Sponsors

James E. Walker Library
College of Liberal Arts
College of Mass Communication
College of Basic and Applied Sciences
Jennings A. Jones College of Business
University Honors College
College of Continuing Education and Distance Learning
College of Education and Behavioral Science
College of Graduate Studies

Copyright ©2009 McNair Program at Middle Tennessee State University, Murfreesboro, TN. All rights reserved.

While the McNair Program staff has made every effort to assure a high degree of accuracy and quality in the content of this publication, the interpretations and conclusions in each paper are those of the authors alone and not of the McNair Program. Any errors of omission are the responsibility of each author.

The Ronald E. McNair Post-Baccalaureate Achievement Program at Middle Tennessee State University is a federal TRiO program that is funded by the U.S. Department of Education.
Knowledge Never Goes Out of Style.

College of Liberal Arts
http://libarts.web.mtsu.edu

Art
English
Foreign Languages & Literatures
Geosciences
History
School of Music
Philosophy
Political Science
Sociology & Anthropology
Social Work
Speech & Theatre
College of Basic and Applied Sciences

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

mtsu.edu/~collbas
Advisory Board
October 2007- September 2011

Michael Allen, Ph.D.
Vice Provost for Research; Dean, College of Graduate Studies

Gloria Bonner, Ed.D.
Assistant to the President for Community Engagement and Support

Luther Buie, MS.Ed.
Advisor, Academic Support Center

Jim Burton, Ph.D.
Dean, Jennings A. Jones College of Business

Scott Carnicom, Ph.D.
Associate Dean, University Honors College

Thomas J. Cheatham, Ph.D.
Dean, College of Basic and Applied Sciences

John Harris, M.S.
Director, Disabled Student Services

David L. Hutton, M.S.
Director, Financial Aid

John McDaniel, Ph.D.
Dean, College of Liberal Arts

John Omachonu, Ph.D.
Associate Dean, College of Mass Communication

Debra Sells, Ed.D.
Vice President, Student Affairs

Harold Whiteside, Ph.D.
Dean, College of Education and Behavioral Science

McNair Program Staff

L. Diane Miller, Ph.D.
Director

Stephen R. Saunders, M.A.
Assistant Director

Charles H. Apigian, Ph.D.
Academic Coordinator

Cindy K. Howell
Administrative Assistant

Terri Proctor
Program Assistant
Scholars in This Issue

Jonathan Copeland
Anjelica Crawford
Ryan Darrow
Christian Davenport
Jordan Dawdy
Lauren Easley
Jason Gerald
Suzanne Hicks
Tiffany Hughes
Ryne Joyner
Jeremy Minton
Rahma Mohamed
Philip Njoroge
Brittney Oliver
Sandra Plummer
Christina Runkel
Dean Andrews
Aaron Bennett
# Table of Contents

From the Director ................................................................................................................. 7
About Ronald E. McNair Scholars and Program ................................................................. 11

“Enhanced Interrogation Methods”: How Legal Memoranda Manipulated Federal and International Laws Prohibiting Torture
Dean Andrews and Dr. Clyde Willis, Political Science .......................................................... 16

Evaluation of Biofuel Additives via Emissions Testing for Generator and Bus Engines
Aaron Bennett and Dr. Ngee Sing Chong, Chemistry ........................................................... 35

The American Perspective of French Clarinet Performance Styles
Jonathan Copeland and Dr. Todd Waldecker, Clarinet Performance, School of Music ............ 40

The Mozart Effect as Influenced by Music Genre
Anjelica Crawford and Dr. Rick Short, Education and Behavioral Science ......................... 43

“A Great Surge of Purpose”: Gay Persons with AIDS and Alternative Therapies
Ryan Darrow and Dr. Pippa Holloway, History ................................................................. 52

Relationship Dominance in Tennessee: Cultural Risks for Domestic Violence
Christian Davenport and Dr. Kathleen Darby, Social Work .................................................. 71

A Mystery on Our Plate: Beliefs about Agriculture from a College Peer Group
Jordan Dawdy; Dr. Angela Mertig, Sociology; Dr. Kevin Downs, Agribusiness and Agriscience 83

Benefits of Physical Therapy from the Patient’s Perspective
Lauren Easley and Dr. J. Angela Hart Murdock, Mathematical Sciences .............................. 101

The Economic Impact of Illegal Immigration in the United States
Jason N. Gerald and Dr. William Ford, Finance ................................................................. 107

Alternative mRNA Splicing Prevalent in Genes and Regions of the Brain Implicated in Bipolar Disorder
Suzanne S. Hicks and Dr. Rebecca L. Seipelt, Biology ........................................................... 117

From Fright to Fight: The Evolution of the Female Action Hero
Tiffany Hughes and Dr. Susan Hopkirk, English ................................................................. 127

Radio-Frequency Identification: A Risk and Benefit Analysis
Ryne Joyner and Dr. Charles H. Apigian, Department of Computer Information Systems ............. 144

Alexithymia and Coping Styles in College Students
Jeremy Minton and Dr. Gloria Hamilton, Psychology ......................................................... 157

Rates of Depression Among Refugees and Immigrants
Rahma Mohamed and Dr. Margaret Fontasia-Seime, Social Work ...................................... 163

The Environment of Microfinance Institutions: The Role of Economic Freedom
Phil Njoroge and Dr. E. Anthon Eff, Economics & Finance .................................................. 171

Attitudes Toward Health and Healthcare Practices in Two Samples of Adult Populations in the Middle Tennessee Area
Brittney D. Oliver and Dr. Gloria Hamilton, Psychology ...................................................... 176

Playing Doctor: Problematic Sexual Behavior or Normal Child Development?
Sandra Plummer and Dr. Kim Ujcich Ward, Psychology ...................................................... 184

Regarded as Rebels: Rutherford County (Tenn.) Unionists during Civil War and Reconstruction
Christina Runkel and Dr. Derek Frisby, History ................................................................. 193
Jennings A. Jones College of Business

Education is our business
http://business.web.mtsu.edu
The College of Continuing Education and Distance Learning...

...at MTSU provides a wide variety of services and programs to enhance your education experience. Many diverse programs are administered through this part of Middle Tennessee State University.

**Academic Outreach and Distance Learning administers...**

...all distance learning or off campus programs for the university. Through MTSU Online and the Regents Online Degree Program students can pursue bachelor and master degree programs in an online environment. This allows students to earn their college education while making it fit around work, family, and other responsibilities. The Adult Degree Completion Program is designed to allow working adults to complete their college education as quickly as possible. Depending upon the individual student’s situation and background they may be able to utilize prior learning and experience to accelerate their degree completion.

**In addition to online courses,...**

...many courses are offered via correspondence, video conferencing, off campus locations, and evening school. Programs for professional educators are also offered online. These programs include Alternative Teaching Licensure, Occupational Licensure programs and Add-On Endorsements such as Special Education and English as a Second Language.

**Specially trained academic advisors...**

...are available for all of our students. We are very proud of the fact that our advisors often receive the highest student satisfaction marks of any college at the university.

**The Professional Development office provides...**

...online access to hundreds of different online, non credit courses. They cover an ever growing range of topics including business, certification prep, computer applications, digital photography, health care, languages, law, personal finance, writing, and more. All of their courses are held within a searchable database called the Professional Development catalog. Go to http://www.mtsu.edu/learn and see what you can find.

This office also works closely with other departments within the university and outside providers to offer courses, seminars, conferences and other programs.

**The Summer School office provides...**

...central administrative oversight for all summer school programs. A recent study shows that students who attend summer school sessions are 40% more likely to graduate from college than those who don’t. Summer school allows flexibility, convenience, a way to catch up or to get ahead, and many other benefits to students. Because many utilize the online courses that are offered during the summer terms, they don’t have to give up that trip to the beach.

**Contracts and Public Service office serves...**

...the needs of existing faculty and staff by aiding them in planning, developing, and funding university projects and initiatives. They provide public service grants for faculty and staff to extend the public service mission of the university. In addition they offer administrative responsibility for management of many of the contracts which this college has under multiple State Departments of Tennessee.
UNIVERSITY HONORS COLLEGE
EXCELLENCE IN MIDDLE TENNESSEE
http://honors.web.mtsu.edu
“Enhanced Interrogation Methods”: How Legal Memoranda Manipulated Federal and International Laws Prohibiting Torture and Coercion

Dean Andrews

Dr. Clyde Willis
Political Science

In the aftermath of the September 11th attacks, executive branch lawyers acting as legal council for the president issued several memoranda which interpreted various laws prohibiting torture or “cruel, inhuman, and degrading conduct” as not applying to the executive branch’s treatment of “unlawful enemy combatants” within military intelligence interrogations and detention. This paper highlights interpretations of several specific legal memoranda during the period of 2001-2003 by re-examining the various authorities that the memoranda dealt with (e.g., 3rd Geneva Conventions, UN Convention Against Torture, War Crimes Act and the Torture Statute). Relying on these collected legal interpretations, the Defense Department promulgated a system of “enhanced interrogation methods” that sanction treatment which would not have been allowed otherwise. This took the form of a menu of several interrogation techniques that in and of themselves may or may not constitute a specific act of torture, but whose cumulative effect administered over an extended time period brings the system within the purview of the Torture Statute and broader constitutional and international violations.

Introduction

This study looks at several national executive branch legal memoranda’s re-interpretation of the applicability of the Geneva Conventions, War Crimes Act and Torture Statute to detainees within the War on Terror and shows that these re-interpretations allowed for treatment of detainees which would not have been allowed previously. Through a desire to read the Geneva Conventions and other protections as not applying to this class of detainees (or “unlawful enemy combatants”) on a generalized rather than case-by-case basis, the legal memoranda tended to minimize the discrepancies between their new model of detention and some of the provisions of the authorities they interpreted. By focusing on the problems in the legal memo’s pursuit of this new war detention regime, it can be seen that the memoranda inordinately disregarded important points which may have moderated the administration policy of not treating prisoners within the War on Terror as prisoners of war (POWs). These discrepancies thus call into question the actual legality of such detention treatment.

Years before any of the abuses and allegations of torture had been leveled against the Bush administration’s detention programs within the War on Terror, the president had requested legal opinions from the Justice Department’s Office of Legal Counsel (OLC) in order to determine the potential legality of a planned regime of coercive interrogation which would be used on detainees captured in Afghanistan and elsewhere. The OLC acts as the official legal think tank of the executive branch, whose lawyers issue authoritative legal analysis on any legal topic when asked in order to establish or clarify the federal government’s position on specific issues. These OLC opinions, written between the years of 2001
middle tennessee state university - summer 2009

and 2003 (Appendix I), became the legal position of the United States at the time of their writing. They are the intellectual and legal foundations for the establishment of the Military Tribunal System and the detention regimes typified by the Guantánamo Bay detention camp in Cuba and Abu Ghraib military prison in Iraq. By utilizing a unitary executive theory of the president's powers during war, the memoranda's main contribution was to give the Bush administration confidence that any interrogation program they established would be safeguarded from adverse legal scrutiny or defeat by the hands of opponents in both American and international courts.

The most significant opinions were written by John Yoo in January 2002, following requests from the White House. Yoo's arguments were quickly expanded by another one of the OLC's top lawyers, Jay Bybee, in both his January 22nd memo and then later in the extremely controversial August 9th memo. Found within Yoo's and Bybee's January memos are the arguments for why they felt that the several provisions of the Geneva Conventions did not legally apply to operations against Al Qaeda and Taliban within the invasion of Afghanistan. The January memos went on to assert that the discounted Geneva jurisdiction also limited the ability of the War Crimes Act or Torture Statute to operate against military field conduct. It is then Bybee's August memo which stands on all these conclusions and begins to contemplate a more limited view of the act of torture itself which would make prosecutions of military abuse of detainees nearly impossible.

Relying on these OLC memos' disassociation between military detention of unlawful enemy combatants (UECs) and their protection under the Geneva Conventions, the Department of Defense (DoD) then initiated an expansion of its interrogation program. Since the OLC had determined that the military would scarcely be legally liable under international or national statutory restrictions, the Department of Defense was free to employ "enhanced interrogation methods" (Appendix II) which would surely have been considered otherwise illegal. Tactics such as sleep deprivation, dietary and environmental manipulation, isolation, stress positions, and sensory deprivation, among other things, were used in an environment of coercion which can only be justified if the OLC memoranda's reasoning is valid.

While evidence of detainee abuse within the war on terror is by now well documented by scores of scholarly and governmental accounts, this study delves into how legal interpretations allowed this level of acknowledged abuse. As well as being a stepping stone to clearly illegal conduct against prisoners in places such as Abu Ghraib, the memoranda reveal that the early legal conception of the rights of UECs was one that systematically allowed for coercive interrogation as part of a pre-established program. Although many of these general legal interpretations generated by the Bush administration have been either later rescinded by the OLC or struck down within recent cases heard before the Supreme Court, the specific, underlying "enhanced interrogation techniques" have not. A quick summary of the faulty memoranda conclusions and their refutation within this study can be seen in Appendix III.

Who Are Subject to Military Detention?

Only 14 days after the September 11 attacks, the Justice Department's Office of Legal Counsel issued a memorandum which interpreted the president's war powers under the Constitution as being broad enough to allow for widely discretionary actions and determinations: "Force can be used both to retaliate for those attacks, and to prevent and deter future assaults on the Nation. Military actions need not be limited to those individuals, groups, or states that participated in the attacks on the World Trade Center and Pentagon: the Constitution vests the President with the power to strike terrorist groups or organizations that cannot be linked to the September 11 incidents, but that, nonetheless, pose a
similar threat to the security of the United States and the lives of its people ... Neither statute [the War Powers Resolution nor Authorization for the Use of Military Force] can place any limits on the President’s determinations as to any terrorist threat, the amount of military force to be used in response, or the method, timing, and nature of response” (Yoo, September 25th memo, emphasis added). ¹¹

This initial OLC analysis “proved” to the president that he possessed the requisite authority not only to continually review/expand on the identity and nature of the enemy, but also what was an appropriate response thereof. This memorandum viewed Congress’ Joint Resolution giving authorization to the president to use force against those “nations, organizations, or persons he determines planned, authorized, committed or aided the terrorist attacks,”¹² as merely guidance, not precluding broader action against organizations/persons that were not even directly involved with 9/11. While Congress specifically gave the president the authority only to attack those responsible for the 2001 attacks, the September 25th memo explicitly expands congressional authorization based solely on the view that the president’s war powers during times of emergency allow for unlimited discretion despite the legislative qualification: “In exercise of his plenary power to use military force, the President’s decisions are for him alone and are unreviewable” (September 25th memo).¹³

Relying on this self-asserted executive authority, the president then issued an executive order (Military Order of November 13th 2001) declaring that the war on terror would necessitate programs of detention and military trial which would not apply “the principles of law and the rules of evidence generally recognized ... in the United States.”¹⁴ Instead, the president designated Donald Rumsfeld, secretary of Defense, as the arbiter of detainee treatment and to “take all necessary measures to ensure that any individuals subject to this order are detained.”¹⁵

The military order echoes the September 25th memo’s expansion of the war on terror beyond Al Qaeda or the Taliban within the order’s section defining “individuals subject to this order” as those in situations where:

1. there is reason to believe that such individual, at relevant times,
   i. is or was a member of the organization known as al Qaeda;
   ii. has engaged in, aided or abetted, or conspired to commit, acts of international terrorism, or acts in preparation therefore, that have caused, threaten to cause, or have as their aim to cause, injury, to or adverse effects on the United States, its citizens, national security, foreign policy, or economy; or
   iii. has knowingly harbored one or more individuals described in sub-paragraph (i) or (ii).”¹⁶

This expansion of the war on terror beyond those responsible for 9/11 to any individuals, groups, or supporters of belligerency against the U.S. represents a discrepancy between what the OLC memorandum argue and what Bush was actually doing. While much of the legal thrust of the early memoranda rest on the assumption that the only type of persons they would be detaining would either be Al Qaeda and Taliban, the expansive delineation of people subject to detention under the November military order is much broader and various. None of the memoranda which set forth arguments for the inapplicability of Geneva seem to acknowledge the fact that the war on terror would be targeting much more than just al Qaeda or Taliban members in Afghanistan. Thus, they do not have anything to say about other types of belligerents who have nonetheless come within DoD custody under the auspices of the war on terror.¹⁷ This discrepancy will become more significant once the memoranda’s treatment of Geneva inapplicability is discussed.
Conflict between Geneva Conventions and Detention Regime

Found throughout the four Geneva Conventions are specific prohibitions against torturous, coercive, inhumane and degrading treatment. Of great importance to the current topic is the Third Geneva Convention (Geneva III), which deals exclusively with the treatment of prisoners of war. Geneva III lays out a detailed substantive procedure of how POWs are to be held and treated. Most starkly opposed to the subsequent war on terror detention scheme is Geneva III’s explicit prohibition against coercive interrogation: “Every prisoner of war, when questioned on the subject, is bound to give only his surname, first names and rank, date of birth, and army, regimental, personal or serial number. ... No physical or mental torture, nor any other form of coercion, may be inflicted on prisoners of war to secure from them information of any kind whatever. Prisoners of war who refuse to answer may not be threatened.”

