The females in the shower act how the boys would like them to act, not necessarily how girls might typically respond to violations of their privacy. The scenario is seamlessly cut into the movie as a whole and portrayed as a normal course of action.

The narrative styles described above are not limited solely to teen comedies of course. However, the examples do raise important questions in terms of the influence of the director, specifically with regard to the director's gender and what is represented in films viewed by teenagers. In the scenarios above, a woman (Amy Heckerling) directed the first sequence about Brad. A man (Bob Clark) directed the second scenario about Tommy.

In terms of prestige in the Hollywood film industry, the teen comedy generally rests near the bottom of the list. The genre rarely attracts the A-list of directors in the film business and teen comedies are usually produced on a low to medium budget. Despite the reputation of the films, the audience for them is a substantial block of consumers. Whether or not critics and parents approve of these films, the young generation comes out to see them—*and* what is represented in them. That the established directors in Hollywood are reluctant to work in teen comedy has helped make possible the hiring of a small number of female directors over the years—still quite a rarity in mainstream cinema (Speed, par. 4). Does the director's gender make a difference in terms of character representation to this young audience?

This essay argues that the gender of the director does make a discernible difference. Considering the ongoing criticism about the exclusion of women in the film business, it is important to focus attention on the differences that exist in form and content between films which are directed by men and those directed by women. Structurally defined differences—that is, differences based on the creative choices regarding formal elements such as framing, camera angles, and *mise-en-scene*—would demonstrate specifically what is *not* being represented when one gender lacks inclusion in the industry. Because of the nature of the impressionable young audience, along with the window of opportunity for female directors in the low budget teen comedy genre, it is a reasonable place to start the process.

There are many factors involved in movie production. It is a large-scale collaborative effort and the many influences, from producer to writer to audience demand, must be examined. A logical first step is to analyze individual films to understand the formal elements and identify key areas for comparison.

The purpose of this study is to examine and identify the portrayal of female characters and narrative perspective in two selected films. The difference in structure between the two films is a significant point of departure in context of the statistics concerning the small number of women directors in Hollywood. Evidence of a difference in directing styles between men and women will demonstrate that the female perspective is compromised by lack of films directed by women.

Amy Heckerling's *Fast Times at Ridgemont High* (*Fast Times*) and Bob Clark's *Porky's* are similar in terms of the storyline and the year in which they were released. *Fast Times* and *Porky's* are teen comedies set in a high school location and have a cast consisting of students and teachers.

Lesley Speed has aptly labeled the subgenre of these two movies "low-comedy" (Speed, par. 10). This type of film tends to make repeated references to functions of the lower body, with plenty of toilet humor and sex jokes. Low-comedy is also the great equalizer; no matter what your class or social situation, lower body operations are universal (Hollywood translation: wide audience appeal). Speed notes that this subgenre has "a tendency to construct comic scenarios around themes such

as masturbation, oral sex, and sexual fantasy" (Speed, par. 12). While both films employ this type of humor, portrayal of gender perspective is where the differences are evident.

In film criticism, text based analysis includes visual and auditory elements. The text is made up of the formal elements that comprise a shot or sequence such as camera angles, lighting, *mise-en-scene*, framing, and music (see appendix). Every one of these formal elements is seriously considered for every single shot and together create the structure of the movie. Pre-production on a film is a very long process, where the script is broken down into sequences and the elements are deliberately planned to guide the audience in a certain direction, to come to a certain conclusion, to follow the story the filmmaker is intent on telling. This is where the decisions of the director can make a significant difference. How a director chooses to use the formal elements, moderated by other influences (i.e. collaborations), will greatly influence the storyline and how the characters are represented.

The pre-production set-up and subsequent editing are so seamless, however, that it's designed not to be noticed as people sit in the theatre enjoying a movie. The shots are cut together to create a narrative flow that seems perfectly natural, and included in the story is the dominant ideology that comes across as perfectly natural, unquestionable that the values and beliefs (including the gender roles) are just the natural order of things. In fact, the narrative is painstakingly constructed.

Annette Kuhn writes that text based analysis is "a form of reading which starts out with the aim of uncovering processes and structures at work in a text that may not be immediately discernible" (82). Robin Wood, in his attempt to provide a definition of American ideology and "the values and assumptions so insistently embodied in and reinforced by the classical Hollywood cinema" compiled a partial list to "make conscious…concepts with which we are all perfectly familiar" (Wood, par. 4). The list includes capitalism, the work ethic, and heterosexual romance and marriage. The patriarchal society, where men are active and women passive, is the status quo (Mulvey 39-41). Males are expected to be assertive and females should be submissive. In most Hollywood movie narratives, the boys get to play and the girls get to stand on the sidelines.

