College of Basic and Applied Sciences

Aerospace
Agribusiness and Agriscience
Biology
Chemistry
Computer Science
Engineering Technology
Mathematical Sciences
Military Science
Nursing
Physics and Astronomy

mtsu.edu/~collbas
Proud supporter of the
Ronald E. McNair Program

College of
Mass Communication
Middle Tennessee State University
Murfreesboro, TN 37132

- Academic portfolio includes: National Ethics Summit; Emmy Award winners; Pulitzer Prize winners; High Definition TV facilities; Distinguished Journalist-in-Residence, and leaders of various media and communication associations, etc.

- ACEJMC-accredited programs in journalism and electronic media communication and graduate study in mass communication

- Home to the Seigenthaler Chair of Excellence in journalism and First Amendment Studies [endowment of more than $2.7 million]

- Graduate education includes M.S. in Mass Communication, and M.F.A. in Recording Arts and Technologies. Competitive graduate assistance available.

- Located near Nashville the music “capital” of the world, we are the only U.S. College with both recording technology and music business programs offering a comprehensive music education. Newly approved concentration in commercial songwriting

- Interns train with firms in New York, London, Los Angeles, and other top media markets including Atlanta, Nashville, Los Angeles, and New York City.

For more information please contact:

615-898-5171
www.mtsu.edu/~masscomm
95% Graduation Rate

The McNair Program at MTSU is now in its eleventh year. I am grateful for the financial support of the colleges at MTSU for this, our eighth volume of the McNair Research Review. Each of the eight colleges and library on campus listed on page 2 contributed toward the production of Volume VIII. Thanks, too, to the McNair staff – Lindsay Gates, assistant, Cindy Howell, secretary, and Charles Apigian, academic coordinator – for helping put this journal together. I would also like to thank the university community for its continued support. Sidney A. McPhee, president, and Diane Miller, former McNair director and now interim executive vice president and provost, have been particularly strong supporters.

To date, McNair has served 141 students at MTSU, including the 35 current students, 17 of which were recently accepted into the program. During the time McNair at MTSU has been in existence, 101 of our past 106 students have graduated, or 95 percent. In addition, 63 students have either earned advanced degrees or are enrolled in a graduate program. Two students have completed professional doctoral degrees (MD and JD) and two more have earned the Ph.D. Graduate schools that our former scholars have attended or have been accepted to include Vanderbilt University, Brandeis University, North Carolina State, University of California-Davis, New School in New York, The Ohio State University, University of Maryland, Notre Dame and University of Florida, to name a few.

Volume VIII of the McNair Research Review contains the research of 17 scholars in the following disciplines: music, biology, mathematics, finance, history, political science, sociology, English, anthropology, and psychology. The student scholars and their faculty mentors deserve all the credit for making this issue of the journal an outstanding one. Counting this issue and all previous issues, 117 articles have been published in virtually every field of academics offered at MTSU.

The full, formal name of the program is the Ronald E. McNair Postbaccalaureate Achievement Program, named after Ronald E. McNair, the NASA astronaut, whose brief biography appears on page 11. To be eligible for the program, a student must meet the following criteria:

• Be a first-generation college student (neither parent or guardian has earned a baccalaureate degree) and be financially disadvantaged (according to federal guidelines);
• Or be a member of a group currently underrepresented in graduate education (Black, Hispanic, Alaskan Native, or American Indian);
• Plan to pursue a doctoral degree;
• Be enrolled in a degree program at MTSU or transferring to MTSU;
• Have completed at least 60 semester credit hours with a CUM GPA of 3.0 or higher;
• Be a U.S. citizen or permanent resident.

If you are an MTSU student and meet the qualifications above, we invite you to apply for admission to the program. If you are a member of the faculty, administration, or staff at MTSU and know a student who may be eligible, please encourage the student to drop by the McNair office in Midgett Building, Room 103. More information and an application are also available at www.mtsu.edu/~mcnair.

Sincerely,
Steve Saunders
Interim Director
College of Education and Behavioral Science

Careers begin here.
Complete Your Degree Online at MTSU!

MTSUAnytime.com is your guide to all online and hybrid degree programs offered at MTSU.

We currently provide more than 14 complete degree programs in addition to hundreds of online or hybrid courses. Earn your online degree from the best public university in Tennessee.

MTSU—Tennessee’s Best.
Call for Papers:

Inaugural Issue

Priority Deadline: June 1
Final Fall Deadline: September 15

Scientia et Humanitas
A Journal of Student Research
A publication of the MTSU Honors College

Research is accepted from MTSU students either by themselves or in conjunction with a faculty mentor. Students should submit articles in an electronic format in Microsoft Word or Rich Text Format. Articles may be e-mailed as an attachment to scientia@mtsu.edu, submitted on a disk to Scientia et Humanitas, MTSU Box 267, or submitted by flash drive to the Scientia et Humanitas office, Honors 223, and/or to the Adviser in Honors 225. Students are responsible for confirming that the office has received their work.

Submissions must have 30 or fewer typed, double-spaced pages and may include revisions of papers presented for classes, for Scholar’s Week, or Honors theses. The submission should include the title of the article followed by the name(s) and department(s) of author(s) with an address, telephone number and e-mail at which the author(s) may be reached.

Papers should include a brief abstract of no more than 250 words stating the purpose, methods, results, and conclusion. Papers will typically include an introduction, a description of methods, a report of results, the author’s conclusions and notes and references formatted consistent with standards within the discipline.

All papers will be student reviewed. Accepted papers will be published online in the style of a professional journal. Authors will retain copyright privileges and will receive five printed copies.

Inaugural issue publish date: December 1, 2010

For more information please contact: Marsha Powers, Coordinator of Publications, University Honors College 898-5759 or scientia@mtsu.edu The website is currently being updated: www.mtsu.edu/~scientia
Tools for the Advancing Clarinetist: Recordings of Significant Pedagogical Works

Jonathan Copeland

Dr. Todd Waldecker
Clarinet Performance, School of Music

As an advancing clarinetist looking to the future as a teacher and performer, I have noticed that there are significant works for the clarinet that have not been recorded. Recordings can be used as one of many teaching tools to model style, tempo, tuning, etc. when working with students. There are many significant pieces in the clarinet repertoire that are beneficial to students and professionals that tend to be absent from the recording studio. In response, I have selected eight works for clarinet that I believe would be beneficial for students to study. My goal is to create a representative recording of each work to supplement a compendium of information. The compendium contains information such as composer biography, historical information on each piece, performance tips, and a glossary.

Assembling of Compendium:
• Compiled information and created a biography of each composer.
• Assembled biographic information on the arranger, if applicable.
• Researched each piece for historical background and created a summary of the relevant information.
• During the process of studying and preparing the pieces, performance tips were identified that would benefit the student. Music examples and fingering charts for the student to refer to were also included.
• Glossary terms were highlighted to aid the student in the understanding of each term in context. In addition, foreign terms within each piece of music were translated to help broaden the student’s understanding of the music and the intent of the composer.

Recording Process:
• Researched and studied the historical content of each work, composer, and arranger to enable a more accurate performance perspective.
• Approached each piece from a pedagogical perspective and discovered performance tips that would benefit the student most effectively.
• Rehearsed weekly with pianist to create ensemble precision.
• Recorded the list of works in three separate recording sessions.
• Edited the various recorded tracks to create the model recording.

List of Works:
I. Luigi Bassi: Lamento (Nocturne)
II. Ernesto Cavallini: Adagio e Tarantella
III. Giuseppe Tartini: Concertino
IV. Darius Milhaud: Petit Concert
V. W.A. Mozart: Divertimento in Bb
VI. Johann Kalliwoda: Introduction and Variation
VII. Ferdinand David: Introduction, Theme, and Variation
VIII. Johann Baptist Vanhal: Sonata in Bb Major

I have included here one complete work from the compendium and the piece I chose to include as an example is the Luigi Bassi: Lamento for Clarinet and Piano.

Reference


Luigi Bassi (1833-1871)  
Lamento (Nocturne) for Bb Clarinet and Piano

Luigi Bassi was an Italian clarinetist and composer and much remains a mystery about him. Many scholars believe that Bassi was born in Cremona, Italy, in 1833. Bassi was a student of Benedetto Carvalli at the Milan Conservatory from 1846 to 1853 and wrote 27 works for clarinet and 15 of those works were opera fantasias.¹

Luigi Bassi was known as a virtuoso clarinetist during the Romantic era of music, and virtuosity played a major role in this era. When Bassi graduated from the Milan conservatory he quickly became a popular performer. He was also a member of the La scala opera orchestra until his death in 1871 and was a member of the orchestra at the Teatro alla Canobbiana from 1861- ca. 1864. During Bassi’s lifetime he became to be popular with Ricordi music publishers. Bassi’s music was published by companies; such as, Ricordi, Lucca, Lanti, Vis mara, and Guidici e Strada.²

The genre that Bassi chose to use for most of his compositions was the Opera Fantasia. This genre is considered the virtuoso and “show off” genre to the musical world. Luigi Bassi was known as a virtuoso clarinetist and that is why many people believed he chose this genre so often, because composers often performed their own works in this genre. An Opera Fantasia is a work that uses borrowed melodies from operas. The composer also writes variations on the melody and often creates new material such as cadenza to complete the piece by connecting each melodic idea. Opera Fantasias were also used as teaching tools to help advance the technique of students or amateurs.

Lamento (Nocturne) for Bb Clarinet and Piano

A nocturne is typically a romantic instrumental piece that is free and depicts a dreamy and relaxing mood. The most common form in nocturnes is the ternary form and Bassi’s Lamento (Nocturne) displays this form. Lamento by Luigi Bassi was believed to have been a piece he composed for one of his

² ibid
students and was used as a teaching tool to teach rhythmic, technical, and musical accuracy. Bassi chose the key of a minor and a 6/8 time signature.\textsuperscript{3} The texture of this romantic nocturne is homophonic with the clarinet containing the melodic line and the piano is used merely as chordal accompaniment.

**Performance Tips**

- The clarinet begins with an \textit{andantino} melody and consists mainly of eighth and sixteenth notes. With this beginning melody set your metronome to eighth note = 132 and try to focus on keeping the melody in strict time and add as much music and dynamic contrast as possible. The more musicality is practiced the better you will become at it. Also, following dynamic markings will not only help you with musicality but rhythm and technique.

- In measure 16, do not clip the sixteenth note on beat two. Instead resolve the A before with the downbeat on four, and this will help you start the new section smoothly.

- In measure 17, make sure to keep the subdivision constant to help you with the rhythm and \textit{stringendo}.

- Check the A in measure 22 with a tuner because it tends to be sharp. You can add your right hand as shown in the fingering example to lower the pitch of the A.

Measure 23 starts a completely new section. In the beginning we were in a minor and we have now switched to C Major. Make sure to observe the **dolce** because this is the first time you have seen this term in this piece. You have moved from **con espressione** to **dolce**, which corresponds with the key change.

Measure 69 really sets up the rest of the piece. Make sure to observe Bassi’s request of **a piacere** and really take your time.

In measure 70 at the **poco piu mosso**, grace notes are on the beat, and once again do your best to not clip the first sixteenth on beat four.

Take your time at measure 73 before moving on, and always remember there is no rush in making music, especially a **lamento**.

My final suggestion for you in mastering this piece is to always practice with your tuner. Throat A’s tend to be sharp, which is what the piece ends on with an octave leap. (See example)
Transformation of Tobacco Plants Using Synthetically Replicated Antigenic Regions of Shigella flexneri 2a 2457T OmpA

Sade Dunn

Dr. Bruce Cahoon
Biology

Shigella flexneri is a member of the Enterobactercea family and a common cause of fatal bacillary dysentery in undeveloped countries. There is currently great interest in developing an easily procured and inexpensive vaccine to alleviate this cause of dysentery. This experiment attempts to synthetically replicate the most antigenic parts of the OmpA gene of Shigella flexneri and produce it in plants for use as a vaccine. The OmpA protein is found on the outer membrane of S. flexneri and aids in cell growth, conjugation, and allows bacteria to penetrate and infect a mammalian cell eliciting an immune response without an adjuvant agent. Software called “Antigenic” was used to calculate the most antigenic amino acids of the OmpA protein. The highest two antigenic regions were synthesized as a single concatemer and placed into the PBI121 plant expression vector. My goal is to determine if this gene construct could produce the intended antigen in plant tissue. Tobacco is chosen because it is relatively easy to transform and culture. If successful, the next step will be to transform a more palatable plant, such as carrot.

Introduction

Shigella flexneri is a gram negative, non-motile, rod-shaped bacterium. Worldwide it causes more than 140 million cases of dysentery a year killing more than a one million individuals, most of whom are children (Parsot 2005, Kotloff 1999). Shigella flexneri causes dysentery by destroying the lining of the intestinal tract. It is transmitted through unsanitary conditions often due to fecal oral transmission. It causes chronic lower abdominal pain, fever and chills with blood and pus in the stool (Jennison 2004). Due to its high resistance to antibiotics, a vaccine is necessary but has not yet been developed.

The OmpA gene, (outer membrane protein A) is a potential target for the development of an edible vaccine because OmpA helps Shigella flexneri grow, conjugate, penetrate and infect the host cell. An important aspect of OmpA is that it does not need an adjuvant agent to cause an immune response (Jeannin 2002). The OmpA gene is a large gene that is composed of hydrophobic and hydrophilic areas. Because most antigenic regions are hydrophobic, a computer program called Emboss “Antigenic,” developed by Alan Beasaby and Peter Rice, is used to estimate the most hydrophobic regions in the OmpA gene (Kolaskar & Tongaonkar 1990; Welling et al 1985). The computer program compiles all the information into an algorithmic equation to determine antigenicity. Based on this information a sound experimental design was planned to successfully insert the OmpA antigenic regions into the PBI121 plant expression vector and insert it into a tobacco plant.
Methodology

Antigenic by Emboss is used to calculate the most antigenic regions of the OmpA gene. The two highest antigenic regions are synthesized by Integrated DNA Technologies with restriction enzymes (SacI and BamHI) and start and stop codons designed on either side of the concatamer. Upon receiving the completed plasmid from the company the newly designed gene was prepared by digesting it with the enzymes SacI and BamHI. A plant expression vector, pBI121, was also digested with the same enzymes to receive the gene. The digested OmpA and pBI121 are then gel purified and ligated together. The ligation product is used to transform competent E. coli and plated on Luria broth + kanamycin media to show sensitivity. Tobacco seeds are sterilized and grown on MS media for two weeks and then transformed utilizing a gene gun. The gene gun utilizes gold particles coated with the OmpA-pBI121 vector. The transformed tobacco seeds are then planted on RMOP media that only genetically modified tissue should grow on.

Results and Discussion

The results from the experiment show successful purification and ligation of OmpA and pBI121 (Figures 1a and 1b & 2). Also, resistance to kanamycin is shown through competent E. coli. (Figure 3). The successful transformation of the tobacco plants is not complete at this time but the preliminary results show the tobacco plant growing on the RMOP media along with callus (Figure 4). Finding a vaccine for dysentery caused by Shigella flexneri is very important for undeveloped countries. OmpA gene plays an important role in exploiting the immune system to cause dysentery. This experiment shows that the most antigenic parts of the OmpA gene can be ligated into a plant transformation vector. Preliminary results of transformation in tobacco is inconclusive but if successful it will be a major advance in vaccination in undeveloped countries. By utilizing plant transformation, people can be vaccinated effectively and inexpensively. Further experimentation upon completion of this current one will explore whether transformed plants will be edible or harmful to human beings.

Citations & References


**Figures 1-4.**

These figures show that pBI121 and OmpA were successfully digested and purified by using restriction enzymes.

This figure shows that OmpA and PbI121 were ligated together and that OmpA was inserted into pBI121 plasmid.

This figure shows that E.coli was transformed with the pBI121 OmpA plasmid.

This figure shows that tobacco callus was growing from potentially transformed tissue.
Prevention and Treatment of Acute Low Back Pain: Physical Therapy and Other Non-Surgical Methods

Lauren Easley
Dr. Julie Angela Hart Murdock
Mathematics

During any given year, low back pain affects eighty percent of the American population (Hertling and Kessler 2006). An individual may experience his/her first episode of acute low back pain between the ages of twenty five and sixty (Nieman 1997). When receiving treatment for acute low back pain, more than ninety percent of Americans that suffer from low back pain respond well to conservative, non-surgical treatment like physical therapy (Trevathan, W., Smith E., McKenna, J. 1999). Although past studies suggest that the first episode of acute low back pain may not occur until age twenty-five, this study indicates evidence that the first episode may occur as early as eighteen years old. This study will also examine how experiences of low back pain correlate to education levels about low back pain prevention, health insurance coverage and treatment of low back pain such as physical therapy, and daily activities. A total of seventy-eight students were randomly surveyed.

Background and Purpose

Typically, low back pain occurs among the lumbar vertebrae in the L4-L5 region since these vertebrae bear the stress of bending, sitting, and lifting (Neiman 1997). Low back pain can be due to irritation among the nerve roots of the low back, straining among the lower back muscles, damage among the bones, ligaments, or joints, or damage among the intervertebral discs (Ullrich 2007). Acute low back pain, as opposed to chronic low back pain, is due to stresses on the muscles and ligaments that support the vertebral column, called the lumbar multifidi and the transverse abdominus respectively. The lumbar multifidi comprise the deepest layer of the back that attach the vertebral arches to the processes of the vertebral column. The transverse abdominus is the deepest layer of the abdominal muscles (Nicholas Institute of Sports Medicine and Athletic 2006). Other factors that may contribute to acute low back pain are obesity, smoking, poor posture, psychological stress and anxiety, low physical activity, and low degree of muscular strength and joint flexibility which contribute to the deterioration and breakdown of the vertebral joints and muscles (Trevathan, W., Smith E., McKenna, J. 1999). An episode of acute low back pain may be sudden or subtle in onset; result from trauma, cause numbness, tingling, swelling, and muscular weakness; involve single or multiple sites of pain; and persist for days or weeks (Lippincott, Williams, and Wilkins 2009). An experience of acute low back pain compared to chronic low back pain is temporary but has little effect on regular daily activities (Lippincott, Williams, and Wilkins 2009).

Research reveals that among those at high risk for experiencing an episode of acute low back pain are people between the ages of twenty and forty; and also at high risk are those that exhibit the previously stated factors that influence the onset of acute low back pain such as obesity (Felson 2000). Normally, acute low back pain is preventable, diagnosa-
ble, and treatable for those that are at high risk (National Health Institute 2007). In our society, only twenty-nine percent of individuals suffering from acute low back pain require conservative treatment and one percent for surgery, and the rest of the of the individuals recover without any intervention (Hertling and Kessler 2006). More than ninety percent of those that are suffering from acute low back pain respond well to conservative, non-surgical care (Trevathan, W., Smith E., McKenna, J. 1999). Conservative treatment includes prescription of analgesics and muscle relaxants, anesthetics, steroid injections, chiropractic spinal manipulations, and physical therapy in various forms (Trevathan, W., Smith E., McKenna, J. 1999).

Recent studies support that the use of back health education with behavioral changes and conservative treatment like physical therapy will prevent or delay the onset of acute low back pain or expedite the recovery from acute low back pain (Nieman 1999). Back health education will focus on improving behaviors such as posture while sitting, standing, and sleeping, exercising regularly, and body mechanics when bending, lifting, and twisting (American Physical Therapy Association 1998). Physical therapy treatment of acute low back pain consists of heat therapy, massage, mobilization, exercise, and education about posture and body mechanics (NISMAT 2006). Physical therapy is recommended by physicians more than any other non-surgical treatment for acute low back pain (Nieman 1999). Goals of physical therapy with exercise are to decrease low back pain, increase function of the muscles and the vertebrae of the lower back, and provide education on a maintenance program to prevent recurrences of low back pain (Cooke 2004). This study seeks to determine who among a population that may be at high risk for experiencing an episode of acute low back pain whether an individual can experience low back pain as early as eighteen years old. The study will also explore whether a relationship exists between an individual’s education level about back health education and physical therapy and the onset of an episode of low back pain. Our goal is to develop an educational tool that could provide the proper information to a population between the ages of eighteen and sixty years old that will improve or delay acute low back pain.

Materials and Methods

Subjects

Students from Middle Tennessee State University between the ages of eighteen and sixty years old voluntarily completed surveys consisting of questions pertaining to their health insurance coverage, low back pain treatment such as surgical and non-surgical, experiences of low back pain, and daily activities. Students also marked on a body map sites of pain coinciding with experiences of low back pain. Subjects were given a letter informing them that their input was voluntary and that the surveys were approved by the Middle Tennessee State University Institutional Review Board.

Data Analysis

Descriptive statistics were used for the mode to demonstrate that an episode of acute low back pain can occur as early as eighteen years old. Chi-squared analyses were performed to determine whether relationships existed on the basis of age, knowledge about health insurance coverage of physical therapy, amount of exercise during the week, and the number of hours of sitting during the day influenced experiences of acute low back pain using level of significance accepted as $\alpha=.05$. 
Results

A total of seventy eight students completed the survey. The majority of the students were eighteen-year-old and male. Seventy out of the seventy-eight students experienced low back pain, and many of the students marked that they experienced pain in the lower back region on the body map (Figure 2). Using chi-squared analysis, we could not reject the null hypothesis of independence of the following pairs of factors: age and health insurance coverage, sex and health insurance coverage, age and knowledge of health insurance coverage of physical therapy, experience of low back pain and health insurance coverage, health insurance coverage and receiving of treatment, and experience of low back pain and amount of exercising a week (Table 8). However, we conclude that low back pain is not independent of the number of hours a person is seated per day. In fact, those students who sat for longer periods experienced low back pain more than those that sat for shorter periods of time.

Conclusion

The results of the survey demonstrated that both male and female students experienced low back pain, and they experienced low back pain as early as age eighteen. The body map also demonstrated that students experience pain in the lower back region. The chi-squared analyses suggested that the amount of time a student sat during the day influenced an episode of acute low back pain. Further investigation is needed to analyze the dependence of other factors, specifically to determine if education level about low back pain prevention and treatment and occurrences acute low back pain episodes are related. The present study provided evidence that individuals as young as eighteen years old are experiencing low back pain, and they prefer conservative treatment. There is a need for further research to develop an educational tool that will provide individuals with conservative prevention methods to help delay or prevent the onset of acute low back pain.

References


### Table 1.
Contingency table for age and health insurance coverage.

<table>
<thead>
<tr>
<th>Age</th>
<th>Health Insurance Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>18</td>
<td>23</td>
</tr>
<tr>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>&gt;=22</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>64</td>
</tr>
</tbody>
</table>

### Table 2.
Contingency table of sex and health insurance coverage.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Health Insurance Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>Yes</td>
<td>39</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>63</td>
</tr>
</tbody>
</table>

### Table 3.
Contingency table of age and knowledge of health insurance coverage of physical therapy.

<table>
<thead>
<tr>
<th>Knowledge of Health Insurance Coverage of Physical Therapy</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>&gt;=22</td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>Did Not Know</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Knowledge of Health Insurance Coverage of Physical Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>&gt;=22</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
</tr>
</tbody>
</table>
Table 4.
Contingency table of experience of low back pain and health insurance coverage.

<table>
<thead>
<tr>
<th>Experience of Low Back Pain</th>
<th>Health Insurance Coverage</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>58</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>70</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 5.
Contingency table of health insurance coverage and receiving of treatment.

<table>
<thead>
<tr>
<th>Health Insurance Coverage</th>
<th>Receiving of Treatment</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>12</td>
<td>46</td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>15</td>
<td>55</td>
</tr>
</tbody>
</table>

Table 6.
Contingency table of experience of low back pain and amount of exercise per week.

<table>
<thead>
<tr>
<th>Experience of Low Back Pain</th>
<th>Amount of Exercise per Week</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>0-1 day</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Yes</td>
<td>2-3 days</td>
<td>19</td>
<td>27</td>
<td>17</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>21</td>
<td>29</td>
<td>19</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 7.
Contingency table of experience of low back pain and amount of sitting per day.

<table>
<thead>
<tr>
<th>Experience of Low Back Pain</th>
<th>Amount of Exercise per Day</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1-2 hours</td>
<td>0</td>
<td>6</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Yes</td>
<td>3-4 hours</td>
<td>2</td>
<td>13</td>
<td>42</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>2</td>
<td>19</td>
<td>44</td>
<td>13</td>
</tr>
</tbody>
</table>

Middle Tennessee State University - Summer 2010
Table 8.
Results of Chi-Square Testing for Independence.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Chi-Squared Value ($\chi^2$)</th>
<th>Degrees of Freedom ($df$)</th>
<th>Cut Off Value ($\alpha=0.05$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age and Health Insurance Coverage</td>
<td>3.624192</td>
<td>4</td>
<td>9.488</td>
</tr>
<tr>
<td>Sex and Health Insurance Coverage</td>
<td>0.829082</td>
<td>1</td>
<td>3.841</td>
</tr>
<tr>
<td>Age and Knowledge of Health Insurance Coverage of Physical Therapy</td>
<td>10.77268</td>
<td>8</td>
<td>15.507</td>
</tr>
<tr>
<td>Experience of Low Back Pain and Health Insurance Coverage</td>
<td>0.025278</td>
<td>1</td>
<td>3.841</td>
</tr>
<tr>
<td>Health Insurance Coverage and Receiving of Treatment</td>
<td>2.218957</td>
<td>1</td>
<td>3.841</td>
</tr>
<tr>
<td>Experience of Low Back Pain and Amount of Exercise per Week</td>
<td>1.769414</td>
<td>3</td>
<td>7.815</td>
</tr>
<tr>
<td>Experience of Low Back Pain and Amount of Sitting per Day</td>
<td>12.65834</td>
<td>3</td>
<td>7.815</td>
</tr>
</tbody>
</table>

Figure 1. Back Pain Survey

The purpose of my study is to survey individuals between the age of 18 and 60 that may have experienced back pain. I will then use chi-squared analysis to support the need for education about physical therapy for treatment of back pain and the need to prevent back pain. For additional information about giving consent or your rights as a participant in this study, please feel free to contact Tara Prairie at the Office of Compliance at (615) 494-8918. Directions: Please mark one box for each question. If you have any trouble answering the question or comprehending the question please be sure to ask me about the question.

1. Age
2. Sex
   □ Male           □ Female
3. Race
   □ American Indian or Alaskan Native    □ White
   □ Asian, Pacific Islander, or Hawaiian native □ Hispanic/ Latino
   □ African American or Black            □ Other
4. Do you have health insurance?
   □ Yes            □ No
5. Does your health insurance policy cover your physical therapy treatments?
   □ Yes            □ No            □ Do not know
6. Did you know that physical therapists can treat back pain?
   □ Yes            □ No
7. Do you feel that physical therapy would be beneficial for treating back pain?
   □ Yes            □ No
8. Have you ever experienced back pain?
   □ Yes    □ No
9. How often do you experience back pain?
   □ Daily    □ Weekly    □ Monthly
10. Did you receive any treatment for back pain?
    □ Yes    □ No
11. What type of treatment did you receive for back pain?
    □ Surgical    □ Non-surgical
12. Which type of treatment do you prefer?
    □ Surgical    □ Non-surgical
13. How often do you exercise within a week?
    □ 0-1 days    □ 2-3 days    □ 4-5 days    □ 6-7 days
14. How long do you sit during the day?
    □ 1-2 hours    □ 3-4 hours    □ 5-6 hours    □ 7 or more hours

Please indicate where you are experiencing back pain.

Thanks for taking my survey!
Figure 2. Body maps of sites of pain students experienced.
How Much Is Too Much?: An Analysis of CEO Compensation among High-Profile Financial Services Firms Receiving TARP Investments

Jason Gerald
Dr. Charles H. Apigian
Information Systems

Due to the current U.S. recession, the media, legislators, and informed citizens have developed a deep concern about the methods and amounts of executive compensation within firms receiving government aid from TARP investments. With executive pay notoriously characterized by greed, legislators even decided to curtail top executive compensation in some cases. The focus of this research is to determine whether CEOs of high-profile financial services firms receiving TARP investments have justified compensation packages that are suitably aligned with shareholder interests and firm performance. To assess firm and CEO performance, the changes in common financial metrics (ROI, ROE, etc.) as well as the corporate governance quotient were incorporated into each firm’s evaluation. Further analysis was conducted to determine the impact that the managerial power or optimal contracting approach had on a CEO’s compensation package. By comparing CEO pay and firm performance of six select firms with a sample group of twenty similarly diversified firms using multiple regression tests, we found little evidence of a significant relationship between pay and performance.

Introduction

During the past few years, the U.S. financial markets have suffered great losses. Contributing factors include an unpredictable economic market and in some instances, a classic case of the agency problem, which is the conflict that arises when management and shareholders have different views regarding governing the company (Agency Problem, 2009). The agency problem can impact both firm performance and CEO compensation.

CEO compensation has sparked much recent public debate since Treasury Secretary Timothy Geithner co-authored the Troubled Asset Relief Program (TARP). Geithner’s goal was to purchase preferred shares in companies and help them regain stability and promote growth (FRB, 2009). However, some TARP recipients are contractually bound to CEO compensation packages which may have contributed to the firm’s poor performance.

Since the TARP is funded by American taxpayers, its use is under much scrutiny with many high-profile financial services firms receiving substantial funding. Six of the higher profile TARP recipients include CitiGroup, Wells Fargo and Co., Capital One Financial Corp., American Express Co., Fifth Third Bancorp and US Bancorp. Most of these firms performed poorly in 2008 under basic performance metrics such as return on assets (ROA), return on equity (ROE), earnings per share (EPS), and net income (NI). Furthermore, all of these firms received well over $3 billion dollars in TARP investments (Interactive Graphic, 2009). With this amount of government aid, their CEOs should be compensated in a manner that encourages sustained financial growth.

There are primarily two categories of compensation: optimal contracting and mana-
grial power. The optimal contracting approach attempts to align shareholder and management interests, while the managerial power approach purports that top corporate executives “have almost complete discretion on management” (Berle and Means, 1932). Though both approaches have strengths, the managerial power approach can be a detriment to TARP finds because CEOs can overexert their influence to attain more favorable compensation.

To show how minor details can impact one’s pay, consider the following conditions under which a CEO is more highly compensated:

1. “When the board is large, which makes it more difficult for directors to organize in opposition to the CEO” (Core, et al. 1999).
2. “When more of the outside directors have been appointed by the CEO, which could cause them to feel a sense of gratitude or obligation to the CEO; and when outside directors serve on three or more boards, and thus are more likely to be distracted” (Core, et al. 1999).
3. When CEOs also serve as chairman of the board, their pay is usually 20-40% higher (Cyert, et al. 2002; Holthausen, et al. 1999).

These commonly-overlooked factors demonstrate how a lack of oversight combined with CEO power can lead to suboptimal compensation packages.

**Hypothesis**

Through an analysis of the performance of the six high profile financial services firms and the CEO’s compensation, we hypothesize that TARP investments cannot serve its intended purpose if the CEO’s compensation package is not appropriately linked to firm performance and shareholder interests. Though it is difficult to assess all the factors contributing to a firm’s poor performance, if an agency problem or suboptimal compensation contract exists, then the CEO’s pay may encourage behavior which is in management’s best interest, rather than the firm.

**Data and Methodology**

**Table 1. Data on Six High-Profile TARP Recipients**

<table>
<thead>
<tr>
<th>Comp</th>
<th>TARP (B)</th>
<th>^ROA</th>
<th>^ROE</th>
<th>^EPS</th>
<th>^NI (M)</th>
<th>Salary</th>
<th>Bonus</th>
<th>Stock Options</th>
<th>NEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>AmEx</td>
<td>3.4</td>
<td>7.60</td>
<td>(15)</td>
<td>(1.03)</td>
<td>24,800</td>
<td>1,250,00</td>
<td>0</td>
<td>34,181,79</td>
<td>6,112,50</td>
</tr>
<tr>
<td>Citibank</td>
<td>25</td>
<td>(0.72)</td>
<td>(33.02)</td>
<td>(7.01)</td>
<td>(15,962)</td>
<td>958,333</td>
<td>0</td>
<td>37,262,911</td>
<td>0</td>
</tr>
<tr>
<td>Wells Fargo</td>
<td>25</td>
<td>(1.11)</td>
<td>(12.33)</td>
<td>(1.68)</td>
<td>5,402</td>
<td>878,920</td>
<td>0</td>
<td>7,920,000</td>
<td>0</td>
</tr>
<tr>
<td>U.S. Bancorp</td>
<td>6.6</td>
<td>(0.72)</td>
<td>(7.4)</td>
<td>(0.84)</td>
<td>(1,378)</td>
<td>900,034</td>
<td>0</td>
<td>5,850,000</td>
<td>0</td>
</tr>
<tr>
<td>Fifth Third</td>
<td>3.4</td>
<td>(2.9)</td>
<td>(23)</td>
<td>(5.93)</td>
<td>503</td>
<td>899,995</td>
<td>0</td>
<td>1,873,930</td>
<td>0</td>
</tr>
<tr>
<td>Cap One</td>
<td>3.5</td>
<td>(1.75)</td>
<td>(9.95)</td>
<td>(6.41)</td>
<td>(4.5)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Note: (B) refers to billions.*
To understand the importance of CEO pay in relation to firm performance, we first reviewed literature on compensation practices from many of the top journals and scholarly books, such as: *Economic Quarterly, Journal of Political Economy, Handbook of Labor Economics, Journal of Banking and Finance, Journal of Economic Perspectives*. These sources provided key insight into common compensation practices, trends, and criticisms.

**Table 2. Data on 20 Other TARP Recipients**

*Note: (M) refers to millions.*

<table>
<thead>
<tr>
<th>Company</th>
<th>TARP (SM)</th>
<th>(^{\circ})ROA</th>
<th>(^{\circ})ROE</th>
<th>(^{\circ})EPS</th>
<th>(^{\circ})NI</th>
<th>Salary</th>
<th>Bonus</th>
<th>Stock Options</th>
<th>NEC (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achor Bank</td>
<td>110</td>
<td>(5.23)</td>
<td>(85.39)</td>
<td>12.31</td>
<td>(259)</td>
<td>280,000</td>
<td>0</td>
<td>0</td>
<td>59,595</td>
</tr>
<tr>
<td>Citizens</td>
<td>6.3</td>
<td>(0.09)</td>
<td>0.17</td>
<td>0.06</td>
<td>(0.365)</td>
<td>342,720</td>
<td>109,232</td>
<td>35,513</td>
<td>0</td>
</tr>
<tr>
<td>Enterprise F</td>
<td>4.4</td>
<td>(0.79)</td>
<td>(8.46)</td>
<td>(1.06)</td>
<td>(13.1)</td>
<td>406,368</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1st Comm Bank</td>
<td>10.7</td>
<td>(5.21)</td>
<td>(68.3)</td>
<td>(8.8)</td>
<td>(178.4)</td>
<td>392,902</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1st Merchants Corp</td>
<td>116</td>
<td>(0.33)</td>
<td>(3.66)</td>
<td>(0.59)</td>
<td>(11)</td>
<td>346,154</td>
<td>0</td>
<td>211,957</td>
<td>0</td>
</tr>
<tr>
<td>Home BancShares</td>
<td>50</td>
<td>(0.53)</td>
<td>(4.99)</td>
<td>(0.59)</td>
<td>(10.3)</td>
<td>31,731</td>
<td>0</td>
<td>44,042</td>
<td>0</td>
</tr>
<tr>
<td>Indep Bank Corp</td>
<td>72</td>
<td>(3.19)</td>
<td>(43.13)</td>
<td>(4.5)</td>
<td>(101)</td>
<td>382,000</td>
<td>0</td>
<td>349,996</td>
<td>0</td>
</tr>
<tr>
<td>Ind Comm Banc</td>
<td>21.5</td>
<td>(0.16)</td>
<td>(1.77)</td>
<td>(0.25)</td>
<td>(1.1)</td>
<td>350,514</td>
<td>0</td>
<td>24,800</td>
<td>89,202</td>
</tr>
<tr>
<td>Integra Bank</td>
<td>83.6</td>
<td>(4.27)</td>
<td>(45.56)</td>
<td>(6.94)</td>
<td>(141)</td>
<td>478,786</td>
<td>0</td>
<td>351,006</td>
<td>0</td>
</tr>
<tr>
<td>Lakeland Fin Corp</td>
<td>56</td>
<td>(0.13)</td>
<td>(0.9)</td>
<td>0.03</td>
<td>0.49</td>
<td>414,371</td>
<td>0</td>
<td>0</td>
<td>248,700</td>
</tr>
<tr>
<td>MainSource Fin Gro</td>
<td>57</td>
<td>(0.17)</td>
<td>(1.59)</td>
<td>(0.17)</td>
<td>(2.7)</td>
<td>186,619</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Peapack Glad Fin Cor</td>
<td>28.6</td>
<td>(2.52)</td>
<td>(31.86)</td>
<td>(4.09)</td>
<td>(33.9)</td>
<td>350,000</td>
<td>0</td>
<td>53,950</td>
<td>0</td>
</tr>
<tr>
<td>Pinn Fin Part</td>
<td>95</td>
<td>(0.22)</td>
<td>(2.21)</td>
<td>(0.09)</td>
<td>7.8</td>
<td>643,000</td>
<td>0</td>
<td>461,891</td>
<td>360,750</td>
</tr>
<tr>
<td>SCBT Financial Corp</td>
<td>64.6</td>
<td>(0.37)</td>
<td>(5.42)</td>
<td>(0.8)</td>
<td>(5.78)</td>
<td>400,000</td>
<td>0</td>
<td>1,118,916</td>
<td>0</td>
</tr>
<tr>
<td>Ameris Bancorp</td>
<td>52</td>
<td>(0.17)</td>
<td>(0.37)</td>
<td>(1.43)</td>
<td>(19)</td>
<td>4,000,000</td>
<td>0</td>
<td>85,250</td>
<td>0</td>
</tr>
<tr>
<td>BancTrust Fin Gro</td>
<td>50</td>
<td>(1.05)</td>
<td>(10.61)</td>
<td>(0.5)</td>
<td>(4.93)</td>
<td>350,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Berkshire Hills</td>
<td>40</td>
<td>0.27</td>
<td>1.78</td>
<td>0.62</td>
<td>8.7</td>
<td>450,000</td>
<td>0</td>
<td>250,004</td>
<td>150,000</td>
</tr>
<tr>
<td>CIT group</td>
<td>2,300</td>
<td>(1.02)</td>
<td>(22.28)</td>
<td>(6.62)</td>
<td>(2880)</td>
<td>800,000</td>
<td>0</td>
<td>5,172,500</td>
<td>0</td>
</tr>
<tr>
<td>Western Alliance Banc</td>
<td>140</td>
<td>(5.25)</td>
<td>(52.77)</td>
<td>(8.33)</td>
<td>(269)</td>
<td>563,942</td>
<td>0</td>
<td>304,200</td>
<td>0</td>
</tr>
</tbody>
</table>
To conduct the analysis, data on the TARP recipients were compiled from the American Federation of Labor and Congress of Industrial Organizations’ (AFL-CIO) Executive Paywatch database. Data provided by the AFL-CIO were obtained through proxy statements filed with the U.S. Securities and Exchange Commission by the respective companies for fiscal year 2008. Also, the 2008 annual reports of each company provided data on the changes in performance measures. The corporate governance quotient (CGQ), which was derived from Institutional Shareholder Services (ISS), was provided by Forbes.com.

For comparison, 20 other TARP recipients were selected for analysis. This group’s performance indicators were available in the “Financial Highlights” tab of the “Investor Relations” section on the company’s website. Some data were also gathered from the online profile. The information about TARP recipients and amounts was available through the U.S. Treasury Department’s TARP Transaction Report.

After compiling the data, the corporations were evaluated through two lenses. First, the company’s performance was assessed using financial performance metrics, with consideration given to firm size, industry, and economic conditions. Then, the 2008 compensation packages for the high-profile CEOs were reviewed for evidence of the impact of the managerial power or optimal contracting approach.

**Elements of Compensation**

Most compensation packages are comprised of base pay and some fringe benefits. However, as one advances through corporate ranks, additional components are phased in. Nonetheless, the purpose of compensation remains the same: to encourage employees to satisfy shareholder interests, create an incentive for outstanding performance, retain talented executives, and allow them to maintain lifestyle objectives (Ellig, 1982). Listed below are the various components of compensation along with their purposes.

**Salary**

The salary portion of the package, which usually accounts for no more than 20 percent of total compensation, reflects the CEO’s level of experience and any record of sustained, superior performance (Ellig, 1982). But, if the industry does not typically provide bonuses or lavish perquisites, then the salary will compensate for both short and long-term contributions to the firm. The salary portion merely accounts for the day-to-day responsibilities of running the organization. Also, due to the Omnibus Budget and Reconciliation Act of 1993, salaries are usually around $1 million for non-performance based compensation because of limitations on tax exemptions outlined in the bill (Maisondieu-Laforge, et al, 2007).

To show how insignificant a salary can be to some CEOs, consider Richard Fairbanks of Capital One Financial. In 1997, he decided to forego his salary and bonuses in exchange for all performance-based stock options. This was an unprecedented move for a young executive but proved extremely lucrative when he exercised 3.6 million vested stock options for $250 million (Gray, 2009).

**Employee Benefits**

This component, formerly known as “fringe benefits,” is increasing in cost and complexity, which causes a greater financial burden for firms. These benefits include paid holidays, vacation allowance, worker’s compensation, disability pay, legal services, low-interest loans, healthcare, educational assistance, life insurance, and financial retirement contributions (Ellig, 1982). Most individuals consider employee benefits as the above-mentioned items (vacation allowance, healthcare, etc). However in 2005, former Citigroup
CEO Sanford Weill forfeited more than $2.5 million in benefits. This encompassed $524,949 for transportation, $61,846 for medical and dental premiums, $302,758 for security and an annual pension benefit package totaling $1.1 million (Stempel, 2009), which are common among executives in large-cap finance corporations.

**Short-Term Incentives/ Non-Equity Compensation (NEC)**

The main purpose of short-term incentives is to encourage the CEO to lead the firm to attain annual performance benchmarks. This component is used as a variable method of compensation to reward exceptional performance. An important factor that firms consider is the salary-bonus ratio. For example, a high salary-low bonus plan would offer no incentive to reach performance measures. In contrast, a low salary-high bonus plan would overpay mediocre performers throughout the year. In order to qualify for short-term incentives, the candidate must be promoted to a key position or specific salary amount (Ellig, 1982).