Not only is questioning beyond name, rank and serial number impermissible, but prisoners are to be treated humanely without being subjected to “physical mutilation ... acts of violence or intimidation and against insults and public curiosity” maintaining their “full civil capacity which they enjoyed at the time of their capture” without restriction.

While other provisions are also in conflict with the military detention regime, these three provisions are especially antithetic to the type of detainment and interrogation that the Bush administration sought to give to captured persons within the war on terror.

Also pertinent to detainee treatment is the Common Article III, which is found in all four Conventions. The Common Article is so named because it is the third article of all Geneva Conventions. It does not carry the same detailed meaning of the rest of the conventions, but serves as a general prohibition against torture and maltreatment against detainees and sets a minimum level of treatment invoked when the rest of the Conventions may not apply. It consists of four general prohibitions, which are: (a) violence to life and person, in particular murder of all kinds, mutilation, cruel treatment and torture; (b) taking hostages; (c) outrages upon personal dignity, in particular, humiliating and degrading treatment; (d) the passing of sentences and the carrying out of executions without previous judgment pronounced by a regularly constituted court affording all the judicial guarantees which are recognized as indispensable by civilized peoples.”

A perusal of the list of interrogation methods developed by the Department of Defense to be used against detainees (included in Appendix II) shows that many of the proposed provisions either violate the nature of sections (a) or (b) of Common Article Three or Articles 13 and 14 of Geneva III. Taken in light of the prohibition of questioning in Article 17 of Geneva III, all of the proposed techniques would be illegal, for the only truly permissible function of a Geneva POW camp is the holding of the enemy forces until the duration of the conflict. Yet, the memoranda initially make no claim about the legality of their proposed methods of interrogation and detention, instead relying solely on the claim that the people they are capturing, Taliban and al Qaeda members, are not protected under any aspect of the Geneva Conventions.

The discussion of the legality of the interrogation methods cannot be resolved without the determination that the applicable jurisdictional provisions of the conventions do or do not apply. The majority of OLC opinions are devoted entirely to the Geneva’s perceived inapplicability. It is not until the “2003 Defense Department Working Group on Detainee Treatment” report that a real substantive look at the methods is employed.

What then is crucial is the correctness of the OLC memorandum’s interpretation of the Geneva Conventions’ jurisdictional provisions. Both Common Article Three and Geneva III (Article 4) have parts that stipulate when, and to whom, its provisions are to be applied. John Yoo’s January 9, 2002 memorandum entitled, “Application of Treaties and Laws to Detainees,” is the first memo in the series of OLC decisions dealing with detainee affairs to make a legal claim that the whole of Geneva did not apply in Afghanistan.
OLC Interpretation of General Jurisdictional Provisions of Geneva

In order for persons to be protected as a full POW under Geneva III, they must be covered by Articles II or IV. The relevant part of Article II states, “The present Convention shall apply to all cases of declared war or of any other armed conflict which may arise between two or more of the High Contracting Parties. ... They shall furthermore be bound by the Convention in relation to the said Power, if the latter accepts and applies the provisions thereof.” Thus, a soldier of a state that is a signatory and an observer of the Geneva Conventions, then that soldier is entitled to POW treatment.

Article IV of the Geneva III also allows for entities of non-High Contracting Parties to qualify for POW treatment if they meet certain requirements: “(2) Members of other militias and members of other volunteer corps, including those of organized resistance movements, belonging to a Party to the conflict ... provided that such militias or volunteer corps, including organized resistance movements, fulfill the following conditions: a) that of being commanded by a person responsible for his subordinates; b) that of having fixed distinctive sign recognizable at a distance; c) that of carrying arms openly; d) that of conducting their operations in accordance with the laws and customs of war.” Subsections a through d of Article IV represent what can be called the basic laws of war. If a party is not part of a clear command structure, wears no recognizable uniform, conceals weapons or purposefully attacks civilians, then such a force would be thought of as not following the laws of war and not be entitled to Geneva protection. On the other hand, these subsections do allow for entities that are not necessarily part of one of the High Contracting Parties to be treated as POWs if they follow the basic rules of war.

The January 9th opinion makes short shrift of these jurisdictional provisions, arguing that members of al Qaeda cannot be defined as being POWs under Geneva III Art. II or IV. Obviously, as the memo points out, the nature of al Qaeda as a “non-governmental terrorist organization composed of members from many nations” denies al Qaeda the privilege of being considered a “High Contracting Party” in Article II terms. Moreover, since al Qaeda tactics are intrinsically against the laws of war, they do not qualify under Article IV: “Al Qaeda members have clearly demonstrated that they will not follow these basic requirements of lawful warfare.” More abstractly, the memorandum then makes the leap of denying the Taliban the classification of being the government of Afghanistan. As acknowledged, Afghanistan had been a signatory of all four Geneva Conventions since the 1950s, and so at first glance the Taliban should be accorded Geneva Convention status. Instead, based on the determination of the State Department and DoD, the OLC opinion treats Afghanistan as a “failed state,” during the time of American invasion and thus the Taliban is treated merely as a faction. The memorandum defines a failed state as “generally characterized by the collapse or near-collapse of State authority ... characterized by the inability of central authorities to maintain government institutions, ensure law and order or engage in normal dealings with other governments, and by the prevalence of violence that destabilizes civil society and the economy.” Yoo asserts that the Taliban’s government was just such a failed state, having had only Pashtun support within the government and also being more subservient to interests of narco-traffic and al Qaeda’s Osama bin Laden.

Two other arguments made for the Taliban not being the government of Afghanistan is based on the claim they only controlled an estimated 90% of the country at the point of invasion, and only three countries in the world recognized them as a legitimate force. These points are problematic since they do not logically and necessarily preclude the Taliban from Geneva III insofar as the Taliban conducted war as “(3) Members of regular armed forces who profess allegiance to a government or an authority not recognized by the Detaining authority.”
This failed state argument over the inapplicable nature of the Taliban to the Geneva Conventions is cursory at best. The argument also highlights one of OLC’s recurrent weaknesses, namely, lack of knowledge of the nature of al Qaeda or Taliban. At the time of the memos’ writing, early 2002, there was little reliable fact-based information that the OLC could center its conclusions on regarding the nature of the Taliban or al Qaeda and their conduct from the battlefield. The January 9th memorandum acknowledges this deficiency openly toward the end of its argument: “We want to make clear that this Office does not have access to all the facts related to the activities of the Taliban militia and al Qaeda in Afghanistan.”

Yet forced to come to a position which favored the wants and needs of what the president saw as military necessity, the OLC relied on their incomplete data nevertheless to conclude that al Qaeda and Taliban where ineligible for Geneva protections.

Nowhere in the January 9th opinion is there a discussion of how the Taliban’s fighting in America fit under Geneva III’s Article IV as the memo had done with al Qaeda. Instead, the memorandum simply argues that the Taliban was so co-opted by Osama bin Laden and al Qaeda that their status under Article IV would be the same: “we think it fair to characterize the Taliban militia as functionally intertwined with al Qaeda, and therefore on the same footing as al Qaeda under the Geneva Conventions.”

As shown above, Article IV of Geneva III has specific criteria of conduct which a fighting force may follow in order to receive POW status upon capture; yet nowhere in the January 9th memo or subsequent memoranda is there any such analysis of the conduct of Taliban fighters in Afghanistan. Thus, there are major problems with OLC’s tying of the Taliban’s Geneva status with that of al Qaeda’s without a clear acknowledgment of the cursory nature of some of the facts relied upon to reach these conclusions. Despite the holes in this initial memorandum, its determinations became the basis for all subsequent memoranda (as cited in Appendix I) and they led to the President’s official declaration that al Qaeda or the Taliban did not fit under Geneva protections.

As described earlier, the memos never consider the possibility that people other than al Qaeda or Taliban would be encountered and detained during the invasion of Afghanistan. This is a problem which now, years later, is beginning to resurface during the current round of habeas corpus hearings of Guantánamo detainees following the Boumediene ruling by the Supreme Court.

While the interrogation methods and detention scheme developed after these initial memoranda were intended to be applied to al Qaeda and Taliban fighters, many people traveled from outside of Afghanistan to fight what they saw as an invading American force. Many people held in Guantánamo had no links to Taliban or al Qaeda, while Article IV Geneva III allows POW protections to just these sorts of people if their conduct is in line with the Laws of War: “Inhabitants of a non-occupied territory, who on the approach of the enemy spontaneously take up arms to resist the invading forces, without having time to form themselves into regular armed units, provided they carry arms openly and respect the laws and customs of war.”

Another problem with the OLC’s blanket ruling that the Geneva Conventions do not apply to the Taliban or al Qaeda is that such a determination ignores the impact of case-by-case circumstances upon the actions on the ground. While the OLC relies on “available facts in the public record,” it is conceivable that individual circumstances could occur where members of al Qaeda/Taliban carried open arms, respecting the laws and customs of war in any given situation. By broadly classifying al Qaeda and Taliban fighters as non-Geneva forces, the OLC opinions deny the operational facility of Article IV and thus allow forces not to be treated as POWs though they may actually follow the conduct of war.
Common Article III and the Effect of Hamdan v. Rumsfeld and Boumediene v. Bush

Outside of the full protection of Geneva III, persons may still be protected with the more general provisions of the Common Article III. The OLC’s January 22nd memo acknowledges that Common Article III protections are less difficult to adhere to than the more detailed Geneva III protections: ‘[I]t “requires State parties to follow only certain minimum standards of treatment toward prisoners, civilians, or the sick and wounded – standards that are much less onerous and less detailed than those spelled out in the Conventions as a whole.”’ Common Article III’s jurisdictional language makes its application contingent on the fact that the conflict is “not of an international character occurring in the territory of one of the High Contracting Parties.”

Many legal interpretations argue that this aspect of Common Article III is negligible compared to the importance of its four general provisions which are enumerated above. This interpretation views Common Article III as not just applying POW protection to forces within civil wars, but to all conflicts not covered by Articles II and IV of Geneva III. Such a view thus would make Common Article III customary international law which must be followed despite its substantive jurisdictional provisions.

The January 9th and January 22nd memoranda see this argument as fallacious, depending solely on the clear jurisdictional requirement of Common Article III as occurring within a conflict “not of international character” to mean that such a conflict cannot be applied to the international war on terror and could never fit under Common Article III. The OLC sees customary law as having no control whatsoever over the conduct of the U.S. military under the president’s war powers: “any customary international law of armed conflict in no way binds, as a legal matter, the President or the U.S. Armed Forces.”

Because of the OLC’s strong view of the president’s plenary power to fight war and conduct foreign relations, they throw away the idea that Common Article III represents a level of prisoner treatment so basic and fundamental to humanity that it should govern despite its jurisdictional language: “prohibition on violations of common Article 3 would apply only to internal conflicts between a state party and an insurgent group, rather than to all forms of armed conflict not covered by common Article 2.”

Up until the 2006 ruling of the Supreme Court in Hamdan v. Rumsfeld, the OLC’s interpretation of the inapplicability of Common Article III went seemingly unchallenged. With that ruling, the court said that Common Article III must be seen as binding under U.S. Law. The Court disavows the memos’ reliance on the president’s commander-in-chief power to supersede treaty obligations as voiced in the January 22nd memo: “The Court denies this asserted executive power to re-interpret the obligations of Treaties after their signing and therefore applies Common Article III to the treatment of detainees in Guantánamo Bay.”

The Supreme Court’s extension of Common Article III to Guantánamo Bay related to the article’s 4th provision in relation to military trials. Yet, the Hamdan ruling has further implications based on the unequivocal nature in which the Court applies the Common Article to Executive actions: “Common Article 3’s requirements are general, crafted to accommodate a wide variety of legal systems, but they are requirements nonetheless.”

The court deferred the discussion of whether al Qaeda and Taliban fit into the protections of Article II or IV of Geneva III, instead opting to adopt the more fundamental protections of the Common Article. Nevertheless, as discussed above, parts (a) and (c) of the Common Article III would still conflict with many of the more coercive interrogation methods subsequently proposed and included in Appendix II. This ruling came four years after the initial memoranda concerning Geneva’s application in the war on terror were written; thus, it did not intervene in the continual development of the interrogation methods that the OLC memos permitted in the meantime.
Another issue that the memoranda cited as working in their favor was their determination that the proposed venue of detention at Guantánamo Bay would further mitigate their liability because no American court had the requisite jurisdiction over the military base in Cuba.41 This determination rested on the fact that while America held total control over the land, the state of Cuba retained ultimate sovereignty over the territory based on the lease agreement signed by both nations in 1903. The memoranda always fell upon this determination as a safety argument in case all other substantive arguments failed. For, even if a future court wanted to disagree with the OLC’s opinion on the non-applicability of any part of the Geneva Conventions in the war on terror, the fact that detainees were held outside of the sovereign territory of the United States would prevent any court from ruling on the subject.

This argument was rejected by the Supreme Court’s recent ruling in Boumediene v. Bush. In this ruling the court asserted that the U.S. holds de facto sovereignty over Guantánamo and hence must extend constitutional provisions such as habeas corpus to detainees held there: “The Court does not question the Government’s position that Cuba maintains sovereignty, in the legal and technical sense, over Guantánamo, but it does not accept the Government’s premise that de jure sovereignty is the touchstone of habeas jurisdiction.... The Government’s sovereignty-based test raises troubling separation-of-powers concerns, which are illustrated by Guantánamo political history. Although the United States has maintained complete and uninterrupted control of Guantánamo for over 100 years, the Government’s view is that the Constitution has no effect there, at least as to non-citizens, because the United States disclaimed formal sovereignty in its 1903 lease with Cuba. The Nation’s basic charter cannot be contracted away like this.”42 Thus, the memorandum’s assumed cover has similarly been dismantled by the Supreme Court.

Application and Defenses Against the War Crimes Act and the U.S. Torture Statute

Beyond the substantive discussion of the Geneva Conventions, the memoranda explored further possible liabilities which could arise out of detention/interrogation operations in the war on terror. Two such liabilities are federal statutes: The War Crimes Act (WCA, 18 USC § 2441) and the U.S. Torture Statute (Torture Statute, 18 USC § 2340). Both statutes give domestic application to international treaties signed by the United States — the WCA makes grave breaches of the Geneva Conventions domestic criminal offenses, and the Torture Statute gives domestic application to the UN Convention Against Torture (CAT).

All of the Geneva Conventions were approved by the Senate and signed by the president in 1955, constituting a part of U.S. law. Yet, it wasn’t until the passage of the War Crimes Act43 in 1997 that breaches to the Geneva Conventions were made subject to penalties under the U.S. criminal code. In a relevant section, the WCA makes it a war crime for anyone to commit a grave breach “(1) in any of the international conventions signed at Geneva 12 August 1949, or any protocol to such convention to which the United States is a party” or “(2) of common Article 3 (as defined in subsection (d)) when committed in the context of and in association with an armed conflict not of an international character.”44 Grave breaches of the four Geneva conventions are defined by Article 130 of Geneva III, “Grave breaches ... shall be those involving any of the following acts, if committed against persons or property protected by the Convention: willful killing, torture or inhuman treatment, including biological experiments, willfully causing great suffering or serious injury to body or health”45 (emphasis added).

The WCA defines grave breaches of Common Article III as “(A) Torture. — The act of a person who commits, or conspires or attempts to commit, an act specifically intended to inflict severe physical or mental pain or suffering (other than pain or suffering incidental to lawful sanctions) upon another person within his custody or, quite broadly,
any reason based on discrimination of any kind. (B) Cruel or inhuman treatment. — The act of a person who commits, or conspires or attempts to commit, an act intended to inflict severe or serious physical or mental pain or suffering (other than pain or suffering incidental to lawful sanctions), including serious physical abuse, upon another within his custody or control...” (emphasis added).