While male and female directors work within the same dominant ideology in mainstream cinema (otherwise the film risks rejection by the majority and is apt to be labeled feminist or experimental cinema), the way they express themselves within that framework is noticeably different.

Robin Wood elaborates on the nature of low-comedy. The movie must incorporate "certain bottom-line generic conditions that must be satisfied for such a film to get made at all" (Wood qtd. in Speed, par. 12). Rachel Abramowitz, an author who interviewed several successful women in the Hollywood film industry, reveals that Martha Coolidge, director of the teen comedy *Valley Girl* (1983) "responded to the producer's demand that 'we must have naked breasts in this movie four times' by devising scenarios in which the spectator is encouraged to identify with female characters" (Abramowitz qtd. in Speed, par. 15). Female directors have found ways to "incorporate female perspectives into generic frameworks that were not traditionally thought to be feminine" (Speed, par. 15).

Both *Porky's* and *Fast Times* incorporate conventions of the teen comedy genre, yet closer examination of form and content demonstrate the differences between the two.

The first convention is the idea of same-sex friendships, depicting two or more characters that generally develop throughout the course of the movie and support each other. In *Porky's*, the female characters interact minimally. The young gym teacher, Miss Honeywell, and the older gym teacher, Beulah Ballbricker have an adversarial relationship. Cherry Forever, the exotic dancer visited by the boys, does not have a scene with another female. Wendy, the classmate who happily bears the brunt of practical jokes and is known for her willingness to have sex with anyone, is shown in groups of females from time to time, but characters and friendships are not developed. In the sequence where Wendy encourages a naïve young freshman girl to approach a group of male friends, we see the treatment of the same sex friendships in terms of how they differ in their formal elements.

The sequence begins with a long shot of the students in the schoolyard. The camera follows the freshman Mindy, a bit character who appears only in this scene. The framing is distant and wide as she is pushed along by Wendy and walks over to the group of boys (the main characters who have been introduced previously). While Mindy addresses Meat, the athlete of the bunch, the long shot cuts to a medium shot of the four boys on one side of the fence and Mindy on the other. During dialogue, the view of the camera is on Meat and Mindy's conversation (Wendy sent the girl over to find out how Meat acquired his nickname) until the athlete glances over his shoulder. The viewer then sees Meat's point of view as he looks at Wendy standing with two other unidentified girls in a medium long shot with no dialogue. In a reverse angle medium shot of the four boys and Mindy, we listen to Meat's buddies talk him out of taking advantage of the naïve young freshman so that he

doesn't risk losing a sport scholarship. They are all in the frame and the focus is on the boys. Wendy, in the medium long shot, again with no dialogue, is clearly disappointed that her sexual prank on the naïve girl didn't work and waves Mindy back away from the boys. The sequence ends with the four male friends in a medium shot laughing and interacting. The friendships between Wendy and other females are never brought into the narrative, and her prank on the young freshman shows her lack of camaraderie with Mindy.

In *Fast Times*, the friendship between Stacy, the female lead, and Linda is developed over the course of the movie. Viewers are introduced to them as they work in the mall, listen to them talk to each other as they lounge poolside, and see them eating lunch together at school. In one particular sequence, Linda comes to the defense of Stacy after Damone backs out of the deal to pay half for an abortion. The camera stays on medium close-ups of the two girls as they talk on the phone, alternating between the two and giving them full screen time as Linda vows to get revenge for Damone's shirking of responsibility. In the following series of shots, we see that Linda indeed followed through for her friend and took matters into her own hands. She publicly humiliates Damone. As he leaves for school in the morning, he finds "Prick" spray painted on his car. Damone covers it with taped cardboard, but the word is also marked across his locker when he arrives at school. Female friendship in this film is important to the narrative and is developed as loyal, supportive, and constant. Framing and editing in the sequences directs our attention to the storyline involving the actions of the female characters.

Another convention of the teen comedy genre is the inclusion of some type of authority figure. In *Porky's*, it's the cops; in *Fast Times*, it's the history teacher, Mr. Hand.