As noted above, a bonus is designed to reward exceptional performance. But with US Bancorp, no such concept applies. In 2008, after suffering from more than a billion dollar shrink in net income, losses in EPS, ROA, and ROE, CEO Richard Davis received an additional 1.4 million shares with an estimated value of $5 million and $850,000 in restricted stock (US Bancorp, 2009). It is important to consider the impact such amounts of compensation have on lower level employees and their motivation, if short-term incentives are not justified.

**Long Term Incentives**

The primary difference between short and long-term incentives is the length of time in which the performance is assessed. Short-term incentives are typically assessed within a year, while long-term incentives are assessed between 3 to 5 years. This form of compensation is usually where a sizable portion of CEO’s salary is derived. Since most firms would rather promote long-term sustained growth, compensation committees or Board of Directors tend to place greater potential for lucrative gains in this category. Stock options are becoming a more prevalent source of compensation because the CEOs share similar risks as the shareholders by having to invest their own resources. This is a token of confidence in their involvement in the future well-being of the firm (Ellig, 1982).

**Stock Options**

This grants the recipient the ability to purchase a specific amount of company stock during a predetermined time at a stated price.

**Qualified Stock Options**

This option is a stock option with a price and time constraint. Here, one can only purchase the options at or above fair market value, the option period must be 5 years old or less and the exercised option must be held for at least 3 years.

These days, stock options are the most common form of long-term performance-based compensation. Although some CEOs receive stock options as an annual bonus, they are still considered long-term incentives because the options take longer than a year to become vested (Ellig, 1982). For example, Kenneth Chenault, CEO of American Express, earned a $1.25 million salary but exercised vested stock options from previous years for more than $34 million, which was an 18% decrease in compensation from 2007 (DeCarlo and Zajac, 2009).
Considerations in Firm Performance

The recent economic downturn and consolidation in many industries caused the financial markets to play a more pivotal role in the prolonged stability of the U.S. economy. This sector provides products for both consumer and commercial entities such as loans, credit cards, insurance and other investments. Some key factors to consider while assessing the financial performance of the high-profile firms include the impact of the sub-prime lending crisis, the recession and the fact that the company utilized the TARP in the first place.

Sub-Prime Lending

The financial services sector has suffered significant losses stemming from the credit crisis, a rise in unemployment, and the housing market. As the housing industry began to flourish in the 1980s, there was a simultaneous shift in mortgage lending standards, instruments, and procedures. A key contribution to these changes was that lending institutions transitioned from holding a large portion of their loans for repayment, to selling the collateralized debt to global financial markets. As this practice grew in popularity, lenders extended more loans and credit. Then, when interest rates rose and the introductory rates that were underwritten into the loans expired, mortgage defaults skyrocketed (Greenspan, 2009).

Troubled Asset Relief Program (TARP)

Because of the impact of the weak U.S. economy, many financial institutions needed some form of capital investment to remain viable. On October 14, 2008, more than 550 companies received the relief from the Treasury through the Troubled Asset Relief Program (TARP) (Interactive Graphic, 2009). Treasury Secretary Timothy Geithner and his officials authored the two parts of the Program entitled: The Capital Purchase Program and The Temporary Liquidity Guarantee Program.

Under The Capital Purchase Program, institutions had the option to sell the U.S. Treasury equity interests equaling 1 to 3 percent of the institution’s risk-weighted assets. This allowed the company to free its balance sheet of risky assets. The Treasury allotted $250 billion for the purchase of these preferred shares with the goal of renewing confidence between the borrower and the lender. These same institutions were also eligible for the Temporary Liquidity Guarantee Program which guaranteed full insurance coverage of non-interest bearing deposits of any amount (FRB, 2009).

Solvency

The recent economic downtown also impacted many financial companies’ solvency, which is a ratio used to calculate a firm’s ability to meet future debt obligations. As a general rule, a solvency ratio greater than 20% is considered financially stable (Solvency, 2009). Solvency relates to the recipients of TARP investments because unless the firms were risking bankruptcy, then they likely applied for TARP investments as an insurance policy against a financially turbulent future.

Key Financial Metrics

In order to assess the effectiveness of each firm, the change in four commonly used financial metrics were selected for 2008: return on assets (ROA), return on equity (ROE), earnings per share (EPS) and net income (NI). The purpose of these metrics is to provide data for stakeholders to determine the profitability of a firm.
Return on Assets (ROA)

This measure is an indicator of how well management converts assets into earnings. ROA is written as a ratio and is also known as “return on investment.” As a stakeholder, ROA can either entice consistent high-yielding returns, or provoke caution due to a firm’s inability to generate earnings.

\[
\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}
\]

Return on Equity (ROE)

Similar to ROA, ROE is also monitored by stakeholders because it measures the percent of a corporation’s profits earned relative to the investment of shareholders.

\[
\text{ROE} = \frac{\text{Net Income}}{\text{Shareholders’ Equity}}
\]

Earnings per Share (EPS)

Earnings per share is one of the more heavily relied upon metrics because it provides the dollar amount of the firm’s profits allotted to each outstanding share of common stock. A high EPS is a positive indicator that the firm is profitable and will likely result in a higher stock price.

\[
\text{EPS} = \frac{\text{Net Income} - \text{Dividends on Preferred Stock}}{\text{Outstanding Common Shares}}
\]

Net Income (NI)

Net income is the total amount of the company’s earnings. This is calculated by subtracting all expenses from the total revenue and is typically found in a firm’s income statement. It is also referred to as “the bottom line,” “earnings,” or “net profit.” (Duchac et al., 2006).

These four key metrics provide a holistic view of a firm’s performance when analyzed alongside each other. Also, due to differences in accounting and reporting practices, it is best to measure performance through multiple lenses.

Firm Characteristics

Although all the firms measured offer similar financial services, the metrics used below illustrate the size, value, market share, and board efficiency of each firm. This allows for a more proportional view of each firm’s impact on the economy. The amount of TARP investment each firm received in relation to its size and the CEO’s compensation package should provide insight into what amount of the TARP investment will be factored into a CEO’s salary. The metrics listed below also bring into perspective the type of consequences the U.S.’s struggling economy would face should these financial giants reach their demise.
Table 3. Firm Characteristics of Six High-Profile TARP Recipients

<table>
<thead>
<tr>
<th>Corp</th>
<th># of Emp</th>
<th>Market Cap ($B)</th>
<th>Ent Val (B)</th>
<th>Net Income ($M)</th>
<th>CGQ</th>
<th>TARP ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AmEx</td>
<td>66,000</td>
<td>28.02</td>
<td>88.39</td>
<td>26,899</td>
<td>93</td>
<td>3.4</td>
</tr>
<tr>
<td>Citi</td>
<td>326,900</td>
<td>16.65</td>
<td>(30.91)</td>
<td>(27,684)</td>
<td>85</td>
<td>25</td>
</tr>
<tr>
<td>Wells Fargo</td>
<td>272,800</td>
<td>104.59</td>
<td>341.62</td>
<td>2,655</td>
<td>6.4</td>
<td>25</td>
</tr>
<tr>
<td>5th Third</td>
<td>20,618</td>
<td>4.11</td>
<td>24.19</td>
<td>(2,113)</td>
<td>92.4</td>
<td>3.4</td>
</tr>
<tr>
<td>US Bancorp</td>
<td>57,904</td>
<td>31.71</td>
<td>91.67</td>
<td>2,946</td>
<td>55.6</td>
<td>6.6</td>
</tr>
<tr>
<td>Cap One</td>
<td>25,800</td>
<td>8.82</td>
<td>23.97</td>
<td>(46)</td>
<td>71.2</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Note: B refers to billions and M refers to millions.

Market Capitalization (Market Cap)

This measures the total market value of all the company’s outstanding shares (Market Capitalization, 2009).

(4) Market Cap = # of Outstanding Shares x Current Mkt Price of a Share

Enterprise Value (Ent Val)

This is also a measure of a company’s value which is often used as an alternative to market capitalization (Total Enterprise Value, 2009).

(5) Enterprise value = (Market Cap + Debt + Minority Interest + Preferred Shares) - (Cash + Cash Equivalents)

Corporate Governance Quotient (CGQ)

Developed by the Institutional Shareholder Services (ISS), CGQ rates public companies by the quality of their board structure and composition, executive and director compensation and bylaw provisions (Corporate Governance Quotient, 2009).

The characteristics for each firm provide an illustration of their size in relation to one another. With firm sizes ranging from 66,000 to 326,900 employees, the overall impact of one or more of these firms going bankrupt would impact the U.S. economy differently. For example, it would be hard to judge Fifth Third Bancorp’s need for TARP investments in the same light as Citigroup or Wells Fargo which are substantially capitalized and employ many more people.
Alternative Approaches to Compensation

To thoroughly understand executive compensation, consider the purpose of compensation. Compensation should be designed to reflect an alignment of shareholder’s interests in profit maximization with managerial efforts to prosper the firm through effective business practices. However, this is not always the case. Two well-researched approaches to explain common compensation methods are optimal contracting and managerial power.

Optimal Contracting

The optimal contracting approach assumes that through the agency theory, the agent’s, or CEO’s overall expected utility is tied to the objectives of the principal, or the shareholder (Murphy 1999). According to Jensen and Murphy (1990), they found “empirical evidence … consistent with this broad implication: changes in both the CEO's pay-related wealth and the value of his stockholdings are positively and statistically significantly related to changes in shareholder wealth, and CEO turnover probabilities are negatively and significantly related to changes in shareholder wealth.” They also showed that incorporating performance incentives linked to increases in shareholder equity produces a favorable outcome for the firm. Supporters of the optimal contracting approach view the compensation contract as a means for the CEO to sell their services to the firm. It also allows the firm the opportunity to implement performance-based incentives to encourage the CEO to foster an environment which satisfies shareholder interests (Jensen and Murphy 1990).

Managerial Power Approach

In contrast to the optimal contracting approach, the managerial power approach assumes that the components of a CEO’s compensation package are crafted based on his or her influence over the board and other executives (Bebchuk and Fried 2003). In the optimal contracting approach, shareholders seek to receive the highest output from the CEO; therefore, these compensation packages are significantly less than those which reflect the managerial power approach. With the managerial power approach, CEOs use their coercive power over the board to attain the upper limits of the compensation package.

Lucian Bebchuk (2003) noted that the managerial power approach’s primary determinant of the upper limit of compensation is what he terms the “outrage costs.” The “outrage” that Dr. Bebchuk referred to was the public resistance toward exorbitant CEO compensation. The word “outrage” appropriately describes the sentiments of many U.S. taxpayers engaged in public outcry over the compensation practices of many firms receiving TARP investments. President Barack Obama stated that “people are still getting huge bonuses despite the fact that they’re receiving taxpayer money, which I think infuriates the public” (Telegraph, 2009), and although the TARP recipients have government-mandated limits on executive pay, these executives still manage to attain high levels of pay through contractual obligations and corporate politics.

Results

To analyze any possible links between the pay and performance of the 26 firms in this study, multiple regression analysis was performed. TARP and the four previously-stated financial metrics (ROI, ROE, etc.) were used as independent variables and compared to the four components of compensation (salary, benefits, etc.). The following table was constructed to show the relationship, if any, between the firm’s performance and its CEO’s compensation package.
Table 4: Regression Analysis Comparing

<table>
<thead>
<tr>
<th>Tarp and Financial Metrics</th>
<th>Salary</th>
<th>Bonus</th>
<th>Stock Options</th>
<th>Non-Equity Comp</th>
</tr>
</thead>
<tbody>
<tr>
<td>TARP</td>
<td>0.184</td>
<td>-0.424</td>
<td>1.581</td>
<td>-0.007</td>
</tr>
<tr>
<td>*ROA</td>
<td>0.753</td>
<td>0.949</td>
<td>0.527</td>
<td>3.455*</td>
</tr>
<tr>
<td>*ROE</td>
<td>0.777</td>
<td>0.852</td>
<td>-0.516</td>
<td>0.471</td>
</tr>
<tr>
<td>*EPS</td>
<td>-0.093</td>
<td>0.445</td>
<td>-1.144</td>
<td>1.045</td>
</tr>
<tr>
<td>*NI</td>
<td>0.312</td>
<td>-0.101</td>
<td>-7.242*</td>
<td>4.389*</td>
</tr>
</tbody>
</table>

Values represent t-scores calculated during multiple regression analysis

Note: * Indicates a p-value < 0.05

The first observation from these results is that salary and bonuses for both the high profile firms and the other 20 smaller firms are not allocated based on the achievement of performance-based benchmarks. Therefore, the amounts of these components are dependent on other factors which may or may not influence the well-being of the firm. Top-ranking executives whose pay is not linked to the performance of the firm have no monetary incentive to fulfill their fiduciary responsibilities. Also, performance-based pay allows executives to be paid proportionally when the company profits or experiences losses.

As noted by the asterisk, there is evidence of a relationship between non-equity compensation and the change in both net income and return on assets, as well as a negative relationship between stock options and net income. This relationship with NEC is likely due to the fact that non-equity compensation is earned based on prolonged growth or meeting performance-based benchmarks. If the benchmarks are not met, the non-equity compensation is not granted. Also, non-equity compensation is one of the discretionary components of compensation; therefore, during difficult economic conditions, these are likely the first to be decreased.

The second relationship is puzzling and does indicate a flaw in the corporate structure of compensation. Since it is a negative relationship, it indicates that when the net income of a firm decline, the stock options that a CEO cashes in increases. On the surface this does indicate a distressing result that the CEO looks to cash in prior to the stock price going down due to a reduction in net income.

Discussion

Since its inception, the TARP has been a controversial topic. Some taxpayers think the U.S. should not play a role in bailing out companies because an integral part of any capitalist society is the inevitability of failure. On the other hand, some consider it a necessity but desire more oversight, regulation, and accountability. There is no doubt that many upholding these two contrasting views fall on opposing sides of the political spectrum. But the fact is that the investments have already been made and the only option is to hold recipients to a greater standard of accountability and set a precedent for any future bailouts.

The leadership within an organization should set the example of the type of culture, value system, and code of ethics held by the rest of the group. However, when serious problems occur at the top of an organization, similar issues are likely to develop through the ranks. As is the case with many of these 26 firms, a combination of a weakening economy, a proliferation of sub-prime lending and poor managerial oversight apparently contributed to
a financial collapse unforeseen since The Great Depression.

As noted earlier, the managerial power and optimal contracting approach can either contribute to the sustained viability or the downfall of an organization. However, both approaches only partially remedy the agency problem, which in this case occurs between CEOs and their shareholders.

To illustrate the optimal contracting approach, consider the case of American Express CEO, Kenneth Chenault. Amidst the tumultuous financial conditions plaguing the U.S. economy and steadily diminishing consumer confidence, he still managed to lead his corporation to a $26 billion dollar increase in net income, and earned a salary in excess of $42 million dollars. Although $42 million is significant compensation for anyone, it is less than 0.1% of the corporation’s net income and the vast majority of it was earned through exercising vested stock options (Executive PayWatch, 2009). American Express also has a high Corporate Governance Quotient (CGQ): 93, which shows that the corporation’s governance, compensation, and bylaws are exceptional.

In contrast, the managerial power approach shows evidence that the CEO uses power or influence within the organization to craft a favorable compensation package. In the case of Citigroup, which suffered losses of over $26 billion in 2008, its CEO, Vikram Pandit, received total compensation of over $38 million. Although Citigroup has a CGQ of 85, it is apparent that this compensation agreement was designed for Mr. Pandit to profit regardless of company performance.

In theory, Citigroup’s shareholders would not design a compensation contract which allows the CEO to gain when profits decline substantially. However, if the relationship with the CEO is favorable and a quid pro quo mentality exists among the board member and executive staff, then the upper echelon of the organization are more inclined to gain at the expense of the corporation.

**Conclusion**

Some important limitations to this study were the scope, current economic conditions, and method of valuating equity awards. Because there were well over 500 firms which received TARP investments, an analysis of only 26 firms cannot construct a comprehensive view of the relationship between executive pay and performance among all the recipients. Also, the current recession caused many of the CEOs to lose both their bonuses and much, if not all, of their non-equity compensation. Lastly, in pursuant to the 2006 SEC ruling, disclosure of equity awards were limited to only stocks or options that vested during the fiscal year being reported, rather than the total amount granted (Executive PayWatch, 2009). Therefore, some CEO’s SEC filings may not represent a completely accurate report of their stake in the company.

This study demonstrates the necessity for a more comprehensive approach to creating effective compensation packages. It also seeks to promote an understanding that any taxpayer funds utilized for the rehabilitation of the U.S. economy should be allocated with keen oversight and a full evaluation of the organization’s leadership and motives. The total CEO compensation is not what we are debating; instead, we are concerned with the method of compensation and its impact on one’s ability to meet performance-based measures.

The primary purpose of the TARP was to assure U.S. consumers, investors, and shareholders that the financial sector will remain stable and safe throughout the economic downturn. However, since some TARP recipients operate with a serious agency problem, the decisions of the executive board and its stakeholders may not be in the best interest of the corporation. And given that, the results clearly show little evidence of a concerted effort to link pay to performance, there is much to be improved with regard to executive pay.

There is no single approach that will lead to prolonged sustainable growth in an
organization because uncertainty is the only certainty in all markets. Through analysis of the various components of a CEO’s compensation package and how those parts impact CEO and stakeholder actions, compensation committees and governing bodies can design packages which contribute to the company’s long-term prosperity rather than its failure.

References


How World War I Affected Poor Tennesseans, and Their Experiences Overseas

Johnathan Gilliam

Dr. Robert Hunt
History

Tennesseans generally did not show much enthusiasm for World War I. Both whites and blacks lived in rural areas, were poor, and were uneducated. These individuals were targeted by local draft boards. Once in the armed forces, however, those who were subsistence farmers earned approximately the same income as they had previously. Training was hard but living conditions were good, and the new soldiers were optimistic until their first battle.

The United States joined the epic and deadly struggle between the European powers in April 1917, but the declaration of war and the ability to draft men to mobilize and fight for the United States was resisted in the South. The United States government initially sought volunteers, but fell short of the numbers needed. The war overseas did not concern Tennesseans, and some believed financial and banking institutions wanted a war in Europe that Tennesseans would have to fight. Unfortunately, the large population of poor and mainly agricultural Tennesseans, often did not receive deferments from their local draft boards and had to fight in a war they did not want. Many southern blacks were pressed into the service by the local draft boards in the South because of racism, and some blacks unknowingly were labeled deserters.1 Some southerners deserted and spoke out against the government’s forced conscription, but the majority of poor, uneducated, agricultural Tennesseans were drafted and were sent to training camps and then to war. The United States needed troops for the war in Europe. Even though some Tennesseans had better things to do on the farm than be involved with war in Europe, the local draft boards usually picked poor, uneducated, Christian, whites and blacks to be led by rich and better educated white officers who trained, shipped, and led them into battle.

The reason the United States resorted to the draft was simply because it was not ready for the huge number of troops needed to fight the war in Europe. The United States was in no position to declare war on Germany or its allies without drafting soldiers or without public support at home to produce the goods and materials needed. According to Jennifer Reene, “the nation had fifty-five planes in questionable condition and no tanks. The army had enough rifles stockpiled to arm 890,000 troops, but only enough ammunition to support 220,000 men in battle.”2 The United States military and air force were not equal to Germany’s in any way. In 1914, the Germans spent more on defense, had a larger army, and a very large population. The Germans were prepared for war, unlike the Americans. The Germans spent $442 million compared to the United States’ $314.8 million, and the German

1Deserters, slackers, and draft dodgers were names that are used for people who avoided the draft or deserted outright. The government, people, and authors each labeled the deserter or draft dodgers differently. The government tended to label them as deserters, which would be harsher punishment and would mean less sympathy from the locals.

2Jennifer D. Reene, Rich Man’s War, Poor Man’s Fight: Race, Class, and Power in the Rural South during the First World War (Westport, CN: Greenwood Press, 2006), 9.
armed forces were at 891,000 compared to the United States’ feeble 164,000. In only one area did the United States lead Germany and that was in total population: 98 million to 65 million.\(^3\) The numbers are somewhat misleading because America and American companies had been supplying Great Britain and France with munitions since 1914, but America was certainly not ready to fight the war on its own.

Matters were made worse because some, including many Tennesseans, supported Germany. Some Tennessean newspapers were not really concerned with the war overseas, and others were editorially pro-German. Two newspapers in West Tennessee, *News-Scimitar* and *Memphis Commercial Appeal*, were concerned with other things than American involvement. Watson Griffin notes, “the *News-Scimitar* was very favorable to the idea of German Teutonic civilizations being protectors of whites and the *Memphis Commercial Appeal* worried about the British declaring contraband on Tennessee cotton. Middle and East Tennessee had very little concern or reaction to what was happening in Europe.”\(^4\) Richer Tennesseans who owned cotton farms were occupied with staying out of war, but poor Tennesseans were concerned that the United States involvement in the Great War was inevitable.

According to authors, Reene and Keith, poor Tennesseans believed and argued that the United States would be pulled into war because of America’s trade and financial agreements with Great Britain. Some rural folk in the Midwest and South worried about the influence of Northeastern banks and businesses on the nation’s foreign policy. They feared that these financial institutions intended to force the country into war against Germany to continue their profitable war trade with Great Britain and ensure repayment on the loans they made to the Allies.\(^5\) Reene notes:

> In 1917, the British were overwhelmingly dependent on American credit and supplies to continue the war. Almost overnight, the United States transformed itself from a debtor to a creditor nation and made inroads into world and domestic markets traditionally dominated by British capital.\(^6\)

Most poor Tennesseans did not want to fight to protect the United States banking interests overseas because they had little directly invested in Europe but also they had daily farm chores and jobs that needed to be done to pay the bills and feed the families. Rich Tennesseans had more at stake, and they may have wanted to control trade even though supporting this is not certain. Some poor, uneducated Tennesseans were incredibly disadvantaged because they were targeted purposely by the draft boards and maybe by the government for the draft. Many people from the lower ranks of society, usually located in the rural areas, did not directly know the highest ranking members in society who had more say and power in the draft boards. But Tennesseans were drafted to fight overseas like other Americans to meet the large numbers needed to make an effective modern army as will be discussed later.

Among Tennesseans, 80,000 served and 4,000 were killed.\(^7\) Of these 4,000, there were 1,836 battle deaths and approximately 2,164 deaths from influenza and other causes.\(^8\)

---


\(^6\)Ibid., 7.

\(^7\)Griffin, “A Profile,” vii.

\(^8\)Ibid., 60.
The influenza deaths among people from Tennessee were higher than the national average in part because of the rural educational background of Tennesseans. Griffin ascertained that out of the 1,553 Gold Star Records, 791, or 51 percent of the servicemen had some degree of literacy. The number of years of schooling and education that each Tennessean had was directly related to literacy. Fred Baldwin writes, “37 percent of the white draftees had 6 years or less of school.”

The 1920 literacy average in Tennessee was around 89.7 percent, which put the state’s illiteracy at 10.3 percent. The national average illiteracy was at 6 percent. Griffin also notes a difference of illiteracy in urban areas at 6.8 percent compared to Tennessee’s rural areas at 12.8 percent. The rural areas were where most draftees came from because they tended to be poor farmers and the most likely to be drafted by draft boards. What is important is that the more education people have the more money they make. It is safe to say that more highly educated people would be less likely to be subsistence farmers and more likely to be urbanized. A higher level of education would have saved many from the draft.

Literacy and education were typically related to IQ (intelligence quotient) test scores given by the military. The IQ test was developed by a French psychologist named Alfred Binet. Binet created the basis of the IQ test and the basic questions that should be asked such as common sense questions as well as basic arithmetic. Binet, along with Theophile Simon, created the IQ formula by which the IQ final score is calculated by mental age divided by chronological age times one hundred. A similar test was used by the United States Army, created by a group of seven psychologists. By 1919, almost two million men had taken the Army intelligence test. The United States previously had no way to sort the huge number of draftees into various positions. The problem was handled by administering an IQ exam. The test served as the basis for assigning test takers to their future position and pay in the armed forces.

The IQ of southern states tended to be lower than other states simply due to lack of education. Test results released after the war showed that the average white American soldier had a mental age of thirteen but southern areas had lower IQ scores than northern and western states. Not everyone could read, so illiterate soldiers had to have a special version of the IQ test with pictures instead of words. The main reason Tennesseans’ education, literacy, and IQ are important is it helps explain the high rate of deaths attributed to disease. For example, if Tennesseans were better educated they would have been taught how to avoid the flu better by washing their hands frequently and avoiding contact.

The Spanish flu was devastating world-wide. Millions of people died from the flu that targeted the lungs of its victims. Molly Billings, author of the online article “The Influenza Pandemic of 1918,” says, “1/5 of the world became infected, and 675,000 Americans...”

---

9Ibid., 26.
14Reene, World War I, 47.
died from the influenza.” Billings notes, “15-34 year olds were 20 times more likely to die from the flu.” Most American soldiers were in this age group, and this is why 43,000 total soldiers died from the flu. The lack of education was deadly to Tennesseans who went to war because most uneducated people did not know how to protect themselves from diseases. Influenza accounted for 2,164 of the total 4,000 deaths among Tennesseans, which was higher than the national average. That is more Tennesseans died from disease than from bullets.

Because many Tennesseans lacked a good education, they knew very little about personal hygiene, which would have kept influenza deaths down. April Sanders says that the flu was “spread by coughs and sneezing.” It was also transmitted by personal contact or touching some infected object like a door knob. The best two options to avoid becoming sick were to avoid contact as well as to wash hands as often as possible. One medical officer on a transport carrier to France voiced his concern about some Tennesseans and the influenza:

Many of them had been in the service not more than three or four weeks and knew nothing of discipline; and the meaning of personal cleanliness and the methods of self-protection from disease was as a closed book to them.

The flu of 1918 was wild-spreading and devastating, which few could resist. There is no evidence to suggest that education and cleanliness alone could have saved one from being attacked by the diseases at the time, but it seems very plausible that better education along with cleanliness would have lowered the chances of becoming infected with certain diseases. As for the Spanish flu, since it is transmitted from the air and by personal contact the more educated people may have known to take precautions. However, in the Army, there may have been no way to reduce physical personal contact because the soldiers were in the barracks, transport ships, and trenches together in large numbers.

Education may also have attributed to higher rates of desertion in the South than the North because many uneducated people, more numerous in the South, saw no need to be overseas, and they accordingly avoided the draft or deserted. The South had 95,000 draft resisters. Jeannette Keith believes that the number of draft resisters was so high because the majority of white “ slackers,” which are people who resisted being drafted as well as outright deserters, had a fair chance of not getting caught. Authorities, draft boards, and the government attributed their angry and stubborn resistance to the draft to ignorance. It could have been a combination of not getting caught because some people did not even know the government mailed draft notices. A minority of Tennesseans were labeled deserters without their knowledge and these supposed “ deserters” did not send back the information requested of them by the government.

16Ibid.
18Ibid.
20Jeannette Keith, Rich Man’s War, Poor Man’s Fight: Race, Class, and Power in the Rural South during the First World War (North Carolina University Press, 2004), 193.
Some deserters were put in a special category simply for not receiving mail. The statistics show that nearly a third of reported draft-dodging occurred in the South because the lack of resources and money actually helped whites and some blacks avoid the draft, but it is more likely they did not dodge purposely. People in this area did not receive any written documentation nor did they submit any paperwork to allow the government to categorize them into draftable and not draftable categories. Of course, not all of the draft resisting and dodging was unintentional. Some Tennesseans vehemently resisted going to war. Whites would even barricade themselves in mountain cabins and shoot at the authorities sent to round them up. According to Keith, “Provost Marshal General Crowder sent cavalry troops to detain deserters in Dekalb, Warren, Van Buren, White, and Cumberland Counties after being asked to by Rutledge Smith, who was head of the Council of National Defense and the Selective Service System in Tennessee.” Of course, not all of the draft resisting and dodging was unintentional. Some Tennesseans vehemently resisted going to war. Whites would even barricade themselves in mountain cabins and shoot at the authorities sent to round them up. According to Keith, “Provost Marshal General Crowder sent cavalry troops to detain deserters in Dekalb, Warren, Van Buren, White, and Cumberland Counties after being asked to by Rutledge Smith, who was head of the Council of National Defense and the Selective Service System in Tennessee.”

Running away and shooting at authorities was not as extreme as taking one’s own life. Some Tennesseans even killed themselves or fought against troops sent to get them instead of being sent overseas:

- Facing the possibility of capture by the soldiers, one deserter committed suicide. Federal troops killed another who had absolutely defied the authorities and had drawn his gun to shoot into the squad of soldiers when one of the soldiers instantly dropped him with a bullet from his rifle.

Not all protesters of the draft ran away, shot at authorities, or killed themselves. Some nonviolent Tennesseans took to the streets and protested. One person in Tennessee, convicted of making “scurrilous and inflammatory statements” about President Wilson and the Red Cross, spent two years in the federal prison in Atlanta. When these people were actually found, labeled, and drafted they were sent to better paid positions as privates than they had been paid as farmers.

A large number of Tennesseans who went to war made money that was consistent with their income with farming. The lowest ranked American soldier overseas made around one dollar a day, which was ten times what the lowest German soldier made. The majority of the lowest ranked military personnel were farmers. Griffin notes, “Tennessee out of the 1,265 files of the Gold Star Records in which occupation was listed, 743 or 59 percent were listed as farmers.” The mean income of Tennessee farmers was $1556 annually, and this included the richest farmers and the poorest. The income for the lowest ranked soldier was $360 a year, but “Personal income for Tennesseans in 1919, which had slightly increased because of the war, was only $390 annually.” After the war, wages only increased by $30 a year. Unsurprisingly, educated draftees received better positions and more money than did uneducated farmers.

---

21 Reene, World War I, 37.
22 Keith, 192.
23 Ibid., 164.
24 Ibid., 172.
26 Ibid., 9.
Highly educated people were more likely to volunteer and apply for officer positions. Many of the Tennessee officers had college training or around 14-15 years of schooling. A large number of them came from influential professions: 50 percent were doctors, lawyers, and teachers. It is surprising that so many professionals quit their jobs and joined the war. Many were also forced to join through the draft. It would seem likely that a majority of new college graduates would have filled more than 50 percent of the officer positions. Compare this to 61 percent of draftees who were poor farmers with six years of schooling.

The typical white recruit of Tennessee (volunteer or draftee) stood at 5’7” tall, weighed 141.5 pounds, and was in his early 20s and unmarried. One of them became quite famous. Alvin C. York resembled other Tennessee soldiers because he was deeply religious, a poor farmer, and uneducated, but York became one of the extraordinary and exceptional Tennessean soldier because of his heroic deeds and his shooting skills. York loved his country and God, like most Tennesseans, but he had a lot of problems deciding if killing was acceptable. York said, “I loved and trusted Uncle Sam and I have always believed he did the right thing. But I was worried dear though. I didn’t want to go kill, I believed in my Bible, and it distinctly said, ‘”THOU SHALL NOT KILL.’” York may have been uneducated like a lot of Tennesseans, but one thing farmer boys like him knew how to do was shoot and use guns. Alvin York was appalled by what he saw on the rifle range: “Them there Greeks and Italians and even some of our own city boys ... missed everything but the sky.” York’s shooting skills helped shoot him into the public spotlight on 8 October, 1918. York said, “[I] single-handily silenced thirty-five German machine guns, killed twenty Germans and took 132 prisoners before leading [my] ambushed patrol back to safety.” York returned to the United States as a hero. He did not take any money or try to make money from his time overseas, and he spent the rest of his life working to bring public services such as schools to his neighborhood.

Not all people were treated as heroes. Blacks were suppressed and treated badly in the South, especially by draft boards. Blacks did not have the same opportunity as whites, and blacks were drafted at a higher rate than whites. Baldwin notes, “[Nationally] approximately 51.65 percent of all blacks were placed in Class 1-A as compared to 32.53 of all whites in this class.” In Tennessee, 17,339 or 28 percent of the 61,069 drafted were black even though they made up only 21.7 percent of the state’s population. Tennessee had a significant number of blacks who were in Class 1-A. Some blacks were labeled as deserters because they did not respond to draft notices that they never received. Blacks did not get their notices because some of them were tenants who had their mail withheld because they were past due on rent. The more obvious and commonly thought of reason so many blacks were drafted was partly due to the racist draft boards. Ironically, racism delayed the intro-

28Ibid., 30.
29Ibid., 33.
30Renee, World War I, 33.
33Renee, World War I, 88.
34Baldwin, American Enlisted Man, 53.
36Ibid., 11.
duction of black soldiers, and when they were finally inducted they were relegated to labor and noncombatant roles. White officers claimed blacks were not as effective as whites and pushed them out of the deadly areas. Black Tennesseans who did not have to go overseas were spared the war but they were mistreated in the United States.

Local draft boards had the power to decide who would go to war, or not. The ability of local boards to issue deferments became yet another vehicle to support white supremacy. Rich farmers did everything in their power to protect their workers from being sent overseas, and it seems plausible that blacks not under their direct control would be likely to go. Rich white landowners used political power to persuade local draft boards to defer their black tenant farmers, thus protecting their labor force. Yet blacks under the control of powerful whites were less likely to get rejected than poor whites and less likely to apply for exemptions, perhaps out of fear. Many blacks had been targeted by racist people for lynching, which was very common at this time. According to Keith, “One black newspaper headlined its story on the Scott murder ‘Tennessee Lynching Outrivals Worst German Atrocities.’ In February 1918, lynchers in Estill Springs killed a black man named McLedurran and also Reverend George W. Wyse for giving him shelter.”

Each county’s local draft board defined different criteria for draft eligibility. Southern counties in Tennessee considered family values to be very important. The draft board in James County, for instance, gave men with families exemptions: “In fact a woman can not control children as a man can and in bringing them up they need a father, no matter whether dependent for support or not.”

As stated before, draft boards had the power to declare who would go to war, and rich people typically were directly or indirectly in control of them. The poor were not treated fairly or represented equally by the draft boards. As an example, the dirt farmers in Benton County wrote their governor because of unequal treatment: “We have been told that such farmers as are in Benton County are not considered by the government [because they were not ‘big rich farmers’].” The poor had no power and very little voice regarding draft boards, but the rich could find ways around the draft for themselves as well as for their black tenant farmers. Keith says, “Rich southern whites, their sons, and their black workers avoided the draft, which made this a poor man’s fight only.”

Draft boards, which singled out the poor, also had the power to decide which religious institutions were pacifist. Alvin C. York was not the only deeply religious person in the military from Tennessee. Many letters home to family and friends related to Christianity in one way or another. For York, religion advised against killing; for others, religion seemed to motivate them in the other direction. Lieutenant Ferry Stanley wrote home to explain that

---

37Ibid., 111-112.
39Scott was a northern educated black who came to see the atrocities in the area. Whites were angered at his visit and killed him by lynching.
40Keith, _Rich Man’s_, 123.
41Ibid., 70.
42Ibid., 74.
43Ibid., 134.
he fought “so that Christianity will reign on Earth.” Christianity was helpful in elevating moral and ethical standards outside of combat as well.

Religion eventually changed some people and motivated them to better themselves while in the service. Many Tennesseans were raised to follow Christianity or Protestant ways of life but did not always follow it completely. People believed they should become familiar with God and Christianity to help increase their odds of survival. Religion spread through the camps and changed some people completely. Samuel Smith of Humphreys County was converted at camp. He wrote his sister: “Nora I never thought how I must live till I came here. It has come to me that I must live right. I know I have been a rough boy but you may tell the world I have changed now...” Some people certainly believed God would help them more than others if they were religious, but many people changed over to God’s divine grace before they even received military training. But religious or not, they needed to train and drill first before they could be sent to France.

Training was constant, rigorous, and extensive. The life of a soldier was rigorous because he had to train constantly in the hot sun with little or no rest. James Ruffin of Tipton County described how challenging it was when he said, “It certainly is a hard life. … When we were vaccinated we had to drill. Some boys were falling out like dead men in the army. All they did was to pick them up and keep on drilling.” People were forced to train in full military gear. This was a problem because most people were not used to the constant weight of their gear. A similar scene to the one James Ruffin described was related by Hugh Stuart of Cheatham County when he wrote to his brother from Camp Gordon: “They fall out every day here when they drill. When they stand at attention some of them fall as if they were shot.” Training was incredibly hard, but it was the only way to transform farmers into a modern army. After a day’s march, the soldiers could finally rest in the military barracks.

For Tennesseans, their barracks were usually better than their homes, which did not have electricity or running water. (TVA, or the Tennessee Valley Authority, came to impoverished rural areas after the Great Depression.) Says Griffin, most of draftees did not have access to hot water or toilets at their homes. Dillard Sells and John Temple of Overton and Shelby Counties, when writing to their sisters, made reference to what they considered to be the “fine housing” of their barracks. However, Tennesseans could only stay in the “fine housing” long enough to be trained and sent overseas.

A huge number of troops went across the Atlantic Ocean to France. Some 4,850,000 soldiers were to be sent over in January to June 1919 at the rate of 300,000 per month from August to December. Most of these soldiers made it to France safely because of the convoy system. The convoy system was able to transport troops without any ships being sunk. Large numbers of troops and materiel reached France because single U-boats could not fight a mass of ships together. The trip took around 14 days and soldiers amused themselves by watching boxing and wrestling matches playing cards, and attending band concerts. Many soldiers were prepared and alert for enemy ships once they reached the U-boat zone. Lieutenant Ferry Stanley observed while en route to France that everyone

44Ferry Stanley to Addie Stanley, 25 May 1918, WWI G.S.R.
45Samuel Smith to Nora Grapnel, 10 November 1917, WWI G.S.R.
46James Ruffin to Mr. and Mrs. D.W. Ruffin, 15 September 1918, WWI G.S.R.
47Hugh Stuart to Norman Stuart, 30 November 1917, WWI G.S.R.
48Dillard Sells to Floyd Sells, 25 September 1918; John Temple to Mrs. Bertha Arnold, 25 July 1918, WWI G.S.R.
seemed happy and somewhat relaxed until the eighth day when they entered the waters where submarines lurked. Soldiers on the transport ships were required to eat and sleep with their clothes on and wear belts that would help them float in water. 50 They were fortunate that no Germans were spotted, but things would become worse once they reached the trenches of France.

Many Tennesseans were ready and eager for battle as a result of propaganda, training and good living conditions in the American barracks. Pleasant James wrote to his father that “all the boys are optimistic about going over, never hear any complaint at all.” 51 Living conditions on the ship were uncomfortable because people were cramped and people were seasick, but in France, especially in the beginning, soldiers had sleeping quarters that were bug-infested. Jesse Hunt, one of the soldiers put in a barn, wrote to his father about where he was staying: “Since my arrival over here we take our hardships as more of a joke now than anything else. We were billeted in old barns when we first came over that were so full of lice you couldn’t be comfortable in any position.” 52 The discomfort of lice, however, was nothing compared to the psychological and physical stress of living in the trenches.

The first taste of battle destroyed all the optimism built up from training and government-supported media that the soldiers had about war and defeating the Germans. Some soldiers’ optimism and determination did not last through one attack. After Harold Goodwin experienced his first shelling attack, he wrote to his sister: “This old story book stuff of men chaffing at the bits to get in action is just true of fellows like me who have never been in action, and from what little I saw, I’m not half as blood thirsty as I was.” 53 Fear of death for themselves was not the only demoralizer. Some experienced the death of friends and this lowered morale and spirit considerably. Oddly enough, the death of friends and comrades could also have the contrary effect of providing motivation to stay determined and to fight on. As Benjamin Hinkle wrote to his father, “My men have been picked off at my elbow and blown into pieces by big shells at my front and rear but I’m still here doing my best to help win this great victory which shall be ours regardless of cost.” 54

The survivors, who consisted of poor, rich, uneducated, educated, black, white, draftees and volunteers, of the Great War returned to Tennessee. A majority of the veterans returned to their humble and simple lives on the farms. But most, if not all, would never forget their time, sacrifices, and duty overseas.

The United States had a hard sell to convince Tennesseans to go to war because many did not agree that war was necessary. A majority of the total 80,000 Tennesseans who fought were drafted. The United States government gave local draft boards the power to control those who would be drafted and sent to war; they usually picked poor whites and blacks, who were not protected by rich whites. Most Tennesseans were religious and felt their belief in Christianity was important, but some Tennesseans used religion as a reason to fight or justification against the Germans and to spread Christianity. After training, many soldiers were ready for battle, but warfare changed their confidence and left many with scars and reminders that some could never forget.

50 Griffin, “A Profile,” 47.
51 Pleasant James to T.H. James, 27 January 1918, WWI G.S.R.
52 Jesse Hunt to Willie Hunt, 16 August 1918, WWI G.S.R.
53 Harold Goodwin to Mary L. Goodwin, n.d. 1918, WWI G.S.R.
54 Benjamin Hinkle to Tomas Hinkle, 27 October 1918, WWI G.S.R.
Bibliography


You Should Be Ashamed: Attitudes toward Community Service Orders and the Use of Shame and Stigmatization as Punishment

Monica Hicks
Dr. Meredith Dye
Sociology and Anthropology

Community service (CS) has been used as an alternative to incarceration in the United States for more than 40 years. CS is both punitive and rehabilitative; however, when it was first used more emphasis was placed on the rehabilitative aspect. In recent years, policy toward crime has reflected the “get tough” approach by integrating shaming punishments and stigmatization into more rehabilitative alternatives. This study uses a vignette design accompanied by a brief survey to assess public opinion on the effectiveness of CS for DUI offenders and whether shame and stigmatization should play a role in punishment. Surveys were administered to a convenience sample of Middle Tennessee State University students. In general, students thought CS was a fair and effective punishment, but more so for first-time offenders than repeat offenders. Overall, though, students favored harsher punishments than CS orders as well as the incorporation of shame and stigmatization as punishment.