Through a textual reading of the WCA, the January 9th memo correctly saw the “grave breach” violation as meaning that failure to provide full Geneva treatment was not a war crime. “Thus, the WCA does not criminalize all breaches of the Geneva Conventions.”47 Yet tying itself to its own determination that Geneva does not apply, as a point of law, to the conflict in Afghanistan, the OLC determined that no actions of the administration could be construed as war crimes. In light of the contemporary understanding that Geneva does in various ways apply to the treatment of detainees no matter their status or classification, it follows that certain interrogation methods could be seen as violating the War Crimes Act if the tactics were determined to violate any of the provisions of the above enumerated provisions. Outside of an analysis of the interrogation methods themselves, it can be argued that the OLC’s erroneous argument that the War Crimes statute could not apply to executive actions encouraged abusive action since military personnel thought that they were safe from liability in U.S. courts.

The OLC takes a different approach when analyzing the Torture Statute, instead devising hypothetical defenses for actions arising out of this statute, defenses which could also be used against prosecution under the WCA. The Torture Statute makes torture a criminal offense, in light of the United States’ obligations under its signing of the UN Convention on Torture (COT). While the COT utilizes much broader language to define torture and cruel and unusual punishment, the Torture Statute is the only such prohibition which is actionable in court rather than constituting customary international law. The Torture Statute defines the offense as follows, “(1) “torture” means an act committed by a person acting under the color of law specifically intended to inflict severe physical or mental pain or suffering (other than pain or suffering incidental to lawful sanctions) upon another person within his custody or physical control; (2) “severe mental pain or suffering” means the prolonged mental harm caused by or resulting from — (A) the intentional infliction or threatened infliction of severe physical pain or suffering; (B) the administration or application, or threatened administration or application, of mind-altering substances or other procedures calculated to disrupt profoundly the senses or the personality; (C) the threat of imminent death; or (D) the threat that another person will imminently be subjected to death, severe physical pain or suffering, or the administration or application of mind-altering substances or other procedures calculated to disrupt profoundly the senses or personality” (emphasis added).

The applicable provisions of both the Torture Statute and WCA qualify the commission of the proscribed offense by the fact that it was done intentionally or if the action was specifically intended to cause harm. This is what the August 2002 memo (the Bybee memo) focuses on in order to create defenses against possible charges under the WCA or Torture Statute against military or intelligence personnel involved in coercive interrogation. Through the citation of several court cases, the Bybee memo argues that torture would only occur if the actions were intended to torture: “even if the defendant knows that severe pain will result from his actions, if causing such harm is not his objective, he lacks the requisite specific intent even though the defendant did not act in good faith.”49 The Bybee memo also lays out the good faith argument in which personnel committing torture could not be prosecuted if they did not know extreme harm would come from their conduct: “Where a defendant acts in good faith, he acts with an honest belief that he has not engaged in the pro-
scribed conduct ... a defendant theoretically could hold an unreasonable belief that his acts would not constitute the actions prohibited effects.\textsuperscript{50}

In relation to the Torture Statute, these statements follow the wording correctly, and thus could not be thought of as incorrect analyses. Yet, when comparing the Torture Statute with its precursor in the UN COT, it is clear that the American law added the word “specifically” to the intention qualification in relation to the commission of torture. Article I of the UN COT reads: “torture means any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him or a third person information or a confession, punishing him for an act he or a third person has committed or is suspected of having committed, or intimidating or coercing him or a third person.”\textsuperscript{51} The addition of the word “specifically” allows for a narrower interpretation of when torture occurs because while one can intentionally inflict pain even if that is the main aim, no one can be said to have specifically intended to inflict pain unless that was the only goal.

The reasoning of the Bybee memo on the nature of specific intention and how operatives can defend against it is not faulty based on the language of the Torture Statute itself, yet the memo fails to realize the flaw in the statute as compared to the Torture Convention. Through the addition of the word “specific” to the intention clause of the Torture Statute, the Congress essentially defined the act of torture in narrower terms than the UN Convention. Thus, the Torture Statute fails to implement the UN COT fully, by allowing for torturous conduct to be defended against in the courts even though it was aberrational in nature. Article II of the UN COT states: “Each State Party shall take effective legislative, administrative, judicial or other measures to prevent acts of torture in any territory under its jurisdiction. \textit{No exceptional circumstances} whatsoever, whether a state of war or a threat or war, internal political instability or any other public emergency, may be invoked as a justification of torture. An order from a superior officer or a public authority may not be invoked as a justification of torture.”\textsuperscript{52} None of this language is included in the U.S. application of the convention within the criminal code. This absence shows how the American Torture Statute fails to adequately implement its treaty obligations under UN COT.

The Bybee memo capitalizes on this discrepancy when it hypothesizes that within a trial accusing a U.S. operative of torture they could use the argument that the torture was committed out of “necessity or self-defense.” In espousing a necessity defense for the intentional commission of torture, the Bybee memo opines that “any harm that might occur during an interrogation would pale to insignificance compared to the harm avoided by preventing such an attack.”\textsuperscript{53} The offending operatives’ defense was their initial intention, meaning instead of intending to torture they instead intended to secure the safety of the country from another terrorist attack: “a government defendant, acting in his official capacity, should be able to argue that any conduct that arguably violated Section 2340A (the Torture Statute) was undertaken pursuant to more than just individual self-defense or defense of another. In addition, the defendant could claim that he was fulfilling the Executive Branch’s authority to protect the federal government, and the nation, from attack.”\textsuperscript{54} Taken in light of Article II of UN COT, it is obvious that both the necessity and self-defense defenses against prosecution for the crime of torture are unacceptable and antithetic to the substance and spirit of the Convention against Torture. The Bybee memo seems to ignore UN COT’s Article II provisions, which preclude the use of any defense in light of torturous acts.

The Bybee memo goes a step further though, arguing that the Congress does not have the right to impose a ban on torture upon the president because such an act would violate the commander-in-chief power: “the President’s power to detain and interrogate enemy combatants arises out of his constitutional authority as Commander-in-Chief. A construction of Section 2340A that applied the provision to regulate the President’s
authority as Commander-in-Chief to determine the interrogation and treatment of enemy combatants would raise serious constitutional questions. Congress may no more regulate the President’s ability to detain and interrogate enemy combatants than it may regulate his ability to direct troop movements on the battlefield.\textsuperscript{55} This sort of extreme war power authority is a severe strain on the constitutional concept of balance of powers among the separate branches of government. The OLC views the president’s war powers as being absolute, yet this sort of complete autonomy from legislative qualification or judicial scrutiny is against the very intentions of the founding fathers who envisioned a presidency which was limited and controlled. James Madison saw the war powers as being opposed to the balance of powers: “Of all the enemies to public liberty war is, perhaps, the most to be dreaded, because it comprises and develops the germ of every other.... If Tyranny and Oppression come to this land, it will be in the guise of fighting a foreign enemy.”\textsuperscript{56}

**Severity Requirement for Act of Torture to Occur**

The Bybee memo also attacked the application of the Torture Statute by narrowly defining the act of torture itself to include only the most severe and debilitating acts: “We conclude that for an act to constitute torture as defined in Section 2340, it must inflict pain that is difficult to endure. Physical pain amounting to torture must be equivalent in intensity to the pain accompanying serious physical injury, such as organ failure, impairment of bodily function, or death.”\textsuperscript{57}(emphasis added). This understanding of torture is not clearly seen through the objective wording of the Torture Statute or the UN COT. Instead through a series of narrow analogizing, the Bybee memo narrowed the idea of torture to only the most shocking actions. The biggest fault in interpretation came when the memo used the definition of “severe pain” which was applied in statutes relating to the application of health benefits. It is here that the meaning of severe pain is tied to organ failure and bodily impairment. The Bybee memo acknowledges the problem of taking this definition out of context, yet does so anyway: “Although these statutes address a substantially different subject from Section 2340, they are nonetheless helpful for understanding what constitutes severe physical pain. They treat severe pain as an indicator of ailments that are likely to result in permanent and serious physical damage in the absence of immediate medical treatment.”\textsuperscript{58}

Instead of using this understanding of the contextual difference between the medical definition of “severe pain” and that of the criminal act of torture, the memo proceeds to take the medical definition of severe pain directly. The resultant definition of severe pain is much narrower than what common sense would dictate from the wording of the Torture Statute or the UN COT. There are many instances of inflicted pain which a reasonable person would consider qualified as “severe mental pain or suffering” which nonetheless did not result in organ failure or bodily impairment. This narrowing of the meaning of severe pain or suffering thus allows for a level of forced stress and suffering to be administered upon detainees which would never be allowed under the U.S. Constitution or Geneva Conventions.

**Conclusions**

The August 2002 memorandum of Jay Bybee’s is by far the most extreme application of principles initiated by the inapplicability of the Geneva Conventions asserted by the first memorandum in this series by John Yoo. While the Bybee memo has the most fallacious and extreme positions, its errors should not be seen as a product of Bybee’s personal reasoning facilities alone, but instead must be seen as a product of the chain effect that the initial memoranda started through their first re-interpretations of fundamental principles. By asserting military necessity and presidential war power as being an adequate reason to strike down the application of the most widely accepted documents of International Law (the Geneva Conventions), then by slippery slope any other principle or prohibition can be struck
down as well. The Bybee memo and the subsequent interrogation methods menu of the DoD’s Working Group on Interrogation (Appendix II) should then be seen as the logical conclusions of a syllogistic process or legal reinterpretation and invention.

From the determination that the Geneva Conventions do not apply came the perception that the War Crimes Act and Torture Statute charges would not be successfully levied against the U.S. government or its personnel in pursuit of its detention operations. Based on these assumptions, which on their face are riddled with faulty assertions and problematic legal points, the Defense Department developed a series of interrogation techniques (Appendix III) which would not be allowed otherwise. Subsequent Supreme Court cases (primarily Hamdan and Boumediene) have undermined the OLC opinions’ reliance on the non-applicability of the Geneva Conventions. The language of the cases also has shown that many of the conclusions reached by the OLC concerning the power of the executive during war were inflated and ultimately unconstitutional.

Appendix I – List of Memoranda

All of the following Memoranda have been subsequently leaked by news report or declassified around the middle of 2005. They were accessed through their aggregate publication in: The Torture Papers: The Road to Abu Ghraib. Ed. Karen J Greenberg and Joshua L. Dratel. New York, New York: Cambridge University Press, 2005. The memos found therein and discussed in this paper are as follows:

(1) John Yoo, Memorandum Opinion For Timothy Flanigan, The Deputy Counsel to the President, “The President’s Constitutional Authority to Conduct Military Operations Against Terrorists and Nations Supporting Them,” September 25, 2001;

(2) John Yoo and Patrick Philbin, Memorandum for William J. Haynes, II General Counsel, Department of Defense, RE “Possible Habeas Jurisdiction over Aliens Held in Guantanamo Bay, Cuba,” December 28, 2001;

(3) John Yoo and Robert Delabunty, Memorandum for William J. Haynes II General Counsel for Department of Defense, RE “Application of Treaties and Laws to al Qaeda and Taliban Detainees,” January 9, 2002;

(4) Sec. of Defense Donald Rumsfeld, Memorandum for Chairman of the Joint Chiefs of Staff, Subject: “Status of Taliban and Al Qaeda,” January 19, 2002;


Appendix II – Enhanced Interrogation Methods

1. **Direct:** Asking straightforward questions.
2. **Incentive/Removal of Incentive:** Providing a reward or removing a privilege, above and beyond those that are required by the Geneva Convention, from detainees.
3. **Emotional Love:** Playing on the love a detainee has for an individual or group.
4. **Emotional Hate:** Playing on the hatred a detainee has for an individual or group.
5. **Fear Up Harsh:** Significantly increasing the fear level in a detainee.
6. **Fear Up Mild:** Moderately increasing the fear level in a detainee.
7. **Reduced Fear:** Reducing the fear level in a detainee.
8. **Pride and Ego Up:** Boosting the ego of a detainee.
9. **Pride and Ego Down:** Attacking or insulting the ego of a detainee, not beyond the limits that would apply to a POW.
10. **Futility:** Invoking the feeling of futility of a detainee.
11. **We Know All:** Convincing the detainee that the interrogator knows the answers to questions he asks the detainee.
12. **Establish Your Identity:** Convincing the detainee that the interrogator has mistaken the detainee for someone else.
13. **Repetition Approach:** Continuously repeating the same question to the detainee within interrogation periods of normal duration.
14. **File and Dossier:** Convincing detainee that the interrogator has a damning and inaccurate file which must be fixed.
15. **Mutt and Jeff:** A team consisting of a friendly and harsh interrogator. The harsh interrogator might employ the Pride and Ego Down technique.
16. **Rapid Fire:** Questioning in rapid succession without allowing detainee to answer.
17. **Silence:** Staring at the detainee to encourage discomfort.
18. **Change of Scenery Up:** Removing the detainee from the standard interrogation setting (generally to a location more pleasant).
19. **Change of Scenery Down:** Removing the detainee from the standard interrogation setting and placing him in a setting that may be less comfortable; would not constitute a substantial change in environmental quality.
20. **Hooding:** This technique is questioning the detainee with a blindfold in place. For interrogation purposes, the blindfold is not on other than during interrogation.
21. **Mild Physical Contact:** Lightly touching a detainee or lightly poking the detainee in a completely non-injurious manner. This also includes softly grabbing of shoulders to get the detainees’ attention or to comfort the detainee.
22. **Dietary Manipulation:** Changing the diet of a detainee; no intended deprivation of food or water; no adverse medical or cultural effect and without intent to deprive subject of food or water (e.g., hot rations to MREs).
23. **Environmental Manipulation:** Altering the environment to create moderate discomfort (e.g., adjusting temperature or introducing an unpleasant smell). Conditions would not be such that they would injure the detainee. Detainee would be accompanied by interrogator at all times.
24. **Sleep Adjustment**: Adjusting the sleeping times of the detainee (e.g., reversing sleep cycles from night to day.) This technique is NOT sleep deprivation.

25. **False Flag**: Convincing the detainee that individuals from a county other than the United States are interrogating him.

26. **Threat of Transfer**: Threatening to transfer the subject to a third country that subject is likely to fear would subject him to torture or death. (The threat would not be acted upon, nor would the threat include any information beyond the naming of the receiving country.)

27. **Isolation**: Isolating the detainee from other detainees while still complying with basic standards of treatment.

28. **Use of Prolonged Interrogations**: The continued use of a series of approaches that extend over a long period of time (e.g., 20 hours per day per interrogation).

29. **Forced Grooming**: Forcing a detainee to shave hair or beard. (Force applied with intention to avoid injury. Would not use force that would cause serious injury.)

30. **Prolonged Standing**: Lengthy standing in a “normal” position (non-stress). This has been successful, but should never make the detainee exhausted to the point of weakness or collapse. Not enforced by physical restraints. Not to exceed four hours in a 24-hour period.

31. **Sleep Deprivation**: Keeping the detainee awake for an extended period of time. (Allowing individual to rest briefly and then awakening him, repeatedly.) Not to exceed four days in succession.

32. **Physical Training**: Requiring detainees to exercise and perform ordinary physical exercise actions (e.g., running, jumping jacks); not to exceed 15 minutes in a two-hour period; not more than two cycles per 24-hour period. Assists in generating compliance and fatiguing the detainees. No enforced compliance.

33. **Face Slap/Stomach Slap**: A quick glancing slap to the fleshy part of the cheek or stomach. These techniques are used strictly as shock measures and do not cause pain or injury. They are only effective if used once or twice together. After the second time on a detainee, it will lose the shock effect. Limited to two slaps per application no more than two applications per interrogation.

34. **Removal of Clothing**: Potential removal of all clothing; removal to be done by military police if not agreed to by the subject. Creating a feeling of helplessness and dependence. This technique must be monitored to ensure the environmental conditions are such that this technique does not injure the detainee.

35. **Increasing Anxiety by Use of Aversions**: Introducing factors that of themselves create anxiety but do not create terror or mental trauma (e.g., simple presence of dog without directly threatening action). This technique requires the commander to develop specific and detailed safeguards to insure detainees’ safety.