There are subtle differences in the portrayal of young females in this comparison. These less obvious choices are important in training the critical eye to identify the perspective and characters that are actively driving the narrative. In *Porky's*, the group of male friends is hanging outside the local diner. There are some girls sitting around the car too, giggling at the boys but never speaking. The local cops drive up and PeeWee gets out of the cruiser. He was picked up after the cops found him running down the road without clothes, the result of a practical joke by his friends who tricked PeeWee into thinking he was going to have sex with a prostitute. Instead, he ran into the woman's angry "husband", who was hired by his friends to scare him. As the sequence opens, our attention is on the boys cracking jokes and interacting. The cruiser pulls up, and Meat walks into the foreground of the frame, highlighting his importance in the narrative. The camera turns and we see the cruiser through Meat's point of view. When PeeWee gets out of the car, the framing is medium close-up as attention is paid to him speaking. Throughout the sequence, the boys' dialogue is the focus of the camera. Their actions and storyline is important to the film. As the officers leave, one cop turns around and says "See ya later, boys" even though clearly there are both girls and boys hanging out at the car. The girls essentially are absent from the narrative in any real sense and are simply part of the *mise-en-scene*.

In contrast, the classroom sequence in *Fast Times* includes interaction with both male and female students. Mr. Hand walks around the room lecturing the class, and as he does, he directs his attention to boys and girls. When the class is framed in a long shot, Stacy is in the center of the frame. Our attention is directed to her as an important part of the narrative in the scene. When the camera is at the student level, a low angle shot looking up at the authority of Mr. Hand, the viewer is encouraged to feel as if they are one of the young students in the classroom. As Mr. Hand approaches Stacy, he is seen from her point of view. The sequence cuts to Mr. Hand looking down at Stacy, who is the central focus in medium close-up framing. Again, the female characters are portrayed as integral to the narrative and actively involved in the storyline.

Of course, a low-comedy in the teen genre usually includes the first sexual experiences. In *Porky's*, viewers generally follow PeeWee throughout the movie on his desperate quest to have sex. Each time, he is foiled by some circumstance or another until the very end. Tommy, one of the lead characters, makes a bet with Wendy that if the boys can outsmart Porky, she will have sex with PeeWee. In the culminating scene, Wendy fulfills her part of the bargain in good spirits and drags him onto a school bus. All of PeeWee's friends are outside the bus, where the camera is placed as well. The whole group of boys (as well as the viewer) cheers him on. The focus is not on an individual or couple, but on the group as they celebrate a teen ritual. Wendy's character is never developed and we don't get a clear idea why she would agree to participate in the practical jokes and sex favors. She is one-dimensional, without a point of view, and functions in the narrative solely to move the boys' storyline along. All the close-ups are predominantly on the boys outside or on PeeWee shouting out the bus window.

The sex scenes in *Fast Times* are different. Stacy is determined to experiment with sex and relationships and her first encounter is in a baseball dugout. The *mise-en-scene* is sparse and projects a feeling of alienation. The location has harsh lighting from a bare bulb and there is graffiti on the walls. The sequence does not make

the act appear glamorous. It does not give us the male's perspective. The camera framing varies from an over-the-shoulder close-up on Stacy to watch her facial reaction, to her point of view as she looks at the grimy dugout ceiling during the event. The storyline follows the female character from start to finish in the sequence; her actions and reactions drive the narrative. We see the very average and un-romanticized event from a female perspective that doesn't wander into fantasy. The formal elements of the scene don't register it as good or bad, celebratory or painful, and there are no cheering crowds. It is fairly early on in the film, as it becomes part of Stacy's adolescent experience on a journey toward a better understanding of herself.

Social issues are another aspect of teen comedy. *Porky's* incorporates the peeping tom situation described earlier where Tommy and his buddies are caught peeping in the girls' gym shower by Beulah Ballbricker. The character of Beulah has been, up to this point, portrayed as a sexually repressed woman who lacks a sense of humor. The girls in the shower, Wendy and a group of nameless characters, seem to enjoy having the boys peep in on their privacy. When Beulah takes the issue to the principal's office to attempt to prosecute the offender, she is ridiculed out of the office. The formal elements of this scene are unconventional. In a four-minute shot that remains static in framing, a rare choice in filmmaking, Beulah is on one side of the desk while the principal is on the other. Three other men, the boys' coaches, flank him. As she pleads her rather unusual case for positively identifying the culprit, the coaches crack jokes and laugh at her attempts to stop the peeping tom. After the very long four minutes in which the viewers watch Beulah outnumbered and humiliated, the principal can't hold back and starts laughing at her issue as well. She leaves the office defeated, as the camera closes in on the men's hysterical laughter and ends with a close-up of a smiling picture on the wall, a presidential portrait of Eisenhower. Intentionally placed into this sequence, the president becomes one of the men laughing Beulah out of the office as she attempts to present her case to the proper authorities. *Porky's* is set in the historical context of 1950s style patriarchy, the cultural assumption is that "father knows best" and "boys will be boys." The male authority figure is expected to assess the validity of a situation and settle issues with an unquestioned final decision. Against these five laughing men, from the president on down, Beulah didn't stand a chance. There would be no recourse for the peeping tom issue.