Introduction

One of the most widely used alternatives to incarceration is community service orders (CS). CS is defined as a “punitive or retributive measure that simultaneously enables offenders to offer recompense to the community for their wrongdoings” (McIvor, 1993). The use of CS as an alternative to incarceration for less serious crimes began in Britain, Finland, Scotland, and eventually spread to other western European countries (Harris & Lo, 2002). According to McIvor (1993), the first use of CS in the United States was in Alameda County, California, in 1966, for traffic offenders who were required to perform unpaid labor to benefit the community. In the United States, the intent is to provide an alternative to imprisonment for less serious offenders, including those convicted of nonviolent offenses, traffic violations, including driving under the influence charges, or petty theft (Bouffard, 2007). CS is often perceived as a “slap on the wrist” for offenders rather than an actual punishment. Although it “costs” an individual’s time and labor it does not penalize the offender. Since the 1960s, society has been calling for harsher punishments and this has been reflected in the passing of stricter criminal policies such as the “three strikes law” (Cullen, 2000). One result of this call for an increase in punitive policies is the reemergence of shaming punishments used as standalone sentences or incorporated in CS orders. These types of punishments, which allow an offender’s crimes to be publicized, stigmatize the offenders and allow the public to witness for themselves that justice is being served. But is this punishment effective? Does it deter crime? Does society support the use of CS as an alternative sanction? This study assesses public opinion on offenders who serve CS orders (DUI offenders particularly), the extent to which the public views CS as a punishment, their views on the use of shaming punishments in CS orders, and whether the public thinks these sentences are effective for reducing criminal behavior.
Literature Review

Effectiveness of Community Service Orders

After CS was first used in California in the United States, it quickly became a nationwide alternative. For instance, in 1984, CS work became a statewide program in North Carolina, administered by the Division of Victims and Justice Services in the Department of Crime Control and Public Safety, which required each court district to have at least one CS coordinator to interview, place, and monitor CS work (Harris & Lo, 2002). CS was thought to be rehabilitative for the offender and would thereby reduce recidivism, or future criminal offending (Muiluvuori, 2001) but research on the effectiveness of CS shows mixed findings.

Much of the research that evaluates the effect of CS orders on recidivism was conducted in other countries. For example, a study in Finland that measures the effect of CS on recidivism compared 342 offenders sentenced to CS in 1991-92 with offenders sentenced to prison for eight months in 1992. Those sentenced to CS reoffended significantly less and later than those sentenced to prison (Muiluvuori, 2001). In contrast, a quasi-experimental study conducted in Switzerland compares the recidivism rates of 84 offenders sentenced to CS and 39 offenders given a short term (14 days maximum) prison sentence (Killias et al., 2000). Their results show no significant difference between the two groups although the offenders serving the prison sentence had a slightly higher rate of reconviction (Killias et al., 2000). A similar study using matched samples of offenders conducted in the Netherlands compares the recidivism rates of offenders sentenced to CS to those given a (suspended) short-term jail sentence. During a five-year follow-up period, offenders sentenced to CS recidivated at a lower rate (60%) than did offenders sentenced to jail (80%) (Spaans, 1998).

Of the few evaluations conducted in the United States, one of the most noted is McDonald’s (1986) examination of the impact of CS sentences on adult offenders’ recidivism. Using a quasi-experimental design, McDonald evaluates the New York Bronx CS Sentencing Project, comparing 99 adult offenders who received CS orders to 417 who received a jail sentence. He measures recidivism during a six-month period after release from jail and found that 180 days after CS sentencing or jail release, 43% of CS offenders had been rearrested and 41% of jail offenders had been rearrested. Another American study by Bouffard et al. (2007) compares recidivism rates between 200 offenders serving a CS sentence and 222 first-time DUI offenders sentenced to pay a fine. They find that offenders who served a CS sentence were less likely to reoffend and offenders with a prior criminal record were more likely to reoffend.

Public Attitudes toward Community Service Orders

Research on public attitudes toward CS orders or toward offenders in general is very limited. McIvor (1989), as an example, assesses public attitudes about work done in the community by offenders during their CS orders. Fifteen community service programs sent out postal questionnaires to residents who had recently had CS work carried out in their communities by offenders. The questionnaires included questions such as were they happy with the quality of work done and did they feel it was beneficial? Overall, the respondents were happy with the standard of work and thought it was beneficial to them; 96% were willing to have further work performed by CS teams. Another study in the 1980s looks at the opinions of offenders on CS orders (Varah, 1981). One hundred questionnaires were administered to offenders after completion of their CS orders. The results show that 96% of offenders preferred their CS order to short-term imprisonment and felt that they were given suitable work to perform. When asked what they disliked about CS, 65% reported nothing and the most reported dislike was “having to turn up every Sunday.” In addition, 86% re-
ported that they gained something from the experience, the most reported gain being “learning to work with different people, doing different jobs.” Varah reports that 67 offenders actually signed up for volunteer work after their orders.

These findings show that the general public and offenders’ seem to feel that CS is beneficial and does have some rehabilitative effect. The public does advocate sentencing options that try to rehabilitate the offender, but they usually support these alternative punishments for non-violent offenders only (Cullen, 2000). Responses given in a survey done in 1998 in North Carolina indicate that respondents tended to embrace alternatives for those offenders who committed minor property offenses, drunk drivers, and first-time offenders (Cullen, 2000). If the public seems to support rehabilitative sanctions, then why is there an increase in punitive policies? Cullen (2000) maintains the reason for this contradiction is that society wants rehabilitative sanctions, but does not want to appear to be “soft on crime.” The public advocates CS but not as a standalone punishment because it is “too easy.” Instead, CS orders should be a part of a probation sentence and should also include other penalties such as license suspension. One way to ensure CS orders are punitive is to incorporate additional shame and stigma into them. There are many ways to accomplish this but a few contemporary examples include forcing offenders to wear vests or signs publicizing their crimes or by requiring the offenders to perform humiliating or disgusting activities such as shoveling horse manure or picking up dog feces.

Shame, Punishment, and Community Service Orders

The use of shame as a punishment has a long history in the United States. Before the 19th century, tools such as the pillory, stocks, and branding were used to humiliate, shame, and label the offender (Foucault, 1977). Eventually these types of shaming punishments were deemed barbaric and done away with, but a new form of shaming punishments reemerged in the 1970s (Turley, 2005). These punishments are often coupled with or serve as a type of CS order. Stated simply, shaming punishments are punishments that publicly stigmatize an individual; placing an individual’s crime on display in some blatant manner for the general public to witness.

Judges have become extremely creative with this sentencing option. Some judges even gain fame and notoriety for their shaming sentences, one of them being Texas judge Ted Poe (Murphy, 2001). Like CS orders, shaming punishments are usually reserved for relatively minor first-time offenses (soliciting prostitutes, drunk driving), white collar crimes, and petty theft (“Shame, stigma,” 2003). Shaming punishments can take many forms, such as requiring offenders to publicize their offenses in local newspaper ads, on billboards, or public access channels. For example, in San Francisco, a man guilty of stealing mail was sentenced to stand outside the post office wearing a sign that read “I stole mail, this is my punishment” (Turley, 2005). In North Carolina, four young offenders convicted of causing $60,000 worth of damage to school property were required to wear signs around their necks in public that read “I AM A JUVENILE CRIMINAL” (Turley, 2005). In Kansas City, Montana, a popular television show titled John TV features photographs of people arrested for crimes related to prostitution (Murphy, 2001).

The reemergence of shaming punishments as a sentencing option is controversial. Proponents claim that shaming punishments clearly show the public’s disapproval of criminal activity (Netter, 2005) and society can actually witness the offenders paying for their crime (Book, 1999). They also claim that offenders receive considerable costs to their reputations because of the stigma placed on them which, in turn, causes them to lose respect and could affect other aspects of their lives such as job opportunities (“Shame, stigma”, 2003). Shame is the emotion persons feel when disgraced in the eyes of someone they respect (Kahan, 1996), and is considered a specific deterrent. Stigma in itself is a general deterrent;
others avoid crime by example (Braithwaite, 1989, p.20).

Opponents claim shaming penalties can be detrimental to the offender. One critic, Mark Kappelhoff of the American Civil Liberties Union, describes shame punishment as a “gratuitous humiliation of the individual that serves no societal purpose at all” (Book, 1999, p. 2). Critics also claim that shaming is a self-defeating approach to crime (Braithwaite, 1989, p. 20). Shaming is a powerful tool in society as people care about the views and opinions of others, but it can also be destructive (Braithwaite, 1989, p.18). Some strike out against their condemners or push away from them. Shaming penalties serve to alienate the offender from society and further into a criminal subculture that supports or worsens the offender’s deviant acts (Braithwaite, 1989, pp. 18, 67). Shaming can also lead to harmful emotions. There is a strong correlation between shame and anger, rage, and anxiety (Book, 1999; Deonna, 2008). The stigmatization that occurs during shaming punishments can cause the offender to develop anger at those passing judgment instead of focusing on the wrongness of the crime (Deonna, 2008). This can lead to violence against others or themselves. In Georgia, a man convicted of driving drunk was ordered to have his photo posted in the local newspaper along with the publication of his crime. After he received a call from his mother telling him how ashamed and embarrassed she was of him, he committed suicide (Book, 1999, p.12). Critics also point out that there is no empirical evidence that shows that shaming deters crime for the offender or potential offenders (Kahan, 19).

In 2006, the state of Tennessee passed a law requiring all DUI offenders to wear an orange vest with the words “I am a drunk driver” stenciled on the back of it while they complete their CS, which typically includes roadside litter pick-up (T.C.A. §55-10-403). Other states require DUI offenders to obtain special color-coded license plates. Some have opposed the law claiming that it was unnecessary and ineffectual but what does the general public say about this law? Tennessee policy makers claim they are only giving the people what they want by passing harsher punitive laws (DUI Library, 2005 and Nashville Public Radio, 2006), but does the public really want this? What are public opinions on shaming punishments and does the public think these practices are effective for reducing recidivism?

**Methodology**

**Participants**

By means of convenience sampling, 69 Middle Tennessee State University (MTSU) undergraduate students were pooled for participation in this study during the 2009 summer semester.

**Materials**

Three vignette surveys were created to assess college students’ perceptions of offenders serving community service (CS) orders, and on how labels and stigmatization affected their views on the effectiveness of CS. For each of the surveys the general vignette and questions were the same while the age, gender, and background of each offender were changed. The vignette (see Figure 1) described an offender who was issued a DUI charge (e.g., Mike, Rodriguez, or Nicole) and as a part of their probation was sentenced to 24 hours of CS. During the CS, the offender would have to wear an orange vest with the words “City Court” stenciled on the back while they picked up trash on the roadside. The survey consisted of five questions. Although the questions were in yes/no format, the participants were asked to provide written explanations for their responses below each question as well as their overall opinion on the issue at the bottom of the survey.
### Scenario 1: Mike

While driving home from his eighteenth birthday party, Mike was pulled over by the police and was issued his first Driving Under the Influence (DUI) charge. Along with paying various fines, Mike was sentenced to probation and 24 hours of community service. For three days, eight hours each, Mike had to wear an orange vest with “City Court” on the back of it while he picked up trash on the roadside. Mike was embarrassed and ashamed for other people to see him picking up trash.

1. Do you think that Mike received fair punishment for his crime? Yes or No
2. Do you think that offenders should be stigmatized like Mike was when he had to wear the orange vest with “City Court” on the back of it? Yes or No
3. Mike said that he was ashamed for his friends to see him picking up trash. Do you think that shaming should play a part in probation sentences? Yes or No
4. Do you think that Mike will commit another crime or the same crime again? Yes or No
5. Do you think community service is an effective punishment for offenders? Yes or No

### Scenario 2: Rodríguez

While driving home from a party, Rodríguez, a 38-year-old Hispanic, was pulled over by the police and was issued a Driving Under the Influence (DUI) charge. Along with paying various fines, Rodríguez was sentenced to probation and 24 hours of community service. For three days, eight hours each, Rodríguez had to wear an orange vest with “City Court” on the back of it while he picked up trash on the roadside. Rodríguez was embarrassed and ashamed that other people saw him picking up trash. This is Rodríguez’s fourth time completing community service.

1. Do you think that Rodríguez received fair punishment for his crime? Yes or No
2. Do you think that offenders should be stigmatized like Rodríguez was when he had to wear the orange vest with “City Court” on the back of it? Yes or No
3. Rodríguez said that he was ashamed for his friends to see him picking up trash. Do you think that shaming should play a part in probation sentences? Yes or No
4. Do you think that Rodríguez will commit another crime or the same crime again? Yes or No
5. Do you think community service is an effective punishment for offenders? Yes or No

---

**Instructions:** Please read the following scenario and answer the questions below. Feel free to provide explanations for your answers in the space provided.
Procedure

The surveys were self-administered and completed during scheduled class times with permission of the instructor. Each student was given a consent form, a brief overview of the study, and instructions. The surveys were administered using two different methods classified as Group A and Group B. This method allowed us to determine if the participants would respond differently based on survey administration. In Group A, each student was given all three vignettes at once to complete. A total of 22 students were in this group. In Group B, the vignettes were randomly ordered and each student received only one vignette. A total of 46 students were in this group. The data in each group was then analyzed separately using qualitative and quantitative methods. The responses from each survey were compiled in a Word document and analyzed for common themes and patterns. For the quantitative portion, the binary responses were coded into numeric form and entered into SPSS® version 17.0 for analysis.

Results

The data from both groups showed that students thought CS was fair and effective, and that students supported the use of shame and stigmatization as a punishment. Sixty-nine percent of respondents felt that punishment was fair and 76% felt that it was effective. Seventy-nine percent of respondents felt that offenders should be stigmatized and 69% felt that shaming should play a part in sentencing. Forty-eight percent of respondents felt the offender would recidivate. (See Table 1.)
Table 1. Survey results: Overall responses to the vignettes

<table>
<thead>
<tr>
<th>Question</th>
<th>% Yes</th>
<th>% No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the punishment fair?</td>
<td>69.4</td>
<td>29.7</td>
</tr>
<tr>
<td>Should offender be stigmatized?</td>
<td>79.3</td>
<td>18.9</td>
</tr>
<tr>
<td>Should shaming play a part in sentencing?</td>
<td>69.4</td>
<td>30.6</td>
</tr>
<tr>
<td>Will the offender reoffend?</td>
<td>48.6</td>
<td>46.8</td>
</tr>
<tr>
<td>Is CS an effective?</td>
<td>76.6</td>
<td>16.2</td>
</tr>
</tbody>
</table>

There were differences between the vignettes on measures of fairness and effectiveness of the punishment, and the likelihood of recidivism. Respondents felt that CS was not as fair for Rodriguez (45%), as it was for Mike (76%) and Nicole (81%) (p<.001). In their written responses, respondents indicated that Rodriguez should receive a harsher punishment such as jail time. Respondents also thought that Rodriguez (85%) was significantly more likely to recidivate than Mike (30%) and Nicole (26%) (p<.001). For effectiveness of the punishment, respondents thought that the punishment was more effective for Mike (80%) and Nicole (84%), but less effective for Rodriguez (61%), however this difference was not statistically significant. (See Figures 2 and 3.)

To determine whether the method of survey administration affected responses, a comparison was run, using a chi-square test, between Groups A and B. There was a significant difference between Group A, $\chi^2(2) = 7.675$, $p = .022$, and Group B, $\chi^2(4) = 11.224$, $p = .024$ on the fairness of punishment for Mike and Nicole. In Group A, 76% believed Mike’s punishment was fair compared to 86% in Group B. Also, in Group A, 81% felt that Nicole’s punishment was fair compared to 92% in Group B. (See Figure 2.)

There was also a significant difference between Group A, $\chi^2(2) = 18.421$, $p = .000$ and Group B, $\chi^2(8) = 25.069$, $p = .002$ regarding the likelihood of recidivism. In Group A, 36% thought Nicole would reoffend compared to only 7% in Group B. For Rodriguez, 90% of Group A respondents felt that he would reoffend compared to 77% in Group B. (See Figure 3.) There was no significant difference between the group responses for the other three survey questions.
Figure 2. Fairness: Percentage of respondents who thought CS is a fair punishment by vignette and survey group

![Fairness Bar Chart]

Figure 3. Recidivism: Percentage of respondents who thought offender would recidivate by vignette and survey group

![Recidivism Bar Chart]

The qualitative results are separated into groups based on three themes that emerged from the responses. These themes include an emphasis on first-time versus repeat offenders, whether CS was an effective punishment for DUI offenders, and general comments regarding shaming and stigmatization as punishment. Each of these themes along with relevant quotes from respondents is presented and described in the following paragraphs.
First-time versus Repeat Offenders

The majority of respondents considered CS to be useful for the community, but only if the offender took the punishment seriously and only for first-time offenders. A sample of written responses is provided below:

“This aids the community as well as the offenders. However it will not be effective for 100% of offenders.”
“Much better than imprisonment.”
“I would rather have an offender do community service and be productive than have them sit in jail doing nothing.”
“It helps the community and creates a sense of ‘I don’t wanna do that again’ in the offender.”
“Yes. For the first-time minor offenses, appropriate.”
“I don’t think it’s effective but I think they should do it because it’s an inconvenience so it can kinda be punishment.”
“It is effective for some offenders, but I believe in harsher punishments for repeat offenders.”

Indeed, similar to the last comment above, most respondents seemed to think that CS was not sufficient punishment for repeat offenders. Offenders like Rodriguez were seen to deserve jail time:

“Multiple offenders need harsher sentences, but CS should still be a part of it. Our tax dollars go to pay for their life in jail. The least they could do is give back.”
“If it is his fourth offense then community service is not effective and punishment should be increased.”
“Obviously if it was his fourth time for community service the punishment wasn’t getting through.”
“The fact it’s his fourth time calls for a stricter punishment. However it is fair to embarrass someone if it’s their fourth time.”

Effective punishment for DUI offenders

Respondents placed a great deal of emphasis on DUI as a harsh crime that demanded serious penalties. Some considered DUI too serious a crime for CS, others mentioned other additional penalties that the DUI offender should have along with CS:

“Punishment should be greater though, including suspension of her license.”
“I think DUI offenders should receive months in jail not community service.”
“Mike should have received more CS hours and taken a class on DUI, sobriety, etc. (and/or suspension of license).”
“He should have gotten a harder sentence. DUI offenders should be dealt with intensively so they don’t commit it again.”
“I think that drunk drivers should have to look at 101 videos of tragic deaths caused by people with DUI offenses. What if he hit your family?”
Shaming and Stigmatization as Punishment

Most respondents felt that shame and stigmatization should be used as punishments and they felt that it was a deterrent:

“It gives them something to think about and maybe they won’t do it in the future if it causes embarrassment.”
“I think that the embarrassment was a good punishment itself. He should wear a sign that says ‘I’m a drunk driver.’”
“I don’t see a problem with being shamed if you’re caught driving drunk and could easily wreck someone and kill them.”

However, there were a few dissenting views:

“I think that CS is fine for offenders, but wearing the orange vest and stigmatizing Nicole does not help anything.”
“If you commit a crime or endanger the lives of others you should be punished but stigmatization and shame effects are only temporary.”
“I think shaming can be an effective deterrent but it can also lead to more crime as a result of being labeled as a deviant.”

Discussion

This research sought insight into public opinion on CS use as a punishment and the incorporation of shame and stigmatization into CS orders. The findings show that the majority of respondents consider CS to be an effective and fair punishment. They also favor shaming and stigmatizing offenders as a part of CS punishments. How can respondents think that CS is fair and effective but ask for more punishment? As previous research shows (Cullen, 2000), the public supports CS and other alternative sanctions, but do not want to seem too lenient on offenders. A national poll in 1996 reported that 53% of respondents felt that probation was too lenient (Cullen, 2000).

While respondents supported CS overall, they believed that it was more effective for first-time offenders. In written responses they called for a stricter punishment for Rodriguez, because they felt CS orders and shaming were not “working.” The findings of this study are consistent with the previous research that shows that the public advocates incarceration for violent offenders and repeat offenders (Cullen, 2000).

Although punishment is needed when shaming is not effective, it is likely that if shaming does not work, jail will not work either (Braithwaite, 1989, p. 73). Jails and prisons are a revolving door for offenders and yet society still advocates its use. However, polls show that society does not feel that incarceration is effective. A survey of respondents in Iowa asked if offenders are more dangerous after prison, and 66% answered yes (Cullen, 2000). Another poll in New Hampshire stated that jails and prisons turned out hardened criminals, with 48% of respondents in agreement with that statement (Cullen, 2000). It seems as if society views prison as a holding pen for offenders. They feel it is not rehabilitative or effective, but it keeps them off the streets. That is, it serves to incapacitate rather than deter or rehabilitate. Although this is a convenient solution, it is not an effective or smart one. Future research could compare the recidivism rates between offenders serving jail time and those completing service as well as serving jail time to determine if productive, beneficial work for the community while in jail could have a rehabilitative effect on offenders.

In the current study, CS is viewed as more effective for Mike and Nicole because of their ages, and because it was their first offense. It seems that respondents judged that CS was good enough because “kids will be kids,” and they are expected to get at least one DUI.
Also, teenagers are extremely attuned to what others think about them, so shaming punishments should have the most impact on them.

After comparing results between the three vignettes and two groups, we find evidence of gender bias in respondents’ opinions regarding Nicole compared to Mike. In Group A, when participants were given all three vignettes, there was little difference in their thoughts on reoffending between Nicole (36%) and Mike (33%). However in Group B only 7% of respondents felt that Nicole would reoffend. Nicole was seen as the least likely to reoffend even though she was the same age, committed the same crime, and had the same criminal history as Mike. A prevailing gender stereotype is that women are more self-conscious than men and thus are more susceptible to shame, and women generally are not “criminals.” One respondent wrote “I think if it were a male the shaming might not work as well as it does with females.” Since most respondents believe that women care more about others’ opinions than men, then shaming punishments should be effective for them. Future research should focus on gender and CS orders.

There were several limitations in this study. First, this was not a representative sample and thus the results cannot be generalized beyond the limited number of MTSU student respondents. Second, the participants were not asked about their criminal history, which could affect their responses. Third, the gender and age of the respondents along with other socio-demographic information was not obtained, which could also affect their responses. A future design of this study should consider criminal history as well as key socio-demographic characteristics of the respondent influences their attitudes toward CS.

References


Tennessee Code Annotated § 55-10-403.


Characterization of Brain Specific Isoforms of Bipolar Genes and Proteins

Suzanne S. Hicks

Dr. Rebecca L. Seipelt
Biology

Alternative splicing, a common mechanism of regulated gene expression, is a process of inclusion or exclusion of regions of the pre-mRNA which create different RNAs and thus different proteins from a single gene. These proteins provide varied functions for cells in which they are produced. Because alternative splicing is prevalent and has wide-ranging effects, it is of interest to examine alternative splicing in four bipolar-related genes in four brain regions implicated in moods and bipolar disorder. The genes are DISC1, IMPA2, NRG1, and P2RX7 and the brain regions are amygdala, basal ganglia, hypothalamus, and substantia nigra. Reverse transcription-polymerase chain reaction combined with agarose gel electrophoresis is used to identify splicing patterns. A genomic database (AceView) containing cDNA evidence for utilization of such genomic regions as exons and introns is used to determine the gene structure for each of the four genes. The genes are divided into distinct regions in which alternative splicing is predicted. Gene-specific primers are designed to differentiate among the alternative splicing choices by size determination. Finally, cloning and sequencing of cDNA samples and in silico prediction of mRNA isoforms/protein variants are conducted.

Bipolar disorder is a debilitating brain disorder that inhibits the ability to function in everyday life (Health). This disorder encompasses excessive changes in mood and energy. Those suffering from bipolar disorder often have relationship problems, poor job or school performance and may even commit suicide.

Oftentimes, bipolar disorder symptoms do not emerge until early adulthood when many life decisions are being made. When someone is suffering from untreated bipolar disorder, their decisions are being affected by the many irrational thoughts they are dealing with. The decisions they make will impact the rest of their lives even when the irrational thoughts have lifted.

For many years, scientists investigated the connection between bipolar disorder and genetics using family, twin, and adoption studies. A previous study of the Maudsley Twin Register finds a concordance rate in monozygotic (identical) twins of 36% and dizygotic (non-identical) twins at 7% (Cardno et al. 1999). Another study shows a concordance rate for monozygotic twins of 43% and 6% for dizygotic (non-identical) twins (Kieseppa et al. 2004). An additional study of the Swedish Psychiatric Twin Registry and Swedish Twin Registry same-sex twins born from 1886-1967 provides a concordance rate for monozygotic twins and dizygotic twins of 38% and was 4%, respectively (Kendler et al. 2006). The differences in the monozygotic and dizygotic concordance rates suggest a significant genetic component. As would be expected for a complex genetic disorder, several specific genes have since been implicated in bipolar disorder, such as SLC6A4, TPH2, DRD4, SLC6A3, DAOA, DTNBPI, NRG1, DISCI and BDNF, through linkage studies (reviewed in Serretti and Mandelli, 2008). These genes are known to be expressed in brain cells, but human gene
regulation is not as simple as a single gene producing a single protein. One such complexity in gene regulation is that nearly 80% of human genes are estimated to be alternatively spliced (Lee et al. 2008).

Alternative splicing is a regulated process of inclusion or exclusion of regions of the pre-mRNA. First, DNA is transcribed into pre-mRNA. By alternative splicing, the introns are removed and the exons are spliced together in a variety of ways. The different RNAs therefore encode different variant proteins with potentially unique functions. These mRNA isoforms/protein variants can be generated at different times in development, such as the antibody isoforms in B cell development (Peterson 2007), in different tissues, such as the troponin T isoforms in skeletal and smooth muscle (Jin 2008) or in the alternative splicing of several genes in cancer cells (Lee et al. 2008). Because alternative splicing is so prevalent and can have wide-ranging effects, it is of interest to examine the possibility of alternative splicing in four different bipolar-related genes, (DISC1, IMPA2, NRG1, and P2RX7) in regards to brain gene expression, with a particular interest in regions of the brain that are implicated in moods and bipolar disorder.

**DISC1** encodes a protein with multiple coiled motifs which is located in the nucleus, cytoplasm and mitochondria, and is involved in neuron outgrowth and cortical development (Altshuler et al. 2005, Miyoshi et al. 2004, Morris et al. 2003). A recent study with a large Scottish family identifies DISC1 as a disrupted gene located on chromosome 1q42 associated with schizophrenia, bipolar disorder and depression (Blackwood et al. 2001; Millar et al. 2000). Genetic linkage and association studies also show DISC1 to be associated with schizophrenia, bipolar disorder and depression (Harrison and Weinberger 2005, Ishizuka et al. 2006, Mackie et al. 2007).

The second gene of this study, **IMPA2**, encodes a protein belonging to the GTP-binding super family and to the immuno-associated nucleotide subfamily of nucleotide-binding proteins (Yoshikawa et al. 1997). A recent study finds an association between manic depressive illness and the IMPA2 gene (Sjoholt et al. 2004). This supports several reports on the linkage of bipolar disorder to chromosome 18p11.2 and sustains IMPA2 as a susceptibility gene in bipolar disorder.

The third gene selected for study is **NRG1**, one of four neuregulin genes located on chromosome 8p12. Thomson (2007) reports a significant association of the NRG1 gene with schizophrenia and bipolar disorder. NRG1 is a signaling protein that is involved in cell-cell interactions and has a significant function in the growth of organ systems (Tan et al. 2007).

The final gene selected for this study is **P2RX7**. This gene belongs to a family of purinoceptors for ATP. P2RX7 is a receptor that functions as a ligand-gated ion channel and is responsible for ATP-dependent lysis of macrophages through the formation of membrane pores permeable to large molecules (Rassendren et al. 1997). According to one study, P2RX7 influences susceptibility to both bipolar disorder and unipolar depression (Barden et al. 2004). Another study also identifies P2RX7 as a susceptibility gene to bipolar disorder (Barden et al. 2006).

Several independent studies implicate four regions of particular interest in mood disorders: amygdala, basal ganglia, hypothalamus, and substantia nigra. A 2004 analysis of the brain in bipolar disorder patients shows significantly abnormal levels of hypothalamic-pituitary-adrenal axis function indicating a potential trait marker for bipolar disorder (Watson et al. 2004). A study in 2005 utilizing functional magnetic resonance imaging while performing an experimental task and a control task provides evidence for increased activation in the amygdala. Decreased activation in the frontal cortex may represent disruption of a pathway involved in mania (Altshuler et al. 2005). A 2006 report finds shape alterations in the basal ganglia of those with bipolar disorder and indicates that the differences may be modulated by treatment (Hwang et al. 2006). Another study shows that Parkinson’s disease patients produce manic behavior when receiving deep brain stimulation mainly in the sub-
stantia nigra (Ulla et al. 2006). Significantly decreased neuron cell body size in the amygdala are found in bipolar disorder patients (Bezchlibnyk et al. 2007).

Genomic databases suggest that all four genes are expressed in the brain as a whole, and previous studies showed evidence of extensive alternative splicing in the four brain regions implicated in mood disorders: the amygdala, basal ganglia, hypothalamus, and substantia nigra (Hicks and Seipelt 2008). The purpose of this study is to further characterize unexpected mRNA isoforms, determine the protein coding potential for mRNA isoforms utilizing the observed splicing patterns, and finally determine how the predicted protein variants might differ from the reference sequence.

**Methods**

**Determination of Splicing Pattern Used in vivo Using cDNA Size**

A genomic database containing cDNA evidence for utilization of genomic regions as exons and introns, AceView, is used to determine the gene structure for each of the four genes. The genes are then divided into distinct regions and gene-specific primers are selected. Sizes of previously produced cDNAs from distinct regions of four genes using gene-specific primers for four bipolar-related genes are used to differentiate among alternative splicing choices. However, absolute confirmation requires DNA cloning and sequencing.

**Cloning and Sequencing of cDNA Samples**

The cDNA samples from each reverse-transcription reaction are purified and ligated into the pDrive vector (Qiagen) as suggested by the manufacturer, except that the ligation was allowed to proceed for 24 hours prior to transformation. The ligation is transformed by electroporation into DH5α or XL-1 Blue E. coli cells. Cells are analyzed by growing overnight at 37°C on tryptic soy agar plates which contain 50µg/ml kanamycin with 50 µl X-gal and 20 µl IPTG.

White colonies are harvested and placed in a test tube of 2 ml of tryptic soy broth and 50µg/ml kanamycin. These are grown overnight in a shaking incubator at 250 RPM at 37°C. To determine if the gene is inserted into the plasmid, PCR is performed and analyzed using electrophoresis to compare fragment sizes.

DNA is then purified using the Wizard Plus SV Minipreps DNA purification System protocol. Beckman Coulter Quick start kit and T7 primer is used to prepare the sequencing reactions. The DNA is cleaned as per manufacturer’s directions and is stored at 4°C. Capillary electrophoretic sequencing employs the Beckman Coulter CEQ800 DNA sequencer. These sequences are then compared to information from the National Center for Biotechnology Information website (http://blast.ncbi.nlm.nih.gov/Blast.cgi).

Cloning of the cDNAs proved technically difficult and a considerable amount of time and effort was expended pursuing and trouble-shooting the purification, cloning, and sequencing of DNA fragments. Several cloning artifacts were sequenced, but none yielded productive sequence for analysis. Therefore, size determination was used for identification.

**Prediction of mRNA Isoforms/Protein Variants Used in vivo**

When the splicing pattern can be identified, possible mRNA isoforms are assembled from the putative AceView exons. Each mRNA isoform is then translated in silico using ExPASy Translate tool (http://www.expasy.ch/tools/dna.html). Amino acid sequence comparison is made using the Protein Information Resource multiple alignment tool (http://pir.georgetown.edu) and BoxShade server (http://www.ch.embnet.org/software/)
BOX_form.html) to determine how different isoforms would compare to the reference sequence protein. Domains of the protein variants are found using the InterProScan (http://ebi.ac.uk/Tools/InterProScan/) web-based algorithm.

Results

The four areas of the brain active in emotion and moods, which have been linked to bipolar mood disorders, are the amygdala, basal ganglia, hypothalamus, and substantia nigra. In addition, many genes have been linked to bipolar phenotypes, including DISC1, IMPA2, NRG1 and P2RX7. Since the brain is a dynamic organ composed of different cell types with numerous functions that respond to the environment and because gene regulation by alternative splicing is a sensitive mechanism for altering gene expression, it is of interest to examine the possibility of alternative splicing in bipolar-related genes and tissues.

DISC1

The first gene to be considered is DISC1 whose reference sequence mRNA includes 13 exons and encodes an 832 amino acid protein. One region from exons 9 to 12 is successfully examined (Region A, Fig 1, Table 1). In addition to cDNA fragment corresponding to the reference sequence (433 bp), a second splicing pattern is also utilized. By size, the second cDNA fragment uses an alternative 5’ splice site at exon 11 (509 bp). Both the reference sequence splicing pattern and the alternative 5’ splice site is observed in all four regions.

Figure 1. Disrupted-in-Schizophrenia 1 (DISC1) gene diagram showing exons and introns of the gene and regions analyzed for exon inclusion/exclusion and mRNA isoform predictions. The thirteen reference sequence exons are indicated with black boxes and one alternative exon is indicated by a hatched box. Twelve introns are shown by lines between the exons. The reference sequence splicing pattern includes all exons, 1-13. The region examined for alternative splicing and mRNA isoform possibilities are represented by rectangles below the exon map.
Table 1. Disrupted-in-Schizophrenia 1. DISC1 reference sequence region with exons and isoform number, alternative exons included/excluded, and expected cDNA length. Hash marks indicate no addition or exclusion of exons.

<table>
<thead>
<tr>
<th>DISC1 REGION + REF SEQ EXONS INCLUDED</th>
<th>ISOFORM #</th>
<th>ALTERNATIVE EXONS ADDED</th>
<th>REF SEQ EXONS EXCLUDED</th>
<th>EXPECTED cDNA LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region A Exons 9-12</td>
<td>REF SEQ</td>
<td></td>
<td></td>
<td>433 bp</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>66 bp between E11 &amp; E12</td>
<td></td>
<td>599 bp</td>
</tr>
</tbody>
</table>

Based on the cDNA size evidence, two isoforms, a reference sequence isoform and alternative isoform 1 are constructed in silico from AceView database sequences. These mRNA isoforms are then translated into protein in silico using the web-based ExPASy TRANSLATE algorithm. The reference sequence encodes a putative 832 amino acid protein, while isoform 1 is predicted to encode an 854 amino acid protein (Table 2).

Table 2. DISC1 predicted protein variants with domain comparison. The table includes DISC1 region surveyed with mRNA and the predicted protein variant. Variant amino acids are specified along with DISC1 reference sequence protein domains included in variants indicated by a X.

<table>
<thead>
<tr>
<th>mRNA Isoform</th>
<th>Predicted Protein Variant</th>
<th># of Amino Acids</th>
<th>DOMAINS INCLUDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region A</td>
<td>REF SEQ</td>
<td>832</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Isoform 1</td>
<td>854</td>
<td>X</td>
</tr>
</tbody>
</table>

A comparison is then performed between the reference sequence and isoform variant using CLUSTAL multiple alignment at the Protein Information Resource (PIR) and the putative protein domains identified using the web-based InterProScan algorithm. The reference sequence contains one major domain, prefoldin, which is also found in isoform 1 (Table 2, Fig. 2). The prefoldin domain is from amino acid 453 – 586 and is part of a molecular chaperone system that promotes the correct folding of nascent polypeptide chains.
Figure 2. DISC1 reference sequence protein and protein variant 1 multiple alignment.

Ref Seq  1
MGGPCGAGAAGGGYSGHABRRASSCPLPAAECFRRRLRPPFGYRSTSGPPIGFLSAPVGTFLFPPGCG
Isoform  1
MGGPCGAGAAGGGYSGHABRRASSCPLPAAECFRRRLRPPFGYRSTSGPPIGFLSAPVGTFLFPPGCG

Ref Seq  71
VSGELSHEHSSRHACQGCGDSRLLVRSPVRAASAPVSVRGTSAHFGIQLRRGTRLPDRLWPCGCS
Isoform  71
VSGELSHEHSSRHACQGCGDSRLLVRSPVRAASAPVSVRGTSAHFGIQLRRGTRLPDRLWPCGCS

Ref Seq  141
ACGCGEFAMOSSSTLTDAWAEACSGRVARASPAELSSN3CSCGGPPGPEVFPTPPGSHTAFTSTSF
Isoform  141
ACGCGEFAMOSSSTLTDAWAEACSGRVARASPAELSSN3CSCGGPPGPEVFPTPPGSHTAFTSTSF

Ref Seq  211
SPIRLKLSAGGSEAEAGEEPFSSREAEHCSQPQMGAKAAASLDGHPHEDPRCLSRRPSSLATRVSADLAQ
Isoform  211
SPIRLKLSAGGSEAEAGEEPFSSREAEHCSQPQMGAKAAASLDGHPHEDPRCLSRRPSSLATRVSADLAQ

Ref Seq  281
ARNRSRRERDMHLSFMPGSGSSLDSLAPACCGDGSGSDDASNDTLRKFPEVLRLDCLLRRNQMEV
Isoform  281
ARNRSRRERDMHLSFMPGSGSSLDSLAPACCGDGSGSDDASNDTLRKFPEVLRLDCLLRRNQMEV

Ref Seq  351
LSKRLKQCKLQGQADEAVENDDYKHAEATLLQQRLEDQEKLISLHCLPSQROPALSSFLGHLAAOVQALRG
Isoform  351
LSKRLKQCKLQGQADEAVENDDYKHAEATLLQQRLEDQEKLISLHCLPSQROPALSSFLGHLAAOVQALRG

Ref Seq  421
PQAGHPTLPRLMMKPFLLPFLEPTAQSDLHVS1ITRDRWLLQERQQLQIEDEIQARMFVLEAKQQLRREI
Isoform  421
PQAGHPTLPRLMMKPFLLPFLEPTAQSDLHVS1ITRDRWLLQERQQLQIEDEIQARMFVLEAKQQLRREI

Ref Seq  491
CECGQNYWGGCDTLPLVGLSLQGEVSKALQDTLASAGQIPFHAEPFETIRSLQERIKLNLKLRK
Isoform  491
CECGQNYWGGCDTLPLVGLSLQGEVSKALQDTLASAGQIPFHAEPFETIRSLQERIKLNLKLRK

Ref Seq  561
TTCVCEMFKTSLRKYVYDQTPALLEAKMHAISNHFRTAKDLTEIRSLTSEREGLEGLYSLC
Isoform  561
TTCVCEMFKTSLRKYVYDQTPALLEAKMHAISNHFRTAKDLTEIRSLTSEREGLEGLYSLC

Ref Seq  631
LSWWNKIYKLSVYGKEDYNRLREWEHQETAYETSVKENTMKTLYMELTKKLCSCCKPLLGKeweADLEC
Isoform  631
LSWWNKIYKLSVYGKEDYNRLREWEHQETAYETSVKENTMKTLYMELTKKLCSCCKPLLGKeweADLEC

Ref Seq  701
LQSLQFQAEAGSLSTVEDQDMDEGAAPPFPFLHSEDKRKL
Isoform  701
LQSLQFQAEAGSLSTVEDQDMDEGAAPPFPFLHSEDKRKL

Ref Seq  749
SYLSAELGEKCGDEGKLLYLDEQLHTAISHHDEDLIQSLRRELQMVETLQAMILQPAKEAGEREA
Isoform  749
SYLSAELGEKCGDEGKLLYLDEQLHTAISHHDEDLIQSLRRELQMVETLQAMILQPAKEAGEREA

Ref Seq  819
AASCMTA5VHEQA
Isoform  841
AASCMTA5VHEQA
The second gene is IMPA2 whose reference sequence mRNA includes 8 exons and encodes a 190 amino acid protein. Three regions from exons 1-5 (A), exons 3-6 (B), and exons 6-8 (C) are successfully examined (Region A-C, Fig 3, Table 3). For region A, skipping of exon 2 is observed in all tissues (200 bp). For region B and C, an expected splicing pattern is observed which produce cDNAs of 500 and 425 bp, respectively. These unpredicted cDNAs are found only in amygdale (region B), basal ganglia and hypothalamus (region C). These are of particular interest because they were not predicted; however, technical difficulties did not permit further identification other than additional sequence.

**Figure 3.** Inositol monophosphatase 2 (IMPA2) gene diagram showing exons and introns of the gene and regions analyzed for exon inclusion/exclusion and mRNA isoform predictions. The eight reference sequence exons are indicated with black boxes. Seven introns are shown by lines between the exons. The reference sequence splicing pattern includes all exons, 1-8. The region examined for alternative splicing and mRNA isoform possibilities are represented by rectangles below the exon map. Black rectangles indicate where alternative splicing patterns are observed. White rectangles indicate where alternative splicing patterns are observed. However, mRNA exon structure cannot be determined.

**Table 3.** Inositol monophosphatase 2. IMPA2 reference sequence region with exons and isoform number with alternative exons included/excluded. Hash marks indicate no addition or exclusion of exons.

<table>
<thead>
<tr>
<th>IMPA2 REGION + REF SEQ EXONS INCLUDED</th>
<th>ISOFORM #</th>
<th>ALTERNATIVE EXONS ADDED</th>
<th>REF SEQ, EXONS EXCLUDED</th>
<th>EXPECTED CDNA LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region A Exons 1-5</td>
<td>REF SEQ</td>
<td>-</td>
<td>-</td>
<td>459 bp</td>
</tr>
<tr>
<td>Region B Exons 3-6</td>
<td>REF SEQ</td>
<td>-</td>
<td>E2</td>
<td>200 bp</td>
</tr>
<tr>
<td>Region C Exons 8-9</td>
<td>REF SEQ</td>
<td>-</td>
<td>-</td>
<td>292 bp</td>
</tr>
</tbody>
</table>

Based on the cDNA size evidence, two isoforms, a reference sequence isoform and isoform 1 are constructed in silico from AceView database sequences. These mRNA isoforms are then translated into protein in silico using the web-based ExPASy TRANSLATE algorithm.
The reference sequence encodes a putative 190 amino acid protein, while isoform 1 is predicted to encode a 104 amino acid protein (Table 4). The other isoforms, 2 and 3, are not constructed because the coding regions could not be predicted from the fragment size.

**Table 4.** IMPA2 predicted protein variants with domain comparison. Table includes IMPA2 region surveyed with mRNA and the predicted protein variant. Variant amino acids are specified along with IMPA2 reference sequence protein domains included in variants indicated by a X.