Appendix III – Chart of Arguments
<table>
<thead>
<tr>
<th>Memo</th>
<th>Major Arguments</th>
<th>Refutation</th>
</tr>
</thead>
</table>
| Yoo, John. DRAFT: Memorandum for William J. Haynes, General Counsel of the Department of Defense. RE: Application of treaties and Laws to al Qaeda and Taliban Detainees 1/9/02 | • Common Article Three of the Geneva Conventions generally don’t apply to al Qaeda & Taliban  
• Even if they did, they are not actionable within US Courts. | Supreme Court in Hamdan v. Rumsfeld 2006— "the Government asserts, that Common Article 3 does not apply to Hamdan because the conflict with al Qaeda, being “‘international in scope,’’ does not qualify as a “‘conflict not of an international character.’” 415 F. 3d, at 41. That reasoning is erroneous. The term “conflict not of an international character” is used here in contradistinction to a conflict between nations.”  Conventions DO Apply. |
| Bybee, Jay. Memorandum for Alberto R. Gonzales Counsel to the President. RE Standards of Conduct for Interrogation under 18 U.S.C. §§2340-2340A . 8/1/02 | • Military personnel and Civilians can use a Military Necessity argument under the authority of the “Commander and Chief” if being prosecuted under the War Crimes Statute for committing torture or “cruel, inhuman conduct” against detainees. | UN Convention Against Torture signed by the USA in 1974— “Article 2: 2. No exception whatsoever, whether a state of war or a threat of war, internal political instability or any other public emergency may be invoked as a justification of torture.” |
| Gonzales, Alberto. Memorandum for the President. Decision RE Application of the Geneva Convention on Prisoners of War to the Conflict with al Qaeda and the Taliban. 1/25/02 | • “Some of the language of Geneva is undefined, it prohibits ‘outrages against personal dignity’ and ‘inhuman treatment.’ It is difficult to predict what actions might be deemed to constitute violations.” | Our understanding of the US’ obligations under international law in regards to treatment of the accused is best followed by adhering to the Common Law provisions of the 5th, 8th and 14th Am. |
| Bybee, Jay. Memorandum for Alberto R. Gonzales Counsel to the President. RE Standards of Conduct for Interrogation under 18 U.S.C. §§2340-2340A . 8/1/02 | • “Acts must be of an extreme nature to rise to the level of torture.” We further conclude that certain acts may be ‘cruel, inhuman and degrading, but still not produce pain and suffering requisite to satisfy 18 USC §2340” | Documentation and Investigations show that “Enhanced Interrogation Methods” used in unison over an extended period of time produce the effects of torture. “Torture is an extreme form of cruel and inhuman treatment.” |
Notes

1 As defined by the Military Commissions Act of 2006, an “unlawful enemy combatant” is: “(a)(i) a person who has engaged in hostilities or who has purposefully and materially supported hostilities against the United States or its co-belligerents who is not a lawful enemy combatant (including a person who is part of the Taliban, al Qaeda, or associated forces); or “(ii) a person who, before, on, or after the date of the enactment of the Military Commissions Act of 2006, has been determined to be an unlawful enemy combatant by a Combatant Status Review Tribunal or another competent tribunal established under the authority of the President or the Secretary of Defense. “(B) CO-BELLIGERENT.—In this paragraph, the term ‘co-belligerent’, with respect to the United States, means any State or armed force joining and directly engaged with the United States in hostilities or directly supporting hostilities against a common enemy.” - § 948a. Definitions, Military Commissions Act of 2006, PUBLIC LAW 109–366—OCT. 17, 2006.


3Unitary Executive theory is a view of the President’s authority under the constitution which vests all executive authority within the president, unfettered by the Legislative or Judicial branches of government. See also, September 25th OLC memorandum written by John Yoo: “The centralization of authority in the President alone is particularly crucial in matters of national defense, war, and foreign policy, where a unitary executive can evaluate threats, consider policy choices, and mobilize national resources with a speed and energy that is far superior to any other branch.” (emphasis added.)


The September 25th memo is filled with language championing Executive ascendancy in times of war: “Given this context, it is clear that Congress’s power to declare war does not constrain the President’s independent and plenary constitutional authority over the use of military force.” (pg 7)


13September 25th memo, from note 32 on pg 24.


15Id.

16See Id. at II(a)(1).

17Ever since the ruling in the Boumediene case over the summer that detainees at Guantanamo Bay have the right to have Habeas Corpus petitions heard in the United States, scores of detainees have been determined to be held erroneously. Many of the release orders have been due to the fact that the detainees could not be proven to be members of al Qaeda or the Taliban. Illustrative of this fact is the recent controversy over a group of Chinese Uighur Separatists whose recent habeas filing provoked a circuit judge to order their immediate release. See: Glaberson, William. “Release of 17 Guantanamo Detainees Sputters as Officials Debate the Risk.” New York Times. 15 Oct 2008. <http://www.nytimes.com/2008/10/16/washington/16gitmo.html?partner=permalink&exprod=permalink>


25Id. See page 140.
20.Id. See page 143.
23.Id. See page 141.
25. See note 17 and page 14 of this paper.
30.Id.
31.Id.
37.Id.
41. 18 USC § 2430A.

50 Id.


52 Id.


54 Id.

55 Id.


57 Id.
Evaluation of Biofuel Additives via Emissions Testing for Generator and Bus Engines

Aaron Bennett

Dr. Ngee Sing Chong
Chemistry

The blending of “clean-burning” additives in transportation fuels had undergone many disappointing episodes of production bans for tetraethyl lead, manganese methycyclopentadienyl carbonyl, and methyl tertiary butyl ether when it was discovered that such additives posed environmental and health hazards. Currently, bioethanol is considered a clean-burning fuel additive with regard to the emissions of total hydrocarbons, carbon monoxide, nitrogen oxides, and particulate matter. Due to the limited information on the emissions analysis of all biofuel additives including ethanol, it is necessary to conduct thorough emissions testing. Emissions are collected in air sampling bags followed by analysis with gas chromatography-mass spectrometry (GC-MS) and infrared spectrometry (IR). The emission profile for gasoline blended with different biomass-derived fuel additives such as bioethanol, biobutanol, triacetin, and 2-methyl-tetrahydrofuran are compared. Fuel emissions are monitored at blending levels of 2%, 4%, and 6% oxygen by weight in the additives to assess the influence of the additives on the combustion of gasoline. The analytical data for the volatile organic compounds (VOCs) including benzene, toluene, and xylenes as well as polar organic compounds such as formaldehyde, acetaldehyde, and acrolein are emphasized for the emissions testing.

Introduction

Currently, gasoline is the major fuel source for the world’s transportation needs, but there have been many attempts at finding new methods to produce the needed energy. However, with the current infrastructure, gasoline will be around for at least another 30 years. The most feasible option, then, is to continue using gasoline while seeking alternative biofuels suitable for blending with gasoline. One of the benefits of biofuels is that the emissions from gasoline blended with biofuels have been shown to have lower levels of harmful pollutants. Emissions from fuel combustion in gasoline engines can give rise to serious sources of air pollution such as particulate matter, toxic VOCs, acid rain precursors, and greenhouse gases (Zhang et al., 2008).

The current limitation of biofuels additives is that the cost of production is still higher than that of gasoline. Despite being effective in lowering the levels of pollution, the cost of biofuels is still relatively high to the average consumer or refining company and hence the additives are still not widely used. The solution to this cost barrier is to develop a new gasoline additive that is inexpensive to produce, effective at reducing pollutants, and fairly stable in the gasoline mixture. So far, ethanol produced from fermentation of corn sugars has been blended with gasoline, with the most common blend being 10% ethanol. This fuel mixture reduces VOCs and other pollutants but causes a slight decrease in fuel mileage. The disadvantage with ethanol is that it is mainly produced from corn in the United States. The use of corn-based ethanol tends to reduce the capacity for food production since less corn is available for the food industry. U.S. farmers prefer to grow corn instead of other food crops but Brazil’s ethanol production for transportation fuels currently comes from sugar cane, a crop that does not grow well in most areas of the United States due to climate
restrictions. Even with this drawback, ethanol continues to be the main gasoline additive. In 1992, the U.S. Clean Air Act mandated the use of oxygenated fuels in winter for cities with elevated ambient concentrations of CO during the cold months. This program required 2.7% by weight of oxygen in gasoline, and the oxygenate of choice for this program has been ethanol (Graham et al., 2008). This policy was implemented before the undesirable impact of widespread ethanol production on rising food sources was publicized. Recently, a fuel mixture composed of 85% ethanol can be used in “Flex-fuel” vehicles or vehicles made to burn ethanol or gasoline. As research in alternative transportation fuels continues, fuel additives other than ethanol will likely be developed and commercialized.

Materials and Methods

The testing of the fuel additives including ethanol, n-butanol, triacetin, and 2-methyltetrahydrofuran was performed on a Craftsman 2500-watt gasoline generator. The gasoline Exxon 87-octane mixtures contained 2, 4, and 6% of oxygen by weight in each additive and were evaluated. Samples of gasoline of 50mL were burned between each sample to ensure that no cross contamination occurred. The samples were collected in 3 liter Tedlar bags with a vacuum pump to draw the sample. The pump was run for 12 seconds to collect the exhaust gases. The exhaust samples were then analyzed on an Agilent Technologies 5793 gas chromatography-mass spectrometer with a 60-meter ZB624 column. A 20-mL sample was chosen to ensure that the signals of the VOCs would not be saturated and hence lead to unreliable results. Several VOCs such as benzene, carbon monoxide, and ethylene were chosen for quantitative analysis and compared among different fuel blends to determine which additive was the best for each pollutant. Other equipment used for comparison included a Nicolet Magna 550 FT-IR and Varian 7000 FTIR. A 50-mL sample from each bag was transferred using a Hamilton gas syringe into a 10-meter gas cell mounted on the Nicolet Magna 550 FTIR. The spectral resolution of 0.5 cm\(^{-1}\) and signal integration for 100 scans were used to analyze emissions over the spectral range of 650-4000 cm\(^{-1}\). The FTIR was also used to analyze gas standards in canisters so that analytical calibration plots of methane, carbon monoxide, and several other gases could be prepared.

Results

All of the gasoline additives reduced the levels of most VOCs, especially the hydrocarbons. However, some were better at reducing aromatic hydrocarbons while others were better at reducing polar organic compounds containing oxygen. The overall best additive tested was n-butanol, as it showed the largest decrease in pollutants. Adding any one of the oxygenated compounds tested helped improve the emission profile. The oxygen content of the fuel additives facilitated more complete combustion of the hydrocarbons in the gasoline mixture. The reduction of mileage was not investigated because the test samples were burned in a generator. Although all the oxygenated gasoline additives tested generally resulted in reduced emissions, emission levels were about the same for the 4% 2-methyltetrahydrofuran and the original Exxon-87 gasoline. See Figure 1.
In the ethylene emissions graph below (Figure 2), the 2% n-butanol showed the greatest reduction in ethylene emissions in comparison to regular Exxon gasoline. It is important to remember that in a generator, the emissions will be of higher concentrations than in passenger vehicles. For ethylene, the reduction achieved by the oxygenated fuel additives relative to Exxon 87 gasoline ranged from about 5% to almost 30%.

**Figure 2:** Generator emissions of ethylene in various gasoline-blend fuels

Carbon monoxide is a toxic odorless gas formed from the incomplete combustion of gasoline-based fuels. As shown in Figure 3, carbon monoxide reduction with some of the additives was as much as 700 ppm compared to the standard gasoline. For 2-methyltetrahydrofuran, the emission of CO was as high as the gasoline. The 2% ethanol-blended gasoline resulted in the lowest level of CO emission.
Figure 3: Generator emissions of carbon monoxide in various gasoline-blend fuels

For the methane emission results (Figure 4), the addition of ethanol and triacetin in the gasoline had nearly the same degree of methane reduction. The 2% n-butanol-blended gasoline shows the largest drop in methane emission; 180 ppm of methane was observed in the Exxon 87 gasoline emission testing, whereas the 2% n-butanol fuel had only about 100 ppm methane.

Figure 4: Generator emissions of methane in various gasoline-blend fuels
Discussion

The comparison of all the fuel additives with regard to the reduction of VOCs seemed to support the observation that oxygen content of the blended gasoline mixture affects the emission levels. For each type of additive, the emissions decreased as the oxygen content of the fuel additives increased. Although all of the additives contained oxygen, the extent of emission reduction for specific pollutants varied for each additive. Overall, the VOCs were reduced for all additives. Aromatic hydrocarbons, such as benzene, toluene, ethylbenzene, and xylenes in particular were drastically reduced. The n-butanol additive is the best overall for reducing VOCs. Synergistic effects of n-butanol with other additives have been observed and the study of mixtures of additives is in progress. There are more than 100 different compounds detected in the exhaust gases by GC-MS, and the tasks to compare the concentration of every single compound for all the fuel additives tested are very time-consuming. Such analyses are ongoing with emphasis on the more toxic compounds. The important thing to consider is that the generator emissions will be more polluting than those of vehicles, as the generator is not fitted with a catalytic converter and other means to reduce the emission profile. The levels of harmful emissions in passenger vehicles should be lower. Similar emission testing is being conducted on an MTSU Raider bus capable of burning biodiesel, petroleum diesel, and raw vegetable oil.

Conclusion

Although there are many good choices for gasoline and diesel additives, there is no single additive that can lower the levels of all pollutants in the emission. Many, if not all of the gasoline additives, will reduce mileage somewhat, with the tradeoff being cleaner exhaust. The only effective solution for overcoming air pollution is a reduction in the fuel usage for transportation and power generation as well as smarter uses of alternative energy sources. With the increase in human population, it is increasingly difficult to continue current lifestyles that depend on the use of fossil fuels. Measures of urban planning to encourage walking, bicycle use, and an increase in public transportation are all part of the solution.

References


The American Perspective of French Clarinet Performance Styles

Jonathan Copeland

Dr. Todd Waldecker
Clarinet Performance, School of Music

As an American clarinetist performing French music, I have always questioned if my playing style reflects the original intentions of French composers. “Premiere Rhapsodie” by Claude Debussy is a standard piece in the clarinet repertoire that reflects numerous musical characteristics of the French Concours Conservatoire style that I wish to investigate and apply to my performances. Although I can perceive the French style, I am lacking a true perspective of the French clarinet performance style and this is my musical objective. In order to obtain a true perspective of the French clarinet performance style of Debussy’s “Rhapsodie,” I studied abroad in Belgium at the Oostende Conservatory of Music with French clarinetist Eddy Vanoosthuyse (Royal Conservatory of Ghent) and American clarinetist Dr. Robert Spring (Arizona State University). Through comparing and contrasting their different perspectives and teaching methods on Debussy’s rhapsody, I was able to identify the differences and similarities of typical French and American performance styles. I initially thought that one should play the music as written, but also add whatever was necessary to make it as “musical” and emotional as it could be. After my study with Dr. Vanoosthuyse, I learned that American performers, in general, try too hard to make it musical, and end up losing the passion that Debussy inherently composed in the music. The true passion and emotion is often lost by the performer’s strain of looking for it.

Premiere Rhapsodie

Some of the most well known clarinet works have derived from the Paris National Conservatory. The conservatory has a system for students known as the Solo de Concours, which means solo competition, and this system is used to determine student performance abilities on their instruments. Each year a member of the faculty composes a piece, and the newly written work is used as the concours solo for that specific year. In 1910, Claude Debussy composed “Premiere Rhapsodie,” and over time it has become not only a competition piece, but also a standard work in clarinet repertoire. I have a perception of this piece as being a model of the French style of clarinet performance, but once again this is a perception. The question is: How do the French perform this piece compared to what I perceive to be the French style?

Discussion of Musical Differences

Music cannot be performed without a style. As performing musicians, it is our goal to obtain our own unique style. Although we want to achieve this goal, we still have a style of performance ingrained in us regardless of the outcome; this is our musical training and experience. Americans have a different sense of style than the French because of our culture and our environment. A lyrical and emotional composition cannot be performed correctly if played contrary to the composer’s intentions.
As an American, I cannot perform a French work without the correct style. So this is why I studied abroad in France and Belgium with Eddy Vanoosthuyse (French) and Robert Spring (American) — to discover the differences in these two performers’ playing style and teaching approach. My research culminated in a recital performance of “Premiere Rhapsodie” in Belgium with a true French perspective rather than a biased perception.

My Personal Perception before Research

- Dreamy and more expressive musical phrasing.
- Musical details = more texture and color.
- “Impressionist” style. Visual equivalent is a painting by Monet.
- Flexible tempos but specific tempo markings.
- Intense and colorful tonality.
- Use of a smaller grand piano to give better balance between the piano and the clarinet performer.
- Improvisatory nature.