In contrast, when a serious issue arises in *Porky's* that relates to the male perspective, comedy is set aside until it is resolved. The character Brian, a Jewish boy, is harassed and called a "kike" by another character, Tim. When Tim hurls a basketball at Brian because he is a Jew, the coach reprimands Tim. No hysterical banter surrounds this particular issue. Finally, Brian decides he must defend himself and fights Tim in the schoolyard. No one laughs at the situation and Brian is not ridiculed for lacking a sense of humor about the issue. Rather, he is respected for his fighting skills and standing up for himself. Supporters do not flank Tim. President Eisenhower is not there to approve of a bullying situation. The creative choices of close-up framing that alternate on Brian and Tim, in addition to back-story developed on both characters, gives them equal importance in this sequence. Brian's issue is legitimized and the other male characters (and viewer) sympathize with his problem. The sequence ends on a serious note with no distracting jokes or camera play.

In *Fast Times*, the big issue is teenage pregnancy as experienced by the female lead. When Stacy approaches Damone at the high school track to inform him that she is pregnant, she pulls him aside and speaks one-on-one. The camera holds the simple two shot on the characters. Their dialogue is in standard over-the-shoulder framing. The characters are filmed similarly, representing an equal, one-on-one feel. When Damone attempts to use old clichés to deny responsibility, such as accusing Stacy of promiscuity, she stands her ground and rationally negotiates a compromise to schedule and pay for half of an abortion. The perspective in this sequence incorporates the emotions and actions of the young female character. While the film doesn't dwell long on the serious situation in the girl's life and returns to the comedic aspect shortly after, it also doesn't dismiss or undermine the issue while the sequence is taking place.

Certainly while discussing teen comedy conventions, the "Final Festival," a term coined by Northrop Frye and described by Jon Lewis in his book on teen culture, *The Road to Romance & Ruin*, cannot be overlooked. Be it graduation or the county fair or the important game, a big event near the end of the film is standard for the genre "as a new order is installed" (Lewis 139). In *Porky's*, the event is the celebration in the middle of the night at the county line. The whole town comes out to support Tommy, PeeWee, Meat, and the rest of the boys as they seek revenge on Porky. The marching band is there, complete with twirling majorettes, and so are the local cops and high school coaches. Earlier in the film, Porky tricked the underage boys out of their money when they visited his strip club to hire prostitutes. The boys devise a plan to destroy the building and lure Porky to their hometown county line where the men and women, boys and girls wait to watch and celebrate the

boys' victorious return and the defeat of Porky. The sequence begins with a series of long shots to convey the scope of the celebration. When close-ups occur, they are of the lead male characters as they celebrate. In this classic male fantasy text, it is not necessary to explain why the town, especially the females, would want to come out in the middle of the night to celebrate a group of high school boys' right to hire prostitutes without repercussion. The townsfolk cheer them on as the boys destroy public and private property on a grand scale. To introduce reality into the narrative would undermine the intentions of the film. The scene is satisfying as it allows the viewer, who has been encouraged to become sympathetic and fond of the group of boys over the course of the film, to vicariously live out a fantastic revenge plan. The good guys win and the bad guys get theirs in the end.

The "Final Festival" in *Fast Times* is the end of school year dance. All the requisite silliness ensues as the surfer dude character gets up and sings with the band, the nutty science professor introduces his smashingly beautiful wife, and we watch all the characters dance like goofy teenagers. The noticeable female perspective is included as Stacy talks to Linda in the bathroom. Linda is upset because her college boyfriend dumped her, and Stacy consoles her. The *mise-en-scene* is the refuge of the ladies' room. The close-up framing of the two girls puts them in the action of the narrative, and the viewers watch as Stacy realizes that perhaps she needs to stop being in such a hurry to grow up. It becomes apparent that the seemingly experienced Linda perhaps doesn't have all the answers. The dance sequence, without a real climax, shows the students as they continue to navigate through adolescence and move on with their lives a little bit wiser.