<table>
<thead>
<tr>
<th>IMPA2</th>
<th>mRNA Isoform</th>
<th>Predicted Protein Variant</th>
<th># of Amino Acids</th>
<th>IMP Motifs</th>
<th>Inositol_</th>
<th>IMP Lithium-</th>
<th>IMP Metal-</th>
<th>Signal Peptide</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RefSeq</td>
<td>190</td>
<td>1 &amp; 2</td>
<td>X</td>
<td>1 &amp; 2</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Region A</td>
<td>Isoform1</td>
<td>104</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A comparison is then made between the reference sequence and isoform variant using CLUSTAL multiple alignment at the Protein Information Resource (PIR) and the putative protein domains identified using the web-based InterProScan algorithm. The reference sequence contains five major domains, IMP motifs (1 and 2, amino acids 125-141 and 174-190), Inositol P (amino acid 102-185), IMP lithium-sensitive motifs (1 and 2, amino acids 148-158 and 176-190), IMP metal-binding site (amino acids 122-135), and a signal peptide (amino acids 1-16) (Table 4, Fig. 4). All except for the signaling domain are important for inositol or phosphatidylinosital phosphatase activity.

**Figure 4.** IMPA2 reference sequence protein and protein variant 1 multiple alignment.

NRG1

The third gene is NRG1 whose reference sequence mRNA includes 13 exons and encodes a 897 amino acid protein. Three regions from exons 3-9 (A), exons 6-9 (B), and exons 11-13 (C) are successfully examined (Region A-C, Fig 5, Table 5). For region A, skipping of exon 3 and 4 is observed in all tissues (~275 bp). For region B and C, an expected splicing pattern is observed which produces cDNAs of 263 and 390 bp, respectively, in all tissues. There is an unexpected cDNA in both region A (600 bp) and C (700 bp). These unpredicted cDNAs are found only in substantia nigra (region A), basal ganglia and hypothalamus (region C). These are of particular interest because they were not predicted but technical difficulties did not permit further identification other than additional sequence.
Figure 5. Neuregulin 1 (NRG1) gene diagram showing exons and introns of the gene and regions analyzed for exon inclusion/exclusion and mRNA isoform predictions. The thirteen reference sequence exons are indicated with black boxes two alternative exons are indicated by hatched boxes. Fourteen introns are shown by lines between the exons. The reference sequence splicing pattern includes all exons 1-13 The region examined for alternative splicing and mRNA isoform possibilities are represented by rectangles below the exon map. Black rectangles indicate where alternative splicing patterns was observed. White rectangles indicate where alternative splicing patterns was observed but mRNA exon structure could not be determined.

Table 5. Neuregulin 1 (NRG1) reference sequence region with exons and isoform number with alternative exons included/excluded. Hash marks indicate no addition or exclusion of exons.

<table>
<thead>
<tr>
<th>Region A</th>
<th>REF SEQ</th>
<th>ALTERNATIVE EXONS INCLUDED</th>
<th>REF SEQ EXONS EXCLUDED</th>
<th>EXPECTED cDNA LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exons 3-9</td>
<td>REF SEQ</td>
<td>-</td>
<td>Exons 4 &amp; 5</td>
<td>~275 bp</td>
</tr>
<tr>
<td>Exons 6-9</td>
<td>REF SEQ</td>
<td>-</td>
<td>Exon 8</td>
<td>287 bp</td>
</tr>
<tr>
<td>Exons 11-13</td>
<td>REF SEQ</td>
<td>Includes 142 bp exon between exon 12 &amp; 13</td>
<td>-</td>
<td>395 bp</td>
</tr>
</tbody>
</table>

Based on the cDNA size evidence, four isoforms, a reference sequence isoform, isoform 1, 4, and 5, are constructed in silico from AceView database sequences. These mRNA isoforms are then translated into protein in silico using the web-based ExPASy TRANSLATE algorithm. The reference sequence encodes a putative 897 amino acid protein, while isoforms 1, 4, and 5 are predicted to encode 836, 862, and 944 amino acid pro-
peptides, respectively (Table 6). The other isoforms, 2, 3 and 6, are not constructed because the coding regions could not be predicted from the fragment size.

<p>| Table 6. | NRG1 predicted protein variants with domain comparison. The table includes NRG1 region surveyed with mRNA and the predicted protein variant. Variant amino acids are specified along with NRG1 reference sequence protein domains included in variants indicated by a X. |</p>
<table>
<thead>
<tr>
<th>NRG1 Isoform</th>
<th>Predicted Protein Variant</th>
<th># of Amino Acids</th>
<th>Neuregulin EGF-like motifs</th>
<th>Neuregulin 1-related, C-terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF SEQ</td>
<td>1</td>
<td>897</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Isoform 1</td>
<td>1</td>
<td>836</td>
<td>1,2,3,4</td>
<td>X</td>
</tr>
<tr>
<td>Isoform 4</td>
<td>4</td>
<td>862</td>
<td>1,2,3,4</td>
<td>X</td>
</tr>
<tr>
<td>Isoform 5</td>
<td>5</td>
<td>944</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

A comparison is then performed between the reference sequence and isoform variant 1, 4, and 5 using CLUSTAL multiple alignment at the Protein Information Resource (PIR) and the putative protein domains identified using the web-based InterProScan algorithm. The reference sequence contains two major domains, Neuregulin EGF-like motifs (1-4) and Neuregulin 1-related C-terminal (Table 6, Fig. 6). Both domains are found in isoform 4 and 5. Neuregulin EGF-like motifs, located at amino acids 343-356, 364-375, 381-398, and 409-419, is involved in receptor binding and embryonic development. Neuregulin 1-related, C-terminal is located at amino acid 260-636.

Figure 6. NRG1 reference sequence protein and protein variant 1, 4, and 5 multiple alignment.
Figure 6, cont.
The last gene examined is P2RX7 whose reference sequence mRNA includes 13 exons and encodes a 596 amino acid protein. Two regions from exons 1-3 (A), exons 3-6 (B), are successfully examined (Region A and B, Fig 7, Table 7). For region A, skipping of exon 2 is observed in the substantia nigra (82 bp), and inclusion of alternative 139 bp exon between exon 2 and 3 (390 bp) can be seen in the amygdale and substantia nigra. For region B, an expected splicing pattern is observed which produced cDNAs of 385 bp, and is observed in all tissues. There is an unexpected cDNA in both region A (600 bp) and C (700 bp).

**Figure 7.** P2X purinoceptor 7 (P2RX7) gene diagram showing exons and introns of the gene and regions analyzed for exon inclusion/exclusion and mRNA isoform predictions. The thirteen reference sequence exons are indicated with black boxes and two alternative exons are indicated by hatched boxes. Thirteen introns are shown by lines between the exons. The reference sequence splicing pattern includes all exons 1-13. The region examined for alternative splicing and mRNA isoform possibilities are represented by rectangles below the exon map. Black rectangles indicate where alternative splicing patterns were observed. White rectangles indicate where alternative splicing patterns was observed but mRNA exon structure cannot be determined.
Table 7. P2X purinoceptor 7 (P2RX7) reference sequence region with exons and isoform number with alternative exons included/excluded. Hash marks indicate no addition or exclusion of exons.

<table>
<thead>
<tr>
<th>P2RX7 REGION + REF SEQ EXONS INCLUDED</th>
<th>ISOFORM #</th>
<th>ALTERNATIVE EXONS ADDED</th>
<th>REF SEQ EXONS EXCLUDED</th>
<th>EXPECTED cDNA LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region A Exons 1-3</td>
<td>REF SEQ</td>
<td>-</td>
<td>-</td>
<td>251 bp</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>-</td>
<td>E2</td>
<td>82 bp</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>139 bp between E2 &amp; E3</td>
<td>-</td>
<td>390 bp</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Unknown inclusion</td>
<td>-</td>
<td>750</td>
</tr>
</tbody>
</table>

Region B Exons 3-6

<table>
<thead>
<tr>
<th>REF SEQ</th>
<th>Alternative 3' splice site at E5</th>
<th>-</th>
<th>-</th>
<th>385 bp</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Unknown inclusion</td>
<td>-</td>
<td>-</td>
<td>800 bp</td>
</tr>
</tbody>
</table>

Based on the cDNA size evidence, three isoforms, a reference sequence isoform and alternative isoforms 2 and 4 are constructed in silico from AceView database sequences. These mRNA isoforms are then translated into protein in silico using the web-based ExPASy TRANSLATE algorithm. The reference sequence encodes a putative 596 amino acid protein, while isoforms 2 and 4 are predicted to encode a 642 and 1064 amino acid protein, respectively (Table 8). The other isoforms, 1, 3 and 5, are not constructed because the coding regions cannot be predicted from the fragment size.

Table 8. P2RX7 predicted protein variants with domain comparison. Table includes P2RX7 region surveyed with mRNA and the predicted protein variant. Variant amino acids are specified along with P2RX7 reference sequence protein domains included in variants indicated by a X.

<table>
<thead>
<tr>
<th>P2RX7</th>
<th>mRNA isoform</th>
<th>Predicted Protein Variant</th>
<th># of Amino Acids</th>
<th>P2X7 Receptor Motifs</th>
<th>P2X Receptor Motifs</th>
<th>P2X Purinoceptor</th>
<th>Signal Peptide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region A</td>
<td>REF SEQ</td>
<td>596</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 19, 11</td>
<td>1, 2, 3, 4, 5</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>isoform 2</td>
<td>642</td>
<td>1, 2, 3</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Region B</td>
<td>isoform 4</td>
<td>1064</td>
<td>1, 2, 4, 5</td>
<td>1 &amp; 3</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

A comparison is then performed between the reference sequence and isoform variants 2 and 4 using CLUSTAL multiple alignment at the Protein Information Resource (PIR) and the putative protein domains identified using the web-based InterProScan algorithm. The reference sequence contains four major domains, P2X7 Receptor Motifs (1-11), P2X Receptor motifs (1-5), P2X Purinoceptor and a signal peptid (Table 8, Fig. 8). All four domains appear in both isoforms except for the P2X Receptor domain in isoform 2. The P2X7 Receptor motifs are located at amino acids 1-12, 34-47, 48-58, 195-204, 379-394, 395-406, 408-422, 449-462, 497-510, 560-576, 577-592, respectively. P2X receptor motifs are found at amino acids 86-94, 160-171, 242-254, 289-299, 308-322. The P2X purinoceptor is at amino acids 74-440, and the signal peptide is found at 1-44. The P2X receptor, P2X purinoceptor
and P2X7 receptor are all important in receptor activity, ion channel activity, ATP binding, ion transport, and membrane.

Figure 8. IMPA2 reference sequence protein and protein variant 2 and 4 multiple alignment.
Discussion

In recent research, alternative splicing was observed in mRNAs produced from four bipolar-related genes in four brain regions that had been previously implicated in moods and bipolar disorder (Hicks & Seipelt, 2008). This is important since alternative splicing can produce proteins which have different sequences resulting in a change of protein function or produce truncated proteins which in effect lower the level of functional protein. Analysis to determine exactly how the potential proteins encoded by these alternative mRNAs differ from the reference sequence, which protein domains are different or excluded, and how the different proteins function alternatively may lead to a clearer picture of how the cells in the brain function differently and may be involved in brain malfunction and disease.

This research indicates that DISC1 encodes for a putative 832 amino acid protein with an alternative protein isoform of 854 amino acids when alternative exon of 66 bp is added between exon 11 and 12. IMPA2 encodes for a 190 amino acid protein with an alternative protein isoform of 104 amino acids when exon 2 is excluded. Two unexpected isoforms were found in IMPA2 that were 500 and 425 bp long. NRG1 encodes for an 897 amino acid protein with three alternative proteins. Isoform 1 excludes exons 4 and 5 resulting in an 836 amino acid protein. Isoform 4 excludes exon 8 resulting in an 862 amino acid protein being formed, and isoform 5 includes an alternative exon between exons 12 and 13 resulting in a 944 amino acid protein being formed. There were also two unpredicted isoforms (3 and 6) found. P2RX7 encodes for a 596 amino acid protein with two alternative isoforms. Isoform 2 includes an alternative exon between exons 2 and 3 resulting in a 642 amino acid protein forming and isoform 4 has an alternative 3’ splice site at exon 5 making a 1,064 amino acid protein.

Along with evidence for regulation by alternative splicing for these bipolar genes,
this study also has shown that alternative splicing is specific for different brain regions. Specifically, the amygdala encoded for an 832 amino acid protein with an alternative protein isoform of 854 amino acids for DISC1, both of which were expected. One expected alternative protein isoform of 104 amino acids was encoded for IMPA2. One unexpected alternative protein isoform of 500 bp was found, although the protein coding regions could not be predicted from size and would need further analysis. An expected protein of 190 amino acids was not found. Three expected alternative protein isoforms at 836, 862, and 944 amino acids were coded for NRG1. The 862 amino acid protein excluded exon 8 and the 944 amino acid protein included 142 bp between exon 2 and exon 3. Another expected isoform of 390 bp was found but had an unknown exclusion and could not be predicted based on size. An expected protein of 897 amino acids was not found. One expected alternative protein isoform of 642 amino acids was found for P2RX7. This protein included 139 bp between exon 2 and exon 3. One expected 596 amino acid protein and one expected alternative 1,064 amino acids were not found.

The basal ganglia encoded for an expected 832 amino acid protein and an expected alternative isoform at 854 amino acids in DISC1. One expected alternative 104 amino acid protein was encoded for IMPA2. An unexpected 500 bp isoform was found but the protein coding regions could not be predicted from size and would need further analysis. There was one expected protein of 190 amino acids which was not found. Three expected alternative protein isoforms at 836, 862, and 944 amino acids were coded for NRG1. The 862 amino acid protein excluded exon 8, and the 944 amino acid protein included 142 bp between exon 2 and exon 3. Another expected isoform of 390 bp was found but had an unknown exclusion and could not be predicted based on size. One unexpected 700 bp isoform was found, also with an unknown exclusion, and was not predictable based on size. Both of these will need further analysis. An expected protein of 897 amino acids was not found. One unexpected alternative protein isoform of 750 bp was found for P2RX7 which had an unknown inclusion and could not be predicted based on size. This isoform, too, needs further analysis. It included 139 bp between exon 2 and exon 3. One expected protein and two expected alternative proteins, at 596, 642, and 1,064 amino acids, respectively, were not found.

The hypothalamus encoded for an expected 832 amino acid protein and an expected alternative isoform at 854 amino acids in DISC1. One expected alternative 104 amino acid protein was encoded for IMPA2. An unexpected 500 bp isoform was found; however, the protein coding regions could not be predicted from size and would need further analysis. There was one expected protein of 190 amino acids which was not found. Three expected alternative protein isoforms at 836, 862, and 944 amino acids were coded for NRG1. The 862 amino acid protein excluded exon 8, and the 944 amino acid protein included 142 bp between exon 2 and exon 3. Another expected isoform of 390 bp was found but had an unknown exclusion and could not be predicted based on size. One unexpected 700 bp isoform was found, also with an unknown exclusion, and was not predictable based on size. Both of these require further analysis. An expected protein of 897 amino acids was not found. An unexpected alternative protein isoform of 750 bp was found for P2RX7, which had an unknown inclusion and was not predictable based on size. As with so many others, this isoform needs further analysis. The protein included 139 bp between exon 2 and exon 3. One expected protein and two expected alternative proteins, at 596, 642, and 1,064 amino acids, respectively, were not found.

The substantia nigra encoded for an expected 832 amino acid protein and an expected alternative isoform at 854 amino acids in DISC1. One expected alternative 104 amino acid protein was encoded for IMPA2. An unexpected 500 bp isoform was found but the protein coding regions could not be predicted from size and would need further analysis. There was one expected protein of 190 amino acids which was not found. Three expected alternative protein isoforms at 836, 862, and 944 amino acids were coded for NRG1. The 862 amino acid protein excluded exon 8, and the 944 amino acid protein included 142 bp between
exon 2 and exon 3. Another expected isoform of 390 bp was found but had an unknown exclusion. It could not be predicted based on size. One unexpected 600 bp isoform was found, also with an unknown exclusion and unknown inclusion, and could not be predicted based on size. Both need further analysis. An expected protein of 897 amino acids was not found. One unexpected 642 amino acids was found for P2RX7. This protein included 139 bp between exon 2 and exon 3. An unexpected isoform of 82 bp was found. This isoform skipped exon 2 but was not predictable based on size and thus needs further analysis. One expected 596 amino acid protein and one expected alternative 1,064 amino acids were not found.

Future experiments could include analysis on the unpredicted isoforms that were found. These, along with all the expected isoforms, could be compared with normal and bipolar brain tissues to see if a particular isoform is included in one tissue or disease state over the other. Since the acquisition of human tissues would be difficult, gene expression comparison studies using known mouse models for a variety of mood disorders would be a logical next step.

Literature Cited


“But You’re Just a Girl”: Gender and Power Relations in the Realm of the Female Action Hero

Tiffany Hughes

Dr. Susan Hopkirk
English

We cannot believe, we men, that power will ever reside happily in the body of a woman, unless that power is a male child. Not true power. The power must be in male hands, God-given. That’s what our fathers tell us, idiots that they are.

Clive Barker, “Jacqueline Ess: Her Last Will and Testament”

In 1964, Supreme Court Justice Potter Stewart tried to explain “hard-core” pornography, and what is obscene, by saying, “I shall not today attempt further to define the kinds of material I understand to be embraced . . . But I know it when I see it” (law.umkc.edu). This quote, and the intent behind it, is well known as summarizing the irony and difficulty in trying to define pornography and obscenity, two things with which most people are familiar, but which defy definitive definition. Perhaps the same can be said when discussing gender, gender identity, and gender roles. Defining what is considered masculine and feminine proves to be extremely difficult, yet there seems to be an “I know it when I see it” mentality present when addressing this issue. What is masculine and what is feminine may be impossible to define clearly and concisely, especially in light of recent scholarly theory. When thinking about gender, scholarly thought has moved toward more ambiguous definitions, suggesting that gender and gender roles are constructed and fluid.

In “Masculinity, Femininity, and Androgyny,” a 1970s study conducted at California State University, Northridge, it was revealed that while people might define masculinity and femininity in traditional ways – masculinity equals power and dominance while femininity equals passivity and emotions – those surveyed preferred persons who were more androgynous, possessing both stereotypically masculine and feminine traits as opposed to one or the other. The study polled a total of 60 people, 30 of which were college professors and graduate students at UCLA, while the remaining 30 consisted of men and women with no college background. Evalyn Jacobson Michaelson and Leigh M. Aaland revealed that “while almost all of the noncollege informants viewed masculinity and femininity as polar opposites, large portions admired individuals whose characteristics were mixed or con-trasexual” (256). Of those with collegiate background, Michaelson and Aaland found that few “defined masculine and feminine as logical opposites, denoting agency and communion, respectively” (258). The results of the study concluded first that “people are more likely to define masculinity as agency and femininity as communion than they are to admire pure agency in men or pure communion in women,” and second, that “the higher the education, the less likely a person is to see a clear dichotomy between masculinity and femininity, and the more likely a person is to approve similar patterns of behavior in both sexes” (269). This way of thinking about gender as fluid suggests that the assumption of masculine versus feminine no longer held even in the 1970s. Yet, Hollywood still today follows this binary ap-
proach to gender and gendering with its representations of the Female Action Hero.

Over the past two decades the Female Action Hero has become a predominant figure in popular culture. She can be found in comic books, video games, television, and film. While her inception in some of these media happened long ago, in recent years she has become more prominent and has even begun rivaling her iconic male counterpart, both in numbers and popularity. Still, what Sherrie Inness calls the “media staple” by the Male Action Heroes remains the popular culture norm against which the Female Action Hero is measured (1). This comparison stems from the notion of power as a purely masculine trait, and society’s ambivalence and unwillingness to accept women of power. Generally, society has been more accepting of the Male Action Hero than the Female Action Hero, restricting her to genres of science fiction, horror, and fantasy, whereas the Male Action Hero is allowed to exist in a world more closely associated with reality. Where the Male Action Hero battles other men, the Female Action Hero is forced to face vampires, demons, and zombies, all unrealistic characters based solely in fictional worlds, suggesting a woman with true power is a fictitious creation. Nevertheless, in recent years, the Female Action Hero has emerged with as much ferocity as Rambo rampaging through the jungle after his enemies. The Female Action Hero demands to be heard, be analyzed, and critiqued.

The Female Action Hero is a direct descendant of the female character in horror film. There have been four dominant types of female characters featured within the horror and science fiction film genres. These characters represent an evolutionary process, one in which the female characters become stronger and more resilient as time goes on. This evolutionary process has led to the creation of the Female Action Hero which is prominent in film today. In “Boxing Gloves and Bustiers” Inness writes, “With the changes in women’s real lives came changes in popular imagery. As women in society changed, heroines in film did as well. The rise of the female action heroine was a sign of the different roles available to women in real life” (6).

This transition is reflected in pre-feminism and the three waves of the feminist movement, with each of the four eras featuring a dominant character. (For an extended discussion of the four eras, see Hughes 2009.) The first type, the sacrificial virgin, appears in films such as the 1920s German expressionist film Nosferatu and mirrors the pre-feminist movement. Like the “Angel of the House,” her duty is to sacrifice herself for the good of those around her. The second type, the damsel in distress, appears in 1930s monster movies like King Kong and mirrors the first wave of the feminist movement. She is a character incapable of saving herself and must rely solely on the male hero to save her. The third type, the Final Girl of the 1970s slasher films, who embodies the second wave of the feminist movement, can be seen in Texas Chainsaw Massacre and Halloween. The Final Girl is typically sexually unavailable or virginal, avoiding the vices of those who are victimized in the film, and is the only central character of stature to survive the movie. These evolving roles have led to the creation of the Female Action Hero, who has become prevalent as society has entered the third wave of the feminist movement.

The Final Girl, a precursor to the Female Action Hero, is a source of controversy and debate among feminist film critics. Carol Clover, author of Men, Women, and Chainsaws: Gender in the Modern Horror Film writes, “The Final Girl is boyish, in a word. Just like the killer is not fully masculine, she is not fully feminine” (40). Clover argues that the Final Girl is nothing more than a male in drag and admits that while some may view her as an empowering character, Clover herself does not. She suggests that when a Final Girl, such as Laurie in Halloween (1978), defeats the killer by stabbing him, she “has not just manned herself; she specifically unmans an oppressor whose masculinity was in question to begin with” (49). The Final Girl becomes masculinized through “phallic appropriation” by taking up a weapon, such as a knife or chainsaw, against the killer (49). Essentially Clover suggests that the Final Girl figuratively becomes a man when she stops running, faces the killer, and
defeats him, castrating him in the process. Clover then asks, “If we define the Final Girl as nothing more than a figurative male, what do we then make of the context of the spectacular gender play in which she is emphatically situated?” (55).

Isabel Cristina Pinedo, author of *Recreational Terror: Women and the Pleasure of Horror Film Viewing* counters Clover’s argument, stating:

She too uncritically accepts the literary model that ‘those who save themselves are male, and those who are saved by others are female.’ If a woman cannot be aggressive and still be a woman, then female agency is a pipedream. But if the surviving female can be aggressive and be really a woman, then she subverts this binary notion of gender that buttresses male dominance (83).

Unlike Clover, who aligns physical power with maleness and masculinity, Pinedo suggests that power can be both female and feminine. For instance, in *Halloween*, Laurie utilizes a coat hanger and knitting needle, domestic items more closely associated with femininity, in her fight against Michael. In using these weapons, Laurie is asserting her status as powerful female against Michael’s status as powerful male.

Still, in most slasher films, power begins as male – and is based upon the female being not only powerless, but lifeless. In *Goddesses and Monsters* Jane Caputi notes, “The most common monster of contemporary horror film is a serial killer” (133). This is true, especially in the slasher film. In talking about the slasher, Caputi writes, “By killing women and children, Freddy and Jason, as well as the actual killers whom they reflect, are symbolically destroying life and the future itself” (139).

Caputi fails to take into account the Final Girl’s importance in the these films. While Clover over-analyzes the gendered nature of the Final Girl, Caputi overlooks her completely. Because the killer seeks to destroy life and the future through the killing of women and children, the victor of the film *must* be woman. In order to repair what the killers have attempted to damage, the symbolic bearer of life and protector of the future (woman) must stand up against these monsters and defeat them. Caputi suggests that the killing of women and children is a product of the dominant culture: “It is the ultimate expression of a sexuality that defines sex as a form of domination/power; it . . . is a form of terror that constructs and maintains male supremacy” (121). Caputi believes that for the slasher film, the killer must be male. She also states, “Their true father is indeed a collective entity – the patriarchal culture that has produced the serial killer as a fact of modern life” (135).

**The Controversy of the Female Action Hero**

Much like the Female Action Hero is shaped by the dominant patriarchal culture, this same culture transforms these men into psychopathic killers. Therefore, because the killer is male, and his intent is to maintain male supremacy, the savior of these films must be female. She does not defeat him because she is the only one left at film’s end that can, but instead because it is her right and duty to ensure the future. Clover argues that, in killing the killer, the Final Girl “mans herself.” She further says, “The moment at which the Final Girl is effectively phallicized is the moment that the plot halts and the horror ceases” (299). In killing the killer – the symbolic destroyer – the Final Girl further attests to her femininity and her femaleness, as Pinedo argues. The Final Girl’s taking up of arms and killing the “destroyer” is not representative of her shift from femininity to masculinity, but rather a re-assertion of her female power and selfhood in the patriarchal world that has tried to annihilate her. She both embraces stereotypical biological determination – the female as producer and protector of life – but also wins through a violence stereotyped as male. Thus, Pinedo’s vision for a female character which is both aggressive and truly woman is achieved.
The Female Action Hero is successor to the Final Girl, and like the Final Girl, divides critics. Some feminist film critics, such as Rikke Schubart, author of *Super Bitches and Action Babes*, suggests, “Today’s active, aggressive, and independent female hero is clearly a child of feminism” (6), agreeing with Pinedo. These feminist critics welcome her as progressive and a sign of equality. Schubart writes, “From their point of view, her use of masculine violence and discourse signals the end of an outdated psychoanalytic taxonomy of male versus female (active versus passive, and so forth)” (6). Yet other feminist critics perceive the Female Action Hero as the opposite. In their view, Schubart writes, “she represents a backlash against feminism, and her plastic surgery is a sign of oppression. From this perspective Lara Croft is not a strong woman but, as Germaine Greer has called her, a ‘sergeant major with balloons stuffed up his shirt’” (6). These critics claim that the Female Action Hero’s physical appearance – thin, big-breasted, small waisted – does little to promote feminist ideals, but instead adheres to societal notions of beauty, which work to restrict women who do not fit this ideal. In addition, the Female Action Hero appears in a fantastic world, rather than a realistic one, and even there, her transgression of traditional gender roles is a problem as much as it is lauded.

Stereotypically, masculinity is associated with physical power, and aggression, logical thinking, leadership, assertiveness, power, and being the savior/hero. Femininity, on the other hand, is stereotypically associated with physical weakness, emotions, nurturing, being a follower or subservient, powerlessness, and being the one in need of rescue or protection. In short, masculinity’s opposite.

In *The Second Sex*, Simone de Beauvoir states that in all societies men are defined as actors or subjects, while women are defined in relation to men. “He is the Subject [hunter, farmer, soldier] . . . she is the Other [mother, mate, wife]” (xvi). Thus the distinctive characteristic of femininity is said to be alterity, or otherness. Other writers have echoed de Beauvoir’s analysis. Mary Daly, in *Beyond God the Father*, suggests the masculine stereotype has been said to imply “aggressivity, the possession of dominating and manipulative attitudes towards person and the environment, and the tendency to construct boundaries between the self . . . and ‘the Other’” (15). Carolyn Heilbrun writes, in *Towards a Recognition of Androgyny*, “The masculine individual is popularly seen as a maker, the ‘feminine’ as a nourisher” (xiv).

Each of these critics acknowledges the stereotypical classifications of gender in which masculinity equals power and femininity equals weakness. In searching for definitive ways in which to define masculine and feminine, one thing is abundantly clear – it seems that defining masculinity outside of the scope of femininity is simple, because there are clear attributes. However, defining femininity without a concept or notion of masculinity is increasingly difficult, as femininity is “other.” And in most cases, traits clearly defined as feminine are simply listed as those belonging to a woman. The *Oxford English Dictionary* defines masculine as “Designating an object deemed to be of the male sex on the basis of some quality, such as strength or activity, esp. as contrasted with a corresponding object deemed female” (“Masculine” def 4a); “Of a personal attribute, an action, etc.: having a character befitting or regarded as appropriate to the male sex; vigorous, powerful. Of a man: manly, virile” (“Masculine” def 5a); or “Of a material thing or physical quality: powerful in action, strong” (“Masculine” def 5b). The definition of feminine is far less descriptive: “Of persons or animals: Belonging to the female sex; female” (“Feminine” def 1a); “Of or pertaining to a woman, or to women; consisting of women; carried on by women” (“Feminine” def 3); or “Characteristic of, peculiar or proper to women; womanlike, womanly” (“Feminine” def 4a). As a verb, feminine is defined as “To make feminine; to weaken, effeminate” (“Feminine” def 1). Perhaps this inability to clearly define what is masculine and what is feminine lies at the heart of Hollywood’s portrayal of the Female Action Hero, and the ambivalence to creating a female character that does not challenge gender assumptions while still being a strong
and empowered character.

The Female Action Hero defies binary gender thinking and challenges traditional notions of assigned gender roles. Inness writes, “not only does the action heroine demonstrate that she can perform the same tasks as a man . . . but she also challenges the entire gender system based on the binary male-female relationship. She creates a new gender system in which she can enact ‘woman’ in nontraditional ways” (8). Her physical power, strength and assertiveness have long been associated with masculinity, while her size, stature, and sexualized appearance are associated with femininity. Thus, the deeper issue resides in the fact that gender and biological sex are not synonymous, though they have long been conflated with one another. Biology and gender, while distinct, have come to represent the same thing in society, and those who break traditional associations between the two are ultimately punished; boys who show feminine traits are called “sissies,” while girls who exhibit masculine traits are called “tomboys.” Society shames those who do not adhere to traditional notions of gender/sex identity. However, the Female Action Hero does a great deal to challenge this notion by her very existence.

Yet, finding a place in which the Female Action Hero belongs is difficult, and placing her in one category or the other risks reducing her to her simplest terms. Reducing her to a masculinized female, or a male in drag neglects the complex nature of the hero—a nature that must be examined on a character basis, and not as an ensemble. In her article, “From Figurative Males to Action Heroines” Elizabeth Hills writes:

Female action heroes confound binaristic logic in a number of ways, for they access a range of emotions, skills, and abilities that have traditionally been defined as either “masculine” or “feminine.” As female characters who take up the central spaces in the traditionally “masculine” genre of action cinema, they derive their power from their ability to think and live creatively, their physical courage, and their strategic uses of technology (39).

Hollywood is uncomfortable with erasing the dichotomy of masculine and feminine. It attempts to create boundaries and differentiate between women who eagerly transgress gender boundaries, versus the reluctant heroines. The association between masculinity and power presents a problem when gendering the Female Action Hero. Innes notes, “The popular media are still deeply ambivalent about how to depict tough women so that they do not challenge gender conventions too drastically” (5). There still exists a dichotomy in terms of the female hero’s gendering. She is primarily gendered one of two ways. She is either obviously feminine or questionably masculine; there is rarely any middle ground. The gendering gap reflects society’s ambivalence toward women of strength in patriarchal society. Despite the fact that every year more and more Female Action Heroes grace television and silver screens, the idea of power and strength still works within the framework of patriarchy.

Why some female heroes are able to retain their femininity while others sacrifice theirs on the altar of patriarchy is clear. The answer is power. Power plays a key role in this dichotomy that has split the female action hero across two planes of existence. Because power is equated with masculinity, those who accept and embrace their power do so at the expense of their femininity, while those who deny or reject their power, are ambivalent about their power, or use it while still under male control are able to maintain femininity. The acceptance or rejection of power becomes a signifier for how each Female Action Hero will be read and interpreted. Those who eagerly accept the power given to them become equated with masculinity, while those who deny or reject their power are feminine.

In her earliest depictions on television, the Female Action Hero appeared as strong, feminine and sexual, yet still ruled by a man. In television shows such as “Charlie’s Angels” (1976) and “The Bionic Woman” (1976) strong women emerged who fought against the villains of their day. Despite the fact that these women were the central key to the plot of
their shows, they still served under the dominant patriarchal norm. The Angels belonged to Charlie. Jamie Summers did not become the Bionic Woman by her own hand, but was created by the male-dominated Berkut Group. The hand of patriarchal control has continued to oppress and dominate many female action heroes that have emerged since then.

In films such as the Resident Evil series (2002–2007) and the Underworld series (2003-2009) this power is decidedly given to the lead characters by an outside male-dominated force. In the Resident Evil series, Alice (Milla Jovovich) is unwillingly injected with the T-virus by the Umbrella Corporation to determine its affects on her. As a result she develops physical and mental abilities that enable her to fight off the horde of zombies that are constantly attacking her and those around her. While she is capable of handling the zombie threat without the T-virus, it is deemed necessary by the corporation to inject the unwilling Alice with the virus to see how she will fare.

Dress and Combat Boots

After discovering her warrior persona in the first battle scene, she begins to take charge, easily neutralizing the zombies, rabid dogs, and genetically altered monsters she has faced, all while wearing a dress and combat boots, two contradicting images that suggest both masculinity and femininity. But in the end, she is again controlled by the Umbrella Corporation. Waking up on the operating table in an empty hospital in Raccoon City, screaming and gasping for air, she tears off multiple syringes representing the unwilling penetration Alice’s body has undergone at the hands of the corporation. Exiting the hospital Alice finds the city in sheer chaos with newspaper headlines reading, “THE DEAD WALK!” Grabbing a shotgun from an abandoned police car, Alice faces the world with a determined look and cocks the gun. As the camera pulls away, she is left as the only ray of hope in the chaos. Unlike the Final Girl, who saves the day because she is the only one left, Alice must save Raccoon City because she is the only one who can. Though she is surrounded by others, Alice proves to be the only one capable of defeating the threat. She is not isolated, like the Final Girl eventually becomes.

In Super Bitches and Action Babes, Rikke Schubart speaks of Milla Jovovich, the actress who plays Alice:

Where most female heroes have a traditional femininity – sexy, seductive, and unmistakably female – Milla’s characters appear almost ugly with marked features, an androgynous appearance, and a hysterical behavior. Where the female hero alternates between female and male positions, Milla is caught in constant emotional high-strungness, a symptom of intense repression. Her inbetweenness manifests itself in a thin, flatchested body shaking manically in anger and hysteria. A body stripped not only of clothes but also of large breasts, broad hips, round bottom. Milla’s body is that of an adolescent who can pass as boy or girl, but neither man nor woman (271).

Jovovich’s appearance implies androgyny and asexuality, which allows her character to transition easily between masculine and feminine roles. Jovovich’s body may be known for its ability to exhibit hysterical behavior, as Schubart mentions, but her transition from masculine to feminine is a fluid, seamless one. Alice is just as believable as the amnesia-ridden damsel in distress as she is busting through the windows of a church on a Harley.

Alice’s body does not respond to the T-virus as others do. Her body is capable of adapting to the virus instead of being mutated by it. This ability to adapt the virus places Alice in the realm of “other,” neither human nor monster. This is a metaphor for Alice’s gender issues. Schubart says, “The female hero is usually caught in a state of in-betweenness
where she must choose between two positions presented as excluding one another and gendered respectively ‘feminine’ and ‘masculine’ . . . The conflict erupts when she tries to be and do both . . . Unitizing separate positions creates a state of in-betweenness where ‘normal’ gender roles become flux” (271). Instead of being transformed into a mutant creature or becoming a zombie, Alice instead transforms the virus, developing near superhuman abilities which make her both threatening and valuable to the Umbrella Corporation. In the same way, Alice manipulates traditional gender distinctions. Schubart writes, “In Resident Evil and Resident Evil: Apocalypse . . . Alice has no romantic relationships and her body is uniquely resistant to the T-virus, two elements that can be read as celibacy and a body resisting ‘intrusion’” (283). This is precisely what Alice desires most – to resist the Umbrella Corporation’s further “intrusion” in her life. Through the genetic mutation, she is masculinized, becoming more assertive, taking on bigger monsters, and ultimately gaining more power, which she now seems to embrace.

Fighting her way through the streets of Raccoon City, Alice becomes a mother figure in her quest to rescue a small girl along with those traveling with her from the zombies and mutants that now plague Raccoon City. However, Alice is forced to “perform” for the patriarchal head of the Umbrella Corporation at film’s end, when she must do battle with Matt, a former cohort, now mutated monster. After defeating Matt, the end of Apocalypse finds Alice once again the helpless female, having been captured by the corporation and subjected to biogenetic experiments against her will until rescued by her friends. Finally understanding her full potential, the Umbrella Corporation implants a mind control device in Alice. She is once again a female under male control.

**Buffy: Just a Girl**

On the small screen, the character of Buffy is a perfect example of the “good” female action hero, one who uses male-bestowed power under male control. Buffy, first introduced in the 1992 film, Buffy the Vampire Slayer, is vapid, shallow, and self-centered, concerned chiefly with boys, the latest fashions, and cheerleading – stereotypical feminine concerns. Nonetheless, she proves herself fully capable of fulfilling her duties as the “chosen one,” a vampire slayer. In the television series (1997-2003) Buffy proves herself able to thwart evil at every turn. However, the high school feminine concerns she had in the film still continue to plague her throughout the series.

The reluctance to own her power is a struggle for Buffy. In “The Gift,” the season five finale, Buffy saves a teenage boy from a vampire attack in an alley. After the danger has been eliminated the boy exclaims, “But you’re just a girl,” to which Buffy replies, “That’s what I keep saying” (2001). Buffy is also aware that others are ambiguous toward her and her powers. In the season five episode “Checkpoint” Buffy remarks, “See, I’ve had a lot of people talking at me in the last few days. Everyone is lining up to tell me how unimportant I am. And I’ve finally figured out why. Power. I have it. They don’t. This bothers them” (Checkpoint, 2001). Buffy longs to simply be a girl, free from the responsibilities of saving the world. She has not asked for the power she has been given and is reluctant to accept it. However, this does not stop her from saving the day time and time again. This denial of power allows her to maintain her femininity, where others would lose it. Elyce Rae Helford, in “My Emotions Give me Power,” points out, “As long as she does not seem to enjoy committing acts of physical violence overmuch, she is not condemned within the framework of the series” (23). Buffy’s constant rejection of her power keeps her grounded and within the framework of the “good” feminine hero.

Buffy is notorious for fighting in skirts, high heels, and tight fitting clothing. She is, to use Buffy terminology, “über”-feminine. But she represents femininity in masquerade, the unlikely heroine. Mary Ann Doane, in “Film and the Masquerade: Theorising the Female
Spectator,” writes, “For Joan Riviere, the first to theorise the concept, the masquerade of femininity is a kind of reaction-formation against the woman’s trans-sex identification, her transvestism” (138). Like the Final Girl, Buffy risks being reduced to a male in drag. Her aggressive and violent nature as the slayer masculinizes her. Her femaleness and her transgression of traditional gender roles places Buffy in a state of in-betweeness, much like Alice. In order for Buffy to maintain her femininity, she must exaggerate it. Doane goes on to write, “Masquerade, on the other hand, involves a realignment of femininity, the recovery, or more accurately, simulation, of the missing gap or distance” (139). She must literally dress the part. Her skirts, dresses, high heels, and seemingly never-out-of-place hair are all aesthetic attempts to reassert her status as a feminine woman. Because strength is characteristically associated with masculinity, Buffy must extend her femininity in order to maintain it in the face of her power. Sara Crosby, in “The Cruelest Season: Female Heroes Snapped into Sacrificial Heroines,” says, “The ultrafeminine name “Buffy” . . . identifies our hero unequivocally with woman” (161). Her ultra-femininity balances her power.

Buffy’s powers also make dating problematic. The two most stable relationships for Buffy are with vampires. In the first two seasons of the show Buffy dates Angel, a vampire with a soul, while during the final two seasons she is involved with Spike, a vampire incapable of harming humans (who later also acquires a soul). While both are as physically strong as Buffy, the two are essentially neutered by their inability to attack humans, and any threat they once posed has been removed. Interestingly, a reversal occurs between the two vampires as the show progresses. In the beginning Angel fights alongside Buffy, until the two have sex. Once this has occurred Angel loses his soul and reverts to his former evil self. Thus, Buffy is punished for her sexuality. In the final episode of season two, “Becoming: Part Two,” Willow is able to restore Angel’s soul, but, Buffy is still forced to kill him in order to stop the end of the world. Angel returns in season three and the two renew their relationship, though they are never sexually intimate again, and in the season three finale, Angel leaves Buffy in order to allow her a normal life.

Juxtaposed to this is Spike, who, when first introduced in season two, is evil. It isn’t until season four that Spike reforms, though unwillingly. Having been captured by a secret military organization called the Initiative, a microchip is implanted in his head that prevents him from attacking humans. Two seasons later, a sex-based relationship develops between the two. Returning in season seven with a soul, a much different relationship gradually develops between Spike and Buffy, one much more tender and personal, though never again sexual. Yet, once again, in the series finale, Buffy is stripped of this relationship as well when Spike is killed. Though emphasis is placed on Buffy’s heterosexuality, Buffy never achieves a lasting relationship. Like the women in slasher films who are killed for having sex, Buffy is punished for her sexuality.

When Good Girls Go Bad

There is a separation between the more recent representations of the Female Action Hero and her predecessors. While the Female Actions Heroes of the last 20 years may have begun under the dominant patriarchal hand, most do not stay there. This leads to a gendering issue. If a woman denies her power, fights against it, or remains under patriarchal control, she remains gendered feminine. However, if she is willing to accept her position as a dominant woman, she is gendered masculine. Thus, power is still male-controlled.

In both cases, if a woman acquires too much power, there is a chance she will somehow transform from hero to villain, and quite easily. Standing in direct contrast to Buffy is Faith, another vampire slayer who appears in the third season of the show. Faith,
unlike Buffy, accepts and embraces her power. She thrives on the thrill of the hunt. She is more forthright than Buffy, and she is more aggressive both sexually and in fighting. Helford points out the class differences that separate Faith and Buffy. Buffy is obviously middle class, while Faith is “depicted as lower in social class than Buffy. She is rebellious, sexual, and expresses her anger openly, often with relish” (21). This, along with her full acceptance of her power, serve as forces to condemn Faith, transforming her status from that of hero into “antihero and then villain status” (21). Faith eventually becomes so full of self-loathing that she renounces her fight against evil and, instead joins it, becoming one of Buffy’s key rivals in the third season of the show. This serves as a moral lesson in patriarchal society of the consequences of a woman gaining too much power.