My Perspective after Research

- Music is passion, and the performer must go beyond the notes to tap into emotion.
- True perspective = the American perception, but everything is taken to the extreme.
- “There is no American style, only the French style.” – Eddy Vanoosthuyse
- Smooth phrasing.
- Extreme emotion portrayed through music.
- French performers prefer the Durand edition of “Premiere Rhapsodie.” The American edition by David Hite is too liberal with editorial markings. (The music edition is similar to the different editions of the Bible.)
- Greater appreciation of the sound that comes from the music and of the composer’s markings in the music.
- The French are strict in performing what the composer intended and do not add things to make it musical; instead, they use color and passion within their own sound to portray the French style of extreme emotion.

Conclusion

In conclusion, I have discovered that the French perspective is very similar to my initial perception, but everything is taken to the musical extreme. For example, if I were to think something should sound musical, the French would say even more musical. They also seem to draw upon their inner emotions more to portray the music instead of just performing the notes written on the page. French musicians seem to have such a great appreciation and respect of the natural composer’s intention of the music, and they let the music come natural; they do not try to add special effects to the music to convey their own personal intentions. The overall experience was an eye opener, not only musically, but culturally as well. After this research opportunity, I conclude that for me culture plays a tremendous role in music and the performance style.
Works Cited

Clarinet lessons from Robert Spring (Arizona State University) and Eddy Vannosthuyse (Royal Conservatory of Ghent).

**Recital Program**

**Belgian Clarinet Academy 2008**

Friday, July 11 at 7:00 pm
Georges Maes Recital Hall - Conservatory Ostend

**Student Recital # 2**

- Sonata: 2. Romanza...Francis Poulenc
  Nele Desmet, Belgium
- Sonata: 1. Allegretto - 2. Allegro animato...Camille Saint-Saens
  Ashley Tapp, USA
- Sonata: 2. Romanza - 1. Allegro Tristamente...Francis Poulenc
  Jeffrey Sherwood, USA
- Rhapsody...Claude Debussy
  Jonathan Copeland, USA
- Time Pieces: 2. Andante espressivo - 1. Allegro risoluto...Robert Muczynski
  Kim Endel, USA
- Five Dance Preludes...Witold Lutoslavsky
  Leonie Bluett, Ireland
- Sonata in Eb, op 120/1 : 1. Allegro amabile - 2. Allegro Appassio...Johannes Brahms
  Coddy Grabbe, England
- Grand Duo Concertant : 2. Andante can mota - 3. Rondo...Carl Maria von Weber
  Andy Hudson, USA
- Solo de Concours...Andre Messager
  Jennifer Kabbas, USA

**Geert Callaert - Pianist**

*Thank you for coming and supporting our students.*
The Mozart Effect as Influenced by Music Genre

Anjelica Crawford

Dr. Rick Short
Education and Behavioral Science

Recently, research has begun to examine the effects of music on different cognitive processes in the human brain. Such cognitive functions include learning, memory, and spatial performance. The Mozart Effect is the apparent cause of the increase in performance that classical music (Mozart) has on visual-spatial abilities. The current research tests the Mozart Effect on participants at ages 18-24. There are also two added genres of music to evaluate whether the effects of music on cognitive functioning are only for specific genres. Each participant takes the Stanford-Binet test of visual-spatial performance before and after listening to eight minutes of either instrumental jazz, pop, or symphonic music, and the results of the two tests are compared for each participant as well as being compared across genres.

Introduction

In recent years researchers have studied the effects of music on different cognitive processes such as learning, memory, and spatial perception. One specific area of research in the broad topic of the effects of music on cognition is the Mozart Effect. The Mozart Effect is the increase in spatial performance after listening to Mozart recordings. Parents buy Mozart recordings for their young children and even unborn children in hopes that it will somehow increase the child’s intelligence. Despite the fact that businesses have profited from the common belief that listening to Mozart may affect cognitive functioning, there has been little research done on the Mozart Effect compared to the volume of research conducted on other areas of cognitive psychology.

Healing effects of music have been referenced in other cultures other than the American culture. In China, musical compositions are produced that are meant to specifically target certain illnesses or specific parts of the human body. In France, a physician by the name of Alfred Tomatoes spent nearly 50 years studying the effects of music on the body. After diagnosing one of his patients with a severe speech impediment resulting from emotional problems, Tomatoes exposed him to Mozart on a daily basis and recorded a positive change in the patient’s speech patterns (Campbell, 1998).

The effect of music on cognitive functioning is not a new idea. Music therapy is a growing field in psychology and is based on the beliefs of the healing effects of music on the body and the mind. Steven Hale is a music therapist and gerontologist who is active in providing music therapy to nursing home patients. Music therapy is often used with people in nursing homes, people who suffer from dementia, long-term illnesses, and depression, along with many others. It is only in the past ten to fifteen years that the specific area of the effects of music on visual-spatial perceptions has been studied (Humphrey, 2000).

In research on the Mozart Effect, spatial performance is measured after exposure to music composed by Mozart to determine if the music affects spatial perception. Spatial perception involves detecting shapes, locations, volumes, and distances of an object in relation to another object. Visual-spatial perception and motor-spatial performance are the two
types of spatial skills examined here. Visual-spatial skills include judging distances and volumes of objects by looking at them. Motor-spatial skills include navigating safely around other objects. In research on the Mozart Effect, participants are given several tasks that test their spatial skills. An early example of research done to investigate the Mozart Effect was conducted by Rideout and Taylor (1997). They included 16 male and 16 female participants. They found an increase in spatial performance immediately following exposure to ten minutes of a Mozart Sonata.

Another example of research done in the mid-1990s on the Mozart Effect was conducted by Frances Rauscher. Rauscher displayed several folded figures to students who were instructed to describe what the figures would look like if unfolded. Students were exposed to either Mozart, silence, or mixed sounds which included an audio-tape story and a dance piece. Each group improved its scores from the first day to the second. The Mozart group improved by 62%, which is significantly greater than the improvement of the silence group (14%) and the mixed sounds group (11%) (Campbell, 1998).

By 1999, the Mozart Effect was studied in the context of mathematical skills. Gordon Shaw was not a believer in the healing effects of classical music, but was interested in its effects on the math skills of students. Shaw found a considerable increase (27%) in test scores of students who were exposed to Mozart for a period of time. His findings led to programs that advocate keeping music classes in schools because they have such a positive effect on scholastic performance. Shaw’s studies were key in giving the Mozart Effect the publicity it needed to spark further research.

The reasons for the occurrence of the apparent Mozart Effect were investigated by Jones, West, and Estell (2006) at Indiana University. They explored whether it was a priming of neural pathways caused by listening to Mozart, an increase in mood and/or arousal, or if it were simply a musical preference that led to the apparent increase in spatial ability. Forty-one college students were randomly assigned to either a control group or an experimental group. For seven minutes the control group was exposed to silence, and the experimental group listened to Mozart. After exposure the participants were asked to report their arousal and music preference, and to complete a spatially related task. Their performance on the task served as the dependent variable. The researchers found higher spatial performance scores for the group that listened to Mozart. They then controlled for arousal and found no difference between the spatial performance scores of the experimental and control groups. This could mean that arousal was actually a primary confounding variable in the correlation relationship between listening to Mozart and spatial performance. This seemed to be plausible because the group that listened to Mozart had a higher reported arousal than the group that listened to silence. Musical preference was not found to have a significant effect on the spatial performance scores.

A similar experiment was conducted by Jones and Estell (2007), but instead of using a college population as participants, they used high school students. The sample size was 86 full-time high school students (55% female). Their objective was to determine if the Mozart Effect appeared in this specific population and, if so, was the effect caused by arousal leading to better spatial performance. The experimental group listened to 7.5 minutes of Mozart, and the control condition was exposed to silence for the same amount of time. After exposure, each group was instructed to report its arousal level and perform a spatial performance task. No difference was found between the spatial performance scores of the males and females. The group that listened to Mozart exhibited a significantly higher spatial performance score. There was also a positive correlation between arousal and spatial performance, which supports research done by Jones, West, and Estell (2006), suggesting that it is not the music that improves spatial performance, but it is the music that increases arousal, which in turn increases spatial performance.
Other research has centered on the effects of music on cognitive performance outside the Mozart Effect. Schellenberg (2006) explored the correlation between music lessons and IQ scores. He found that there was a weak correlation between IQ and the duration of music lessons in children. He then aimed to determine if the effects of music lessons on intellectual ability lasted into young adulthood. He found that there was a strong correlation between music lessons and intellectual ability in young adulthood. He stated in the article that music lessons were actually a predictor of IQ scores in young adulthood. Because Schellenberg’s research was correlational, there can be no determination of causality.

Another example of research on the effects of music on cognition was done to determine if there were any differences in mental abilities of adult musicians and non-musicians (Helmbold, Rammsayer, and Altenmüller, 2005). The researchers compared abilities such as reasoning, memory, verbal comprehension, and several other mental abilities of adult musicians with those same abilities of non-musicians. The participants ranged in age from 18 to 32 and 53% were females. The musicians all studied at a music institution in Germany and received musical training for an average of 17 years. They found no significant difference in the mental abilities of musicians and non-musicians except for flexibility of closure and perceptual speed. Flexibility of closure is the ability to detect one single element or object in an array of other objects or in a complex design. Perceptual speed is the ability to compare one column of text or numbers with another. In the areas of a detected difference, musicians performed better than non-musicians. The researchers explained this difference by mentioning that flexibility of closure and perceptual speed are skills that are necessary to play an instrument successfully, and those that did not play instruments may not have utilized and perfected these skills as the musicians had.

The effects of music on cognitive functioning have been compared to the effects of involvement in dramatic arts on cognitive functioning. Bower (2004) mentions that the cognitive functioning of children involved in dramatic arts is compared with that of children involved in music, and it is shown that there is a different type of benefit that results from involvement in the dramatic arts. Bower states that, based on rating from parents, social skills are improved as a result of involvement in dramatic arts. This causes one to wonder why it is that music, specifically classical music has such an effect on cognitive functioning.

In past research, classical music is the only music used in studying the Mozart Effect, which rules out determining whether or not the type or genre of music contributes to changes in spatial performance. In the current research the participant’s spatial skills are tested before and after exposure to several types of music so that the individual’s change in spatial performance is measured and individual differences will not confound the results. The independent variable of the current study is the genre of music to which the participants listened. Genres included in the study are a symphonic Mozart selection, a pop selection, and a jazz selection. The dependent variable is spatial performance.

Judging by sales of classical albums, specifically Mozart, it is possible that people in America and several other countries may accept the idea that listening to Mozart can increase intelligence, although most have no idea how such a phenomenon could occur. Several best-selling books put an emphasis on the effects of Mozart on mental health. There are albums entitled “The Mozart Effect” which have reached as high as #8 on Billboard’s Classical Music Charts (Cunningham, 1998). This suggests that not only do the masses believe in the Mozart Effect, but they are supporting it by purchasing items with the hope of results.

Research centered on the effects of music on cognitive functioning, and more specifically, the Mozart Effect, is expanding as music programs in schools around the country are at risk. Research on this specific topic is also giving us more insight on the functioning of the human brain, which, in the future, may aid in understanding the brain better and also in providing ways to get maximum performance.
The objective of the current study is to further explore the Mozart Effect and related effects among participants, and to determine if type of music is related to the degree of the Mozart Effect elicited. Based upon previous research on the Mozart Effect, and even broader research done on the impact of music on cognitive processes, the investigator hypothesizes that there would be a Mozart Effect for each group and that there would be a difference in the degree of the effect across music genres.

**Method**

**Participants**

The participants in the study were 15 undergraduate students between the ages of 18 and 24 at Middle Tennessee State University who have a variety of academic concentrations to prevent academic major from becoming a confounding variable. The participants were chosen by a convenience sample due to the Psychology Research Pool being unavailable during the summer months.

**Materials**

Three selections of music on a personal compact disc player was used to play the music the participants were be exposed to. Each CD contained one eight-minute piece of music, either of a symphonic, pop, or jazz genre. The symphonic selection was taken from “The Prince of Egypt: Music From the Original Motion Picture Soundtrack,” which was released in 1998. Track 8, “The Burning Bush,” was played for six minutes, automatically followed by track 3, “The Reprimand,” which played for two minutes. Both tracks were composed by Stephen Schwartz. Track 8 introduced vocals at 6:20, and because all of the music was to be instrumental, track 8 faded into track 3 to prevent this interference. The music selection was heavy in the lower register brass instruments such as the trombone and tuba, and it included an infusion of stringed instruments to create a full symphony sound. The jazz selection was taken from the "Chicago" soundtrack album, which was released in 2002. Track 15, “After Midnight," which faded into track 16, “Roxie’s Suite," were used for the jazz selection and totaled eight minutes. This selection was upbeat and included brass instruments such as the trumpet. The pop selection was taken from a 2004 contemporary pop single, which was performed by Fantasia and is entitled, “Free Yourself.” The pop selection was looped to play a total of eight minutes because the total time of the track was four minutes and 17 seconds. Each music selection was chosen to be instrumental to prevent the possibility of language interfering with spatial performance. The jazz and symphonic music selections were chosen because they are traditional to their genre.

**Measure**

A group of college students at Middle Tennessee State University were given the Stanford-Binet, starting at the easiest task and continuing until the participants scored zero on three consecutive tasks. Participants were randomly placed in three groups: the jazz group, the symphony group, and the pop group. The name of the group represents the type of music each participant would listen to in between the pretest and the post-test.

When researching the Mozart Effect, the Stanford-Binet is most commonly used because of its reliability and proven validity. The Stanford-Binet has an interesting history. It was birthed in France around the turn of the 20th century. The French government asked a French psychologist by the name of Alfred Binet to develop a test that would test students to determine if special education was needed. This was meant for the benefit of children who
did not need special education, so that they would not be held behind because of the necessity for a slower teaching schedule. Of course this was also for the benefit of students who needed special education; so that they could get the attention they needed and not get left behind. The original test that Binet developed was not very valid, nor was it reliable, but it was first the first edition, and it was still early in the stages of developing intelligence tests. In 1916, a professor at Stanford University with the help of a few of his graduate students reworked the test to make it more reliable. This version of the test was named the Stanford-Binet after Stanford University and Alfred Binet.

The Stanford-Binet was used with students, but also with army recruits. Robert Yerkes is credited with developing the Army Alpha and Army Beta tests. These tests were designed to determine if an army recruit was more like a leader or a follower, which determined placement for army individuals. Robert Yerkes was also the president of the American Psychological Association, which only added accreditation to the test within psychology circles. So although the test was developed for students, it is valid for all ages.

There have been five revisions of the Stanford-Binet: in 1937, 1960, 1972, 1986, and 2003. With each revision, reliability and validity have increased. One major difference between the editions is the way the tests are grouped. With the original test, tasks were grouped as a function of age. With the current version, tasks are grouped by the type of task. For example, all of the visual-spatial perception tasks are grouped together, and they increase in difficulty as the task number increases. The original test was weighted heavily on verbal ability. Now there is a verbal and non-verbal section for each group of tasks. The tasks include fluid reasoning, quantitative reasoning, knowledge, visual-spatial perception, and working memory. With each type of task the difficulty increases as the task number increases. If a participant taking the test scores three consecutive zeros, the individual moves on to the next portion of the test because it is very unlikely that one would miss three consecutive tasks and be correct on the next task.

The non-verbal portion of the Stanford-Binet allows test takers who have difficulty with language and vocabulary to receive scores that are valid because this portion is not focused on vocabulary, which can vary from population to population. The non-verbal fluid reason section is memory-based. The non-verbal knowledge section is tested by pattern analysis. The non-verbal quantitative reasoning section is tested with absurdities. The non-verbal visual-spatial section is tested by copying figures. The non-verbal working memory section is tested by memory for objects. The verbal and non-verbal sections of the test are not unrelated. There is an extremely high correlation between the verbal and non-verbal sections for each task difficulty level.

The Stanford-Binet is very popular to use among students because it is extremely reliable and valid. This test also measures well with extreme scores, which often does not hold true for intelligence tests. Despite the reliability and validity of the test, there are still criticisms, one being bias. Does the test aim more at a specific population, causing the scores of that population to be elevated above other populations? This is always a concern with intelligence tests because one part of the population may not receive the same education or have the same cultural focus as another part of the population. Even the 1986 version drew criticisms, even though it was a considerable improvement over the earlier versions. One criticism was that it did not diagnose mild retardation before the age of 4 or 5. Also the game-likeness of the test was decreased, which also decreased the interaction between the test taker and the administrator.