Clearly there are differences in the representation of young females between these two films. As demonstrated by the examples in this essay, the structure of formal elements in a film is more than a sum of the parts. These aren't just camera angles and close-ups we're talking about, but the very building blocks of narrative manipulation. The point of this comparison is not to make a value judgment over which perspective is better or worse than the other, but rather to argue that one perspective is systematically produced more often than the other. If men direct the overwhelming majority of films, and those directors choose to make movies with a predominantly male perspective, a huge imbalance is created. Based on this study, further research is warranted to support the argument and bring awareness to the importance of representation in film.

Porky's, from start to finish, maintains the perspective of the male fantasy film. It incorporates outlandish humor and situations in a narrative completely driven by the male characters. The young female characters are marginally represented. *Fast Times*, on the other hand, devotes much of the storyline to the young female lead, Stacy, and her point of view. It includes comedy based on situations where male and female characters interact and develops a narrative where the female characters are represented as integral to the story.

Awareness of these differences, and recognizing the discrepancy of gender representation on a larger scale, is an important step in the evolution of a more inclusive mainstream film industry.

Appendix

The following is a glossary of film terms, compiled from the course information websites at http://spot.pcc.edu/~mdembrow/glossary.htm, http://www.courses.fas.harvard.edu/~chlit130/terms.html, and http://puffin.creighton.edu/fapa/aikin/Web-files/...glossary.htm:

Camera angle: The position of the frame in relation to the subject it shows: above it, looking down (high angle), straight on, or looking up (a low angle).

Conventions: Forms and symbols in language, art, and culture that have an agreed-upon meaning.

Cut: In the finished film, an instantaneous change from one framing to another.

Framing: The use of the edges of the film frame to select and to compose what will be visible onscreen.

Genres: Various types of films which audiences and filmmakers recognize by their familiar narrative conventions.

Ideology: A relatively coherent system of values, beliefs, or ideas shared by some social group and often taken for granted as natural or inherently true.

Mise-en-scene: Literally, "putting in the scene," "staging the action"; a term that describes everything that the camera photographs, including acting, lighting, décor, locations, make-up, and other element within the shot itself, as opposed to effects created by cutting.

Shot: A take, in part or in its entirety that is used in the final edited version of the film.

Point of view (POV) shot: A shot taken with the camera placed approximately where the character's eyes would be, showing what the character would see; usually cut in before or after a shot of the character looking.

Shot/reverse shot: Two or more shots edited together that alternate characters, typically in a conversation situation. Over-the-shoulder framings are common in this type of editing.

Long shot or extreme long shot: A framing in which the scale of the object shown is very small; a building, landscape, or crowd of people would fill the screen.

Medium long shot: A framing at a distance which makes an object about four or five feet high appear to fill most of the screen vertically (human figures are generally from the shins up).

Medium shot: A framing in which the scale of the object shown is of moderate size; a human figure seen from the waist up would fill most of the screen.

Two shot: Two people close together.

Medium close-up: A framing in which the scale of the object shown is fairly large; a human figure seen from the chest up would fill most of the screen.

Close-up: A framing in which the scale of the object shown is relatively large; most commonly a person's head seen from the neck up, or an object of comparable size that fills most of the screen.

Extreme close-up: A framing in which the scale of the object shown is very large; most commonly a small object or part of the body.

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Slums of Beverly Hills. Dir. Tamara Jenkins. Perf. Alan Arkin, Marisa Tomei, and Natasha Lyonne. 20th Century Fox, 1998.

Valley Girl. Dir. Martha Coolidge. Perf. Nicolage Cage. MGM, 1983.

Weird Science. Dir. John Hughes. Perf. Anthony Michael Hall and Kelly LeBrock. Universal Pictures, 1985.

About the TRiO Programs

To fight the war on poverty, our nation made a commitment to provide education for all Americans, regardless of background or economic circumstances. In support of this commitment, Congress established several programs in 1965 to help those from low-income backgrounds and families with no previous college graduates (first generation). The first three programs established were Talent Search, Upward Bound, and Student Support Services. Thus, they are known as the TRiO Programs.

Since then, other programs have been added, including Upward Bound Math and Science, Educational Opportunity Center, The Training Authority, and in 1989, The Ronald E. McNair Post-baccalaureate Achievement Program. The goal of all of the programs is to provide educational opportunity for all.

The Ronald E. McNair Post-baccalaureate Achievement Program is designed to prepare highly talented undergraduates to pursue doctoral degrees. In addition, the goal is to increase the number of students from low-income backgrounds, first generation college students, and under-represented minorities on college and university faculties.