Faith’s downhill spiral begins after the death of her first watcher (a guide and trainer of slayers) and the betrayal of her replacement watcher. Faith now stands without the patriarchal guidance of the Watcher’s Council, a group consisting predominantly of men, who guide and train the slayer. Because Faith lacks this guiding male hand, she now exists outside the framework of the show’s patriarchal order, and for this, she is condemned. Her downward spiral is further accelerated after accidentally killing a human being one night. She refuses to go to the authorities and report what has happened. She tells Buffy that because they are slayers and are powerful that they are above the law and can do whatever they want. Yet, this proclamation is a ruse, used to mask the true anguish and guilt Faith feels inside. Faith’s self-hatred can be read as feelings of guilt in so willingly accepting her power in a patriarchal society. Since she has not adhered to the “natural” order that places the man in a position of power and has instead accepted and embraced her own power, she feels extreme guilt that turns self-destructive. But Faith cannot stay on this path of self-destruction for long, and must either reform or suffer the ultimate punishment for her transgressive behavior – death. This is a common theme in many films and television shows, which seem to suggest that a woman with power is a problem that must be reconciled. For Faith, her reconciliation is prison. However, for many Female Action Heroes, death is the only solution.

Death Becomes Her

When a woman becomes too powerful in popular culture her life is inevitably cut short, warning the audience of the threat these women pose. Coupling women and violence is nothing new to film and television. Women have been exposed and exploited through violent acts for decades. In Horror: The Film Reader Mark Jancovich points out that the most graphic attacks are directed against women, and particularly ones who have just had sex. He goes on to say, “These films are . . . part of a violent reaction against feminism” (5). Robin Wood, in his book, Hollywood from Vietnam to Reagan, elaborates further, describing the slasher film as a reaction to feminism in which “the women who are terrorized and slaughtered tend to be those who resist definition within the virgin/wife/mother framework” (197). Women who have continued to defy the standards created by patriarchy in relation to their sexuality and power are continually punished for this defiance.

For example, in 2001, Buffy the Vampire Slayer, Xena: Warrior Princess, and Dark Angel killed their leading ladies off in the season finales of each show. In “The Cruelest Season” Crosby writes, “The motivation for their suicides, however, swings towards . . . their guilt, abject self-hatred, and regressive sacrifice to the needs of a patriarchal community” (154). She goes on to suggest that before they reach this point they must assume three “truths” about themselves and their community. First, like Eve, “they bear a burden of guilt,” guilt associated with their toughness. Second, “the patriarchal community averts a collision with . . . individualism by making these women want to alienate their power.” Because of the stereotypical association with femininity and a passive “nature,” female heroes do not want their transgressive toughness. They want to give it up and just be normal girls. Third, “the only stable or pragmatic community is a patriarchal community” (155). If female
centered communities have begun to form around female heroes, the narratives must dis-count them. Because female heroes are tough and resilient, they challenge the status quo and so must sacrifice themselves to preserve the patriarchal order and dismember the female-centered community they have established.

This is not the only type of death many female heroes suffer. If they do not suffer from a literal physical death, another death occurs for the female action hero: the death of their female or feminine self. This alternative is a form of masquerade; an image that is visibly feminine, yet lacks all that makes her biologically female. Some shows present female-ness (and to a lesser degree, femininity) as a biological essentialism: the ability to bear children. The Female Action Hero, lacking the ability, is simply the shell of a woman. She often has been altered in whole or in part by outside forces. For many of these women, this is done against their will or without their consent.

In the recent, short-lived television series, “Bionic Woman” (2007), a pregnant Jamie Summers, after being in a fatal car crash, is rushed to a secret facility where she is implanted with bionic technology throughout her body. As a result, she gains Superman-like abilities to run extraordinarily fast, jump great heights, fight with the force of many men, hear things from a great distance. However, upon finding out what has happened to her, she is shocked and outraged. Her eyes have been implanted with cameras, which allow those at the Berkut Group to see everything she sees. The price paid for her life is the loss of her femininity. Hardness is equated with masculinity, and the replacing of Jamie’s body parts with the hard, sterile bionic technology, combined with the loss of her baby, transforms her into an asexual being. Because female essentialism links womanhood with biological, reproductive capabilities, Jamie’s lack now removes her from the realm of sexual woman.

Monique Wittig, in The Straight Mind and Other Essays, writes, “Sex is a category which women cannot be outside of . . . for the category of sex is the category that sticks to women, for only they cannot be conceived of outside it” (7-8). Without the ability to reproduce, she is no longer female. Instead she is a man in a woman’s body.

In much the same way that Faith is punished for her power, Buffy’s Kendra is punished as well. Kendra, a vampire slayer introduced in the series previous to Faith’s appearance, has fully accepted her power and responsibility as a slayer; she has embraced this so much so that she has been denied any and all feminine life experience. She is permitted to attend school, but is not allowed to speak with boys. Kendra is solely concerned with her power and responsibility as the slayer, forsaking all things stereotypically female. In doing so, she also becomes asexual. In “Who Died and Made Her Boss?: Patterns of Mortality in Buffy,” Rhonda Wilcox writes, she has “absorbed the view of the mainly masculine” (6). Kendra embraces the patriarchal order fully, and while she is gendered masculine, her body is still female, like Jamie Summers, an asexual being. Kendra’s denial of self for the sake of her mission proves to be her undoing: her short-lived stint on Buffy is brought to an end (she is killed) after only three episodes. Kendra’s eager embracing of power and her desire to become masculine work as forces to punish her.

In Alien: Resurrection, the popular character of Ripley from the earlier Alien films appears again, only it is not truly Ripley, but a clone created to look and act as she did. Because the real Ripley, who has since passed away, was capable of handling the alien threat, a new one is created to do the same. All femaleness has been stripped from her. While she is overtly feminine in her appearance, she is manufactured femininity, created to serve a purpose; she lacks the biology that makes her female. She is not a woman. She is simply a recreation created to look the part of a woman.

Similarly, in Fox’s television series, “Terminator: The Sarah Connor Chronicles,” Cameron is a Terminator sent back from the future to help John Connor survive to lead the resistance against Skynet. Cameron, played by Summer Glau, is extremely feminine in her appearance yet, like Ripley in Alien: Resurrection, she lacks all the biology that makes her a women. She is simply a machine masquerading as female. Posing as John’s sister, she saves
him and Sarah time and again from attacks by other cyborgs sent to destroy them. However, she is never truly accepted or trusted by those she protects. She has far greater power than any other character on the show, yet she also proves to be the greatest liability the family faces. Her power and her otherness cast her as an outsider amongst those she has been programmed to protect.

As a machine, Cameron is neither male nor female and is therefore untrustworthy and dangerous because her very existence transcends the notions of gender roles. Because Cameron is a cyborg, she has no free will. Her capabilities only go as far as her programming allows; programming that has been put into place by the John Connor of the future who has sent her back to protect him. She is female without self control – instead she has male control. In one of the final episodes of the series, Cameron realizes the threat she may pose to John, so in order to protect him from herself if the need arises, she implants a small explosive device in her head, near her microchip (her one spot of weakness). Since she has not been programmed for self-termination, she entrusts John with the detonator. Cameron is not even in control of her own death, and is again under male control.

While Ripley in Resurrection and Cameron in Terminator: The Sarah Connor Chronicles are both physically designed to appear female, they have in fact been stripped of the very thing that biologically makes them female – their internal anatomy and reproductive abilities. In her article “Lara’s Lethal and Loaded Mission: Transposing Reproduction and Destruction,” Claudia Herbst writes of the videogame character, Lara Croft, “Despite the fact that [she] is represented as an empowering female, she appears to have lost something quintessentially female” (35). She is the manufactured female, created to look the part, but she has been stripped of the reproductive aspect of her sexuality completely.

Who Died and Made Her Boss?

There are few exceptions to the rule of patriarchal dominated power. Rarely is power passed down through the matriarchal line. It is seldom seen in television and seemingly nonexistent in film. Two television shows, however, that do present power passed down through a matriarchal line are Charmed and Buffy the Vampire Slayer. Yet even Buffy is flawed in this respect. While the series is based on the premise that “In every generation there is a chosen one. She alone will stand against the vampires, the demons, and the forces of darkness. She is the slayer” (Welcome to the Hellmouth, 1997), it is revealed in season seven that it was a group of men who, in the beginning, decided it would be this way. The passing of power from one generation to the next stays within a matriarchal line; the initial giving of the power, though, is still based in patriarchy.

This leaves Charmed to stand alone in representing a matriarchal power system. Charmed centers around the Halliwell sisters, three witches who are the “Charmed” ones; three sisters who, combined, are the most powerful witches in the world. Their powers are passed down through the women of their family. The show, predictably, presents the Wiccan powers these three have inherited as burdens as well as gifts. Like many of the female heroes, the sisters of Charmed often yearn for a life free of the responsibility they have been born into. Piper, more than the other sisters, longs for a normal life, outside of magic and demons. She is the least accepting of her power. For this reason, Piper is the first to reap the benefits of femininity. She is the first to marry and to give birth. However, despite this denial of power, the birth of her first son causes her to continue, more fervently, to battle evil. She and her husband Leo, a “whitelighter” (guardian angel for witches) have given birth to the most powerful magical being on the planet. Because of this, Piper must fight harder to protect her son. This determination to protect her son also serves as a form of female entrapment. She is forced to make sacrifices, in the name of motherhood that she was not willing to make before. While she is still a strong, empowered character, her maternal status binds
her with an obligation to protect her son above all else. She is ruled by her biological ability to reproduce – again, as biological determinism, female essentialism. Despite the fact that Charmed presents a matriarchal line as a source of power, it too is flawed by the birth of Wyatt, Piper’s son. While the Halliwell sisters are, combined, the three strongest witches, Wyatt is given the title as the most powerful being on earth shortly after his birth. While the Wiccan powers have been passed down from one woman to the next for centuries, the birth of a male heir to the power ushers in the strongest magical being, showing that while the female hero has made extreme advances toward acceptance, society still prefers a male — even if a baby — with great power.

In a similar manner, Sarah Connor of the Terminator series faces maternal problems. After discovering, in the first film, that she will soon give birth to the leader of the resistance to save humankind, Sarah knows the future of the world rests in her hands (and ultimately her son, John’s). In order to fully protect him, Sarah must acquire the skills to ensure his survival. She too becomes bound by motherhood, destined to play the role as ultimate protector. A promotional poster for Fox’s television series, Terminator: The Sarah Connor Chronicles, reads, “The mother of all destinies.” Sarah knows what must be done to prepare John for his future, and she sets out to do all that is necessary. Her life is lived in service to her son – again, a denial of the self for male goals.

Unlike the other Female Action Heroes mentioned, Sarah has no “super-powers.” She has not been injected with a virus, bionically altered, or born with magical powers. Sarah’s “powers” are achieved through discipline and intense training. It is her maternal status that drives her to do so. She, like Piper, is ruled by motherhood and a male agenda.

In today’s popular culture the Female Action Hero plays numerous roles. Her tougher, more “masculine” image suggests that a greater variety of gender roles are open to women. However, her toughness is often relegated and minimized by her femaleness, which is commonly associated with weakness in society. Innes writes, “Tough women can offer women new role models, but their toughness may also bind women more tightly to traditional feminine roles — especially when the tough woman is portrayed as a pretender to male power and authority, and someone who is not tough enough to escape being punished by society for her gender-bender behavior” (5). So, where does this leave the female hero? The notion of a woman with power should ideally be one of freedom and independence. Instead, it serves as a means of subjugation, control, and confinement, often forcing women to choose between femininity and power. Inasmuch as power can be given to these tough women, it can just as easily be taken away if they refuse to abide by the rules laid out by the dominant patriarchal order. Though she may save the day, rarely is there a happy ending for the Female Action Hero.

Works Cited


Buffy the Vampire Slayer. Dir. Fran Rubel Kuzui. Twentieth Century Fox Film Corporation, 1992. Film.


The Double-Edged Sword of Terrorism: The Battle for Perception

Adrian N. Mackie
Dr. Karen Petersen
Political Science

There has been a substantial proliferation of academic literature on terrorism about its group hierarchies and motivations. However, little research has been conducted on the evolution of terrorist groups and how social support has been maintained considering the increasing economic, political, and militaristic pressures of the international community. There are three primary factors that influence how social support is maintained by terrorists—foreign policy, the media, and the social support “terrorist groups” provide to their constituents. Currently, the conceptualization “terrorism” is too broad to adequately deal with the variations that exist between groups which could be classified as guerrilla, resistance, or political. Until the term “terrorism” is better refined, understanding how social support is maintained will remain elusive as it is the perceptions and (re)actions of the international community that will determine what avenues of support “terrorist groups” will pursue.

Introduction

States of the 21st century are facing modern warfare which is asymmetrical in nature and growing in lethality as it evolves (RAND 1999). Asymmetrical warfare is fourth generation warfare employing nonconventional tactics and can be linked to many conflicts including secessionist movements, resistance movements, “freedom fighters,” or even terrorism, depending on the context and the definition being applied to the conflict (Goodwin 2006). Modern terrorism has become one of the most significant forms of conflict as is evidenced by “The War on Terror” and its important impact on the international system since the Iranian Revolution in 1979 and the present. Modern terrorism is utilized to influence elections, conflict, and political decisions. Most notably, modern terrorism employs tactics that states were (and arguably continue to be) unprepared to combat. It is important to note that while terrorism existed before 1979, it is this crucial year that marks an evolution in tactics and motivations that led to increased international interest.

Considerable academic literature exists on the identification of terrorism as well as the hierarchies and methods of knowledge transfer in terrorist groups. The tactics of terrorist organizations, and to some extent the conditions that create a permissive environment for terrorist group formation, have been well documented even with the limited data that is available due to the secretive nature of terrorist groups. Additionally, literature concerning the effects of terrorist groups on election cycles, populations, governments, peace processes, and even larger conflicts such as the Lebanese Civil War or even the much larger issue of the Arab-Israeli conflict can be examined in the work of Andrew Kydd and Barbara Walter, Ifat Moaz, Jacob Shamir, James Forest, Paul Wilkinson and many others.\(^1\) However, little

research has been conducted on the evolution of terrorist groups with a specific focus on how social support has been maintained considering the increasing pressures of the international community. Examples of international pressure are the Oslo Accords in 1993, “The War on Terror” created by former President George W. Bush, and the International Summit on Democracy, Terrorism, and Security (Richardson 2006: 175).

Research on terrorism often focuses on the civilian populations which terrorist organizations target. Consequently there is a lack of information about the process by which terrorist organizations gain support from civilian populations. Understanding this process has implications in as much as social populations are the source and support for terrorist groups. This particular gap in the academic literature, which is also acknowledged by Jeff Goodwin, raises questions about terrorism (e.g. How do terrorist groups maintain social support and what exactly is terrorism?). The latter of the two questions is especially important since it is unlikely that the populations from which terrorist groups receive support will view themselves or the group as terrorists. Consequently, the formation of perception surrounding terrorism in relationship to the question of how terrorist groups gain and maintain social support becomes especially important since there is no consensus whatsoever on the term “terrorism” (Goodwin 2006: 2027). Perception formation stems from the various factors which mold the way a person or group of people are viewed. Foreign policy is the ultimate representation of perception since foreign policy is larger than the beliefs of any individual and becomes the roadmap by which any action is taken in the international arena. Foreign policy is traditionally associated with states. However, in this modern age substate groups must maintain foreign policy as well. For example, Hezbollah, Al-Qaida, and the Taliban each have policies toward the West.

This paper will focus on the evolution of terrorism between 1979 and the present with particular attention to the development of social support. However, to understand this particular aspect of the research topic, it is important to take note of what terrorism means because its modern usage encompasses a broad variety of militant acts. The debate surrounding the term terrorism will be discussed as well as its relationship to the overall research question of how terrorist groups gain and maintain social support. Furthermore, terrorism’s definitional flaws will be discussed in terms of their impact on the identification of terrorist groups by the external and internal actors. And finally, the relationship that the identification of terrorist groups has to the shift toward a focus on Near Eastern terrorism by the West and United States will be examined. There are three primary factors that influence the development of social support for terrorist groups — the foreign policy of governments opposed to terrorism and terrorist responses, the media, and the reciprocal social support terrorist groups provide to their constituents. After each of the three factors that influence social support are discussed, a brief case study on Hezbollah will challenge the application of the term “terrorism” and demonstrate the necessity of clarifying the term’s usage for future research.

Defining Terrorists, Terror, and Terrorism

It is haphazard to pursue a research question dealing with the notion of terrorism by assuming any definition one would find for the term would suffice. In fact, one researcher of terrorism found that when searching for the term on an internet search engine, one could stumble upon thousands of entries (Schmid 2004: 378). It is no longer sufficient to assume

---

2 The 1993 Oslo Accords required that the Palestinian Liberation Organization (PLO) curtail terrorism in the region. However, acts of terrorism actually increased due to the backlash of Hamas in response to the progress being made with the PLO and the creation of the Palestinian Authority.

3 For more examples of international pressure see Wilkinson 2000: 190-192.

4 Goodwin 2006.
that what looks like, smells like, and kills like terrorism is terrorism (375). What defines a person as a terrorist one day could make that person a national hero the next as was evidenced in the case of Nelson Mandela. When Mandela was released, Ugandan president Yoweri Museveni stated that Mandela was a freedom fighter even though at the time of Mandela’s imprisonment he was viewed as a terrorist (415).

Terrorists, terror, and terrorism evoke thoughts of the “War on Terror,” embassy bombings, or various media images broadcasted from the 1980s to the present. However, what do these terms mean? How we define terrorism ultimately affects the actions taken against groups labeled as deviant by the international system. Furthermore, the implications of the term terrorism will ultimately determine foreign policy and the impact of terrorist groups on the modern international system. In other words, what states determine terrorism is will result in how states take action against it. Additionally, the way in which terrorist groups interact with the international system — in terms of whom, what, when, where, and how — will be impacted by the prevailing definition. For example, in 2006 Hamas was elected to power in the Gaza Strip of Israel. The United States labeled the elections illegitimate and refused to recognize Hamas while further labeling the group as a terrorist entity. Former President George W. Bush stated that “Hamas is one of the deadliest terror organizations in the world today” (Jenson 2009: 1).

U.S. foreign policy makers as well as those from Israel and Europe have debated the legitimacy of negotiating with Hamas especially since Hamas occupies what is viewed by some as legitimate political positions in Gaza (Jenson 2009: 1). Yet, there is no internationally accepted definition for the term terrorism, and the definitions available are numerous, broad, and to some extent vague (Richardson 2006: 2). The U.S. Code,7 which is produced by the Office of the Law Revision Council under the auspices of the U.S. House of Representatives, identifies terrorism as “Premeditated, politically motivated violence perpetrated against non-combatant targets by sub-national groups or clandestine agents, usually intended to influence an audience” (Richardson 2006: 2). However, definitions vary from agency to agency and from nation to nation. Some definitions include aspects of the type of violence, the presence of fear, the notion of deterrence of opposition, discriminate versus indiscriminate acts, and notions of “self-help,” non-lethal action, or even an act of symbolic purpose. As Alex Schmid has accurately stated, in order to fight “terrorism” on a global scale, such as the “Global War on Terror,” one must first know exactly what terrorism constitutes and whether or not it is a “metaphorical” war like the “war on poverty” or a “real” war (2004: 375).

Without a uniform definition, international agreements, multilateral or unilateral actions by governments, and international mobilization against terrorism are compromised. The lack of a uniform definition results in an inability to concretely apply the term to individuals or groups of individuals employing terror tactics. As one author has stated “leaving the definition [of terrorism] implicit is the road to obscurity” (Gibbs 1989: 329). Conse-

5Hamas stands for Harakat al-Muqawama al-islamiyya (The Islamic Resistance Movement) (Mishal and Sela 2006: 1) It also stands for the Arabic word ‘zeal.’

6Negotiations for the release of an Israeli soldier occurred through Germany and Egypt (2009).


quently, a terrorist group to one nation could be a freedom fighter in another (Oberschall 2004: 26). Moreover, the notion of terrorism suggests deviance from acceptable international practice or at least actions that are defined by international law and convention. Obscurity has resulted in states themselves being accused of terrorism (Rodin 2004: 752). States frequently employ acts of terror as can be seen during the Stalin regime in the USSR and arguably even the United States, Israel, Lebanon, and Iraq based upon the lack of precision and clarity in the definition. The lack of clarity undercuts any action taken against terrorism and the actions of international bodies and states. For the purposes of this paper, the definition of terrorism employed is as follows: Terrorism is a violent act carried out by sub-state actors against civilian populations in order to obtain social or political change.

This definition differs from the U.S. Code in several respects. The U.S. Code uses the term “non-combatants” which could be military units that are inactive. Much debate remains as to whether inactive military personnel are considered legitimate targets of war or if attacks on them constitute terrorism as is evident in discussions surrounding the 1983 bombing of U.S. military barracks in Beirut. The U.S. Code also includes clandestine agents as perpetrators of terrorism. However, a clandestine agent remains an arm of government apparatus acting in the interest of the state to which allegiance is given regardless of the activities being made aware to the public. This thereby constitutes an act of war or, at the minimum, state terror. And finally, the U.S. Code states that the act is intended to “usually” influence a particular audience. However, any act committed by a terrorist group is intended to influence an audience.

These distinctions are critical in understanding how terrorist groups operate and are organized. Furthermore, a precise definition of terrorism is needed in order to distinguish between groups that may exist in a different capacity altogether such as guerilla groups, freedom fighters, secessionists, etc. Terrorism has evolved in the last thirty years and the term terrorism has become an umbrella for wide variety of groups to whom the definition no longer applies. This is significant because how governments act and react to terrorist groups is based on their perceptions of what constitutes a terrorist group.

Transitional Terrorism: Concept Stretching?

The perception of terrorism ultimately determines how social support is gained for actions taken against those labeled as the deviant group and how the deviant group will bolster support against its accusers. Therefore, the evolution of terrorism and its transitional nature must be understood. One particular issue that arises in identifying terrorism or terrorists is the tendency of researchers and/or policy makers to stretch ideas in a way that applies the definition of terms broadly and usually to the extent that the concept itself loses meaning. This is called concept stretching (Sartori 1970). Determining whether terrorism has undergone this “stretching” is important because conceptual stretching suggests a static definition that has not evolved with the original occurrence. In other words, terrorism in the 1970s would be drastically different from that of acts currently included under the term terrorism in the modern age, but a static perception would remain. The absence of a precise and uniform definition as well as the broad application of the term seems to suggest that such stretching has occurred to the point that it is difficult to distinguish between revolutionary groups, insurgency, and acts of terrorism. An extreme example of this conceptual stretching can be seen in the indictment of a student at Middle Tennessee State University for acts of terrorism after the student committed an act of arson and sent threatening letters to several students and faculty (Murfreesboro Post, March 2009).

Essentially, by labeling the student as a terrorist, the U.S. government placed the student in the same league as Osama Bin Laden and Al-Qaeda. Should the “War on Terror” extend to this student? It would seem reasonable to argue that the term terrorism has under-
gone a broadening that has resulted in amorphous conceptualizations and a decrease in the 
ability to empirically study terrorism (Sartori 1970). This problem raises greater concerns 
with regard to the application of the term to groups that are currently labeled terrorists and 
becomes crucial in understanding how groups will bolster support against accusers. This 
lack of understanding may seem irrelevant. However, upon marriage to media and mass dis-
semination of the notion of terrorism, the overstretched and inadequately defined term is 
critical to organizations labeled terrorist because it will mold how terrorist groups produce 
propaganda and react to the policies of their enemies. Conceptual stretching, though em-
ployed by those controlling the flow of information, has an important impact on how terror-
ist groups gain and maintain social support as is evidenced in the following statement made 
by Osama bin Laden:

America has made many accusations against us and many other Muslims around 
the world. Its charge that we are carrying out acts of terrorism is unwarranted…If 
inciting people to do that [9/11] is terrorism, and if killing those who kill our sons 
is terrorism, then let history be witness that we are terrorists.” (CNN Interview, 
Oct. 2001)

While Osama bin Laden’s actions most certainly can be classified as terrorist in 
terms of the definition, his statement focuses on an important point. The application of the 
term’s definition to various groups can strengthen the support that is given to groups labeled 
as terrorist entities. Consequently, the stigma that is inherently attached to terrorism when 
applied widely to various groups can inspire outrage either against those labeled terrorist or 
against the accusers. This is one factor in perception development which results in the crea-
tion of foreign policy not only in terms of traditional international actors — states — but 
also foreign policy in terms of terrorist groups. Consequently, it is reasonable to assume that 
terrorism has evolved over time not only in tactics but also in its ideological nature. Groups 
labeled either correctly or incorrectly as terrorist in nature adapt their rhetoric and messages 
to suit their support populations. This also has an effect on the support gained by the accu-
sers. By labeling a group as deviant and subsequently supporting such description with rheto-
ric, accusers can gain social support against the deviant groups. Deviant groups are capable 
of drawing support from those who do not support the label because some groups, such as 
Hezbollah, provide social support to a broader audience and are not viewed as terrorists by 
the local population.

However, since terrorist groups are evolutionary in nature, labeling a terrorist group 
is not sufficient in maintaining social support over time (Forest 2006). Ideally the classifica-
tion of a group as terrorist would weaken its broad support base. It has been suggested that 
one thing terrorist groups have in common is that they are weaker than their enemies in rela-
tion to political and/or military power while still being capable of inflicting tremendous 
damage to both structural and human surroundings (Richardson 2006 2). Furthermore, the 
higher the ethnic diversity and the greater the degree of fragmentation in the polity suggests 
a proclivity to higher incidents of terrorism (Richardson 2006: 4). This suggests that social 
acceptance of that which is labeled terrorism has roots in political and social grievances 
which also change with time (Jebb et. al. 2006: ix). Social grievances provide a platform for 
terrorist groups to connect to populations thereby promoting social support. An example is 
the evolutionary platform of Hezbollah which has changed with key events such as leadership 
changes, the Oslo Accords, and Hezbollah’s conflicts with Israel. Yet, this is not suffi-
cient in explaining how terrorist groups gain social support considering the past 30 years of 
evolution and the lack of terrorism in places where similar permissive conditions exist.

While the strategies of the Cold War are outdated in dealing with modern issues of 
terrorism, much knowledge and discussion surrounding terrorism has been drawn from pre-
vious decades (RAND 1999). Modern terrorism, however, has taken on many new charac-
teristics including, as Bruce Hoffman states, decreasing attacks with increasing lethality, decentralization of command structures, and ambiguous organization attachments and structures (RAND 1999). This departs from what are labeled “traditional” terrorist groups such as the Irish Republican Army (IRA), the Basque Separatist Movement (ETA), The Red Brigades in Italy, and even the Abu Nidal Organization (RAND 1999). These groups had comprehensible aims and motivations and were more than willing to take credit for their actions.

However, these groups have been joined by much more amorphous groups whose aims, motivations, and ideology are much less apparent. In fact, many groups such as Al-Qaida have become more and more decentralized and have a more diffuse membership (Bukolt 2009). Furthermore, acts taken against embassies and other targets are becoming much more difficult to link to specific entities as is the case with groups who claim to operate under the umbrella of “Islamic Jihad” (RAND 1999: Forest 2006). Additionally, terrorism, according to Krauthammer, is also deeply entrenched within the Middle East and has become an important factor in the Israeli-Palestinian conflict within the past decade, especially with the death of Yassar Arafat and the rise of Hamas and Iranian influence within the region (2006: 31). This represents a shift from a much more Eurocentric or perhaps western focus on terrorism to specific emphasis on the Near East and Islamic terrorist development. Regardless of the changes that terrorism has undergone and the different strategies states have employed against terrorism, the common denominator of terrorist groups is the maintenance of social support.

While terrorism has changed in ways beyond the scope of this paper, it is necessary to note that in identifying terrorism, the definition has not progressed with modern developments in terrorist organizations. A definition that was applicable in the 1980s most certainly needs revision during the “War on Terror,” especially since groups that remain labeled as terrorist organizations are inherently evolutionary in nature (Forest 2006). A key case is Hezbollah. Consequently, questions arise as to the adequacy of the application of the term terrorism. In terms of the social sciences, the lack of a uniform definition and concept stretching results in an inability to adequately study either quantitatively or qualitatively any phenomenon that arises in political structures, such as terrorism.

Development of Perception: (Un)Covering Terrorism

The information revolution has created complex interdependence and produced a “paradox of plenty” in which mass information creates scarcity for valuable information (Nye 2005: 233-234). In the case of terrorism, this means that large amounts of misinformation are capable of being produced and spread both from states and non-state actors. The average onlooker to mainstream media and internet sources consciously and unconsciously develop perceptions about the world around them. As Michael Carpini and Bruce Williams suggest “the media, by presenting selected portions of the political world, can be critical in shaping the political priorities of both the general public and public officials” (1987: 46). Media therefore serve as a system for communicating messages and symbols to the general populace that functions on the macro level to integrate and enculturate groups of people into the structures of the larger society in which media function.

Media are inherently linked to systematic propaganda (Chomsky and Herman 2002: 1). The ability of states and substate actors to control this flow of information is crucial in gaining social support. Therefore, media is one of three primary factors, and perhaps the most vital, in bolstering the support which terrorist groups receive and in bolstering the support western states receive against terrorist groups. As a result of the interdependent nature of media, it is insufficient to approach media’s influence on terrorist groups without analyzing media from the perspective of terrorist groups, media from the perspective of the West, and the interaction of these two spheres. In this paper, media will be analyzed between
1979 and the present as this is most relevant to modern terrorism. In 1979 the Iranian Revolution swept the pro-western Pahlavi regime and replaced it with the theocratic rule of Ruhollah Khomeini (Kinzer 2003). This event was the culmination of tensions that led to the rise of Islamic fundamentalism and the subsequent terrorist groups that formed in the 1980s (Gueraiiche 2009). It is from this revolution that the large-scale jihadist movement arises and the major cleavage between the West and Middle East begins. Iran also rises from the revolution as a major player in the support of anti-West terrorist groups. The revolution was significant because for the first time security concerns surged in the West with regard to the potential dangers of Islam, especially in the United States. This reaction is understandable since the world was caught off guard with the use of commercial planes as weapons against civilian populations post-revolution.

Additionally, the revolution in Iran, though it did not begin as a religious revolution, resulted in an anti-West theocracy that uses Islam as its moral compass. Additionally, the United States suffered heavy casualties as a result of the many terrorist attacks committed against embassies and the multiple hostage situations that were perpetrated by militant Shiite groups, including the hostage situation at the embassy in Tehran during former President Jimmy Carter’s administration in 1979 (Said 1997: xii). Consequently, the 1980s began an era of media which was anti-Middle East in nature and employed propaganda that shifted perceptions of terrorism and fundamentalism from terrorist groups across the globe to that of the Middle East, Arabs, and Islam (Said 1997: xvii).

With the shift in American media, many “experts” on terrorism and the Middle East arose by means of media exposure regardless of actual expertise and usually without any knowledge of the language, religion, or people of the Middle East as evidenced by the McLeher News Hour and other popular programs between the 1970s to the present (Said 1997; Chomsky and Herman 2002). The media that was produced in the early 1980s and throughout the 1990s focused on images of individuals from the region or various acts that terrorist groups committed. Little distinction was made between the actions of various groups such as Hezbollah and Jama’at Islamiyya (Said 1997). Instead of addressing the nature of terrorism during this period of time, questions were being asked as to the nature of the threat of Islam and Muslims, thereby creating an explicit connection between the Middle East and the majority of terrorist activity. In 1996, an international conference on terrorism attended by President Bill Clinton, Prime Minister Sharon Peres, President Hosni Mubarak, and Yasir Arafat was convened in Sharm el-Sheikh to discuss terrorism in response to suicide attacks on Israeli citizens (Said 1997). The negative perceptions of the Middle East and Islam became so ingrained by the 1990s as a result of Time Magazine, the McLeher News Hour, Walter Cronkite and others that when Timothy McVeigh blew up a federal building in Oklahoma, the attack was originally linked to Islamic terrorism as well as the IRA and others (Said 1997; Deflam 1997 5). This was not an unreasonable reaction given the situation but in hindsight perhaps should have been approached differently.

These linkages became so pervasive in media and academia that they created ridiculous images of terrorism. Stephen Schwartz argued that all Islamic terrorism has its

---

9 Examples of this are the TWA flight that was held in Beirut in 1985 and the explosion of Pan Am flight 109 over Lockerbie, Scotland. It should be noted that this was carried out by Islamic terrorists backed by Iran (Said 1997).

10 This moral compass is subject to interpretation by Iranian officials as per the theocratic structure.

11 Directly translated this literally means Islamic Groups. This is the title of the organization and not an umbrella term.

12 The summit occurred in March of 1996 and openly condemned Iran’s stance toward terrorism.
roots in Wahhabi Islam in a British weekly (*The Spectator* 2001; Mamdani 2002). Schwartz also argued that all suicide bombers and hijackers were Wahhabi and this argument resonated in many media circles including the *New York Times*. Even Bernard Lewis (2002), a well-respected expert of the Middle East, wrote, “What Went Wrong with Muslim Civilization?” in which he stated, “The world of Islam had become poor, weak, and ignorant”; he also infantilized the region and suggested that the Middle East had gone terribly wrong. Additionally, former president of Human Rights Watch, Aryeh Neier, compared the whole of the Islamic world to Nazis who identify modernism and democracy as their enemy (Mamdani 2002). There are so many examples of this negative perception that a book could be written about this aspect of media. These examples reveal impassioned and misinformed media which, between 1979 and the present, have integrated into the mainstream. This perception has an impact on terrorist groups.

Negative media against various groups, such as Hezbollah, reinforces the support base of these groups who view themselves as inaccurately perceived by the West. Additionally, the suggestions made by the West about the “problems” of the Middle East have a tendency to enrage people who feel discriminated against. Western media serves to further disseminate the messages of terrorist groups via television but also in terms of printed material. Terrorist groups produce media that rebuts western rhetoric, promotes their ideological causes, and creates a “theater” for their actions (Forest 2006: 133).

It seems logical that media attention is inherently detrimental to terrorist causes. However, terrorism and media are symbiotic because without the legitimization that comes with media attention, terrorist groups lose support and without social support terrorists have no foundation to justify their actions (Forest 2006; Wilkinson 2002). Moreover, media serves to inflame terrorist opponents as well as provide a vehicle for knowledge exchange (Forest 2006). This knowledge exchange can be through the internet but also print and any other media format available. Knowledge exchange and civil liberties are a problem for democracies, especially western democracies.

According to Leonard Weinberg, “brutal dictatorships rarely suffer campaigns of terrorist violence — at least not for very long” (Richardson 2006: 45). However, due to the nature of democratic states, terrorist organizations benefit from the freedoms that are provided in these areas (Wilkinson 2002). Therefore, terrorist groups are careful to ensure that their actions are painstakingly displayed, especially since western media are preoccupied with “the dramatic, the conflictual, and the violent” (Carpini and Williams 1987: 47). The problem lies in the fact that terrorists use media to their advantage which is counterintuitive. Additionally, the permeability and projection capabilities of media create an effective tool for terrorist groups to gain support.

While terrorist groups have failed at toppling governments, they have successfully found a medium to transport their ideology. Western states have failed at successfully stopping the spread of this ideology, which is primarily due to the media of western states. For example, when TWA Flight 847 was hijacked and then publicized extensively, the coverage “played into the hands of the terrorists” because pressure was placed on the U.S. administration to deal with the situation and the terrorist groups were able to reach a broad audience (Wilkinson 2002). Essentially, the primary target for terrorists is the secondary objective and the secondary target is the primary objective. In other words, the civilian deaths are the primary targets of terrorist groups, but the real target is influencing other states, spreading a particular message, and legitimizing terrorist actions among terrorist group supporters. In addition to spreading a particular message, media provides a platform for recruitment, mobilization and gaining support as evidenced when the leader of the Kurdistan Workers Party (PKK), Abdullah Ocalan, was arrested and charged with terrorism by the Turkish government. Tens of thousands of Kurds mobilized to protest. This is largely in response to internet websites urging supporters to protest. And this is further evidenced in Al-Qaeda’s use of internet coordination in the attacks of September 11, 2001 (Forest 2006). Other examples are
evident in the wide variety of media sources that are controlled by many groups labeled as terrorist such as Hezbollah’s Al-Manar television station (Forest 2006). These sources also include video games\textsuperscript{13}, radio, and newsprint but what is more important is the interaction of western media and the media promoted by terrorist groups.

The negative media promoted by the West aids terrorist causes by showcasing a “victory” for their supporters and invoking the desired response from states. The negative media of the West reinforces the support terrorist groups gain by illustrating the tendency of the west to disapprove of actions which terrorist supporters view as legitimate. This is compounded by the media that is created by terrorists which rebukes western media and further supports the terrorist groups’ cause. It is a win-win situation for terrorist groups. Without media broadcasting their actions and message, terrorism becomes the proverbial tree falling in the woods. However, while media is the most important factor for a terrorist group’s support population, the services that terrorist groups provide also attracts individuals.

Gaining Social Support Through Service

As stated previously, terrorist groups are labeled “terrorists” due to their militant acts against civilian populations among other things (Forest 2006). Why then do individuals gravitate to extremist ideology? It is insufficient to say that the appeal of terrorist groups lies with the use of violence and the killing of individuals whom the average terrorist has never met. Logically, an individual must find a positive outcome to legitimize his or her direct participation (becoming a terrorist) or indirect participation (supporting terrorist groups). Many could argue that the instant redress of grievances is appealing in itself. However, grievances usually deal with the inability of the host state to adequately incorporate portions of the population, provide equitable services to the population, or to follow certain popular ideological beliefs such as fundamental Islam or cultural concerns. Terrorist groups have, by definition, a constituency perceived (Al-Qaeda’s belief that they are fighting the west for the betterment of the Arab world) or otherwise (Hezbollah’s belief that it protects the Shia of Lebanon). They therefore are known to provide social services such as schools, hospitals, food, economic aid, relief, and the protective umbrella of security to varying degrees.

Much literature has been written on the impact of a state’s ability to provide social services to populations and the existence of terrorism. However, this aspect is perhaps the most elusive to study as it is very difficult to collect data. Literature on terrorism frequently mentions that terrorist groups will exploit a state’s inability to provide services to its population thereby creating a positive image of the terrorist group to the population receiving service (Forest 2006; Richardson 2006). However, these sections in terrorism literature are very small and barely pay lip service to the issue. I believe this to be a result of the lack of data but also the indirect and direct impact that media and foreign policy towards terrorism has on populations interacting with terrorist groups. Wars, media misinformation, and the inability of states to deal with social grievances all impact the ability of a terrorist group to be successful in an area, which is why the Taliban and Al-Qaeda have been successful over the past few years in maintaining their presences in various regions. Consequently, terrorist groups can take a direct approach to gaining social support but, through the exploitation of media and foreign policy, also gain support with minimal effort.

\textsuperscript{13}Hezbollah released a video game after the 2006 war with Israel that promoted the killing of Israeli soldiers. (Forest 2006).
Foreign Policy: The U.S. and the Near East

The final aspect in influencing social support for terrorist organizations lies within the realm of perception. In the case of the international system and the topic being discussed in this paper, perception translates as foreign policy. Foreign policy is essentially the goals of a nation with respect to a particular topic (Wittkopf, et. al. 2008: 17). In other words foreign policy is used to determine diplomatic interactions, actions in war, and the stance of a state on issues of strategic importance. While terrorism can also fall under the category of domestic policy, it is inherently international and has changed over time, especially between the 1970s and the present. Below are two examples of policy decisions vis à vis speeches.

We can’t accommodate terrorism. When someone uses the slaughter of innocent people to advance a so-called political cause, at that point the political cause becomes immoral and unjust and they should be eliminated from any serious discussion, any serious debate.

Rudolph Giuliani, CNN interview, Sep. 11, 2002

We do not create terrorism by fighting the terrorists. We invite terrorism by ignoring them.

George W. Bush, speech, Dec. 18, 2005

A clear example of the international nature of terrorism is the “War on Terror” used by the Bush administration for the invasion of Iraq and incursions into Afghanistan which molded perceptions of the Middle East and political Islam in the Western world toward an anti-Islamist stance. This of course put relations with Middle East allies in a precarious situation to say the least. Former President Bush had increasing pressures from previous terrorist acts during the Clinton Administration and ultimately distanced U.S. engagement with Islamic organizations as a result of September 11th, 2001. The United States had previous interactions with what Cleveland calls genuine groups in the Middle East which would have been influential in shaping relations in the Middle East. United States security concerns would equate terrorism of a small minority with the whole of the Islamic activist movements in the Middle East, regardless of how benign. This of course was augmented by popular press (Cleveland 2004: 522).

It is out of this context that the U.S. redefined terrorism in what is now an ambiguous and far-reaching term. The Taliban, Al-Qaeda, Hamas, and Hezbollah made the top of the list. Of key importance to the Arab-Israeli conflict are Hamas and Hezbollah. Both, though independent of one another, remain entwined with Iran as well as the question of Israel. While Hezbollah has acted with militant means as was seen in the Lebanese Civil War, Hezbollah now occupies legitimate positions within government. This is a contradiction of the term terrorism.

Prior to the infant stages of the internationalization of terrorism leading up to the 1979 Iranian Revolution and the Lebanese Civil War, terrorism was largely nationalistic. During the Cold War, the United States and the U.S.S.R frequently supported various nationalistic groups through proxy wars to fend off the spread of communism and democracy (BUKOLT 2009). Previous to what I call “The Age of Fundamentalism” (1979-2009), the United States pursued terrorist groups and terrorism through international cooperation, sanc-

14Wilkinson 2002: 188.