On the Stanford-Binet in this study, each participant began with a sample task. This task involved the experimenter forming a figure out of foam board pieces as the participant watched. The participant then formed the same figure. The image that the participant was shown included all the shapes needed to form a figure. What made some of the figures increasingly difficult was that the shapes had no outlines so that the subject could not tell
Where one shape ended and where another began. The participant simply had to mentally or physically move the shapes so that they would form the goal figure. The administrator’s view had the outlines of the shapes so that the participant’s errors could be easily identified. An example task is seen in Figure 1. After the participant understood what each task would involve, the experiment began. The experimenter presented the participant with one image, which the participant then recreated with several foam board pieces. At each level, the difficulty increased. The participant could score 0, 1, or 2. Scoring a 0 on a task means that there are three or more pieces that are placed incorrectly. If the participant scores 0 on three consecutive tasks, the experiment would automatically move on to the next phase. Scoring a 1 on a task means that the overall shape of the figure is represented, but one or two pieces are placed incorrectly. Scoring a 2 on a task means that each piece is placed correctly.

Procedure

All participants were given directions for the experiment before beginning. Each participant performed a set of spatial performance tasks, which were compared to another set of tasks after exposure to the stimulus. Each participant was randomly assigned to one of the three music genre groups. The experiment was conducted separately for each individual participant to prevent interference from other participants. As mentioned earlier, one group listened to a pop selection, one listened to a jazz selection, and the final group listened to a symphonic selection. Each participant was located in a quiet environment to prevent outside influences. After exposure to the musical selection, each participant performed another set of spatial performance tasks. After all participants completed their second set of spatial performance tasks, the data were analyzed to determine which type of music, if any, produced the largest effect on visual-spatial performance. The completion time for each task in the pretest was recorded and compared to the completion times of each task in the post-test.

Results

The first finding was that on average, the participants’ scores increased for each genre group after listening to the music, which means that there was a Mozart Effect in general, regardless of the type of music that was being played. The increase from pretest to post-test was found to be significant (see Table 2). The increase from pretest to post-test by genre was not found to be significant. It was also found that the symphonic group consistently had the biggest score increase from the pretest to the post-test with an increase of 3 points, and the jazz group had the smallest increase in score with an increase of .4 point. The instrument pop groups had an average increase from pre-test to post-test of 2.75 points. See Table 1 for changes in score by genre. In terms of completion times, the symphonic group had the smallest decrease from pretest to post-test, and the jazz group had the largest.

Discussion

The results suggest there was a difference in the scores of the pretest compared to the scores of the post-test which were not due to chance, meaning that the change in score was significant. In terms of the current research, listening to music had a significant effect on the performance scores. However, the increase in scores by genre was not proven to be significant.

There could have been several reasons why the increase in scores by genre was not significant, one being the sample size was too small. An ideal sample size would be at least 60 participants in each genre. Because the sample size was so small, if there was a significant increase in scores by genre, it could not have been detected.
The selection process of the participants also could have been an indirect source of error. The experimenter knew each of the participants because they were chosen through convenience sampling. Because the experimenter interacted with the participants before the test administration, the participants may have been affected by knowing the administrator. Also, because the participants were familiar with each other before the experiment, they may have shared common factors that could have served as unknown confounding variables.

This study was a trial run for a future study that will measure the effects of genre on the degree of the Mozart Effect. This study provided the experimenter with practice administering the Stanford-Binet to students. With test administration, it takes several administrations to decrease the level of error on the part of the administrator. Because this was the experimenter’s first time administering the Stanford-Binet, this could have been a source of error as well.

Overall, the data showed that there was a Mozart Effect, but there was not enough reliable data to determine if the genre had an effect on the degree of change; that is, whether one genre of music produced a larger Mozart Effect than another genre.

Future Research

The researcher is using this research project as a trial run. In the fall of 2008 the experiment will run using Middle Tennessee State University’s Psychology Research Pool, which will increase the number of participants. Also, the sample will be chosen at random, instead of convenience sampling, which will produce more reliable results as it will eliminate possible confounding variables caused by the sample selection process used in the current experiment. The researcher hopes to be able to test enough participants to not only detect a Mozart Effect, but also determine if one type of genre produces a greater degree of the Mozart Effect than another. The researcher will also have more experience administering the Stanford-Binet, which will eliminate errors in the test administration.

References

Table 1. Scores by Genre

<table>
<thead>
<tr>
<th>GENRE</th>
<th>AVERAGE SCORE 1</th>
<th>AVERAGE SCORE 2</th>
<th>AVERAGE SCORE DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYM</td>
<td>9.7</td>
<td>12.7</td>
<td>3</td>
</tr>
<tr>
<td>JAZZ</td>
<td>8.4</td>
<td>8.8</td>
<td>0.4</td>
</tr>
<tr>
<td>POP</td>
<td>8.75</td>
<td>11.5</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Table 2. Overall Mozart Effect

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spearman's rho Pretest</td>
<td>Correlation Coefficient</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.016</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>15</td>
</tr>
<tr>
<td>Spearman's rho Post-test</td>
<td>Correlation Coefficient</td>
<td>.610</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.016</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>15</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level (2-tailed).
Make one just like this.

This is the participant’s view

This is the administrator’s view

Figure 1. Example Task.
“A Great Surge of Purpose”: Gay Persons with AIDS and Alternative Therapies

Ryan Darrow

Dr. Pippa Holloway

History

In the early years of the AIDS epidemic, a significant number of gay “persons with AIDS” (PWAs) sought treatment from alternative medicine practitioners. Accessing alternative medical treatment was part of an effort to exert control over their illness, a journey which necessitated renegotiating their relationship with their orthodox medical doctors, seeking information from and providing it to the other gay PWAs, and developing treatment plans with a variety of alternative practitioners. I studied primary sources documenting the gay PWA experience, focusing on AIDS treatment newsletters, gay community newspapers, mainstream newspapers, and oral histories and memoirs. I also utilized secondary sources and, more generally, the PWA experience to buttress the arguments formulated using the primary sources. The paradigm between the PWAs and their orthodox medical doctor changed to reflect the PWA’s desire for greater choice and control over the treatments prescribed to them. PWAs sought information from the gay community and AIDS Service Organizations. They gathered anecdotal evidence from newsletters, newspaper articles, support groups, seminars, and other methods, in order to evaluate alternative therapeutic options. Alternative practitioners used public outreach and advertising to gain new patients and legitimized their services in a variety of ways.

In 1988, author Paul Monette said that merely seeking information about treatments for his partner’s AIDS-related conditions “gave us a great surge of purpose that colored everything else. Any news about any drug could cut through my blackest despair.”1 People with AIDS and their caregivers advised that “all people with AIDS should be their own doctors.”2 Many described an accompanying attitude, saying that “we’ve found that the guys who don’t accept their disease, who fight it, who perhaps get even a little rude and tough or bitchy about it, they seem to be doing better.”3 For gay persons with AIDS (PWAs), learning

This paper would not have been possible without the support of Dr. Pippa Holloway and the McNair Program of Middle Tennessee State University. Dr. Holloway has provided advice tirelessly on both the quality of the research and the writing of this Paper, and that guidance has been invaluable. A debt of gratitude is also owed to the McNair Program for providing the impetus for this research and for support during both the research and writing phases.

about their illness became an act of resistance and sharing that information with each other became an act of solidarity. These PWAs advised that “no matter what you get involved in, the involvement itself will help.”

Gay persons with AIDS utilized a variety of communities and services to assert control over their health in the early years of the AIDS epidemic. Although reactions to their illness were varied, one method PWAs employed was the use of alternative therapies. However, that quest for alternative therapies was more than an act of desperation but one of many ways that they acted on a need for purpose in the wake of their diagnosis. These alternative treatments penetrated the PWA experience to such a degree that, as of 2007, the use of alternative treatments for HIV diseases still far outpaced that of other illnesses. Their quest for alternative therapies was a complicated one which did not involve the alternative practitioners exclusively. PWAs used AIDS service organizations (ASOs) and other means to find information regarding their illness and possible treatments while asserting that their biomedical doctors could not dominate medical discourse and decisions and, as a demonstration of this newfound power, sought alternative therapies for treatment. Community acted as the conduit by which information was acquired and used in an often solitary fight. It was not so much the treatment itself as the active involvement in seeking it that was helpful to PWAs.

The way that gay PWAs dealt with their illness, including the use of community and alternative practitioners, reflected the way that they coped with the reality of their illness. Sociologist Rose Weitz studied the coping mechanisms of PWAs and identified two broad strategies: avoidance and vigilance. Avoidance happened at all stages of the illness. Before diagnosis, a PWA might have avoided seeking a test which would confirm diagnosis or might have attributed the symptoms and signs of AIDS to other, less stigmatized and less serious, conditions. After diagnosis, a PWA might have constructed his disease identity as

5. For the purpose of this paper, “effective biomedical treatment” is defined as the “triple drug cocktail” which effectively turned HIV disease into a largely manageable, chronic illness. The focus of the paper will be from approximately 1983 to 1990. I will be using the term “biomedicine” in this paper to describe traditional, orthodox medical treatment, including a range of activities from procuring advice from medical doctors to using chemotherapy. The choice of words reflects a common usage in alternative medicine texts and is useful for the implied emphasis on biology, a stark contrast to many alternative therapies. I have defined “alternative” as any system employed by PWAs that existed outside of the realm of biomedical authority.
having HIV or ARC, rather than AIDS, to avoid the reality that his condition was terminal. He might use his savings to travel in the hopes of enjoying the life he had left instead of using those funds to actively combat his illness. Avoidance could be either denial or resignation.

Vigilance, in contrast, was learning and participating in methods which PWAs believed would prolong their life. The search for alternative therapies was one example of this vigilance but PWAs employed others, such as working to gain entrance to experimental drug trials. For example, PWA Ray Engerbretson sought entry into a clinical trial at the National Institutes of Health and was rejected after going through eight weeks of tests to determine his eligibility. Engerbretson reacted to this rejection by seeing a holistic healer who employed “Zero Balancing,” a type of crystal therapy. Engerbretson was open to alternative therapies before his diagnosis with AIDS, yet it was only after his rejection from the NIH trial that his desire to actively resist his illness led him to an alternative treatment practitioner.

Generally, those vigilant PWAs seeking information and treatment began with the advice of biomedical doctors, who were able to best track the progress of their illness and explore whatever biomedical options might be available to them. Biomedical doctors, despite the prevalence of AIDS service organizations, newspapers, and other information dissemination systems, naturally remained an important source of information for PWAs. Journalist Chuck Frutchey wrote that “the first step to take is to see a doctor. Even if you decide to pursue an alternative therapy, there is no substitute for being followed by a doctor who can monitor your vital signs, blood work, etc.” Frutchey then clarified this advice, careful to warn those vigilant PWAs that:

7. Rose Weitz, “Uncertainty and the Lives of Persons with AIDS,” *Journal of Health and Social Behavior* 30, no. 3 (Sep. 1989): 270, 277; Susan Sontag, *AIDS and Its Metaphors* (New York: Farrar, Straus and Giroux, 1989), 35-36; ARC stands for AIDS-related Complex. It was a term that described swollen lymph nodes and a kind of pre-AIDS. It is a term that has been largely abandoned. Weitz is quick to point out that people with other chronic and terminal illnesses used the same strategies to cope as PWAs.
While it is a good idea to consult your doctor, it is not a good idea to surrender your decision-making entirely. The decisions are yours, and you should prepare yourself to make them intelligently. Use your doctor, your friends, and other people with AIDS/ARC as resources, but retain and exercise your right to make choices about your own health — choices that are in your best interest.  

Historian Allan Brandt discussed this democratization of medicine, wherein doctors, loved ones, and other PWAs had equal voices, as an outgrowth of a growing lack of faith in the therapeutic abilities of biomedical medicine.  

Historian Charles Rosenberg also discussed the devaluation of medical authority as a consequence of the peak of optimism in scientific and medical advances, prevalent before the 1940s. As the knowledge gained by scientific observation grew, a gap developed between what medical consumers expected of science and what the scientists were able to deliver. In response, the public began to hold “resentment at medicine’s inability to comply with these imperial expectations.”  

Another element contributing to gay PWAs' resistance to medical authority was that biomedical doctors, not unlike the rest of society, were not exempt from homophobia, which led to a less welcoming care environment for PWAs. According to one PWA, his doctor told him that “I don’t approve of your lifestyle and what it represents. It is ungodly in my view. But that doesn’t mean that I won’t continue to take good care of you.” The PWA, in response, declared, “Oh yes it does!” Some in the biomedical community tried to counter these feelings. Dr. David Wright described a doctor who felt that treating gay patients was contradictory to his religious faith and was unwilling to see any AIDS patients. Wright said to him, “Well, you’ve got to put that aside. You took the Hippocratic Oath, just like I did.”  

Further, despite the Hippocratic Oath, many doctors and healthcare workers held stigmatizing views of AIDS. These doctors and healthcare workers may not have been homophobic but still had nightmares about AIDS infection and avoided working with PWAs.  

18. Bayer and Oppenheimer, 104.  
Those who were forced to work with PWAs sometimes took outlandish steps to ensure their own safety. Janitors used makeshift “space suits” to clean the AIDS ward at San Francisco General Hospital. Other workers in the hospital, such as food service employees, also were scared of infection and left trays of food in the corner of patients’ rooms. PWAs reacted to this perceived insensitivity, based on either homophobia or fear, by seeking more personalized care, which they found through alternative practitioners or sympathetic biomedical doctors. Some biomedical doctors, more familiar with the disease, adapted their strategies for dealing with their patients and made a concerted effort to listen to and learn from them. These doctors found that their patients were as much seeking caring and compassion from them as they were seeking a cure. At least one doctor said that he learned to “return to an older tradition of caring,” which included listening to his patients’ wishes and honoring them as well as he could. These wishes included the right to seek treatment through alternative practitioners in conjunction with biomedical treatment.

These vigilant, gay PWAs insisted that their biomedical doctors take their concerns seriously, including their desire for alternative treatments as a supplement to their biomedical treatment, and left their biomedical doctors with little choice, despite any misgivings they might have about those alternative therapies, but to incorporate alternatives into their therapeutic plan. These doctors realized that if they ignored their patients’ desire for alternative therapies their patients would either withhold information about what they were doing outside of the biomedical realm or would seek treatment elsewhere. The more candid doctors were with their patients regarding these treatments, the more likely the patients would be compliant with their biomedical treatments and come to them for advice in the future.

However, not all PWAs could access these alternative therapies equally and they were mostly utilized by those who could afford them. Alternative therapies were generally not covered by insurance providers, meaning that PWAs needed enough disposable income to pay for these treatments. Although generally expensive, the cost of these treatments

20. Pogash, 20, 22.
varied. For instance, the cost of many alternative therapies was lower in San Francisco, likely due to market pressure in a city that offered such diversity, especially in regard to its Asian population. One student with AIDS made monthly plane flights to San Francisco because the cost of the acupuncture and massage was less expensive and the quality much higher.\textsuperscript{25} Given the high cost, Martin Delaney of Project Inform admonished PWAs to give up luxuries to afford alternative treatments. Delaney suggested that PWAs might have to get a roommate or delay purchasing a new car to stay healthy. At least one PWA found Delaney’s expectations unreasonable; responding in \textit{Gay Community News}, reporter Christopher Wittke wrote that he had “$46 in my checking account and $6 in savings. And he’s saying I may have to hold off a year on that Mercedes so that I can save my health?”\textsuperscript{26} Even with a will, there was not always a way.

Therefore, the high level of income necessary to utilize alternative therapies precluded the possibility of PWAs from lower socio-economic brackets from seeking them in great numbers. Ethnographer Bonnie Blair O’Connor makes the contrast between these different groups clear by stating that it is not those in the inner-city who:

subscribe to alternative treatment newsletters, fax their drug and supplement orders, which they pay by credit card, to buyers clubs, peruse the medical and scientific journals, negotiate with physicians, reach on-line treatment information services by modem from their home computers, and draw upon their discretionary income to pay for foreign pharmaceuticals and other complementary therapies.\textsuperscript{27}

ASOs did make concerted efforts to include all other groups, however, recognizing that the epidemic affected more than just those middle-class, white gay men. Ruth Schwartz of the San Francisco AIDS Foundation wrote a letter to \textit{Gay Community News}, encouraging them to write in a simpler style as the “majority of the United States population is best able to comprehend material written at a 7th or 8th grade level,” pointing out that, in evaluating an article in the newspaper, she found that the staff wrote at a “13th” grade level.\textsuperscript{28} Yet this inclusiveness did not often translate to successful outreach to other PWA populations.

There were other reasons, beyond simple economics, which predicted how likely other PWA populations were to seek alternative therapies. According to \textit{Gay Community News}, reporting from an alternative therapy conference, “[a]lmost everyone at the conference was white.”\textsuperscript{29} Dr. Donna Futterman reinforced the observation, stating that African American and Latino PWAs “don’t really clamor” for alternative therapies.\textsuperscript{30} Many African

\textsuperscript{25} Pogash, 162.
\textsuperscript{27} O’Connor, 155.
\textsuperscript{29} Wolhandler, Hale-Wehmann, and Weaver.
\textsuperscript{30} Bayer and Oppenheimer, 162.
American and Latino PWAs did not participate in these gay-centered networks because they did not want to be identified as gay. In one case, members of the African American community of Washington, D.C. came to resent the gay-oriented Whitman-Walker Clinic, which received a majority of the AIDS funding in Washington, D.C. Clinic workers, feeling that they were being accused of racism, countered to African American leaders that it was homophobia that prevented them from taking advantage of Whitman-Walker’s services. One African American PWA responded, “[t]his is not about homophobia … it’s about dollars and cents and my life. I have the right to live my last days in an environment I choose. We have a right to want the services in our community.”

Geography and PWAs’ distance from an urban center also foretold the level to which they would be interested in alternative therapies. The gay PWA population of Johnson City, Tennessee, according to infectious disease specialist Abraham Verghese, did not respond in the same way as those in larger cities. He stated that “everywhere but in our town, people infected with the virus were chasing down alternative therapies.” Verghese traced the infections in his small town and observed that almost all of the AIDS cases in Johnson City had come from larger cities. Many of Verghese’s patients were men who had returned to their families for care, despite the prevalence of AIDS service organizations. They would have stayed in larger cities where these services were more readily available if they had had the means or the motivation to seek alternative therapies. Even after the organization of the Tri-City AIDS Project in Johnson City, the search for alternative therapies never became prevalent there.

Those vigilant, gay PWAs in urban areas with the means to seek information about alternative therapies utilized both formal networks and informal networks, such as friends, acquaintances, and support groups. The anecdotal evidence from informal social networks commanded similar authority to that of the AIDS service organizations. Paul Monette described using this type of informal network as his primary source of information in his memoir, Borrowed Time: An AIDS Memoir. Monette described his friend Craig as his “research associate” because Monette was able to ask him questions about treatments for AIDS and he was able to answer them effectively. Later in the memoir, after his lover began to go blind from an AIDS-related complication, Monette used this informal network to seek information about the correlation between AIDS and blindness.

32. Burkett, 148-149.
33. Verghese, 222.
34. Ibid., 319-320.
35. Chuck Frutchley, “Choosing Alternative Therapies.”
36. Monette, 94-95.
37. Ibid., 250.
two men, both enrolled in a clinical trial for Compound Q, exemplified the contrast between those that relied on formal networks and those that relied on informal networks for their information. One man read all of the gay papers and stayed involved in the procurement of information while the other relied on a friend “who [read] everything” to explain things to him.\textsuperscript{38}

Vigilant PWAs who used formal networks to seek information often relied on AIDS service organizations. These ASOs were mostly run by and tailored to gay men, which helps to explain the appeal to gay men in particular. The number of AIDS service organizations grew rapidly; by 1994, there were over 18,000 in the United States offering a variety of services.\textsuperscript{39} Some of the ASOs started as health organizations for gays and lesbians well before the AIDS epidemic.\textsuperscript{40} For example, the Whitman-Walker Clinic in Washington, D.C., originally founded in 1973 as “the gay men’s VD division of the Washington Free Clinic,” was already treating 10,000 people per year for various sexually transmitted diseases by 1981.\textsuperscript{41} When AIDS began to dramatically affect the gay population of the city, it was logical to channel funding to the Whitman-Walker clinic, since it was already dealing with the affected population, and over time the clinic focused increasingly on AIDS and on providing services to PWAs. Many founders of ASOs were gay men that had experience dealing with political advocacy.\textsuperscript{42} For example, Fred Goodson, the founder of the Tri-City AIDS Project had previous experience with gay-oriented political groups. He formed a “Gay Liberation Front” in college, worked for East Tennessee’s first gay periodical, and organized a “Gay Cover Group” which organized the efforts of the multiple, small gay groups in the area. It was this experience of organizing gay political movements that aided Goodson as he developed the Tri-City AIDS Project, which by 1988 was successfully holding regular support meetings.\textsuperscript{43}

\begin{thebibliography}{99}

\bibitem{38} Pogash, 193.
\bibitem{39} Burkett, 145.
\bibitem{40} Hippler, “Looking Out for Ourselves: AIDS Support Groups Part I” \textit{Bay Area Reporter}, December 26, 1985; specifically listed in this article are the Bay Area Physicians for Human Rights (BAPHR), which was founded in the mid-1970s to focus on gay and lesbian health concerns and Operation Concern, focused on mental health for gays and lesbians and founded in 1979.
\bibitem{41} Sandra R. Gregg, “Clinic for Gays Provides Specialized Treatment; D.C.’s Clinic for Gays,” \textit{Washington Post}, March 5, 1981.
\bibitem{43} Verghese, 102, 149-150, 156, 253.
\end{thebibliography}
Government funding at the state level reinforced AIDS service organizations at the expense of the health departments, meaning that the ASOs were often the only services available for PWAs. Part of the motivation for the community response to the epidemic was the lackluster response of government agencies. The gay groups felt they had to organize as a result of government indifference and fundraising was, in the earliest years of the epidemic, primarily a gay endeavor. As their political clout and the range and quality of their services increased, ASOs easily overtook the under-funded local health departments as the preferred providers of AIDS services. The health departments began to send PWAs to these gay-run ASOs for the services that they were unable to offer. However, in 1985, when the government was poised to channel significant funds into combating the epidemic, the health departments felt they should get a budget increase so that they would be able to deal more effectively with the crisis. ASOs vehemently argued against this, stating that the health departments had sent PWAs to area ASOs for years and that they should not be the recipient of federal funding now that the government was finally getting involved. Gay-oriented ASOs argued that they had become the de facto experts for AIDS support services and that it made more sense to continue funding them instead of channeling funds to an inexperienced agency.

The federal government distributed the funds to ASOs disproportionately, favoring more urban organizations in the biggest cities, which were affected earliest by the epidemic. It was this disproportionate funding that fostered the viability of alternative medicine for AIDS in these areas. In 1990, Doug Nelson of the AIDS Resource Center in Milwaukee noticed that San Francisco was due for an increase in funding, per PWA, six times higher than Milwaukee. In reviewing the services available in other cities compared with his, Nelson noted that Miami was able to pay for vitamins for its PWAs while he was unable to assist with the purchase of AZT; also, he observed that ASOs in San Francisco paid for acupuncture and psychotherapy while he was unable to pay for a counselor. Therefore, again, geography made a significant impact on the degree to which PWAs were able to seek alternative treatments by reducing the socio-economic threshold that the PWA in some regions needed to meet to receive the services.

Another formal network, the gay-targeted newspapers, acted as a preexisting information dissemination mechanism for the community. One way that these newspapers were able to aid the spread of AIDS-related information was to print AIDS Resource Lists, which began appearing early in the epidemic.

45. Specter.
46. Ibid.
47. Burkett, 141-142.
service organizations, these newspapers also acted as an outlet for community suggestions and frustrations. One reader, Ronald Poe, wrote two letters to the *Bay Area Reporter*, spaced approximately four months apart from each other, with two different theories of the cause and the possible solution to the AIDS epidemic. It would appear that Poe read two books, both of which touched on “new age” concepts, which Poe then connected to AIDS and felt compelled to share with the *Bay Area Reporter* readership. 49 These newspapers printed articles that highlighted various alternative therapies, reported from alternative therapy conferences, and mentioned alternatives tangentially in profiles of PWAs. Advertisements used to support the newspaper financially acted as a community awareness vehicle for potentially beneficial products and services, especially vitamins and conferences. As a cornerstone of the gay community, these newspapers were uniquely situated to spread information to gay PWAs.

AIDS service organizations printed newsletters focused on AIDS which were similar, if more targeted, to gay-oriented newspapers. These newsletters contained articles discussing alternative therapies, as well as experimental treatments and clinical trials, including follow-up articles which tracked the efficacy of the treatments. They contained calendars, resource guides, and sometimes offered sections devoted to letters from readers. ASOs also established toll-free hotlines for information which were staffed by volunteers. Given the nature of the discussion and the stigmatization surrounding the illness, organizations trained the volunteers to deal with both the information aspect of the job and the psychological aspect of speaking with potential PWAs. 50

Although less common than hotlines and newsletters, PWAs also accessed electronic “bulletin boards” from their home computers. These bulletin boards were often not moderated and unproven theories shared equal weight with biomedical drug trials and other topics only marginally related to AIDS, such as politics and religion. 51 AIDS networks were able to utilize computer systems very early because those men that were organizing and participating in these networks were drawn from the very group that was revolutionizing the information industry: men in their early thirties. 52 In June 1984, IDK Enterprises established a free bulletin board system for PWAs at the behest of a former Whitman-Walker Clinic hotline employee who had noticed that callers had worried about being identified by their voice. By 1986, the bulletin board had ninety users per month. In November 1984, the Los Angeles Gay and Lesbian Community Center established the Computerized AIDS Information Network (CAIN). Unlike other bulletin boards, CAIN remained a purely technical resource for PWAs, and included statistics, articles, transcripts, and meeting notices exclusively. CAIN’s administrators did not encourage the use of the bulletin board as an emotional support mechanism. By 1986, CAIN had three hundred users per month. 53

51. Burkett, 301.
52. Bayer and Oppenheimer, 158.
the Dubose Triangle Bulletin Board System offered pre-recorded telephone messages twenty-three hours a day for voice callers and maintained a system for modem users. They accepted information from any source, asking only that uncorroborated information be disclaimed, but reserved the right to refuse information which they interpreted as false or misleading.54

In contrast to the ubiquitous free hotlines and bulletin boards, at least two companies tried to capitalize on the desire for information on AIDS with a for-profit toll line. In late 1985, advertisements began appearing for “976-AIDS” in the Bay Area Reporter and The Advocate. The advertisements enticed callers with the promise of the most up-to-date information. These ads ran in the Bay Area Reporter from October 24th to November 7th, then in The Advocate from November 12th to November 26th, but disappeared thereafter, demonstrating that information was so readily and freely available through the many newsletters, support groups, toll-free hotlines, and databases that potential callers had no need to use this pay service. Even the promise that the hotline would donate fifteen percent of proceeds to an “AIDS research program” was not enough to entice people to call.55 American International Communications established another “976” toll number in San Diego in 1987. The company established this toll number as part of a for-profit network of “976” numbers designed for the dissemination of medical information about a variety of illnesses. The “976” number dedicated to AIDS came under criticism from AIDS service organizations; for instance, Michael Hughes of the California Office of AIDS stated that his concerns were two-fold: that a variety of toll-free information lines provided the same information for free and that the toll-number offered a one minute, pre-recorded message when, in his opinion, trained volunteers should have been giving that information.56

Through these informal and formal networks, a consensus developed among PWAs that alternatives were the best available option to promote overall health and wellness, to address the side-effects of biomedical therapies, and to manage the symptoms of AIDS, but that biomedical treatment was more likely to succeed in killing the virus. Alternative practitioners too felt that the work they were doing was wholly different than their biomedical counterparts, that there was no conflict of interest for PWAs, and that PWAs needed a combination of both disciplines to effectively manage their illness. A few alternative practitioners, however, did prefer that their clients seek treatment from them exclusively. PWAs could choose from a great variety of therapy options, and they often used alternatives in conjunction with one another. Among the most popular alternative treatments PWAs utilized were Traditional Chinese Medicine (both acupuncture and herbal remedies), nutrition and vitamin therapy, new age techniques, and “body work,” such as chiropractic and massage therapy.

Perhaps the most popular alternative therapy, Traditional Chinese Medicine (TCM) appealed strongly to many PWAs. One flyer at a discussion group for alternative therapies declared, “100 percent of Long Term Survivors are using some form of Chinese Medicine weekly.” Due to the popularity of TCM with PWAs, many TCM clinics catered primarily to their needs. For instance, one TCM clinic run by Dr. Jing Wu in Washington, D.C. depended on funds from gay-oriented AIDS organizations for continued operation. Some claimed to be able to offer relief for specific symptoms. Acupuncture, for example, became a popular treatment for peripheral neuropathy, a painful AIDS-related condition. Dr. Jing Wu’s assistant said of new clients entering into treatment that “they come straggling in here like it was the last saloon in town. […] They just figure, why not try this? Then, when they start feeling better, they wonder why they didn’t come here in the first place.”

59. O’Connor, 133.
60. O’Connor, 134-136; Goh and Zhaoliang, 120.
61. O’Connor, 132-133.
63. Moffatt, Spiegel, Parrish, and Helquist, 118.
64. Milloy.
Other alternative therapies and treatments involved taking vitamins and minerals as well as using other nutritional techniques on a daily basis. Even when PWAs felt uncomfortable with other alternative therapies, vitamins and nutrition were well within the limits of normalcy so that they could be approached without a radical rethinking of scientific principles. In 1989, the Consumer Health Education Council called forty-one health food stores to ask for advice about AIDS. All of them suggested at least one of their products for use against AIDS-related symptoms and thirty said they carried vitamins or minerals that actually cured the illness. At least one vitamin distributor claimed that the HIV virus could be inhibited by twelve grams of vitamin C taken daily. Vitamin “mega-dosing,” in which PWAs took many times the normal recommended dose of vitamins, was very popular. Some believed that vitamins were the cure but others continued to look elsewhere. The Anti-Yeast Diet, operating under the premise that foods containing yeast and other “yeast-promoting” foods created an environment which encouraged the development of yeast-related opportunistic infections, called for the PWA to avoid these foods. The Immune Power Diet, although not specifically formulated for the use against AIDS, recommended eliminating “immuno-toxic” foods and became popular with PWAs. More traditional nutritional systems like macrobiotics, which focused on dietary imbalances and the imbalances they created in the body, were also very popular with PWAs.

Many theories about positive thinking and visualization as the keys to wellness developed and often claimed that AIDS was the direct result of negative thinking. Some even claimed that the current political climate, in which gay men were subjected to the attacks of the rising Moral Majority, was to blame for the sudden surge in AIDS cases. Practitioners of these methods to decrease stress and improve mental health described them as meditation, visualization, stress reduction, and positive thinking. These metaphysical systems tended to attribute responsibility for the illness to the PWA directly, although they acknowledged almost uniformly that the illness was a result of the subconscious.

68. O’Connor, 122-123.
69. O’Connor, 123; Helquist; within twenty minutes of diet creator Dr. Stuart Berger’s appearance on a San Francisco talk show, the Crown Books on Castro Street completely sold out of all of its copies of Immune Power Diet.
70. O’Connor, 122-123.
used positive thinking methods as an attempt to overcome specific symptoms and opportunistic infections, but used them more often for general wellness and healing. 74 The visualization process was unique to each individual, suiting his own purposes and beliefs. PWA Bobby Reynolds explained that he, in seeking to use visualization as a way of combating his Kaposi’s sarcoma, imagined “thousands of little Pac-Men gobbling up my cancer cells.”75 PWA Bill Misenheimer claimed to have gone into “remission” of AIDS for one year due to metaphysical therapy, stating that it “has given me such a sense of well-being that I am convinced that is what has saved me. I certainly would recommend therapy to anybody, although no one can promise that it will work for a specific person. All I know is that it has worked for me.”76

The sentiment that “all I know is that it has worked for me” illustrates well the inexact nature of the claims made by alternative therapies and, given that, fraud was difficult to prove; nonetheless, litigation exposed several fraudulent therapies. Federal and state regulators generally responded to fraudulent cures, treatments, and devices through the court system. Two clinics in Houston and Dallas were charged with violations of fair trade practices for claiming that urine injections would cure AIDS.77 Mail going to “R.E.V. Treatment,” a company that claimed a cure was available through a series of $1900 “vaccines” administered in Germany or Mexico, was halted by judicial process in 1983.78 Virus Guard Incorporated was found guilty of false advertising for claiming that its product could cure both AIDS and Herpes in 1986.79 Three PWAs sued Biosystems Incorporated for emotional distress for claiming that their treatment would cure them. This treatment, according to the company, “channel[ed] the body into a desired regulatory response through biophysical catalysts” by having the PWA lie down on a bed, over copper coils, as light shone through a special glass.80 PWAs often needed to travel out of the country to receive the most extreme of these strange “cures,” making litigation for many clearly fraudulent cures difficult.81

74. Wolhandler, Hale-Wehmann, and Weaver
75. Helquist
78. “A Los Angeles-area Mail Order Firm.”
However, even when state regulation proved inadequate, the PWA community was adept at quickly spreading word of fraudulent therapies. A consortium of concerned law students wrote an open letter to the *The Advocate* accusing the magazine of a history of running fraudulent advertisements, citing Viral AID, an electronic device that was claimed to destroy the virus that caused AIDS, and Immune Pack, a tablet that was claimed to restore normal immune function.⁸² Activists clamored for the San Francisco AIDS Foundation to create an organization similar to the Better Business Bureau, which would be empowered to investigate and evaluate claims made by companies and to provide the community with fast information about potential frauds.⁸³ Overall, the PWA community desired to limit state intrusion into the marketplace of therapeutic ideas. Keeping the government response to fraudulent and misleading cures and treatments to a minimum ensured that the full spectrum of possibilities remained open for the PWAs and that the bureaucracy that they had come to fear would not arbitrarily limit their options.