15Gueraiche, Lebanese Civil War, 2009.
tions, and diplomatic negotiations with allies (Memorandum for the White House, 1995; declassified). However, the United States then had very little domestic concern over terrorist attacks entering from foreign entities (Department of Justice, 1998). U.S. foreign policy primarily focused on the isolation of sponsors of terror through indirect means. Terrorism has always been considered a threat to the United States especially since the majority of international terrorist attacks are committed against U.S. interests (Department of Justice, 1998). Under the Reagan administration there were discussions and actions which pointed to a focus on terrorism. However, American foreign policy did not adopt direct intervention methods on the scale seen today until the late 1990s and early 2000s under various measures instituted by the Clinton and Bush administrations.

The internationalization of terrorism occurred in the post-revolution era (Iranian) in which there is a marked shift from nationalistic movements to that of transnational terrorism committed by the Palestinian Liberation Front, Hamas, Hezbollah, and other groups around the globe. More importantly, this period is marked by what some scholars refer to as the rise of Islamic fundamentalism which has been identified as a threat to United States interests (Guéraiche 2009; Perl 2003). It is also during this period that United States policy shifts from indirect action to increasingly direct action as was evidenced by Ronald Reagan’s bombing of Beirut to oust Hezbollah. Clinton froze terrorist bank accounts and placed sanctions on state sponsors of terror as well as a vaguely defined a counterterrorism policy which involved “extracting a heavy price for their [terrorist] actions” through various means both covert and otherwise (Memorandum for The White House, 1995). Finally, George W. Bush militarily engaged individual groups as well as considered working with various state sponsors of terror to counter groups like the Taliban and Al-Qaeda (Perl 2003). This period saw a massive overhaul of the intelligence community under the Bush administration and the Patriot Act (Perl 2003).

The direct attack on terrorist groups under the Bush Administration as well as the creation of executive orders which permitted numerous, heavily militarized and violent engagements with the perceived enemy represented the first major policy change in dealing with terrorism since Reagan, who dealt with terrorism under the framework of the Cold War. The militarization of American foreign policy largely took place in Iraq and Afghanistan (Perl 2003; Richelson and Evans 2001).

**Foreign Policy Implications**

The United States policy toward terrorism has shifted from being isolationist and indirect to largely unilaterally activist. Sixty-three percent of terrorist attacks now occur against U.S. interests (U.S. Department of Justice, 1998). The former Bush administration molded a “War on Terror” that, to some, is as existential as the “War on Poverty.” U.S. actions, covert and otherwise, have ultimately affected the evolution of terrorist tactics. U.S. presence and direct conflict with these groups affect the international community and the states in which U.S. operations occur vis-à-vis the direct involvement on foreign soil as well as the need for cooperation with foreign governments. As time has progressed each administration has had to define and redefine what constitutes terrorism and what actions should be taken. This is immortally evidenced by the attack on the twin towers on September 11, 2001 which thrust transnational terrorism onto the laps of the American people and the foreign policy plate of George W. Bush.

However, as Obama’s administration progresses, terrorist threats continue to evolve and the United States faces two primary challenges: the combating of terrorist groups and the defense of individual liberty which permit much of modern terrorism to exist (Perl 2003). Terrorism is changing and threats remain in the spheres of technology, nuclear proliferation, transnational attacks, fundamentalist ideology, and the dangerous blanket definition of terrorists and subsequent actions taken against terrorists by the United States and the
West. The Obama administration will have to adapt to deal with these issues. The question is whether or not the new administration and later administrations will maintain the policy of responding “vigorously” regardless of where they occur and whether it will employ all “appropriate means” to combat it [terrorism] (Memorandum for the White House, 1995).

**Case Study: Hezbollah (Party of God)**

Of particular interest is how foreign, media, social support, and defining terrorism have interacted with the evolution of Hezbollah to aid in its continued existence. However, Hezbollah has an extensive history and the analysis provided here deals only with the specific factors relevant to this paper. Central to Hezbollah’s evolution is its creation in 1982, the rise of Nasrallah, the Oslo Accords, the 2006 war with Israel, the 2009 elections, and the formation of a coalition government in Lebanon between the current Prime Minister, Saad Hariri and Hezbollah. After a brief history is provided, Hezbollah will be analyzed through the framework discussed above.

Hezbollah formed in 1982 during the Lebanese Civil War as a populist movement and perceives itself as protecting southern Lebanon and the Shiite population. During the Civil War, Israel and the Amal party, which represented the Shiite of southern Lebanon, found mutual benefit in removing the Palestinian Liberation Organization (Norton 2007: 19). Once this unusual alliance ended with the transference of the PLO to Tunisia and Israel appeared to be permanently stationing troops, Amal’s moderate and excessively cooperative stance with the “enemy” resulted in the creation of the more fundamentalist and extremist, Hezbollah16 (Jaber 1997: 15; Cleveland 2004). The breaking point came in 1983 when Israelis disrupted an event called Ashura, the most sacred festival in Shia Islam. The justification used by Israel was that it appeared to be a mob uprising. A fatwa was ordered by Sheikh Mehdi Shamseddin and the call for confrontation with Israel began (Jaber 1997: 19).

The original goal of Hezbollah was to resist Israeli occupation since the PLO had been dealt with. The majority of Hezbollah members were originally part of the Amal party. Consequently, the removal of the PLO was the basis of both groups. It was only when Israel decided to station its military long term that the goal of what became Hezbollah was to resist Israeli occupation. This evolved over time to include an anti-west, especially anti-U.S. stance as a result of the U.S. support of the Jewish State (Jaber 1997). Another shift occurs after the Oslo Accords in 1993, which resulted in the creation of the Palestinian Authority (PA) and a framework for future peace negotiations between the Palestinians and Israelis. The Palestinian plight and lack of government were used as one of the evolving foundations for Hezbollah’s platform and were used to justify its militant actions against Israeli occupation. Hezbollah therefore, uncannily, picked up the flag for the Palestinian people which its members fought during the early stages of the Lebanese Civil War. Upon the creation of the PA, however, Hezbollah expanded its platform to a much more anti-West stance which would be embodied in the rise of Hasan Nasrallah to the visible leadership position of Hezbollah in 1992. With the rise of Hasan Nasrallah, Hezbollah’s platform shifts drastically from the previous leadership which employed numerous militant attacks compared to the Hezbollah of today. Multiple U.S. embassy bombings were perpetrated by Hezbollah with

16Hussein Nasrallah, Hasan Nasrallah’s brother is a lifetime member of Amal and the two brothers were frequently pitted against one another which contribute to the idea that the issues surrounding
the support of Iran and Syria between the 1980s and early 1990s.

In 2006, Israel and Hezbollah entered into a war in which Israel did not attain its goals, according to Hezbollah’s standards (Noe 2007). Hezbollah’s hard-line stance and the general stance of western states to deny negotiation with groups labeled terrorists has led to increased violence between Israel and Hezbollah, which Nasrallah has acknowledged in many of his speeches (Noe 2007). Much like Hamas, the ultimate goal is the restoration of Palestinian lands by whatever means necessary (Noe 2007). This cause was adopted after the creation of the Palestinian Authority to ensure the survival of Hezbollah and justify its maintenance of arms and conflict with Israel. It continues to fuel security concerns for Israel and places confrontation in front of resolution.

Furthermore, Hezbollah has, over time, alienated the people it claims to protect, resulting in Lebanese division, and has adopted the characteristics of a state within a state (Cleveland 2004). Hezbollah has also in many ways adopted its own double standard of using international law as justification for some of its actions while maintaining actions that violate the same law (i.e., defense against attack while at the same time carrying out attacks against Israel by maintaining an illegal militia) (Jaber 1997: 29). Hezbollah’s “state within a state” status, however, does arise from Hezbollah’s ability to provide for the people that which the Lebanese government cannot. Consequently, Hezbollah maintains popularity, especially since it has received much funding from Iran to provide such social services as schools, protection, healthcare, and other supplies. The extent of such aid is incredibly difficult to track since there is a lack of data on the transference and flow of goods and funding within the Hezbollah organization.

The status of Hezbollah and the 2009 elections have shown Hezbollah to be a force with which to be reckoned as they now occupy 45 seats in the government and, in an unexpected turn of events, formed a coalition government with Prime Minister Saad Hariri. This is unexpected since Prime Minister Saad Hariri’s father, former Prime Minister Rafik Hariri, is suspected to have been assassinated in 2005 by Hezbollah (Cleveland 2004). Many also speculate that Syria as well as Israel may have been the perpetrators of the assassination (Cleveland 2004; Forest; 2006). As Hezbollah has evolved, the ideological platform also has evolved. Transitioning into political power has always been on Nasrallah’s agenda because he recognized the importance of political legitimacy to maintaining social support (Noe 2007; Qassem 2005). The pressures of maintaining political constituents of a more diverse background seem to have forced a transition of tactics which require higher thresholds of social support (i.e. the bombing of an embassy would be difficult for Hezbollah to justify and maintain the broad support that it currently enjoys). This is evidenced by Nasrallah’s statements on Al-Manar Television when Hezbollah did not win the majority in government and Nasrallah called for non-violent reactions while affirming that the next election would be won legitimately, through the voting population (Al-Manar Television, 2009).

**Perceptions**

In the framework of this paper, Hezbollah has two levels of perception, that of the United States and the West and that of its support population. The United States labels Hezbollah as a terrorist organization (U.S. Department of State, 2009). However, following suit with the majority of definitions and the definition I provide, Hezbollah does not truly fit into the category of terrorism. Before 1992, attacks carried out by Shia militants were in the hundreds. However, after the ascent of Hasan Nasrallah to “The Voice” of Hezbollah, those attacks have decreased drastically to a total of less than a hundred between his ascent and the present (START Database; World Incidents Tracking Database, 2009). The primary locations of these attacks before Nasrallah and during the modern age are in Israel and Lebanon. However, many of the attacks targeted police or military which by definition eliminate them from being classified as terrorist activity. That is not to say that Hezbollah has not partici-
pated in terrorist activity, but since 2006, the majority of attacks have been against military or police forces. This is especially true with the 2006 war with Israel. Civilian casualties were certainly incurred but this is the case with any war or military action targeted in densely populated areas.

The label which the United States places on Hezbollah as well as the Israeli perception of Hezbollah only strengthens the group’s position as is evidenced in Nasrallah’s following statement after the assassination of Sayyed Abbas Mussawi, Nasrallah’s predecessor:

> What they have done, in fact, is awaken that very scene [Hezbollah’s position and status] … sharpened its awareness, increased its determination, unified it even further, caused it to rally round the resistance, and increased enmity towards Israel in a manner that Abbas Mussawi himself could not have done during his lifetime (Noe 2007: 59).

If I could compare Nasrallah to a personality in American culture, Nasrallah would be the Ronald Reagan of Lebanon. His ability to deliver well-articulated and educated speeches increases his ability to influence his people, especially since he does not condone unwarranted attacks made by militants and views Hezbollah as a resistance force protecting the Shia of Southern Lebanon (Noe 2007: 61). Interestingly enough, Nasrallah, in order to distinguish Hezbollah from terrorists, claims anyone acting in the name of Hezbollah in unwarranted attacks is a terrorist. In other words, Nasrallah suggests unsanctioned attacks are of deviant individuals and not the party. Nasrallah makes every attempt to separate his group from terrorists. The result is two perceptions that are mutually reinforcing. On the one hand, there is an organization that believes it is not a terrorist group and carries out actions that are against the interests of the U.S. and the West. On the other hand, the actions of this group reinforce the beliefs of westerners and results in foreign policy decisions that strengthen the stance of Hezbollah, all of which are compounded by conflicting media.

### Media

Ideas, information, and perceptions are perhaps most easily transmitted through media. Hezbollah has capitalized on this with its own television station, Al-Manar. Through it, Nasrallah delivers many of his speeches in favor of Lebanese unity as well as to pass on ideology and propaganda. Of particular focus recently, Al-Manar has produced many broadcasts about the elections in Lebanon, the new coalition government, and the political occurrences elsewhere in the Middle East, especially the Israeli government and the settlements in the occupied territories (Al-Manar 2009). It is also through Al-Manar that Nasrallah frequently condemns militant action and promotes peaceful elections through which Hezbollah expects to gain supremacy within the next decade (Al-Manar 2009). Al-Manar’s popularity in the region provides fertile ground for gaining social support while also reinforcing negative images of the U.S. and the West.

The U.S. and the West also employ media in the same fashion and, as mentioned previously, western media has focused on the Middle East heavily in light of “The War on Terror,” Iraq, Afghanistan and terrorist activity. Consequently, negative perceptions of the Middle East and anything that can be construed as terrorism are prevalent. The U.S. and democracies, in general, are much more susceptible to ideology dissemination as a result of civil liberties and the “freedom of speech.” That does not mean that citizens in democracies necessarily subscribe to the information that enters. However, it is clear that terrorist information and texts are easily accessible through the internet, books, and other forms of media. Hezbollah uses the rhetoric of the West to gain support and the West uses the rhetoric of Hezbollah and other groups to gain support.
Social Support

Social support, as mentioned earlier, arises partially from a group’s ability to provide services to populations. This is difficult to track and determine for many groups that are labeled as terrorist due to their secretive nature. However, the Deputy Secretary General of Hezbollah, Naim Qassem, in his book, *Hizbollah: The Story from Within*, has documented everything about Hezbollah from its foundations to its very structure, thereby making Hezbollah more accessible.

Hezbollah has a complex system of social services that are intricately intertwined with party membership. After adopting the party’s goals in entirety, each individual is given a party function based upon a hierarchy. Furthermore, division of labor is established in each village or town and no one is required to hold a party identification card. Hezbollah capitalizes on the female population through women’s societies designed to “achieve cultural and societal recruitment” for the hopes of “securing participation in the activities … of the party” (Qassem 2005: 60).

For example, the Al-Mahdi Scout youth group was created to meet the basic needs of the young population while providing a platform for party incorporation. Independently run organizations in the realm of education, culture, health, media, agriculture, and construction were created. These independent organizations have discretion for membership allowing for maximum participation based upon minimum party guidelines (Qassem 2005: 61). They are able to provide services while reaching a broader audience than just those who are strong supporters of Hezbollah. Hezbollah coordinates cultural events in line with education in Lebanon and maintains continuous cooperation with clerics and local leaders who meet party goals. They also provide services to all of those who participate in Hezbollah run events or rallies which allows Hezbollah to reach audiences who do not necessarily follow the party goals. This makes Hezbollah very appealing and provides an excellent structure for gaining and maintaining social support over long periods of time, especially since the party infuses non-party elements into their activities (i.e. culture, education, etc).

Conclusion

While it is difficult to quantify, terrorist groups gain and maintain social support over time through the use of media as a stage for militant acts, a platform to disseminate ideology, and a tool for recruitment. Terrorist groups also use the perceptions and foreign policy of the West and U.S. towards them to garner support. More importantly, terrorist groups provide necessary social services to populations to gain their favor. Of particular consequence to how terrorist groups gain support is how the West and U.S. perceive the notion of terrorism. Because the term terrorism is used to encompass any number of groups, individuals, or acts, many groups labeled as a terrorist group are able to further their goals and maintain militant action.

It seems as if some groups, such as Hezbollah, commit acts of terror but are transitioning into political offices. In the case of Hezbollah, political legitimacy is becoming increasingly important as they occupy a large number of seats in the government and recently formed a coalition government with the Lebanese Prime Minister. Until terrorism is better defined and understanding of how these groups function in spite of international pressure is expanded, “The War on Terror” will become no different than a “War on Poverty.” How do you deal with a problem until you know exactly what it is you are dealing with? Consequently, how terrorism is currently understood by policy makers in spite of terrorism’s evolution over time ultimately determines what actions are taken against terrorists. Perhaps, some of the groups labeled as terrorist are not terrorists but rather political entities that have committed acts of terror and therefore must be dealt with in a different manner. That is not to say that all current groups listed as terrorist in nature should be removed from that list.
However, if Hezbollah was dealt with like a political entity then one of Hezbollah’s key arguments against the West would be eroded forcing Hezbollah to evolve with the changing needs of its growing constituency instead of reacting to the actions of the West.

References


Environmental, Economic, and Health Aspects of the Brazilian Açai Palm Fruit

Lucy Miller

Dr. Richard Pace
Sociology and Anthropology

The açai berry, long a dietary staple for inhabitants of the Amazon floodplains, is now widely exported around the world. Marketing claims for the fruit include a variety of health benefits, including weight control. In addition to health issues, açai production may have an impact on the biodiversity of the environment and it certainly has an impact on the economic well-being of the producers themselves. In this ethnographic study, the perceived health benefits of açai are found to depend on whose perceptions are considered. In general, the açai berry is primarily a staple rather than a health supplement for the producers themselves. Environmentally, although specialization on a single crop entails clearing land of competing plants and thus does reduce biodiversity, it appears, however, that production of the açai berry can be accomplished without environmental degradation. In economic terms, açai production is an important contributor both to the local diet and to the economy.

Introduction

Over the past decade, there have been multiple claims that the açai palm fruit (Euterpe oleracea), a predominant palm species of the Amazon floodplains, is a sustainable non-timber forest product that can help preserve the rainforest while at the same time provide locals with a valuable source of income (Muñiz-Miret et al., 1996). In addition, now that the berry has been marketed globally for export, the health food industry has made multiple assertions as to the nutritional benefits of açai including healing and health sustaining attributes and weight loss properties (Genesis Today, 2009). Given these claims, the production and consumption of the açai palm fruit would appear to benefit a wide variety of constituencies and be an important element in sustainable development for the Amazon. However, many of these claims are unsubstantiated and far exceed scientific research.

The research presented here examines these environmental, economic, and health claims by focusing on the production, consumption, and folk views of açai in Gurupá, Pará. Gurupá is an agroextractivist community located on the lower Amazon River. The inhabitants have been producing and consuming açai for centuries, making the research setting ideal for examining the various assertions made about the palm berry. I employ ethnographic research methods to assess these statements (participant-observation, structured and unstructured observations, and structured and unstructured interviews). My central research questions are: 1) Does açai production help preserve the rain forest, or does the impact on the composition and structure of the forest lead to a loss of biodiversity? 2) Does açai production substantially increase household income levels for producers? and 3) What are the local views on açai’s nutritional properties and how do they compare with the health claims in the United States and in the metropolitan centers of Brazil?
Environmental and Economic Features of Açaí Production

Sustainability and Profitability

Açaí production has been described as a crucial forest resource that could potentially break the cycles of environmental degradation and unfair labor relations in the Amazon, such as experienced in the past with rubber, timber, and *palmito* (heart of palm) extraction. Rubber, for example, was the primary export for the Amazon region between the 1850s and 1920s (Barham and Coomes 1994: 40). While rubber extraction provided a source of income, the commodity chain for rubber was characterized by the exploitative *aviamento* system: a trading system built upon a “pyramid of debt relations” (Pace 1998: 76). This system was based on unequal relations that often left the rubber extractors in perpetual debt.

Likewise problematic, the timber boom of the 1960s-90s led to the overexploitation of specific tree species. Timber firms typically moved from one plot to the next using destructive techniques such as harvesting large quantities of only a few selected species while killing and damaging a high percentage of nearby trees in the process. As described by Hecht and Cockburn (1990: 158), in order to harvest a few specific species — about 3 percent of an area — extractors killed or harmed up to 52 percent of the surrounding trees. In addition, the sawing technology that was used to cut the harvested wood was inefficient and wasteful, leading to more trees being cut to meet the needs of timber producers (Browder 1986: 80).

Palmito extraction also has a destructive history. Since the 1970s, large-scale palmito extraction in the Amazon has resulted in the depletion of these palms, which also produce the açaí berry. Of particular concern was the practice of cutting the tops off the palms in order to extract the palmito located in the top portion of the tree. This method killed the tree and prevented any re-growth from the root clump. This technique of harvesting led to destruction of whole areas of açaí production (Pace 1998: 107).

By contrast, the extraction of the açaí berry is environmentally and economically promising, because unlike these other forest products, the fruit can be easily extracted without killing the tree. The berries are harvested by extractors climbing up the tree and cutting...
off the ripe caches of fruit which grow back and produce more fruit. An açaí palm will produce fruit for up to 15 years, providing long-term economic opportunity without the use of destructive processes. Açaí seems to be an ideal non-timber forest product that can help preserve the rainforest while at the same time provide locals with a source of income. Eduardo Brondízio (2004: 339), an environmental anthropologist, explains, “Emerging from the initiative of local producers to supply a growing demand for açaí fruit, using locally developed technology and knowledge with respect to forest management, açaí fruit production embodies the social and environmental principles that permeate the discourse of sustainable development in the Amazon region.”

Landownership

Landownership patterns are another important element impacting açaí production. Although landownership in the Amazon has a long and complicated history that cannot be easily described in the space provided here, I can focus on the main differences between the practices of large landownership practices and small landownership practices, which are crucial to açaí production. Brondízio (2008: 187-192), for example, maintains that small landowners, owning one to 50 hectares of land, use their plots for subsistence primarily and market production secondarily. They are characterized by exclusive family use of the land, creating autonomy over the resources that are produced on the land (Brondízio 2008: 191). By contrast, medium, large, and corporate landowners, with 50 hectares to 3,000 hectares of land, hire sharecroppers or wage laborers to extract resources (Brondízio 2008: 192). In comparison to small landowners, sharecroppers usually have very little decision-making input regarding how the land is used. They live and work on the land, but they are subjected to the owner’s land management strategies, which often disregard environmental responsibility and the sharecropper’s needs. Brondízio (2008: 192) explains, “Whereas small owners are independent in resource management and can decide which level and means of intensification to proceed with, sharecroppers are bound by the landowner’s decisions regarding pace, space, and degree of intensification.”

Large landowners often make decisions regarding land use based on short-term, high-profit resource extraction and disregard the sharecroppers’ subsistence needs. For example, they may lease the land for palmito and timber extraction, depleting the resources in a short period of time instead of allowing the sharecroppers to manage the land for long-term, secure production. In comparison to large owners, small landowners are more likely to practice sustainable management strategies for resource extraction because the land provides them with continual subsistence and income. As such, açaí fruit production has become a crucial component of sustainable land management for the small landowner because it provides the household with subsistence as well as income, and encourages forest conservation instead of deforestation.

Biodiversity

While many researchers tout the ecological and economic benefits of açaí, there are others who assert that açaí management strategies actually result in the loss of biodiversity in the rain forest. Stephanie Weinstein and Susan Moegenburg (2004), for example, argue that the management of açaí stands can lead to a loss of biodiversity as plantation-like gardens are created. They give several examples of management practices that might reduce biodiversity. For one, in an effort to produce a higher berry yield in a shorter amount of time, extractivists may clear any plants or trees that interfere with the growth and extraction of açaí. In addition, the techniques of planting açaí in new forest areas and home plots may significantly extend the palm’s range and, thereby, replace other plant species and alter for-
est composition. As demand for the berry increases, this reduction of biodiversity will only worsen, say Weinstein and Moegenburg (2004: 317). They argue that there are ways to manage the stands with less human manipulation, but with açaí now becoming a fashion food and with greater market demand, producers might choose to ignore conservation efforts.

Weinstein and Moegenburg evaluate the ecological effects of açaí palm management by comparing non-enriched forest (areas not planted in açaí) to enriched forest (areas planted with açaí). Their research indicates that the management practices of açaí production alters the overall forest composition and structure. Non-enriched, “native forests” had six meter higher canopies, stem densities of all species were 2.8 times higher, and basal areas were 4.8 times higher than in enriched, managed forest stands (337). In their conclusion, Weinstein and Moegenburg (340) state that,

The differences in vegetation composition and structure between açaí-enriched and non-enriched forest stands signify that ribeirinho forest management strategies are not only increasing açaí density across the Amazon estuary, but also that these activities are fundamentally changing the structure and composition of varezea forests. With a nearly complete loss of vines, lianas and large woody trees, and an accompanying opening and lowering of canopy, heavily managed forests no longer resemble native varezea.

Weinstein and Moegenburg’s assertions about loss of native forest bring up an important, and much disputed question of what constitutes a native forest. Many researchers have pointed out that the rainforest is constantly changing in composition, as a result of human interaction as well as natural changes. In fact, humans have manipulated the forests ever since prehistoric occupation. According to Oliver T. Coomes (1997: 183), significant areas of forest thought to have been pristine are now considered essentially anthropogenic in origin. According to Bale (1989), at least 12 percent of the forest is anthropogenic, stemming from human activity dating from prehistoric times.

Coomes (1997: 180) says, “Rather than being ‘ancient’ and ‘timelessly constant,’ continual renewal by tree fall gaps and other natural disturbances has kept the rainforest essentially young and diverse.” The fact that forest composition and biodiversity is in constant flux complicates the notion of a native forest, particularly in the context of rainforest preservation. “In this sense then, the rainforest, as an object of preservation is a moving target, not only by natural change but by its transformation through traditional human activities” (180). Change in forest composition is constantly occurring, so how is the “ideal” forest composition determined since what one may wish to preserve will always be changing?

Health Claims of Açaí

Açaí has been a staple food for rural Amazonians for centuries, if not millennia. Many people in the Amazon estuary eat açaí twice daily. According to Brondizio (2008: 167), in the estuarine household, açaí fruit comprises from 15% to 30% of rural households’ caloric intake. Outside of the Amazon, açaí has recently diffused, not as a staple food, but as a fashion food with purported health and weight loss properties. International health food marketers have described açaí as the new miracle berry. For example, the U.S.-based health food company, Genesis Today, claims the berry is full of antioxidants, amino acids, fatty acids, and dietary fiber.

Benefits of açaí consumption according to health food companies such as Genesis Today, Nutricap Laboratories, and Amazon Thunder, are improvements in stamina levels, healthy libido, liver health, mental clarity, positive moods, sleep, eye health, immune system functions, cardiovascular health, anti-aging, supple skin, healthy hair and nails, detoxifica-
tion, and weight management. Unfortunately, these claims are not substantiated by scientific research nor have they been evaluated by the Food and Drug Administration.

**Methodology and Study Area**

I conducted research over a 10-week period in three locations in Brazil. For the first five weeks, I worked on improving my language skills in a study abroad program in Fortaleza, Ceará. The ability to speak the native language is a crucial aspect of ethnographic fieldwork. It allows the researcher to develop rapport and become a more active member of the community in which he/she is working. During my time in Fortaleza, I also conducted informal interviews with students from the Federal University of Ceará. I asked a variety of questions about health and environmental dimensions of açaí production and consumption. My experience in Fortaleza also included participant-observation, through which I observed how açaí was consumed and sold, in addition to consuming it myself.

The second location was Belém, Pará, situated at the mouth of the Amazon River. The purpose of this part of my research was to adjust to the climate and culture of Northern Brazil, purchase needed supplies for my trip into the interior, and conduct archival research on açaí at the Federal University of Pará. Once these tasks were completed, I boarded a boat for the 36-hour boat ride to the main field site, Gurupá, Pará.

I spent the remaining four weeks of my field research in Gurupá. While there, I attempted to understand the local population’s perspectives on açaí. I was fortunate to be placed in a home-stay with Pedro Alvez Vieira, who became a key consultant for my research. Pedro had formally worked for the environmental NGO known as FASE (Federação de Órgãos de Assistência Social e Educacional or Federation of Social and Educational Assistance Entities). He had a wealth of information on land use in the municipality. In addition, he had created GIS maps of the municipality, including maps of the extractive reserves and reforested areas. Living with his family allowed me to observe and participate in the daily eating habits of açaí, including when it was eaten, how it was eaten, and with what other food it was eaten. Furthermore, casual conversations with my home-stay family allowed me to inquire about their beliefs pertaining to açaí’s health, environmental, and economic aspects on a more intimate level than I could hope to gain from others.

My research methodology consisted of taking descriptive field notes of my day-to-day observations and conversations with a variety of consultants within the home and around the town. In addition, we mapped the number of açaí vendors on the main roads of the town. I also had the opportunity to talk with local extractors and vendors about the processes involved in the production of açaí, from extraction in the interior to the selling
of *vinho do açaí* (a pulp and water mixture that has the consistency of a smoothie, the most common form of consumption in the region) within the town.

**Research**

**Economic Impact**

Data concerning the locals’ view on environmental and economic aspects of açaí were collected at the main research site of Gurupá, Pará (Fig. 1). Before leaving Belém, I spent some time with Jessica Chelekis, an anthropology graduate student at Indiana University who was in the final stages of her field research at Ponta de Pedras on Marajó Island, just downstream from Gurupá. Her research focused on the sale of cosmetics (such as Avon and Natura) and their potential for economic and political empowerment. Having lived in a community similar to Gurupá for nearly 11 months, Chelekis observed the boost that açaí sales had made to the income levels of locals and how that increase affected the sale of beauty products. She explained that when there is no açaí to harvest there is hardly any money circulating in town so no one was spending money on beauty products. Chelekis said that some women only sold Avon products during the açaí harvest season.

![Figure 1: Brazil and Study Areas and Map of the State of Para.](image)

Chelekis’ observations indicated the economic importance of açaí production to Amazonian towns. At the same time, it was important to keep in mind that the production and sale of açaí varies considerably throughout the region. For example, Brondízio (2008:
(176) found significant differences in terms of açai’s contribution to household income for three towns located near the mouth of the Amazon River. He wrote:

In Ponta de Pedras (Praia Grande community), açai represents 64% of household income generated from agricultural products (including rice, beans, and coconut). In Abaetetuba, açai fruit is responsible for up to 50% of the household income of families involved in agroforestry, whereas in Ilha das Onças, açai reportedly represents around 63% of the income generated by commercial products. (Brondizio 2008: 176)

The percentage of income generated from açai varies due to factors such as distance to export markets and length of growing season. Although, there is variation, açai sales still represent at least half of the household income in these three towns.

When I first arrived in the town of Gurupá on July 3, 2009, I started to realize how hard it was going to be for me to determine if açai production substantially increased household income levels for producers in Gurupá. I had only four weeks to establish rapport with the people in the town in order to inquire about their income generated from açai. In addition, if I wanted to talk with individuals from different levels of the commodity chain, including extractors and transporters, it would require me to travel outside of the town. In Gurupá, the people who extract and transport açai often live in communities in the interior that require a boat for transport, something I was lacking. Therefore, the bulk of my information concerning the economic importance of açai had to come from Pedro Alvez and his family members, including his brother and sister-in-law who sold açai.

From what I observed in Gurupá, vinho do açai is usually eaten twice a day and is the base of many meals. Pedro’s family often bought and consumed two liters of açai daily. As mentioned, Brondizio (2008: 167) estimates that açai fruit accounts for 15% to 30% of rural households’ caloric intake. This seems to correlate with what I observed as well as what my fellow ethnographic field school students residing in other homes in Gurupá observed. Families consumed açai for lunch and dinner every day, usually mixing it with toasted manioc meal, called farinha.

This level of consumption indicates that there is a strong, local demand for açai. The berry is not just produced for export, but also provides the locals with a subsistence staple. It is crucial in keeping money circulating within the town, as suggested by Cheleki’s earlier observation. This conclusion is also supported by Brondizio’s findings that two-thirds of the açai that is produced within Pará is consumed internally (2008: 178). Considering that Pará accounts for 95 percent of açai production in Brazil, Paraenses consume nearly 63 percent of the total Brazilian production (Brondizio 2008: 176).

During my field work I also observed how many households sold açai in the town. The vinho do açai is usually sold out of someone’s house, which is marked by a small red flag hanging outside facing the street (see photo). The flag indicates that the vendor has açai and occasionally lists the price per liter. If the vendors are out of açai, they take the flag down. I walked the streets of Gurupá with a map (see below Fig. 3) and counted the number of vendors that I saw. I conducted a vendor count on three different occasions so as to not miss the vendors who had taken their flags down for the day. I counted 30 vendors within the main streets of the town. The number was larger than I expected, considering the size of the town, which has approximately

![Açai vendor flag.](Photo by Lucy Miller)
7000 in habitants. The fact that such a small town had 30 different places selling vinho do açaí signifies the importance of açaí sales to locals in Gurupá.

After making observations about consumption habits and the number of stands, I was ready to talk with the locals about the money generated from açaí sales. During the last week of our stay I was able to visit Pedro’s brother’s home, where they made vinho do açaí and sold it to the residents in the town. In addition, Pedro’s brother took me to the açaí market at the riverfront where I observed the extractors bringing in baskets of berries to sell to the vendors in the town. During these visits, I was able to talk with one producer about the prices and amounts of açaí that he bought and sold. He explained that on an average he or his family members went through approximately 8 latas (five-liter baskets) a day to produce vinho do açaí for locals to buy. On average, they paid approximately 7 reis for one basket of berries in 2009 (one real — singular for reis — was worth approximately 50¢). After processing one lata of berries with water, they produced between six and seven liters of açaí juice, depending on the amount of pulp in the berries. From this estimate, Pedro’s brother was selling an average of 48-56 liters of vinho do açaí a day for an average of 3 reis a liter. After subtracting the cost of the berries, they were making 48-112 reis a day (US $44-56).

According to the producers I talked with, açaí was a good source of income for locals. In addition, Pedro stated that he believed açaí sales had increased substantially in the town over the past few years. The increase, he felt, was due to better management techniques, such as weeding and planting, that lengthen the growing season from six months to 10 months out of the year. Pedro estimated that the average açaí extractor in Gurupá now made about 8000 reis (US $4000) a year, a substantial increase over the income generated from previous forest products such as heart of palm and timber.
Environmental Impact

During the four weeks I spent in Gurupá, I also talked to Pedro and local extractors about their views on açai being a sustainable forest product. I inquired about management techniques and forest composition. At the beginning of the second week, I took an overnight trip to the ribeirinho community of Gurupáí, a small island across from the town of Gurupá. The community consists of 46 families who have agreed to form a state-certified agro-extractivist community with a sustainable development plan. The plan stipulates they will communally own the land and will not overexploit its resources or engage in deforestation. While visiting this interior community, I observed the processes of açai extraction and vinho do açai preparation.

During the observation, one of the extractors explained that as a form of regular maintenance, they clear away the competing plants so the açai can grow. He said that the majority of palms on the land are açai palms because they are native to the area. When I

![Figure 3: Map of Extractive Reserves by FASE.](image)
asked about planting açai palms, he said that there was no need to plant. Simply by clearing away other plants, the sun could reach the fallen açai berries and new palms would grow. As a result, the palms were distributed in clusters, as the new palms would grow from fallen seeds around the base of the tree. When I asked about plantations of açai palms, he explained that when there is a need to plant açai, producers never plant trees side by side because the plants would be more susceptible to diseases and insect infestations. From what the extractor stated and what I observed in this community, it appears that biodiversity reduction, feared by Weinstein and Moegenburg (2004) through the establishment of plantation-like production, is not severe in Gurupá, at least not yet.

One very positive result of açai management in Gurupá is the overall increase in forest cover. Many areas have been reforested since 1999 as a result of açai palm management. Surprisingly, Gurupá is the only place in all of Brazil that has reforested instead of deforested in the last 10 years. Pedro stated that açai palms are grown on these reforested areas, but not as a monocrop or on a plantation. The areas have been reforested with various plant species in order promote biodiversity and prevent disease from spreading to large areas of açai palms. The local inhabitants have also set up extractive reserves, as shown in Fig. 3 on previous page. These are areas where the community of small landowners have agreed to maintain forest cover, and whatever they extract from the ecosystem is replanted. The goal of these communities is to provide subsistence in such a way that promotes long-term sustainability and forest integrity.

The increase in açai production, the surge in reforestation, and the establishment of extractive reserves and other sustainable development projects in the community would not have been possible without the work of FASE, the rural union, and the Catholic Church. As a result of their activism, Gurupá has been able to secure the land ownership of many small-scale producers. Particularly through the work of FASE, Gurupá has been successful in providing land titles to small landowners, thereby protecting them, the land, and the resources from exploitation by large landowners. As mentioned earlier, small landowners are more apt to harvest açai sustainably than engage in predatory timber or heart of palm extraction.

From what I observed and learned from conversations with local extractors, açai provides locals with a steady source of income, while at the same time encourages sustainable practices in the extraction process. Gurupá’s environmental success may be due in part to its limited access to outside markets, which may enable practices that are more environmentally friendly. For example, the açai berry must be transported within 48 hours of harvest, before it begins to rot. Thus, location affects how much fruit can be produced and exported from an area. Communities further from export markets are geared to less intense management strategies, such as forest collection, whereas communities close to markets use more intense management and cultivation techniques (Muñiz-Miret et. al. 1996: 164). Gurupá, being located relatively far from large export markets, tends not to intensively manage or cultivate açai. In fact, most of what is produced is consumed locally.

Health

Nutritional and health research on açai is still relatively new and many of the claims as to the palm fruit’s benefits have not been substantiated. This section, therefore, focuses on a comparison of alleged health benefits of açai as discussed in the United States, Fortaleza, and Gurupá. As explained above, in the United States açai has been promoted as a miracle berry by health food marketers such as Genesis Today and Amazon Thunder. It has even been marketed as a weight-loss supplement by companies such as Nutricap Laboratories. Many of the products are marketed as being very high in antioxidants and iron.

In Fortaleza, I also observed açai marketed as a health food. Unlike the claims made in the United States, however, people in Fortaleza believe that açai is full of calories
and that it is good primarily for body builders. One young woman commented that one serving of açai had enough calories in it to replace all your meals for the day. She continued, “People just eat it and eat it, but one small bowl has enough calories, like 2,000, for the whole day. So one small bowl replaces all your meals for the day, but people don’t eat it like this, as a substitute for all your meals in a day. They eat it more as a snack.”

When I asked about nutritional properties of açai in Gurupá, people told me it was good for the heart and that it was full of iron. One consultant told me she believed that eating açai made the people in Gurupá look younger. Another commented that it was supposed to be good for anemia because it has a lot of iron in it. Yet another person said that it has oil in it that is good for the heart. Interestingly, claims of antioxidant properties or weight-loss properties, so frequently made in the United States, were not part of the Brazilian view.

Conclusions

From what I observed in Gurupá, açai is a crucial resource that has a high internal demand, providing local extractors and vendors with an important source of income. Observations indicated a strong internal demand for household açai consumption, given the large number of açai vendors in the town. With the addition of a growing external demand, açai clearly is a promising commodity that can help support the local economy. In addition, açai can be extracted using environmentally sustainable practices. In Gurupá, small landowners harvesting açai are more likely to follow environmentally friendly extraction processes as these practices facilitate long-term profitability and provide the locals with a subsistence staple. Small landowners in Gurupá have furthermore created extractive reserves that encourage sustainable extraction techniques. Açai has also encouraged reforestation in Gurupá, although in contrast to Weinstein and Moegenburg’s (2004) study, the reforested areas do not resemble plantations. Açai extraction in Gurupá seems to help preserve the rainforest while at the same time provide locals with a valuable source of income.

In terms of beliefs on health aspects of açai, the general consensus in Gurupá was that açai is a healthy food strengthening the heart and providing a good source of iron. In Fortaleza, açai was marketed as a health food, but from what I observed, many people believed that it was only good for body builders who want to consume large amounts of calories. Differences in health perspectives may have something to do with how açai is processed and sold in the Amazon compared to how it is processed and sold in the metropolitan areas of Brazil. In Fortaleza, açai pulp is mixed with a sweet guarana syrup that increases the product’s calorie count. This may account for the common perspective that açai is high in calories in Fortaleza. Compared to the health claims in the United States, weight loss and antioxidant value were not benefits commonly promoted in Brazil.

There are many aspects of açai production, consumption, and distribution that still need to be researched as the product expands into international markets. My research here only skims the surface, although it provides some understanding of the environmental and economic impacts of açai. Establishing health benefits will require medical research. More studies need to be done to understand the complexity of how a growing market will affect local producers and the local habitat.

This research is a part of an ongoing project studying the political ecology of the peasant community of Gurupá, Brazil coordinated by Dr. Richard Pace.

Works Cited


A Review of Intersexuality

Lydia Njoroge

Dr. Gloria Hamilton
Psychology

Proper gonadal differentiation is probably one of the least thought about, but most desired characteristics in infants. This paper presents a review of what is meant by intersexuality, an overview of the biological processes of becoming intersexed, and descriptions of the four most common variants of human intersexuality. The history of the literature concerning intersexuality reveals a lag between medical and social sciences on the study of intersexuality. It is only of late that social scientists have begun to study societal attitudes toward persons who are intersexed and the resulting social stigma they experience. While the entry of social scientists into this field of study is to be lauded, discrepancies between medical and social science terms and definitions need to be resolved for the field to go forward.

Introduction

If a man has a vagina is he still a man? Even with our technological and sociological advancements, this question is not one that can quickly or easily be answered. Hermaphroditism and intersexuality have always been part of nature. There are numerous examples of flora that have the ability to both fertilize and produce offspring. Various fauna have demonstrated the malleability of sex. But studies of sexual ambiguity in humans did not become well-established until long after scientists began to review findings from animal studies.

Before the 1970s, few scholars studied the phenomenon of ambiguous genitalia in humans. They began to understand the differences between sex and gender and noted that the terms came from very different concepts (Bem, 1975). The meaning of sex is drawn strictly from biology. Individuals’ biological composition, or their physical genitalia and chromosomal makeup, comprises their sex. Excluding the possibility of losing chromosomal information during gestation, sex is neither changeable nor malleable after conception. Gender refers to a set of behavioral norms determined by society. Regardless of the values and behaviors encompassed in a gender role, society strongly encourages males to be masculine and females to be feminine. Complexity arises when an individual is not traditionally gendered, such as a biological male who adopts a feminine gender role. This person would normally be considered to have Gender Identity Disorder (Diamond, 2002), but it seems more appropriate to call this condition transgendered. A person who is designated androgynous endorses both masculine and feminine behavioral characteristics. If no gender dominant behavioral characteristics are exhibited by an individual that person would have an undifferentiated gender role.

After the 1970s, there was a wealth of knowledge added to the literature in human sexuality. Taboos surrounding sex and sexuality were questioned as scholars provided data to support their claims and dispute long-held social stigmas. This was the time when the first articles on the highly debated John/Joan case study were published (Diamond, 1997). This decade was filled with newly published literature that tried to understand causes of intersexuality and find ways to treat it (Casale and Herndon, 2004; Donahoe et. al, 2006; Gonzáles
and Bauer, 1998; Perlmutter, 1988; and Synder, 1988). Social scientists were, on the whole, appalled as they began to learn of methods used on patients, such as cliterectomies and colonovaginoplasties. These surgeries left patients without feeling in their genitals and were associated with a high rate of infection. Many patients claimed they were not allowed to see their medical records (Chin et al., 2004). The literature from the 1980s and 1990s included reviews of surgical techniques that might be less detrimental to patients (Casale and Herndon, 2004; Donahoe et al., 2006; Gonzáles and Bauer, 1998; Perlmutter, 1988; and Synder, 1988). Until recently, however, there has been a lag in the research being published on intersexuality.

Types of Intersexuality

In order to understand the literature on intersexuality it is important to first address the biological framework upon which it is based. It is also important to state that the information presented here is meant to be reflective of culture in the United States. A basic assumption in the United States is that sex is a uniquely dichotomous characteristic. This means two things. One, that there are only two sexes, and two, that a person is one or the other. There is no middle ground.

Typical development in humans result in 46, XX, female, or 46, XY, male chromosomes (Salkind, 2005). As soon as the child is conceived the chromosomal sex can be determined. When the egg and sperm fuse, the chromosomes form 23 pairs (Salkind, 2005). Of those pairs, 22 are autosomal pairs that carry information about characteristics such as hair and eye color (Strickberger, 1985). The 23rd pair is known as the sex pair (Salkind, 2005). A karyotype, or chromosomal map, is used to review all of the chromosomes as well as check the sex of the child. However, a karyotype can overlook problems associated with nondisjunction. Nondisjunction occurs when cells do not divide correctly and can result in loss of chromosomes and vital codes resulting in a mosaic karyotype (Stickberger, 1985). Mosaic karyotypes are some of the extreme karyotypes such as 49, XXXYY. Many mosaic karyotypes have specific syndromes associated with them, such as 45, X (Turner’s Syndrome), but they can be associated with a variety of forms of intersexuality.

Having only 45 chromosomes can prove fatal unless the chromosome that is lost is from the 23rd pair. Individuals with Turner’s Syndrome possess only 45 chromosomes, having lost a chromosome from the 23rd pair. The Y or second X in this chromosomal pair provides information needed for sexual development. The Y chromosome’s presence is needed to trigger a chain of reactions that should masculinize the sex neutral genitalia. There is some thought that there may be similar information on the X that is needed for feminization. This idea is supported by the fact that many people with Turner’s syndrome do not have wholly male or female genitalia.

Congenital Adrenal Hyperplasia

Congenital adrenal hyperplasia (CAH), or female pseudohermaphrodism, results from hormonal imbalance during gestation. These women are 46, XX with mild to severe masculinization of their genitalia, which is caused by overexposure to androgens while in utero. The most common forms of masculinization found in these women are elongation of the clitoris and labioscrotal fusion. This form of fusion occurs when the labia grows together and give the appearance of a scrotum. Uncontrolled exposure to androgens can also result in secondary sex characteristics consistent with masculinization. Women with CAH are likely to experience masculine patterns of facial hair, broad shoulders, and a deepening of the voice at puberty.
Androgen Insensitivity Syndrome

Androgen insensitivity syndrome (AIS), or male pseudohermaphrodism, is a condition in which males have bodies that have varying abilities to utilize testosterone. There are two forms of AIS, partial and complete insensitivity. Partial AIS occurs when the body is able to recognize and utilize testosterone at a much lower level than males without androgen insensitivity syndrome. Males with complete AIS have bodies that are not able to recognize testosterone. In both cases, the child is born with a small or incompletely developed penis and undescended or partially descended testes. In some cases where doctors are familiar with AIS, many of these infants will have cosmetic surgery soon after birth so that they can be reared as females.

Should diagnosis not occur at birth, a child entering puberty experiences a cascade of effects associated with intersexuality. Pubertal increases in testosterone in an adolescent male result in the development of broad shoulders, a deepened voice, and facial and pubic hair. Some of the secondary sex characteristics for females are the broadening of hips and growth of genital hair. When the male body does not utilize testosterone, congruent secondary sex characteristics do not develop and the person will develop a phenotype that is incongruent with the genotype. Facial hair in females, for instance, is considered incongruent because it is not a characteristic associated with typical female development. Since female and male gonads, ovaries and testes, produce both estrogen and testosterone, all humans produce both sets of hormones. Males with AIS typically experience feminization during puberty because the body uses the estrogen it is making instead of the testosterone.

Males who have experienced phenotype development that is incongruent with their genotypic identity have created a movement to be addressed as females. Online communities started to provide a network for people who have experienced similar treatment from the medical system. While the initial goal of these communities was to provide support for intersexed individuals, many sites have added information on famous, successful persons or persons considered attractive with AIS that consider themselves to be females. Some of the people listed on these pages have had surgery while others have chosen not to have surgery. These websites field questions such as, what does it mean to be male, female, or other, and to what extent is genital surgery different from any other form of cosmetic surgery.

Mixed Gonadal Dysgenesis

People with mixed gonadal dysgenesis are not known for genital ambiguity. With both CAH and AIS having two functioning gonads, mixed gonadal dysgenesis occurs when one of the gonads is made of fibrous tissue, known as a streak gonad, does not produce estrogen or testosterone and has a high potential for becoming cancerous. The longer lifespan of fibrous tissue, as compared to healthy tissue, is one of the reasons streak gonads become cancerous. Of the four common types of intersexuality, mixed gonadal dysgenesis is the only one that both medical and social scientists agree should have neonatal surgery. A gonadectomy is not viewed, in this case, as altering the genitals to conform with societal norms. It is done solely to prevent cancer.

True Hermaphrodism

The final form of intersexuality is true hermaphrodism, which has a wide range of phenotypes. The standard for diagnosing true hermaphrodisim is a single gonad that is composed of both ovarian and testicular tissue (Donahoe et. al, 2006; Gonzales and Bauer, 1999; Perlmutter, 1988; and Synder, 1988). While over 90% of true hermaphrodites chromosomal composition is 46, XX, they still have testicular tissue, forcing geneticists to reconsider the
role of the Y chromosome in producing males and male phenotypes. The amount of literature on mixed gonadal dysgenesis and true hermaphroditism is significantly less than that on CAH and AIS. A possible explanation of this is that the surgeries associated with these conditions are to preserve the life of the neonate. In contrast, the surgeries associated with CAH and AIS are used only to normalize neonatal genitalia.

Surgical Procedures for Intersexuality

The need for surgery, whether for transsexuals or intersexuals, is debated among scholars on intersexuality. The topic is debated for several reasons: safety for parent and child, consent issues, and the will and freedom of the individual in question. These discussions center around the appropriate age, types, expected and actual results, and standards of surgery. There seem to be varying viewpoints between medical and social scientists, with a few exceptions.

Medical vs. Social Scientists

When, if at all, is the best time for an intersexed individual to have genital surgery? There are two standard answers; medicine says as soon as possible or less than two years old and social scientists say when they are able to make the decision for themselves (Baker, 1981; Casale, 2004; Chase, 2008; Hurtig, 1992; and Liao and Boyle, 2004). Medical literature says that the earlier the surgery is completed, the more quickly the person can heal and the easier it will be for them to accept their sex assignment (Gonzáles and Bauer, 1999; Perlmutter, 1988). The latter also applies to parents because doctors believe they will play a role in how well the child is able to adjust to the sex assignment. Social scientists have argued that there has been much damage done by early surgery when the information is withheld from the patient, which is common practice (Chin et al, 2004).

Medical literature recommends that to ensure a child is not taunted while showering after gym class it is important to perform surgery early (Baker, 1981). As an alternative to gym, the school system could allow the student to enroll in a different class. This would necessitate disclosure of personal information, however, something the individual might prefer not to do. This argument is one of the few that has not had a response or rebuttal from social scientists.

Types of Surgeries

Currently, the most commonly performed surgeries are vaginoplasties, cliteroplasties, labia thinning, and male genital feminization. Vaginoplasties involve a variety of techniques wherein a doctor takes donor tissue and uses it to form a vagina. This surgery has a high rate of needing to be repaired or repeated. A cliteroplasty is a surgery that seeks to minimize the clitoris. This surgery, performed on CAH girls and AIS boys, has a recommended standard length of the clitoris that determines whether surgery is needed, but several doctors when interviewed said that it is easier to “just eyeball it” (Chin et al, 2004). This surgery has one of the highest rates of unsatisfied patients. The most common technique to perform cliteroplasties is to remove the glans clitoris or glans penis, remove the shaft, then reattach the glans to the remaining stump. The problem with this technique is that all of the nerves are severed. This leaves most patients without feeling in the tip of their new clitoris. Labia thinning is performed when there are signs of scrotal fusion or a sex reassignment is being performed. This technique serves no functional purpose and is used to visually feminize the genitalia. Male genital feminizing surgery includes the surgeries above, but specifically for male patients.
The standards and results of these surgeries are not readily available in the medical literature. While there are numerous articles presenting the techniques of different surgeries, only a handful offer any information on how surgeons determine the necessity for, the side effects of, or even results of their surgery. In contrast, literature concerning hypospadias repairs rival cliteroplasties for discontented patients. The array of published information available on surgical mishaps and repair of mistakes is astounding.

Blackless (2000) attempts to determine rates of occurrences of intersexuality since this field of study has little hard data. Basic information about intersexuality should be easily available to inform the public and families, as well as individuals about findings in medical and social science research. To this end, it would be useful to have consistency in terminology across publications.

Another area that should be researched is public opinion on intersexuality. There are data on intersexed populations, but there is little in the current body of literature on how having an intersexed child or friend affects a person’s opinion on intersexed persons or how their life is affected. In summary, there is much to learn, from both medical and social science researchers, in the area of intersexuality. The early work was pioneered by medical professionals, and given that intersexed persons live in a society that, in large part, assumes there are only two genders, it is time that social scientists address the numerous issues that come with acquiring acceptance as an intersexed citizen.

References


Snow, Glass, and Love Apples

Joseph Quarles

Dr. Martha Hixon
English

Of the many folktales that have become entrenched in society, one of the most memorable is the tale of Snow White. The story has withstood the test of time and become a fixture of popular culture, in part because of the 1937 Disney film and numerous modern retellings. The story of Snow White was first published in the early 19th century by two German folklorists, Jacob and Wilhelm Grimm, along with many other folktales commonly told to German children at that time. Since then, the story of Snow White has evolved through the redaction of reprinting, retellings, and adaptations. Modern and post-modern era critical analysis has helped deconstruct this tale by decoding many of the inherent symbols and unearthing the hidden socializing messages contained within the narrative structures, particularly regarding gender roles and sexuality, not only in the traditional tales as told by the brothers Grimm, but also in the more contemporary revisions for modern audiences, both adult and child. This paper provides a comparison and contrast of the 19th century Grimm brothers’ story with three contemporary versions — Walt Disney’s film version of Snow White and the Seven Dwarfs, Angela Carter’s “The Snow Child,” and Neil Gaiman’s “Snow, Glass, Apples” — in order to consider the differences, or lack thereof, in gender roles and sexuality as the story of Snow White has evolved over the last century and a half.

In order to have a better understanding of the Snow White tale and how the story has changed and evolved, as well as the significance of the revisions and changes, one should be familiar with the history of the tale and the methodology the Grimm brothers used to collect and record what they perceived to be indigenous German folk tales. To begin with, as most folklorists argue, early European folk tales were part of an adult oral storytelling culture composed of the illiterate lower classes, and were passed on from generation to generation. Unlike fables, which teach stories with a moral and obvious didactic method, and myths, which are metaphorical and symbolic stories representative of a culture’s belief systems, early folk tales tended to be primarily for entertainment (De Vos and Altmann 7). The tales were chiefly told to “shorten time devoted to mending, sewing, spinning, repairing tools . . . and they were stories that made listeners pay attention . . . with their violent twists and bawdy turns” (Tatar xxxii). Everything from cannibalism to risqué behavior turned up in the tales; for example, an early French version of Little Red Riding Hood portrayed Little Red as a young woman who performs a strip tease for the wolf before crawling into bed with him (Orenstein 4).

When Jacob and Wilhelm Grimm began to collect folk tales, in a massive scholarly project that was to see years of compilation and work, they did so as an attempt to preserve the “‗pure‘ voice of the German people” (Tatar xxxii) and as more of a collection for academics. Despite the popular belief that the tales were collected from peasants in the countryside, the Grimms’ sources for the folk tales were primarily friends from their social circle and of similar class level (Zipes, Complete Fairy xxix). In fact, several of the tales may have had French origins. In particular, the Viehmann and the Hassenpflug families, from whom most of the stories in their collection derived, were both of “of Huguenot ancestry and spoke
French at home‖ (Zipes, Complete Fairy xxix), leaving open the argument that cultural contamination could have affected the stories. The Grimms’ idea of a national pure body of stories derived from the oral traditions of Germany was ultimately not a feasible one. As Maria Tatar notes, “native traditions are always enriched and deepened when they come into contact with other storytelling traditions” (xxxv), and the stories share similarities and archetypes that speak in an almost universal fashion because “they were constructed through a process of constant cross-fertilization” (xxxvi). The brothers Grimm certainly were incredible scholars, and their methods of documentation were acceptable for the time period, but the tales they collected had not only passed on from generation to generation, but from country to country, preventing a pure German voice and showing the malleability and acculturational aspect of folk tales.

However, the transition from oral tradition to a literary compilation did allow the Grimms to create the standard, or “ideal type for the literary fairy tale” (Zipes, Don’t Bet xxx). In other words, with the Grimms documenting their stories in print, the tales then became static, frozen in place and time. The oral tradition of the tales then gave way to a set type of folk tale, immortalized by the brothers Grimm (Zipes, Complete Fairy xxx). Some of the stories did need editing and stylistic changes to adapt them to a literary form, but in the process the stories went through the white middle class male Protestant filter of the Grimm brothers. So the sensibilities of the Grimms, influenced by the religious and conservative structure of the society they lived in, affected the way they altered the stories, especially as far as themes of sexuality. The brothers, after the additional prompting of the upper middle class patrons of their books, began to edit the stories even more in subsequent volumes to make them more palatable for children, and in the process made the tales more proper for the bourgeois middle class audiences, excising the blatant sexuality of many of the tales. Thus the tales went from oral traditions and stories to entertain, with only moderate to nearly nonexistent didacticism, to tales set as the new printed standard told from the middle class male Protestant point of view with a subliminal text of proper behavior, especially for young women (Lieberman 185).

With modern critical interpretation, many of the specific male and female roles dictated by the dominant patriarchal code of the period in which Snow White and many of the other folk tales were created have been deconstructed and studied extensively. Feminist critical theory has been very helpful in analyzing the inherent social messages within the stories, especially in decoding the subtext with regard to the male ideals for women’s societal roles. Of the considerable amount of feminist study done on folk and fairy tales, and in particular Grimms’ Snow White, two notable critical points have been brought to light: males in the Grimms’ version are virtually absent, and the struggle between Snow White and the older aggressive stepmother in the Grimms’ version dominates the story.

The absence of a father figure does not necessarily denote a lack of male influence within the story, as Sandra Gilbert and Susan Gubar argue with their “mirror theory” in their seminal article, “The Queen’s Looking Glass.” Gilbert and Gubar suggest that the mirror within the story is actually the male influence (202). The apparent absence of a dominant male figure actually speaks volumes about the influence of male approval through the subtle mirror. The queen seeks constant validation and emotional reinforcement from the mirror, and as the mirror represents the voice of the King, or the male voice, it is the “patriarchal voice of judgment that rules the Queen’s — and every woman’s — self evaluation” (Gilbert and Gubar 202). By seeking the constant validation of the mirror, the queen then puts herself in the position of direct competition with Snow White for attention from the patriarchy, the social system in which the men are the final authority in all matters of family and society.

“Snow White” is a story that enacts female jealousy, with an older woman so threatened by the beauty of the younger one that she is willing to kill her rival to maintain her social power and influence. In the traditional story, the prince only appears at the end, to wake Snow
White and serve as the means to a safe home, and the dwarfs, because of their dwarf nature, do not count as adult male figures.

This competition between Snow White and the queen brings to the forefront the other part of Gilbert and Gubar’s mirror theory, the paradigm of the younger girl versus the older woman. Many of the folk tales involving transition to womanhood often have what Gilbert and Gubar refer to as the “young angel woman” versus the “older monster woman” conflict (201). The angelic younger girl is inevitably passive, physically beautiful, and humble, whereas the older monstrous woman is often portrayed as aggressive and overly aware of her own beauty and her perilous position with regard to male approval, personified as the mirror in the Snow White stories. The queen is very proactive and highly creative in her attempts to win back the approval of the mirror of the patriarchy. With Snow White being driven from court by the queen’s jealousy and left in a state of “contemplative beauty” (Gilbert and Gubar 203), she is almost in a suspended state of childlike innocence as she slowly begins to transition from maidenhood to a potential candidate for motherhood and marriage. The mirror, by a passive-aggressive method of approving beauty, instigates conflict between Snow White and the queen. As the queen competes more and more for male approval, her own aggressiveness becomes her downfall. Notably, the passive heroines in folk tales never actually attack or defend themselves; they are completely passive while the aggressiveness of the older woman is punished viciously, leaving the heroine inculpable and her innocence intact. The sexual undertone of this narrative device within the Snow White story is that the older woman, the queen, feels threatened by the youth and beauty of Snow White. The queen constantly obsesses on her status in the male patriarchy and, because of her implied middle-aged state, feels her position is threatened by the unassuming younger woman. Meanwhile, the mirror perpetuates the cycle of jealousy.

The final aspect of the Gilbert and Gubar mirror theory is the crystal casket Snow White is encased in toward the end of the story. As the mirror reflects the gaze of male approval and supports the control of the patriarchy, the coffin also serves to control Snow White and represents the other end of the spectrum of male approval. Within the coffin Snow White is the epitome of the demure, passive and beatific young woman. Her protection and confinement in the crystal coffin make her the perfect accessory to a prince. She is reduced completely to the point of being a product, beautiful, but still a commodity. In the state of suspension, “she is an object, to be displayed and desired, patriarchy’s marble ‘opus’” (Gilbert and Gubar 205). In fact, when the prince comes across the coffin he is instantly taken by her frozen beauty. He immediately wants her and desires her, but as a possession, not romantically. He reduces her to a trophy he simply must have by stating, “‘let me have it as a gift, for I cannot live without seeing Snow-white. I will honour and prize her as my dearest possession’” (Grimm, World 359), and as a possession fitting for the prince, “Snow White has become an idealized image of herself . . . the perfect candidate for a Queen” (Gilbert and Gubar 206).

Another point scholars have noted in Snow White, as well as in other folk tales, is the reward system inherent within the stories. Oftentimes the tales end with the villain dying in an excruciating manner, usually before or during the ultimate reward of the protagonist; in Snow White that reward would be the wedding ceremony. As the monster woman, the queen is aggressive and her self-exertions are punished. In contrast with the queen, the passive nature and innocence of Snow White is celebrated and rewarded. These rewards send a strong subtle message that by adapting “conventional female virtues . . . patience, sacrifice, and dependency” (Rowe 217) and by submitting to the male patriarchy, Snow White wins social status and ultimately, the “sexual awakening and surrender to the prince with social and materialistic gain” (Rowe 217). Marcia Lieberman states in her intriguing article on female acculturation through folk tales that the material rewards aspect tends to bolster young women’s capitulation to male patriarchy and to “acculturate to traditional social
roles” (383), as well as reinforce the male voice and views on proper behavior and sexuality in the story.

In the folk tale realm the acquisition of material rewards goes hand in hand with the idea of passivity and beauty. Beauty tends to be a valid form of currency in all folk and fairy tales, and the young heroine’s physical appearance is her one true asset (Lieberman 189). In the Grimms’ version of Snow White, beauty is tied directly to Snow White’s survival as well. The queen initially sends Snow White out to die by the hands of the huntsman. But, as he begins to pull his knife he is suddenly taken by her beauty: “she was so beautiful the huntsman had pity on her” (Grimm, Complete Fairy 182). Not only does Snow White’s beauty buy her her life, but it also facilitates her being accepted unquestionably by the dwarfs. When the dwarfs discover the intruder in their little home, they are completely entranced. They actually cry out “‘What a lovely child!’ and they were so glad they did not wake her up, but let her sleep on the bed” (Grimm, Complete Fairy 183). Beauty is power, it is currency, and the story reinforces that by the reactions Snow White receives from all the males she encounters in the tale. The male patriarchy supports her not only because of her demure behavior and virginal status, but also because of her looks.

Other symbols embedded in the traditional story by the Grimms convey an underlying theme of transition to maturity and of sexuality. The transitional period of Snow White staying with the dwarfs, who are presented as undeveloped sexually, gives the character the opportunity to begin to mature and prepare for the transcendence to appropriate marital status and readiness for children. Santiago Solis notes in his disability theory study on the dwarfs that their physical stature actually served to reinforce the relationship between Snow White and the prince, encouraging the heterosexual marriage ideal: The dwarfs’ roles served “to legitimate physical and sexual normality” (115), since their very structure and size categorizes them as outside the “normal” idea of a heterosexual couple. Thus, they do not serve as a threat to Snow White’s virginity or potential marriageability. The dwarfs are truly safe in that they are non-threatening and not developed sexually, although typed as male. Snow White can then serve in a domestic capacity at their home as a form of role conditioning. Their lack of physical development also allows Snow White the ability to be out on her own in the wilderness and in a safe home environment, with the dwarfs serving as strictly protective and to facilitate domestic conditioning. They are a paternal collective, an example of the more subtle hand of the patriarchal voice attempting to guide Snow White into a proper role for a young woman.

The items used in the three attempts by the queen to be rid of Snow White — the bright colored ribbons, the comb, and the apple — are items of femininity and are also powerful symbols within themselves. The ribbon represents the femininity of fashion, to enhance Snow White’s clothing, the poisoned comb is the aspect of physical beauty, keeping her hair in order, and the apple, the final temptation that renders Snow White into her transitional dormant state, a symbol of fertility and passion. Notably, during the three attempts to neutralize Snow White, the queen takes on the guises of an old woman, and old peddler woman, and an old peasant woman, bringing out the younger versus older woman paradigm again. In what would seem a subversion of female acts of bonding, the disguised queen’s lacing up Snow White’s corset with pretty ribbons and offering to comb her hair in an almost motherly fashion, are veiled attempts to kill her. The irony in the acts, as noted by Gilbert and Gubar, is that the items are part of the “female arts of cosmetology and cookery” (204) and their subversive use by the queen only strengthens Snow White in end. The queen’s subversive use of the traditional symbols of femininity backfire on her as Snow White is strengthened even more through her passivity and chastity (Gilbert and Gubar 204). The apple is preferred to Snow White, who in her innocence takes it, suffers its ill effects and is then put in the glass coffin to be displayed as the perfect female aesthetic for the patriarchy, finally undermining the queen’s own subverted uses for the symbols. The queen’s aggressive use of
the feminine arts is foiled and the younger Snow White is unscathed and even more desirable. The symbols all reinforce the acceptable gender role for girls of the time period with Snow White in the role of being the perfect demure young girl. Thus, at the end of the story, she is ready to be a model wife and the older sexually aggressive queen is punished by death for her knowingly subversive use of the symbols. The roles of both Snow White and the queen were dictated by the beliefs of the period when the Grimms brothers recorded the original oral tale into print, and reflected the protestant Christian ideals of a proper woman of class, as well as a commentary on improper behavior.

The Grimms’ story of Snow White was the one commonly known by Anglo-American audiences for the next hundred years, until Walt Disney produced his now-classic film in 1937. The film was released by RKO theaters in February 1938 and was the first full-length animated American film in color. It is listed by the American Film Institute as the greatest animated film of all time and is also deemed culturally significant by the National Film Registry. The film certainly has had a tremendous affect on American pop culture, and many of the moments within the movie are immediately recognizable to the modern viewer. The scene in which the young, dark-haired Snow White sings the unforgettable song, “Some Day My Prince Will Come,” the tension of the scenes with the huntsman who has been ordered to kill her and the nightmarish run through woods as she escapes his knife, as well the hilarious scenes with Snow White and the dwarfs, are other vividly memorable elements of the film. Moreover, the film contains one of the top ten villainesses of children’s tales and the silver screen, the evil queen. Her frightening use of magic to change herself into an elderly peasant woman is one of the most intense scenes in the film.

The Grimms’ version of Snow White and Walt Disney’s 1937 film version share some strong similarities as far as subtle cultural messages, but the two stories also differ considerably in plot structure. To begin with, even though the Grimms’ tale opens with the motif of the birth mother of Snow White wishing for a beautiful girl child, and then getting her wish but dying immediately after, the Disney version edits this part of the story, as well as any mention of Snow White’s father, instead opening with the new queen as the sole ruler and Snow White’s mortal enemy. Disney’s Snow White has been forced to work as a scullery maid to keep her in place and humiliated. An early appearance in the film by the prince foreshadows the later rescue of Snow White, whereas the Grimms only bring him onstage when he is needed to wake up the seemingly dead princess.

The Grimms’ version also has the queen, who is clearly identified as Snow White’s stepmother in their version, make three attempts on her life, not just one. Disney’s version omitted the first two, reducing the three attempts to the apple alone. Another significant change in the Grimms’ story is how the wicked stepmother is forced to celebrate Snow White’s escape and eventual victory through marriage by having to dance at her wedding in red hot iron shoes until she dies, whereas in the Disney film the queen is chased by the dwarfs up the side of a mountain in a storm where she falls to her death from a bluff. Finally, while Disney’s prince saves Snow White with a kiss that breaks the magic spell, in the 19th century German version, he simply is moving her in her casket and accidently dislodges the poisoned apple piece. Much of the original Grimms’ story was streamlined for the Disney film adaptation, not unlike how the Grimms had to adapt the oral tales they collected to a more effective literary format. In some ways the film is closer to the dark nature of the original folk tales of early Europe in that menace and violence are portrayed unflinchingly. The huntsman’s failed attack with the knife and the queen falling to her death from the cliff are definitely adult themes. Although the stories may have significant differences in plot structure, Disney’s Snow White still has domesticity at its core as a running theme.

Within the modern age and the film medium, have the roles and ideas of sexuality that the Grimms built into their story changed? Because “Snow White” was the first completely animated major motion picture, the impact of the visual presentation of the subject matter on the audience was very important. Disney’s film does seem to reinforce the young-
maiden-transition-to-adulthood paradigm by retelling the story and by reinforcing her subtle sexuality and proper role with visuals. The first visual hint of this is Snow White’s behavior at the beginning of the film when she first meets the traveling prince. Not only is she portrayed as happily cleaning and scrubbing the steps, bolstering the idea of cheerful subservience and domesticity, but she acts very demure and coquettish with the prince, placing herself just out of reach of the suitor and forcing him to play the game of pursuit. Another visual reinforcement occurs after her nightmare flight through the woods, where she is once again portrayed as breathy and properly demure. She apologizes to the infatuated wild life surrounding her for making trouble. She certainly is presented as a model of femininity, her gestures and visual comportment give the impression of turn of the century gentility, but she is also very subservient and passive.

The biggest difference between the Grimms’ story and Disney’s version is in the portrayal of the dwarfs. Disney was very well aware of the visual impact of the dwarfs and felt that a comedic approach would make them more memorable, as the original Grimms’ dwarfs were simply a flat male collective (Thomas 68). The names were purposely chosen to be simple, and the characters reflected the names that were finally chosen (Thomas 68). In the Disney film the dwarfs are reduced from a neutral, safe father figure collective to that of silly children in need of a domestic foundation. Snow White’s role as a potential mother is set with her performing a variety of mothering acts: cooking and cleaning for the dwarfs, making them clean up after themselves and entertaining them. Snow White goes from being protected by a male collective, to being its mother.

The end scene in the film especially reinforces the idea of Snow White’s readiness for marriage and the leaving of her crystal coffin of dormancy, with the prince kissing her and the obvious symbol of a happily ever after golden castle in the sky as their future. The film solidly reinforces and bolsters the earlier Grimms’ reflection of society at the time with modern conservatism; her role is still that of a well-bred and subservient bride-to-be, and like the Grimm version, the vision of Walt Disney is still “grounded in . . . the bourgeois cult of domesticity” (Bacchilega 3). Disney’s retelling does seem to be a much more romanticized version, but it does continue to reinforce the male-approved notion that a woman’s place should be one of marriage and housekeeping.

Both the Grimms’ and Disney’s version of Snow White reinforce subservient and domestic aspects of assigned gender role qualities for women. However, when applying modern critical analysis to the folk tales like Snow White, one should keep in mind the social context of the periods when the stories were committed to print and film. The idea of femininity, of being feminine, was acceptable and desirable during these time periods. With the advent of modern feminism considerable attention was finally paid to the portrayals of women and young girls in literature, particularly in the area folk and fairy tales. After the initial studies of the more obvious gender conditioning aspects of folk tales, much of the feminist critical analysis and retellings of stories like Snow White now lean more toward finding hidden subtle strengths within female characters rather than focusing on the blatant male-approved passivity. Now, many of the postmodern retellings of folk tales go beyond simple children’s stories to ones more adult in nature. Angela Carter’s “The Snow Child” and Neil Gaiman’s “Snow, Glass, Apples” are excellent examples of how feminist critical analysis of folk tales have affected postmodern retellings.

As a result of the feminist movement of the 1960s and 1970s Snow White and many other stories were reanalyzed and deconstructed from the modern woman’s point of view, in considerable contrast with the perpetuated male-approved ideal versions of proper femininity. Angela Carter’s retelling, reflecting another feminist trend, essentially steps past the mirror of male patriarchy and returns to the more simple, neutral and non-didactic folk tale model. Her story “The Snow Child,” which is a retelling of a very early and somewhat harsh version of the Snow White tale, shoves the old version into the light of modern inter-
pretation. The story is relatively short but dense with symbols and possible meanings.

The two main characters in Carter’s retelling, a count and a countess, are traveling through the woods in mid-winter. The count sees a puddle of blood in the snow and a raven feather nearby. He then wishes for a young girl with physical attributes based on the colors he has seen, white, red, and black. The couple then comes across a beautiful young girl standing by the side of the road. The count pays too much attention to the young girl, taking away the countess’ furs and boots and giving them to the snow child as gifts, infuriating the countess. After a series of attempts to kill the snow child, the countess finally tricks the girl into picking a rose that kills her. The count then copulates with the corpse. In the end, however, the couple attempts to reconcile as the count offers the rose to the countess, but the relationship is ruined.

The story is essentially about the countess and the count, rather than a young maiden versus the older woman relationship, and the snow child is a deterrent to their marriage and a symbol of the count’s desires for a young girl, in lieu of his middle-aged wife. Thus, the snow child is a symbol of male desire and the idealized version of that type of youthful femininity. Blood also appears in an important role in this story, blood from the pure fresh snow representing the snow child’s virginity and her spilling her blood, by the pricking of the rose, symbolizing her premature exposure to sexual relations. The countess wears the “pelts of black foxes” (Chainani 117) as a symbol representing the “demeanor of a wily predator” (Chainani 224) and showcasing the cleverness she has had to use to maintain her status with the patriarchy for so many years. By stripping away her emblems of status and authority on a whim in deference to his desires, the count shows dominance over her. As a woman she would have not been independently wealthy in the period the tale is set in, and her power ultimately springs from her husband. But, in a reverse symbolic move the countess uses the rose, a symbol of love and desire, to kill the girl and in the process humiliate the count. He now has to have sexual intercourse with a dead body rather than a living girl, returning the snow child to her basic elements and restoring the countess’ position as an aggressive, manipulative older woman. However, when the countess takes the rose back from the count it hurts her, showing that the romantic side of the relationship is damaged beyond repair, if there was any left to begin with, and as Bacchilega notes, “there is no promise of happiness in the end” (18). The snow child seems to be the Lolita of every man’s desire, a receptacle for his lust, and the primary theme seems to be of an older woman simply doing what she needs to do to assure her own survival.

Neil Gaiman’s post-modern 1998 short story version of Snow White, entitled, “Snow, Glass, Apples,” goes beyond conservative or feminist re-telling to a gothic re-visioning. In a series of interesting twists the story is told in a first person narrative from the stepmother’s point of view and includes necrophilia and vampirism. Rather than a young maiden coming of age story, the Snow White of this tale is a vicious Lolita in the guise of a beautiful adolescent, draining men of their blood through sexual encounters, while the wise and inherently good queen, a natural witch with powers of clairvoyance, struggles desperately to save her kingdom. Initially, the queen attempts to be a loving stepmother, but after she offers her strange stepdaughter an apple late one winter evening, the girl attacks her and nearly kills her, forcing the queen to react to protect herself. Even after the queen’s huntsmen cut the heart out of the evil Snow White and discards the body in the forest, she continues to function, preying on unwary travelers. In the end, the queen’s best magical attempts at destroying the evil Snow White fail. The girl returns home with a prince as her thrall and has the queen burned as a witch.

The story essentially reverses the older woman versus younger woman paradigm and turns the original story of coming of age sexuality on its head. The sexual symbols in Gaiman’s version are in reverse. The queen as the older woman is portrayed as an empowered, mature, and stoic leader. She wants what is best for her kingdom and even though she
was sexually active, she was faithful, healthy, in control and an equal partner. The use of her magic was for good, unlike in the earlier retellings and film presentations. The apple as a symbol of true love and passion, something the cold-hearted princess would not understand, is used against her for the common good of the people. The dwarfs are nearly non-existent and seem to serve more as male thralls to the princess, and as the male collective, they are subverted and at her behest.

The princess, the strongest symbol of all, represents the early sexuality and promiscuity that can damage the soul; she is cold, heartless, and a completely aggressive predator, the foil of the queen. Her ability to function without a heart is a subtle but strong statement about her nature, feeding on blood, the symbol of life, but never really alive. Her bleeding the men around their genitals shows her sexual predatory nature and how she exploits the weakness of men to her own needs. Not only is she without a heart, but her womb, the source of creation, is dead and constantly leaks a small trickle of brackish fluid, making it the complete antithesis of reproduction, life, and healthy sexuality. She does become a wife and queen but a dead one not able to produce an heir. She is, therefore, a true succubus.

While the queen is in the role of an empowered woman with ties to nature, the land, and her people, the princess is a frightening black-hearted Lolita, the mirror of men’s vanity and pride. At the end of the story, whereas the princess has the appearance of a healthy marriage and the supposed beginnings of a monarchy, the queen is burned in fire, a saint’s death, and she essentially dies for trying to save the people who reviled her in the end.

Gaiman’s portrayal of the princess and the queen certainly transcends the earlier male-approved retellings of Snow White. There is no conditioning or patriarchal approval, instead, there is a stark light cast onto the male weaknesses as well as the positive and negatives of sexuality for both genders.

With the Grimms and Disney versions offering the perfect happy ending, and tying that ending to material gain and social status, the stories reinforce the idea that young women should pursue happiness and stability by defining themselves through marriage. This “fairy tale” ending only leads to disillusionment for women who were conditioned by the stories as young girls. To that end, what is to become of Grimms’ Little Snow-white or Disney’s young woman? Will she repeat the cycle, eventually fulfilling her destiny in the patriarchy by aging and attacking the next generation of young girls, or will she sit and stare out of a window, wishing for a child? The tales still persist through popular culture, and the debate as to whether they are training manuals for young women and “imprinted in children and reinforced by the stories themselves” (Lieberman 200), or comments on human nature and women’s biology still continues.

All three of these versions of the Snow White story show an interesting pattern of change and influence from the periods in which they were written, noticeable all the more now with the perspective of time and the application of modern critical analysis. They are especially illuminating in revealing the shifting of views of society on sexuality and roles for women as time has progressed. There have been changes and alterations, and now with postmodernism, complete inversions of the roles of the characters in the Snow White retellings, not only here and in other fairy tale retellings, but also in film, graphic novels, and other forms of media the fairy tales are represented in.
Works Cited


Works Consulted


Stone, Kay. “Marchen to Fairy Tale: An Unmagical Transformation” Western Folklore 40.3


Comparison of Eating Behaviors of College Students Who Self-Identify as At Risk for Type II Diabetes: A Pilot Study

Monique Richard

Dr. Gloria Hamilton
Psychology

Type II diabetes is a chronic disease that affects at least 16 million Americans. The impact on healthcare costs and quality of life has far-reaching implications for individuals, families, and society as a whole. Although behavior and lifestyle modifications can decrease the effects and incidence of Type II diabetes, little research has been conducted on the eating behaviors of individuals and how they contribute to the disease or prevent its development. This study observes the eating behaviors of college students who self-identify as at-risk for Type II diabetes and finds their behavior not to be significantly different from those who do not identify risk. Continued research is necessary to identify opportunities for intervention and implementation of prevention measures relevant to those at risk for Type II diabetes.

Introduction

Type II diabetes affects at least 16 million Americans, with some sources stating upwards of 23.6 million Americans, and is projected to increase substantially in the next 10 years given current sedentary lifestyles and diet choices. An estimate of undiagnosed Type II diabetes among Americans indicates that approximately 1 in 10 individuals has the disease. Further, approximately seventy percent of all U.S. deaths are attributed to chronic diseases, such as diabetes, which is often under-reported on the death certificate. The incurred healthcare costs, burden of symptoms from diabetes, and possible complications preceding other detrimental health problems indicates that more proactive measure be taken in research and prevention of Type II diabetes.

The costs associated with diabetes maintenance, treatment, and complications, such as cardiovascular disease, amputations, and blindness linked to diabetes, are $116 billion directly. Add to that figure another $56 billion from indirect costs associated with loss of work time, illness, and premature mortality. The cost-effectiveness of prevention and edu-


cation versus cost of intervention and treatment is significant because both the incidence of the disease and the cost of treatment both continue to increase.5

Diabetes Mellitus is a genetically inherited chronic disease defined by inability of the beta cells in the pancreas to produce insulin (Type I) or inability of the body to utilize insulin secreted by the pancreas to lower blood glucose levels with varying degrees of malfunction (Type II, hypoglycemia, hyperglycemia, insulin-resistant, Type III). Of all people who are diagnosed with diabetes, 90-95% have a variation of Type II diabetes. Insulin Dependent Diabetes Mellitus (IDDM), or Type I diabetes, may be a genetically inherited metabolic disorder that is typically diagnosed during childhood. Non-Insulin Dependent Diabetes Mellitus (NIDDM), or Type II diabetes, may be genetically inherited, but can also be attributed to excess weight, dietary habits, and other behavioral and environmental factors.6 Type II diabetes can be diagnosed at any age. If the disease has progressed undiagnosed, irreversible damage may cause it to turn into Type I diabetes through the slow destruction of the beta cells and the body’s inability to produce insulin or utilize it. Currently there is no cure for diabetes, but treatment and lifestyle management are possible.

Treatment and prevention of Type II diabetes involves self-management of diet and exercise and controlled glucose levels. Depending on the individual, an oral medication may supplement nutrition therapy. Continued evaluations with a doctor or endocrinologist help to prevent further complications and allow the patient to make adjustments as needed. According to a diabetes prevention trial, diet and lifestyle changes can prevent and treat Type II diabetes more successfully than prescription medication or prophylactic drug therapy (metformin).7 Along with fewer pharmacological interventions, more psychosocial interactions were indicated, including more frequent doctor’s visits that would provide substantial benefit to the patient’s overall health and well-being.

Paired with diet and exercise, lifestyle changes and behavior patterns are critical to continued proper management of Type II diabetes. Sleep, stress-management, and physical activity are essential to maintenance of the body’s ability to function adequately. Consuming balanced meals throughout the day is important to maintaining steady levels of glucose.8 Diabetes is extremely complex and the restriction of carbohydrates and regimented diets are often a challenge for most to follow on a daily basis. Healthy food choices may be difficult

---


due to limited resources, availability, and time constraints — specific obstacles that many college students must overcome. The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) emphasizes that further research is needed on lifestyle and behavior change related to key factors contributing to Type II diabetes.

This pilot study examines the eating behaviors of same-sex college students to identify whether patterns of those who self-identify as at risk for Type II diabetes are different from those who self-identify as not at risk for Type II diabetes. College students undergo significant change and personal development as they transition through their educational careers. Dietary modifications, weight management, and patterns of eating behaviors, as well as self-awareness of health risks, are among some of the challenges college students face at this time. Little research has been conducted to investigate eating behaviors and exercise patterns in relation to risk of Type II diabetes or how lifestyle changes can prevent development of the disease in those who may be at risk.

Dietary factors and regular exercise are recognized as crucial to maintaining a healthy lifestyle and avoiding or, at least, delaying the onset of many diseases even when an individual has risk factors through genetics or lifestyle. Relationships between knowledge of risk and preventative behaviors and implementation of appropriate dietary and exercise behavior modifications have yet to be studied in college students who are at risk for Type II diabetes. This study is designed to assess dietary choices and exercise patterns of college students prior to the onset of Type II diabetes through collection of data from students at risk for Type II diabetes and those who do not identify as being at risk. This study examines emotions and behavior in regards to exercise and self-perceived healthiness of diet as well as food content. These items are examined with the intent of developing key areas for prevention awareness.

**Hypotheses**

The purposes of this research are to look at food choices of students at risk for a chronic disease versus those of students without risk, and examine whether eating is related to emotions. The study is designed to determine whether the groups differ on food choices, duration of exercise, feelings prior to eating, and their estimates of adherence to a healthy diet. It is hypothesized that, because of their health concerns and awareness of the importance of diet in prevention of Type II diabetes, the food choices of the group composed of individuals at risk for Type II diabetes would differ from the food choices of their cohorts who are not at risk. The findings with respect to these hypotheses are important in providing insight into interventions for at-risk individuals.

Lifestyle changes, including physical activity, play a major role in the prevention of diabetes. The expectation for the exercise component of this study is that individuals at risk for Type II diabetes will include exercise as a part of their daily routine as compared to their cohorts. Diet and exercise are affected by the psychology of an individual by virtue of emotional factors associated with both variables.

---


The following hypotheses are tested:

1) Participants who identify as at risk for Type II diabetes will exercise more than those who identify as not at risk.
2) Participants who identify as at-risk for Type II diabetes will rate their diets as good for the majority of the three-day period.
3) Participants who identify as at-risk for Type II diabetes will eat more self-prepared home-made meals than those who identify as not at risk.
4) Participants who identify as at-risk for Type II diabetes will identify hunger as the primary emotion prior to eating as opposed to boredom, stress, or fatigue.

**Method**

Participants (See Table 1) were recruited from two psychology courses at Middle Tennessee State University in Spring and Summer of 2009 resulting in a total sample of 27 undergraduate students, all of whom were female. A demographics survey and clear indicators of identifying whether at-risk or not at-risk were presented. Consent forms and proper protocol were followed to ensure participant confidentiality.

Participants were asked to identify themselves as at-risk or not at-risk for Type II diabetes. The parameters by which they were asked to measure the risk were if one or more of the following were applicable:

- genetic predisposition (one or more direct family members within two generations had Type I or Type II diabetes)
- of African American, Hispanic/Latino American, American Indian, Asian American, native Hawaiian or Pacific Islander descent
- history of gestational diabetes
- have taken or are presently taking atypical antipsychotic drugs such as Olanzapine (Zyprexa) and Quetiapine (Seroquel)
- obese or overweight
- poor dietary habits especially a combination of excessive consumption of fast food, sugary beverages, and carbohydrates

Of these, mention should be made of the antipsychotic drugs as an indicator. Physical risk factors of pharmaceutical drugs must be seriously considered prior to treatment of psychological conditions to prevent possible detrimental and irreversible side effects. Type II diabetes has been diagnosed in patients who have been prescribed atypical antipsychotic drugs in as little as 8 to 15 weeks. The atypical antipsychotic drugs most consistent in developing onset of Type II diabetes include Olanzapine (Zyprexa), Quetiapine (Seroquel) and Risperidone (Risperdal).12


The study includes 13 students who self-identify as at-risk for Type II diabetes and 14 who identify themselves as not at-risk for Type II diabetes. Both groups were asked to complete a three-day log (see Appendix A) of snacks and meals consumed after 4:00 p.m. and to identify their feelings before eating. Students were asked to provide a rating of good or poor pertaining to each day’s diet. Students were asked to record total time spent exercising during each day. Participants recorded whether they ate alone or with others and what type of meal was consumed (i.e., fast food, home-prepared, or sit-down restaurant).

### Results

A one-way ANOVA revealed no significant differences in diet between the at-risk and not at-risk participant groups. A significant difference between at-risk and not at-risk was found in the total number of meals and snacks consumed after 4:00 p.m. A t-test resulted in a significant difference between groups in eating after 4:00 p.m., \( t(1, 25) = 6.38, \rho < .018 \). At-risk participants had fewer occasions of food consumption between 4:00 p.m. and 8:00 p.m. as opposed to those who identified as not at risk. No difference was found between at-risk and not at-risk students in emotion identified before a meal.

### Discussion

The examination of the eating behaviors of college students who self-identify as at risk for Type II diabetes as compared to students who self-identify as not at risk shows no significant differences in the quality of their dietary choices or their pattern of exercise. This study invites further investigation into the eating behaviors of individuals who may be at risk for a chronic disease but may not be taking proper precautions of prevention and may not be aware of their dietary choices. Further examination of the content and quality of nutrients consumed after 4:00 p.m. would clarify if the proper dietary guidelines and health benefits were being followed for optimal health and nutrition. Investigating exercise habits of individuals over a time-based study could provide insight into development of Type II diabetes.

This study includes a quantitative approach, as well as a qualitative component. The complexity of today’s lifestyle and processes of food production present tremendous opportunity for research related to obesity, cardiovascular disease, and numerous other food related health risks. Qualitative research, psychological counseling, and continued efforts to understand relationships between eating behaviors and health are imperative. The more
knowledge and awareness present in this field, the more individuals will be equipped to possibly prevent onset of diseases such as Type II diabetes.

**Limitations**

In this pilot study several limitations should be noted. Typically a 24-hour recall of all food consumption is logged by participants in nutrition studies. For participants’ convenience and time restraints, recording the content of food as well as calories after 4:00 p.m., when the majority of food is consumed, was felt to be adequate to identify dietary patterns of self-identified at risk or not at risk. Record of the day’s amount of exercise for one day was sufficient for this study, but the nature of the exercises was not assessed and it would be beneficial to assess specifics of physical activities. Beverage consumption was often not included as part of the meal or snack which would alter the nutrient content of the meal. Participants had to identify whether the day’s diet choices were good or poor and, depending on their perspective or nutrition education, their assessments may have not been factual according to health criteria, such as the U.S. recommended dietary guidelines.

Changes applicable to the food log should clearly detail specifics of food and beverage consumption. Although some participants detailed portions, a more accurate measurement of portion and calorie identifiers should be utilized. Because of participant variance in interpretation of directions, more specific directions would be helpful.

**Conclusions**

Dietary changes, lifestyle, and behavior modification are essential elements to the prevention and treatment of Type II diabetes and the health risks related to this chronic disease.\(^\text{13}\) Behavior counseling and weight-loss interventions have been shown to reduce the development of diabetes.\(^\text{14}\) Education, awareness, and properly implemented prevention measures are vital to helping Americans overcome unhealthy food choices and sedentary lifestyle patterns. College students are at a critical juncture in their lives when healthy patterns can be implemented to benefit a full and healthy productive adult lifestyle, but these may be compromised due to lack of financial resources, food availability, and time constraints. Acknowledging eating behavior and risk factors associated with chronic diseases is the first step toward moving forward and assessing a strategic action plan for optimal health.


\(^{14}\text{Tate DF, Jackvony EH, Wing RR : Effects of Internet Behavioral Counseling on Weight Loss in Adults at Risk for Type 2 Diabetes. A Randomized Trial. }\text{J Amer Med Assoc } 298: 1833-1836, 2003.\)
Appendix A: Daily Log

Date__________

<table>
<thead>
<tr>
<th><strong>After 4:00 p.m.:</strong></th>
<th><strong>Time after 4:00</strong></th>
<th><strong>Context</strong> (fast food, restaurant; party; meal; etc.)</th>
<th><strong>Did you eat alone or with others?</strong></th>
<th><strong>What were you feeling before you ate?</strong></th>
<th><strong>How healthy was your diet for this day?</strong></th>
<th><strong>Duration of exercise for today?</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>List drinks, foods, how prepared, approximate calories</td>
<td>Time after 4:00</td>
<td>Context (fast food, restaurant; party; meal; etc.)</td>
<td>Did you eat alone or with others?</td>
<td>What were you feeling before you ate?</td>
<td>How healthy was your diet for this day?</td>
<td>Duration of exercise for today?</td>
</tr>
<tr>
<td>Dinner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Date__________
Generating a Buzz: The Myth of TVA’s Rural Electrification in Norris, Tennessee

Christina Runkel
Dr. Derek Frisby
History

The Tennessee Valley Authority (TVA), working in conjunction with various New Deal agencies, often described the substandard living conditions in the South to generate support for its vision of social and economic uplift. In this spirit, the TVA constructed the town of Norris, Tennessee, as the model of the ideal planned community. Unfortunately, like many utopian schemes, Norris failed to fulfill its lofty promises. This paper analyzes the relationship between the ideals and policies of the TVA and the actual Norris community to gain a better understanding of government-sponsored programs and their effect on citizens’ lives.

The Tennessee Valley Authority (TVA) has long touted its contributions to the citizens of the river valley by promoting its government-sponsored programs. Working in conjunction with various New Deal agencies, the TVA often chronicled the substandard living conditions in the South to generate support for its utopian vision of social and economic uplift. In the effort to bring this vision to reality, the TVA constructed the town of Norris, Tennessee, as the model of the ideal planned community. Unfortunately, like many utopian schemes, Norris failed to fulfill its lofty promises. The TVA claimed that electrifying the region would dramatically alter the lives of Tennessee Valley residents, but these people were the least likely to experience the promised transformation. Through analyzing the relationship between the ideals and policies of the TVA and the actual Norris community, one gains a more nuanced understanding of government-sponsored social and economic programs and their effect on citizens’ lives.1

Started in 1933 as a part of Franklin Roosevelt’s New Deal, a group of programs designed to help boost the nation’s economy, the TVA aimed to reduce flood damage, improve river navigation, provide hydroelectric power, and promote agricultural and industrial development. Perceiving the South as one of the nation’s leading economic problems, Roosevelt enthusiastically supported the establishment of a regional planning authority. The TVA Board of Directors, including Chairman Arthur Morgan, began work immediately, and in the summer of 1933 they decided on the area around Cove Creek as the flagship dam, renaming the river in honor of Nebraska Senator George Norris. Several thousand families lay in the path of planned flooded areas, but the TVA made no prior study regarding “family removal, problems of access to isolated areas, or the effects of government purchase of real property on local government finance” because they did not have adequate time due to the “urgent need to relieve unemployment.” With the altered path of the river, the TVA mandat-

1This study would not be possible without the support from the McNair Program. Thank you. I would also like to wholeheartedly thank my mentor, Dr. Derek Frisby, for his guidance. I am indebted to Dr. Rebecca McIntyre for her moral support and editing. This paper could not be done without the assistance of Nancy Proctor at the TVA Research Library at Knoxville, TN, along with Richard Rayburn and the staff of The National Archives and Records Administration — Southeast Region at Atlanta.
ed that the Tennessee Valley residents move. In a 1940 report, the leaders of the Norris Dam Project claimed that “instead of a temporary camp, the establishment of a new town was deemed feasible” because of the need for a TVA headquarters in the area and due to the “housing requirements for the permanent operating force of the dam.” Nevertheless, the government promised to help the local citizens improve their economic status by bringing them electricity. Morgan had high hopes for the Authority’s work and set his utopian dreams into action, choosing an area near Cove Creek. Envisioning a town of 2,000, Morgan wanted to build a community that would provide an “improved moral foundation for society” where the dam workers and the local population would provide the town’s citizens. In order to build the dam and the town, the TVA gained approximately 150,000 acres of land encompassing much of Union, Campbell, Claiborne, Anderson, and Grainger counties. In 1934, the TVA hired local residents to interview families regarding their forced move.

To city dwellers, the interviews showed a simplistic way of life. The Tennessee Valley consisted mainly of farmers, desperate for relief, who had worked the land to its limits. John Rice Irwin, a young boy in the 1930s, recalled an area devoid of vegetation that looked like the surface of the moon. Of the nearly 3,000 interview respondents, over 89 percent lived in their birth county, and nearly 2,000 owned their homes, an extraordinary high number when compared to the rest of Tennessee where only about half the farmers owned their homes. Due to farming chores, children infrequently attended school. The government questionnaires also found that rural families had to travel a mean distance of 1.5 miles to the store, 5.7 miles to the doctor, 1.5 miles to an ele-

Figure 1: Lewis Hine, October 23, 1933.
Original caption: “Washday at the Stooksberry homestead near Andersonville, Tennessee. This old estate of 350 acres dates back to the Civil War. It will be submerged when the Norris Dam reservoir fills. This family is very versatile and carries on all kinds of activities and construction.” Courtesy of The National Archives and Records Administration, Southeast Region in Atlanta, Georgia, RG 142.

mentary school, 8.2 miles to a high school, and 4.4 miles to the nearest trading center. During the Great Depression, the Tennessee Valley residents lived 100 years behind the rest of the country.\(^3\)

To gain widespread support to uplift the Tennessee Valley, the TVA hired photographers to capture images of the “backwoods” people. Lewis Hine stayed for only a short time but provided many of the photographs that turned up in newspapers across the country. One of Lewis Hine’s more popular images shows the Stooksberry farm in Andersonville, Tennessee (Fig. 1). The women stood outside their farm home washing laundry in simplistic prairie style dresses and bonnets. Though Hine took the photo in 1933, the family’s clothing was popular during the 18th century. This type of clothing showed up in many of Hine’s photographs of East Tennessee residents. The home also displays earlier traditions, such as natural elements which made up the exterior and interior of the homes.

Many of the Hine photos display the family gathered around the fireplace, such as the Carden family (Fig. 2). Mrs. Carden had 12 children; farm families tended to be larger due to the need for help on the fields. Many of these families lived on less than $100 per year, meaning they had no money to spend on unnecessary items, such as wallpaper. The Carden family, for instance, used old newspapers to cover their walls. Interiors were plain, and typically, families had simplistic furniture. Oil lamps, along with candles and fireplaces, provided light during the evening hours. Houses, on average, contained only four rooms. Only 3.7 percent of the homes included eight or more rooms.

Most of these households did not have indoor toilets; instead, most families built an outhouse (Chart 1). Indoor facilities included chamber pots, but many families chose to live

---

without such facilities and simply used the outdoors as a restroom. Families had more options with bathing facilities (Chart 2). Only eight (of 3,000) of the Norris Basin area residents had the luxury of indoor plumbing. Most families owned a washtub, while the poorer residents bathed in a nearby creek or river. These families also lacked household items common to the rest of the country. Seventy-seven percent of the basin residents did not own a car, and families used horses and carriages for transportation. Less than 10 percent of the residents owned a radio and therefore could not hear Franklin Roosevelt’s famous Fireside Chats that enthralled the nation. In contrast, over half of the residents owned a sewing machine.

Many families went to the nearest commercial center only once a month and did not have the money to buy the latest fashions. Instead, they made their own clothing. Many outsiders considered these conditions abysmal and described the residents as “backwood hillbillies.” The photographs of Lewis Hine perpetuated this sentiment. Curtis Stiner said that during the Great Depression the basin residents had food to eat, but no money to spend. “I’ve lived in a depression all my life. That’s all I ever knowed. I can’t tell any difference; not between the twenties and thirties.” In an effort to help the residents economically, the TVA forced them to move.4

The TVA began a relocation process. Fieldmen went house to house acquiring the economic statistics of each family and learning their feelings about TVA. The Authority offered land owners a small amount of money for their land and some assistance in moving (for the families who needed it). The tenants, on the other hand, received no money. Fieldman Katherine Baker interviewed Laura Bacon who owned 17 acres and remained antagonistic towards TVA during the interview. Ms. Bacon claimed the Authority did not give her as much money as her husband had paid for the land, especially with the numerous improvements she and her husband made. She told Ms. Baker that “nearly everybody over there has sold out … but me, and I ain’t goin’ to until they pay me a fair price. … You [government] is prying into everybody’s affairs.”

Ms. Bacon was hardly alone in her sentiment. Wade Ridemour lived with one son in a three-room home in Andersonville and believed that the TVA robbed him of his heritage. Upon his relocation he did not desire any electricity in his new home. Daniel Hill of Andersonville owned 167 acres and lived with his four boys and two girls. According to his

---

fieldman, Mr. Hill wanted “twice as much for his farm as [the TVA] offered him,” and believed that they offered his neighbors more. Some residents, however, understood the situation and moved willingly. TVA officials approached John Rice Irwin’s aunt one day and requested that she sell her land. She told them, “I have three little babies buried up there on the hill under the cedar trees and my only desire was to live throughout the rest of my days here among my family and my friends and among my people, but you say that this is going to help a lot of people. It’s gonna save lives, so, if this is true, then we’re ready to leave.”

Most residents felt a sense of loss with their relocation. John Bailey lived in a three-room home with no toilet and only a fireplace for heat. He owned a phonograph and a sewing machine. He and his family always had plenty to eat. He told fieldman Katherine Baker that “the Depression hasn’t hurt us … sometimes I get kinda embarrassed when people see the rough place I live, but we make good here. No debts.” Ms. Baker concluded that if Mr. Bailey received a fair price he would move, but that they were proud of the place and “proud of the way it produces and their ability to be independent on it.” The TVA, however, took away their independence.

In the end, the TVA required all families to relocate, and each adjusted differently. According to resident Claude Longmire, “Most of the people took what was offered. Some protested, but the majority of the people accepted what was offered.” Some decided that rather than move, they would end their lives. H. E. Anderson knew “some people up there that resented moving. … In fact I know two who committed suicide. I knew personally both of them. [The TVA] bought all around [one man], but he wouldn’t sell, and he went down to the pond there and put a rope around his neck and hung himself.” Most of the residents saw that young people adjusted better than older people. Ruble Palmer lived in Union County and moved at the age of 33. She saw that the “old people never did actually adjust to [moving]. Lived there 60, 75 years. You had to force them out. If they had left there on their own accord, it wouldn’t have been so bad, but they had to go, see, and they never did actually adjust.”

Morgan cared little if the relocated residents adjusted or not; instead, he focused on his new town. He and Roosevelt discussed his plans even before Roosevelt appointed the full board of directors, and Morgan claimed that he wanted Norris to solve the rural problems of East Tennessee. The TVA set several requirements for the location of Norris: the site must lie at most three miles from the dam site, it must be scenically attractive, it must lend itself to economic development, it should be on land good for farming and gardening, and it should include enough area so that an adequate “protective belt” would guarantee the new community freedom from encroachment. Morgan found the perfect site for his town, and knew he needed a plan. He called on Earl Draper to prepare a detailed town plan that resembled the smaller industry towns in France. The two men outlined a plan in which agriculture, handicrafts, and small manufacturers were central. Soon, TVA planner Tracy Augur also began work on the plan for Norris, focusing the town around the town center, a construction camp (later transformed into offices), and a shop area. Initially they focused on employee housing and placed the first construction camp on the west edge of town because it provided quick access to the dam and accommodated 925 people. Later, the company built a women’s dorm and a staff dorm. The staff dorm, nicer than the others, housed the engineers working

---


6 McDonald and Muldowny, 60-64.
on the dam. A cafeteria provided food for only 25 cents per meal. The family section of town, separated from the dorms, included 152 fully electrified and insulated houses, 130 lower cost houses (mostly cinder block), 10 duplexes, and five apartment buildings. Families could rent a four-room home for $14 per month (which equaled about one week’s worth of pay), and for $19 could live in a home with a furnace, stove, refrigerator, and water heater — a true luxury in the East Tennessee wilderness. According to a TVA commercial, the introduction of these appliances into the area raised standards and reduced drudgery.

The interior of the new homes were vastly different from the homes just five years before. Many homes included wood paneling and hardwood floors. Figure 3 shows a low-cost employee home with basic pine groove boards. The living room also housed a wooden bookshelf and several paintings of the area wilderness. The TVA also built a community center and school. It provided classes for adults in English, history, government, math, drawing, and typing; as well as vocational classes in woodworking, smithing, dairy farming, gardening, electrical wiring, and automobile repair. The company ran a voluntary health plan for the well-being of employees. The project planners for Norris concluded that the design of the town soberly attempted “to visualize the kind of living conditions that the American people as a whole may legitimately aspire to have if productive energies are utilized to the best advantage.”

Though, in the developers’ eyes, Americans aspired to homes with electricity, the relocated residents received no direct benefit from the electrification of the area. Only a small portion of relocated families lived in Norris. Of the 3,000 interviewed before the arrival of TVA, over 80 percent wanted to relocate to a farm. The new town of Norris offered little incentive for the relocated to stay. Over 60 percent of the families moved to an already overpopulated nearby county, and many felt that their new farms were worse than before their removal. After TVA completed construction of the dam, the employees moved away, and the company took away many of the programs. In a letter to Earl Draper in 1935, Tracy Augur commented, “I still feel, as I have felt from the beginning, that the problems of relocating families displaced by TVA operations present both a direct responsibility and an opportunity for constructive planning, and

Figure 3: Employee Housing. Taken between 1933 and 1945.

Courtesy of the Library of Congress, Prints & Photographs Division, FSA-OWI Collection, [reproduction number, LC-USW33-015728-C DLC].

7McDonald and Muldowny, 218-221, 224-225. The Norris Project, 177-178, 184-193. Modern Marvels: The Tennessee Valley Authority, 32.00.
that neither is being satisfactorily met. The problem seems to be looked upon as a small and incidental one containing nothing but trouble for the Authority.” In the end, Norris was not the town that Morgan wanted to create and it did not help the relocated.

The dream of Norris failed. In order to gain political support for TVA, the Roosevelt administration portrayed the Norris residents as uncivilized and “backwards.” Prior to construction, the government sent photographers to capture the worst-looking houses, schools, churches, and people in the region. TVA promised the people in the area social and economic improvements, yet never delivered. Though TVA wanted Norris to serve as a town for the “lost Americans” of the South, they did little to help the displaced former residents of the Norris Basin. Tracy Augur admitted that the TVA offered the displaced “no improvement in their social or economic status” and did not “compensate [them] for leaving their old haunts and habit.” Many of the employees abandoned Norris and nomadically followed the TVA to other dam construction sites. Ultimately, the utopian vision initiated at Norris was reduced to a public auction of the town’s homesteads, their dreams sold to the highest bidder.

Bibliography


National Archives and Records Administration — Southeast Region, Atlanta, GA. RG 142. Records of the Tennessee Valley Authority.


---

8McDonald and Muldowny, 191-192, 224, 227-229, 238-258, 268.

9McDonald and Muldowny, 166.
Do New Democracies Have Staying Power?

Chris Young

Dr. Doug Heffington
History

In the last quarter of the 20th century, many countries transitioned from authoritarian rule to democracy. This wave of democratization occurred at a rapid rate, establishing democracy as the most accepted form of government in the world. But in recent years, many countries have reversed this trend by de-democratizing at an alarming rate. This paper examines the underlying internal and external causes of democratization and de-democratization with an extended discussion of one case, Nigeria. Applying comparative qualitative methods, I find that strong state capacity and ethnic cohesion lead to the consolidation of a functioning democracy, while a reversal in these processes leads to de-democratization. Externally, I find a strong correlation between increased globalization and democratization.

**Democratization**

Democracy spread worldwide in the 20th century as it became the “only legitimate and viable alternative to an authoritarian regime” (Huntington 2003). By the end of the century, many countries had transitioned from authoritarian governments to democratic regimes. But many regimes that democratized during this period have either failed to fully consolidate or have reverted back into authoritarianism. This troubling occurrence has left many scholars puzzled. Earlier literature suggests that certain social and economic conditions need to be present in order for democracy to develop (Lipset 1959) but the democratization of countries like India and Mongolia refute this theory. Recent literature places great importance on the process of political liberalization (O’Donnell and Schmitter 1986). However, political liberalization has not always translated into democratic reform nor do countries that democratize always become fully consolidated. Kenya and Malaysia are examples of states that have failed to consolidate despite having initiated democratic reforms. The regimes of both these countries have been severely eroded by episodes of ethnic strife and political corruption. These conditions are symptomatic of a lack of strong state capacity, and a lack of state capacity can cause democracies to revert back to authoritarian rule. Without a strong state, subversive acts like ethnic violence and political corruption cannot be negated.

Carothers (2002) speaks of this type of democratic erosion, labeling it a “slow death.” He describes it as “a progressive diminution of existing spaces for the exercise of civilian power and the effectiveness of the classic guarantee of constitutionalism,” which allows authoritarianism to advance. Huntington (1996) warns of this, suggesting that the danger is not so much an overthrow of a regime but rather its slow erosion by those elected to lead it. This has become a reality in many regimes across the world, including the Russian system and several former Soviet satellites.

Authoritarianism has re-invented itself in the 21st century. It is no longer a form of governance that restricts the right of most of its citizens and is brutally oppressive. It has matured into a durable form of governance that is sustained by crafty parties in control (Brownlee 2007). Much of the recent democratization in the world (Huntington’s third wave) is in great threat of regression, and current theory of international politics is deficient in explaining why this is occurring. Modernization theory, for example, is flawed and easily
refuted. The idea that as states become wealthier they become more democratic does not seem to apply to China, which has maintained its authoritarian form of government despite strong economic growth. Moreover, political liberalization — the notion that democratized government becomes more open, less restrictive and accompanied by competition among political parties — has often proven to be a façade for many countries. The appearance of political liberalization has in fact sometimes staved off real democratic change.

The portion of the world that remains un-democratized suffers unremittingly from poor state capacity and ethnic strife. Diamond (2005) points out a triple crisis in governance revolving around state capacity noting: 1) the lack of accountability and rule of law, as evidenced in pervasive corruption, smuggling, and criminal violence, personalization of power, and human rights abuses; 2) the inability to manage regional and ethnic divisions peacefully and inclusively; and 3) economic crisis or stagnation, stemming in part from the failure to implement liberalizing economic reforms and the failure to raise the levels of integrity, capacity, and professionalism in the state bureaucracy. If the rest of the world is to democratize, states must increase their capacity to prevent ethnic divisions from creating deep internal economic and political malaise that leave governments over-burdened and handicapped.

State Capacity

Failed states became a new phenomenon as the 20th century came to a close. States such as Haiti and Somalia struggled to maintain any semblance of order as their governments receded into anarchy. Both nations suffered from massive poverty and lacked the fiscal resources to effectively implement government polices due to their extremely weak state capacities. The states each lacked the ability to harness non-state resources or alter their distribution (Tilly 2007). Neither of these states is governed democratically and neither is able to provide basic services to society or forge national solidarity between various ethnic groups under the state apparatus.

The lack of a strong and stable state has stalled the democratic progress in these countries and exacerbated ethnic strife, human rights abuses, and economic underdevelopment. In such an environment, state legitimacy is often questioned while many non-state actors operate independently of state regulation. In sum, failed states such as these lack the capacity to create political institutions capable of controlling violence or meeting the basic needs of the population. In these cases, rule of law is often arbitrarily enforced and political corruption runs rampant. Democracies struggle to survive in these environments because government bureaucracy lacks the necessary resources to institutionalize democratic governance. In these cases, democratic governments implode.

Somalia is an especially pertinent example of this. In 2009, it held elections for public office while its capacity as a state was greatly limited. The country lacks the capacity to supercede ethnic and tribal ties nor does it even have firm control of its territorial boundaries which are heavily disputed. In recent years, acts of piracy and the spread of Islamic fundamentalism has further weakened Somalia. The lack of an effective state capacity has led to deep fragmentation. Because Somalia has lost its monopoly on violence, well-armed militias frequently seize parts of the state, which lacks the ability to protect its vulnerable citizenry.

A state’s capacity often lags when it fails to protect the political rights of its citizens. Societies that grant political rights to citizens allow power to be dispersed throughout society, and this further legitimizes the state’s capacity to intervene in private affairs separate from the state. Democratic governance paves a negotiated path for bureaucracy to fulfill the will of the state. Authoritarian regimes lack this luxury. They instead have to rule by coercive means because they lack the structure needed to implement policy. Organizational structure in weak states is often limited due to the lack of government authority. The state of Burma is a classic case of “despotic power.” It is ruled by a small group of elites that impose
a brutal, oppressive form of government on its society. The government has depleted its bureaucracy so thoroughly that all political leverage is consolidated in the hands of the military (Engelhart 2005). This has firmed the military’s grip on power but destroyed the chance of a democratic government arising. The result is an impervious state extremely resistant to change and hostile to social mobility. This would make democracy a counterproductive form of governance if it were to be instituted. Burma’s political institutions are so depleted that they would be unable to perform the government procedures of a democratic state.

Burma uses its state capacity to maintain authoritarian government. The military manipulates the government and controls all opposition to the state. Typically, however, strong state capacity tends to increase the chances for democratization by creating a symbiotic relationship between state and society. A state’s capacity is strongly correlated with the power reciprocated from the society it governs. Much of the state’s influence derives from its ability to generate resources from multiple sectors of society. This process, in turn, broadens out economic stratification by limiting elite economic control.

The state also becomes easier to legitimize when power is authorized by a democratic government. Skocpol (1979) defines state capacity as the ability to achieve goals despite opposition and in spite of difficult economic circumstances. This is especially relevant to young, fragile democracies. Most democracies that fail do so within the first five years of their existence because they lack the strength to overcome oppositional forces that pose a serious threat to the state. Nor do they have the bureaucratic foundation to sustain democratic governance in economic downturns.

While democracy’s survival is not solely dependent upon societal factors, its existence is greatly dependent on them. This is why a developed state capable of withstanding competition within the state should be in place before democratization occurs. In weak states, opposition often directly confronts the state (Andersen 2004). Also, prior to democratization, a state should have strong bureaucratic institutions that can implement policy. Many states have made the mistake of democratizing without replacing authoritarian apparatuses.

**Ethnic Integration**

In the early stages of the democratization process, great uncertainty arises as the formation of a democratic government creates a new social order to replace the old one. This often leads to violent conflict amongst various ethnic groups as they compete for power in the new government. At this stage, institutions allowing political power to penetrate all realms of society are absent and ethnic ties are placed above the national interest.

This was the situation in many countries after de-colonization occurred in many parts around the world starting in 1960. Many states containing volatile ethnic compositions were left in fragile situations after colonization had created many artificial geographic line based on the geopolitical purposes of the colonial powers. This forced the integration of many mutually antagonistic ethnic groups into a single state structure. With the arrival of freedom, democracies thus faced a perilous situation. In many cases, ethnic wars broke out as a struggle for power and resources ensued. This occurred in Nigeria, India, Somalia, and numerous other countries.

In recent years, ethnic conflicts have not so much caused but rather been caused by state failure and refugee flows into neighboring states (Weiner 1996; Lambach 2007). Conflicts from other states spilling into neighboring states has created tense environments and exacerbated ethnic conflict in areas already plagued by weak state capacity and inefficient bureaucracy (Lake and Rothchild 1998). For instance, Sudan’s refugees have poured into neighboring Chad. This conflict, which has gained much international attention, has remained an intrastate conflict. But it is easy to see such an ethnic conflict becoming internationalized if it poses a serious threat to world or even neighborhood peace and security. One such case is the re-emergence of the Kashmiri conflict between India and Pakistan. The
presence of nuclear weapons on both sides and linkage to the Western world greatly increases the chances of this conflict becoming internationalized. Most ethnic conflicts remain confined to specific regions, a legacy left by de-colonization which has been instrumental in the failed states we see today. Somalia still suffers from tribalism and is a failed state that lacks the capacity to provide its society with a stable government. Nigeria is plagued by ethnic tension and oil disputes.

Heterogeneous states strain the democratization process but do not make it impossible. Brazil, for example, did not experience a tumultuous ethnic conflict in its transition to democracy despite its diverse society. Nor does ethnic heterogeneity automatically spell doom for a state attempting to consolidate its democracy. Many countries around the world such as Canada and America are multi-ethnic and manage to maintain stable governance. The mere presence of ethnicity alone does not guarantee conflict. It is often ethnicity in combination with something else such as resource scarcity that sparks ethnic conflict.

In some cases, it can be over-centralized governments that exacerbate already tense ethnic situations by intensifying economic and political inequality. In these cases, ethnicity then becomes a useful tool for mobilization. This can be dangerously divisive and potentially lead to devastating ethnic violence which can erode the state capacity of a democracy. In contrast, ethnic mobilization can also support democracy. This occurs in societies where the majority of the population being oppressed shares a common ethnic bond. This creates a social condition that opens space up for political participation, forcing elites to negotiate and transferring some of their power to the masses. This process is called ethnic liberalization.

During this process, certain political liberties may be granted to the masses in order to stymie potential social unrest. One such freedom that may be granted is the opportunity to vote. Of course this may exacerbate ethnic tensions if the society is deeply divided economically by resources. Ethnic tension can also hamper democratic rule when minorities fall victim to the policies imposed by the majority. Disparities can exist in democracies as long as the state does not, itself, promote these inequalities (Tilly 2007). If it does, society may delegitimize the state by refusing to acquiesce formally to state procedures. Protests against unfair government policies may occur and mobilizations for social change are likely to follow. This often can lead to explosive ethnic violence.

Once a state has formally institutionalized ethnic ideologies, it creates a society that channels financial resources away from many sectors of society. A structure then becomes established that disproportionately sways political power and ideology. South African accomplished this when it incorporated racial apartheid into the state apparatus (Tilly 2007). Ethnic ideologies then became institutionalized as ideology translated into policy.

Institutionalized racism can create a backlash from the oppressed ethnic groups lacking political and economic power. Instead of integrating into the state, ethnic factions quickly lose faith in government and begin to participate in activities that subvert the state’s capacity. This imperils the state and it is less able to perform necessary governmental functions. Factions of the state undermine authority and leave the government susceptible to political corruption.

This is extremely debilitating to the overall function of the state. One of the main purposes of the state is to encompass trust networks into a centralized form of governance. This helps to create legitimacy which allows for authority to be asserted by the government. If ethnic cohesion is not present, government tends to become increasingly fragmented and so must struggle to institute policies that mutually benefit state and society. Resistance to the brutal apartheid regime in South Africa began as unity was forged between separate ethnic groups who challenged the existing order and de-legitimized the state. After a long struggle, apartheid was dissolved and a new era of democratic governance was established. In the aftermath, a rigid social structure still existed that links directly to the many years of apartheid rule. The end of apartheid eliminated state-sponsored segregation but it failed to eliminate inequality.
According to Seekings and Nattrass (2005), apartheid had provided full employment to whites but had shunted blacks into farming and mining jobs. What originally had been a race-based division of society transformed to include also a class-based division so that blacks did not experience gains when the country prospered economically.

While South Africa has emerged from apartheid, it still remains mired in systemic structural racism. Democracy is still shallow and extremely fragile because it is still nestled in a social order that breeds racial inequality. Politics is still largely a zero-sum game. There is little incentive to form political associations across racial or ethnic lines. Ethnic allegiances are more important than national identification. South Africa still risks becoming ethnically fragmented to the detriment of democracy.

Often times, ethnic politics can create polarizing ideologies that divide the state and de-legitimize government authority, reducing the state’s ability to maintain control. One result is that basic services are not delivered. Second, there is no state monopoly of violence. Because other groups may resort to violence, the state cannot ensure the safety of its citizens. Third, non-state actors begin to form and provide some of the services the state is unable to provide. Lastly, interdependence between state and society diminishes as power becomes a mechanism of non-democratic actors.

In healthy democracies, a mutually dependent relationship is in place between society and the state. This allows for a central authority to govern and provide services without interference. But in low-capacity states, ethnic tension undermines this relationship, challenging the state’s legitimacy. If this occurs, democratic consolidation becomes a stalled process. Ultimately, a democracy can only fully consolidate if it manages to integrate previously segregated ethnic groups into the public sphere. Political participation becomes a part of the state apparatus and legitimacy follows. The reverse occurs when ethnic groups are allowed to actively pursue their political interests without state approval, forming their own bases of autonomy. They become politicized and institutionalized. Fragmentation results and the state loses authority.

Globalization and Democracy

While democratization is the product of internal factors, external factors provide the environment that influences the prospects of democratization. During the Cold War between two major powers, the United States and the Soviet Union, the emergence of new democracies was more difficult as each hegemon supported loyal states regardless of their systems of government. With the end of the Cold War, the demise of the Soviet Union and bipolarism, globalization has made the establishment of democracy easier. Authoritarian regimes could no longer survive merely because one of the major powers considered them to be allies. Economic gain trumped political motives as the global economy developed rapidly in the late 20th century. It was no coincidence that that globalization coincided with a wave of democratization.

Globalization spurred democratization across the world in two specific ways. First, it created an international norm that deemed democracy as the most respectable form of government. There simply was no other competing ideology. Second, it integrated economies across the world while giving some countries extensive political leverage in the international sphere. Globalization supports pro-democratic actors while simultaneously reducing the impediments to compromise. It further raises the costs of “elite subversion,” according to Remmer (1995).

As economies became more integrated, globalization managed to quite successfully diffuse power in many instances from the state to society via increased trade, foreign investment, and technological innovation. This increased linkage throughout the world in five areas: 1) economic ties such as trade; 2) geopolitical ties which include regional associations; 3) social ties; 4) communication ties; and 5) transnational civil society ties. These international
linkages helped to foster democratization (Levitsky and Way 2005). While these linkages are empirically valid in certain cases of democratization, they may also have the opposite effect. As China has integrated into the global economy, its very size has allowed it to maintain a repressive form of government. Democratic nations’ willingness to do business with such nations as China may in fact strengthen the authoritarian regime.

Nigeria

British Colonization

Democracy has failed to take root effectively in Nigeria for various reasons. It currently lacks a strong state due to its tumultuous ethnic make-up. Historically, Nigeria has been occupied by multiple ethnic groups, but three main groups have dominated the political realm. In the northern part of Nigeria, the Hausa people are the main inhabitants. The Igbo Christians are a majority in the east. The Yoruba are prominent in the west. In recent years, ethnic cohesion in Nigeria has been tempered by a growing religious divide between the north and south. The north is a predominantly Muslim region while the south is largely occupied by Christians. Elites rule arbitrarily without a firm legitimacy. State capacity has been greatly limited due to lack of fiscal resources while society remains deeply fragmented between ethnic, geographical, and religious factions. This hinders party formation as party affiliations often do nothing more than fall along ethnic and religious lines.

The consequent instability and political malaise can be traced directly back to the artificial unification of the country during British colonization. After de-colonization, Nigeria became a state founded upon loose legal ties that lacked the strength to bind. Nigeria’s formation into a state did not integrate separate territories into a single political entity. This was why Nigeria immediately fought a civil war after de-colonization.

Ethno-nationalism became entrenched as a useful tool of mobilization as each group glorified itself in comparison to the others. Nnoli (1978) says there was a “psychological race” between the ethnic groups characterized by a common consciousness among members of each group, rejection of those outside the group, and conflict.

During colonization, the British had maintained a strict separation between the three regions of the country. Under their imperial rule, the British allowed the Hausa in the north to continue its authoritarian practices in alignment with Muslim tenets and beliefs. In contrast, the Yoruba and the Igbo practiced a much more democratic ruling system that the British felt needed to be controlled. These two groups were highly socialized by British customs. They adopted Western values such as Christianity and they emphasized Western education. The divide between north and south created a huge problem for Nigeria. The Hausa people were content and actually argued in favor of colonialism. Their system of governance made it easier to consolidate power as long as the British remained in power. The Yoruba and the Igbo, on the other hand, wanted a transition away from colonel rule. East and west regions wanted separate independent states that would be able to operate without being controlled by the north.

The north was comparatively poor but had a larger population than both the Igbo and Yoruba populations combined. This would give them more political clout in affairs of the state and likely create an ethnically hegemonic state. But the north feared that the more affluent Yoruba and Igbo regions would easily consolidate power following de-colonization. In order to prevent this, the north demanded that the country continue to be separated into three regions.

Nevertheless, Nigeria gained independence in 1960 as a single entity, albeit an unstable one called the First Republic. Demands were made to reserve power for specific groups, promoting ethnic politics. This worked against the state’s capacity to govern in the interests of all. It also encouraged corruption. The Igbo claimed they were victimized by
election fraud. Because of the north’s overriding majority, the elected government was un-
likely to meet the needs of Igbo even in the absence of voter fraud. A coup occurred in 1966.
In retaliation, a counter coup was launched by the Hausa, and many Igbo Christians who
were living in the north were brutally massacred. The discovery of oil in the south added to
the ethnic tension. The north’s firm control of the government made the south afraid to tap
the resource out of fear that they would not receive the revenue.

Soon after, in 1967, the Biafra War broke out. This civil war started when the east
tried to secede from the Nigerian state. The north fought to prevent this from occurring. By
war’s end, in 1970, the secessionist movement was squelched and Nigerian remained loosely
intact at a cost of three million casualties. The war left bitter feelings among many Nigeri-
ans, particularly the Igbo.

Government became highly centralized, but because Nigeria embodies a wide array
of ethnicities that hold disparate beliefs about governance, no government yet has managed
to institutionalize an equitable system that allocates resources and opportunities fairly. Eth-
nic politics continued to be dominant and the conflict between the various ethnic groups
makes it very hard to legitimize government. As a result, democracy has not taken hold in
Nigeria. Indeed, the country was to turn to military rule for 16 years.

Military Rule

After the war, a military government was installed that attempted to unify Nigeria
under a ratified constitution. But many of the same problems remained. Ethnic tension led to
the assassination of Igbo leader J.T.U. Aguiyi-Ironsi after ruling for only six months. He
was replaced by Yakubu Gowon until he was removed by coup in 1975. Murtala Moham-
med succeeded Gowon but was killed in another coup in 1976. General Olusegun Obasanjo
ruled until 1979.

During military rule, measures were taken to integrate Nigeria but they often had
the opposite effect. Any government centralization tended to benefit the more affluent south.
This led to mass resentment from the north which ultimately led to Ironsi’s assassination.
Gowon attempted to modify Nigeria’s political structure by instituting a 12-state structure in
1967 in which six states each would be placed in the north and the south. Seven more states
were added by Obasanjo. This newly formed federation managed briefly to balance out re-
sources and relieve ethnic tensions but the reforms gave too much power to national authori-
ty (Suberu 2001). Although intended to establish a stable system by giving citizens some
voice under military rule, they instead served to expand the central government’s rule by
diminishing the autonomy of the states. Moreover, the direct link between oil and govern-
ment disallowed equal political power. The ethnic group in power at any given time was the
one that benefitted.

A second attempt at democracy was made (this time, a presidential rather than a
parliamentary system). The Second Republic was initiated by the new constitution of 1979
and it brought drastic changes that reduced ethnic cleavages. Diamond (2005) says that
while ethnicity was still important, it was much more “fluid” and much less polarized. The
presidential system allowed for power to be dispersed more proportionately without having
an over-centralized authority. Many laws were passed to prevent the state from being gov-
erned by an ethnic hegemon. Unfortunately, the quality of governance suffered as revenues
received from oil exports were shrinking at the time. This greatly reduced state capacity and
allowed ethnic politics to creep into the public sphere again. Bitter political debates between
local and national leaders ensued. Disputes were primarily fought over the allocation of oil
revenues and federal involvement in local matters.

In 1983, after a brief stint of political progress, a coup occurred and ethnic politics
became profitable again. This cycle continued repeatedly in Nigeria up until the establish-
ment of the Fourth Republic in 1999 when democratic measures were implemented. But
hopes of democracy were quickly put to rest as ethno-nationalistic ideologies came to the forefront once again. The central government continued to exploit ethnic loyalties for narrow political gain and political corruption remained rampant. There was not to be a transfer of power from one civilian government to another until 2007.

Corruption and ethnic strife continue to plague the state. Moreover, it has yet to transcend the legacy of colonialism as illustrated by the Nigerian police. During colonization, the British police force was used to subjugate the Nigerian colony and serve the British elite (Smah 2003). Coercive police practices of intimidation, torture and even murder continue long after the British have gone. Alemika (2003: 21) argues that “Police are instruments of oppression and exploitation in totalitarian and unjust social systems. Yet they are essential to the preservation of justice and democracy. … The police are guardians of social order. As an institution the police force helps to preserve, fortify and reproduce the prevailing social order, and are hardly catalysts for its change. Thus when a social order is repressive, exploitative and unjust, the police preserve it by suppressing and defusing demand for democracy and elimination of oppression and injustices.”

If Nigeria is ever to consolidate democracy, it must efficiently build up its bureaucracy and create institutions that integrate oppositional forces into the state. This is the first step to building state capacity and bridging ethnic tensions.

Bibliography


Skocpol, Theda. (1979). *States and Social Revolutions*. New York: Cambridge University Press.