Both fraudulent and more altruistic alternative practitioners and organizations cultivated their clients through a variety of methods. Advertising offered a successful means for alternative practitioners and services to reach new audiences. Alternative practitioners incorporated language into their advertisements that the PWA empowerment movement had already established. This language appealed to vigilant PWAs’ belief in medical and personal autonomy, advising PWAs to “develop [their] own health improvement plan.”⁸⁴ Advertisements were also polarizing to the PWA community. The aforementioned open letter to *The Advocate* was only one example of the magazine’s perceived unwillingness to remove advertisements that the community considered false or misleading. One upset reader even called advertisements for vitamin supplements “nutrition quackery.”⁸⁵

![Figure 2](image.png)

**Figure 2.** *The Advocate*, “Why You Can Trust Advocate Advertisers,” *The Advocate*, May 28, 1985.

---

⁸² Tomas Medina, Stephen Matchett, and Alissa Friedman to *Gay Community News*, November 23-29, 1986; see figures 2 and 3.
⁸³ White.
⁸⁵ Peter McKnight to *The Advocate*, September 29, 1983.
The Advocate published a message in 1985 meant to reassure readers of the quality of the products and services that advertised in the magazine.\textsuperscript{86}

A year and a half later, the publisher of the magazine, Niles Merton, clarified his position on advertising. He stated, “For the most part, you try not to become involved in the process of evaluating products – if for no other reason than the fact that you’re not qualified or equipped to do so. … It’s hardly the role of the publisher – or of the publication itself – to choose sides in … dispute[s].” Merton then, however, contradicted himself and reasserted that The Advocate had “turned down any number of ads that have been offered to us – ads that were false or misleading, or that advertised products that were clearly dangerous.”\textsuperscript{87} The stakes were higher in regard to these advertisements and Merton was trying to do the right thing, but his position was difficult as a publisher of a magazine which depended on advertising revenue for profitability. The community response to these ads demonstrated the collective sense of responsibility shared by PWAs and other gay community members.


\textsuperscript{87} “Free to Choose, But Not Free to Deceive,” The Advocate, November 11, 1986.
Another effective method alternative practitioners used was to stage conferences and seminars which focused on alternative therapies. Attendance at the workshops and seminars was generally free for PWAs and, consequently, acted as both outreach and advertising for the practitioners. One popular traveling workshop, “The AIDS Mastery Workshop” paid to advertise in gay newspapers well in advance of its appearance, but promoters of the workshop also benefited from newspaper articles written about it, a type of advertising that other workshops and seminars relied on for spreading awareness of their existence to the PWA community. These conferences, seminars, workshops, and retreats also brought together many types of alternatives under one roof, exposing the PWAs to demonstrations of massage, macrobiotics meals, positive thinking, chiropractic therapy, and acupuncture. This was a particularly important technique that the alternative practitioners employed to ensure that they were reaching both an uneducated and interested audience as “most people at the conference[s] were already involved to some extent and not totally new to all these ideas.” The conferences were a way of exposing PWAs, who were already skilled at gathering and disseminating information, to new alternative treatments which would then continue to be fed back into the PWA community through both formal and informal networks. These conferences, among them “The AIDS Mastery Workshop,” also served to energize these PWAs anew and gave them fortitude to continue fighting. Activist Terry Sutton attended “The AIDS Mastery Workshop” and, according to his friends, “he got in touch with his power. Before the mastery he was very shy, and quiet. The mastery lit his fire.”

No matter the method, the act of resistance itself was the therapy for many PWAs and vigilant activity provided the tools to resist. The AIDS activists who protested outside of the National Institutes of Health did so to prod the government to change. This was an act of resistance. Ray Engerbreton used crystal therapy after being disappointed by his rejection from an NIH trial to continue his fight. This too was an act of resistance. After his death from AIDS, Carolyn Helmke shared Terry Sutton’s answering machine message with the readers of Gay Community News. Sutton said:

> When the history of this epidemic is told, let it be known that gay men, lesbians, and women were our warriors; that we took care of our sick and we fought a government that seemed not to care. And we did it with integrity, compassion, and love.

91. Wolhandler, Hale-Wehmann, and Weaver.
For gay men dealing with the AIDS epidemic in the early years, it was both a personal struggle and a community effort. Community was a means to procure information about strategies which would allow them to assert their dominance over the illness, otherwise invisible, ravaging their body. By using both formal networks, including AIDS service organizations and gay-oriented newspapers, and informal networks to procure information, these vigilant PWAs remained actively involved in their personal health. This information allowed them to question biomedical authority and seek out alternative therapies.

When Monette described his “great surge of purpose,” it was information that gave it to him. When caregivers stated that PWAs should “be their own doctors,” they spoke of autonomy and self-reliance. It was those same people with AIDS that were “a little rude and tough and bitchy” that Weitz described as vigilant. The fire the AIDS Mastery Workshop lit for Terry Sutton was the same one lit, through many other means, for all of these PWAs. In the absence of effective biomedical treatment, PWAs expressed their vigilance in a variety of ways including active involvement in learning about their illness and seeking therapies which might or might not cure them. The cure was absent, so the cure itself became less important than the fight.

WORKS CITED

Newspapers and Periodicals

The Advocate (1983-1988)
AIDS Treatment News
Bay Area Reporter (1985-1986)
San Diego Union-Tribune
The Seattle Times
Washington Post
Windy City Times (1985-1986)

Primary Sources


**Secondary Sources**


Relationship Dominance in Tennessee: Cultural Risks for Domestic Violence

Christian Davenport

Dr. Kathleen Darby
Social Work

Honor culture is an informal, esoteric tradition of obtaining repute for oneself and dishonoring one's rivals, thereby creating one's own place in society. Previous research suggests that an honor culture exists in the American South, and that said culture is a mitigating factor in crimes against women as a result of male domination in relationships. Research participants (N=135) were recruited by convenience sampling from Tennessee residents enrolled at Middle Tennessee State University who were currently or recently involved in romantic relationships, and polled by use of Hamby's (1996) Dominance Scale to examine patterns of three types of inter-relationship dominance: Authority, Restrictiveness, and Disparagement. Statistical evaluation suggests the test to have questionable reliability for Southern (as opposed to Northern) populations. Further research will investigate possible cultural tendencies towards socially desirable behavior as measured by the Dominance Scale.

Introduction

Domestic violence (DV) has become both a social and an economic problem in the state of Tennessee. The state spends roughly $174 million annually on healthcare, justice, social service, and business systems in relation to DV (Tennessee Economic Council on Women, 2006). During 2004, the Southern states' population was 36.1% of the nation’s inhabitants. It is estimated that in 2004, 41.9% of the nation’s violent crimes occurred in this area (Department of Justice, 2006). A total of 66,619 cases of DV were reported in 2004 in Tennessee (TECW, 2006). According to TBI’s 2007 Crime in Tennessee report, 48% of all person crimes were DV offenses. Domestic violence victims totaled 83,418 for 2007, with a total of 31,228 arrests. In the span of three years, there was a 25% increase to 16,799 reported DV victimizations in the state of Tennessee since 2004. The Center for Disease Control estimates that there is an occurrence of DV in one of three families.

Literature suggests that, though the phenomenon of DV occurs throughout the world, it may be more easily explained and predicted in particular cultures and societal groups, namely within patriarchal societies such as “honor cultures” wherein male dominance is used as a means of social control (Vandello & Cohen, 2003; Puente & Cohen, 2003; Sugihara & Warner, 2002; Cohen, 1996; Straus, 1976). The moral value of honor may be explained in two ways: the first and more widely accepted definition being an ideal of virtue, morality, integrity, and altruism; the second as a more unofficial and inherent ideal of status, superiority, and reputation based on the male capacity to protect his family unit and property and females’ perceived “control” over the males’ reputation by being chaste, demure, and respectable. Both definitions of honor are known to exist in particular cultures and areas of the world, namely Mediterranean societies (Greece, Italy, and Spain), Middle East and Arab cultures, Latin and South American cultures with Iberian roots, and the American South (Vandello & Cohen, 2003). For the purpose of this article, the author will focus on the area of the American South.
Knowledge of the way the culture interacts with social structure and organization, as well as an understanding of the violence itself, is essential. The current study addresses the perpetuation of the honor culture and explores how it may contribute to domestic violence; specifically, the historical connection of jurisprudence in the South to honor culture norms and the roles of jealousy and dominance as risk factors for domestic violence within romantic relationships.

**Literature Review**

**History of Honor Culture in the American South**

The honor culture first arose in the South during the time of the frontier, a period lacking social organization wherein violence and masculine strength were highly valued and used as a means of control. Scottish and English immigrants from traditionally war-torn areas of the borderlands settled into the American South, bringing their herding strategies and cultures with them (Vandello, 2008). Herding-based cultures were highly susceptible to theft and were thereby forced to create a system of protection of home, property, and family, using violence when necessary, mainly due to the lack of an effective legal system at the time. Violence was necessary to produce the impression of an implied aggressive reaction to any perceived threat.

The disorganization of frontier society gave rise to further violence, lawlessness, and aggression. Added to the social aspect of disorganization, the existence of slavery, poverty, and heat mitigated the violent tendencies. Moral and social justifications for these acts were previously authorized by theological influence, therefore “the southerner had a propensity to view himself as an enlightened patriarch governing his family and possessions under the blessing of God” in emulation of biblical patriarchs’ subjugation of those divinely defined as inferior (Foutz, 2000). At this time, such control was socially acceptable and perceptually ordained by God. From as early as 340 A.D., church councils and Catholic popes had portrayed an existence of a hierarchy of man. Though these ideals were directly refuted in areas of the Bible such as Galatians 3:28, where it is stated that “there is neither Jew nor Greek, there is neither bond nor free, there is neither male nor female: for ye all are one in Christ Jesus,” enslavement of seemingly morally unfit persons, which included women, was historically endorsed by the church. The influence of religious institutions was paramount to the organization of family and community, and the interpretations of moral or just behaviors when dealing with others were skewed during this disorganized period.

Social disorganization theory supports the predictable stages of social change that developed in the frontier era, wherein the influences of familial, community, and religious institutions became the foundations of socially acceptable behavior and cultural norms. Once the Southern honor culture was crystallized, a pattern of culturally condoned violence was formed. The perpetuation of the Southern honor culture memes can be discerned within current lax self-defense laws, subjective enforcement of laws, and a generally permissive attitude toward both general and domestic violence. These familial, community, and religious institutions may also exacerbate the traditional notion that violence is more acceptable when associated with one’s honor, in particular a man’s honor (Cohen, 1998).

**Legal Legitimization**

In 2006, the Tennessee Economic Council on Women called for “additional research to ascertain the extent of the problem” of DV to “aid local and state policy-makers in addressing the problem in a logical fashion.” In order to address the situation in the state regarding the legal aspect of DV, the history of laws concerning violent acts and the way
those laws are perceived must be examined. Previous research into the honor culture has non-specifically addressed the perpetuation of violence through existing capital punishment, self-defense, and domestic violence laws within the Southern states (Cohen, 1996). Tennessee is one of 36 states that has the death penalty. As of 2008, the South has the highest execution rate in the United States with a total of 921 executions since 1976; the next being the Midwest with 127 (Death Penalty Information Center, 2008). Tennessee’s murder rates were ranked 16th in the United States during 2007 (DPIC, 2008). In holding with honor culture norms and previous research, this information may be interpreted as a collective justified sense of retribution (Cohen, 1996).

Social attitudes toward violence as social control can further be reflected by public stances concerning gun control, national defense, and permissive self-defense laws. Southerners are more likely than other U.S. residents to approve of aggressive behavior when utilized as a means of “protection of self, home, and property; defense of honor; socialization of children; and various forms of social control” (Cohen, 1996). Southerners are shielded by law in the use of force as a means of protection. Current self-defense laws coincide with norms within the honor culture in that Tennessee self-defense statutes do not require a person to retreat before threatening or using force, as seen in T.C.A. § 36-11-611. The ideal of frontier-era toughness can be seen in this law insofar as a person is not expected to concede defeat.

Under the weapons section entitled Defenses in Tennessee Code Annotated § 39-17-1322, “A person shall not be charged with or convicted of a violation under this part if the person possessed, displayed or employed a handgun in justifiable self-defense or in justifiable defense of another during the commission of a crime in which that person or the other person defended was a victim. [Acts 1994, ch. 943, § 1.]” The South has been a largely agrarian society where hunting for meat was originally a component of survival, and therefore the requirement of firearms became ingrained in the Southern culture. This method of providing for one’s family has become largely outdated, and thus the necessity of firearms has decreased, though hunting is largely continued as a sport in the South. In psychological research, the presence of guns has been correlated to an increase in testosterone levels and feelings of aggression (Kleinsmith, Kasser and McAndrew, 2006). The presence of firearms in a hostile environment could then heighten aggressive feelings toward another person, thereby creating a dangerous atmosphere. This law reflects a lenient attitude toward firearm control and self-defense within the state (Cohen, 1996).

Current legislation, while not overtly condoning DV, is less strict in the South than other areas. This phenomenon may be due to the projected perception that women are subordinate to men and must therefore be controlled or coerced into “proper” female behavior, especially in response to real or imagined infidelity (Cohen, 1996). The history of Southern DV law has become more protective of women over the years, but continues to reflect roots in religion and British law. Early American jurisprudence stems from the ethos of Christianity and British common law. These statutes and case law deem violence an appropriate means of “correction” for slaves, children, and wives; and tend to favor personal privacy in such matters. The South has been shown to be more accepting of violence when used for coercion and punishment than other areas of the United States, namely in its laws and social policies (Cohen, 1996). In the Bible’s creation story, women were relegated to the status of slaves to their husbands after Eve disobeyed God (Genesis 3:16). In following with this ideal, British common law of the 18th century considered married couples a single legal entity, headed by the man, and allowed the husband to beat his wife with a rod no thicker than his thumb (Jackson, 2007, p. 612). This idea carried into the United States through immigration to become a foundation of early DV law. In Mississippi, the Bradley v. State case of 1824 set forth legal precedent for the husband to “exercise the right of moderate chastisement, in cases of great emergency, and use salutary restraints in every case of misbehavior, without
without being subjected to vexatious prosecutions, resulting in the mutual discredit and shame of all parties concerned” (Jackson, 2007, p. 613). It was not only the man’s right, but legal and moral responsibility, to control his wife’s behavior.

Current Tennessee laws, while improving over the years, reflect norms associated with the honor culture. For example, Tennessee Code Annotated § 36-3-620 (a) (1) states that “If a law enforcement officer has probable cause to believe that a criminal offense involving abuse against a family or household member, as defined in 36-3-601, has occurred, the officer shall seize all weapons that are alleged to have been used by the abuser or threatened to be used by the abuser in the commission of a crime.” The wording of this particular law does not take weapons from abusers to protect domestic abuse victims as defined in T.C.A. § 36-3-601 (9) (c): “Adults or minors who are dating or who have dated or who have or had a sexual relationship, [as used herein “dating” and “dated” do not include fraternization between two (2) individuals in a business or social context].” While now endeavoring to protect the family and spouses of Tennesseans from DV involving weapons, non-cohabitating dating relationships are not equally protected from violent significant others and their weapons. As seen in Table 1, the relationship of the offender to 2007 DV murder victims in Tennessee is often that of a dating relationship (TBI, 2008).

Table 1. Domestic Violence Murder Victim’s Relationship to Offender

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Murder and Non-Negligent Manslaughter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victim was Boyfriend/Girlfriend</td>
<td>22</td>
</tr>
<tr>
<td>… Child</td>
<td>10</td>
</tr>
<tr>
<td>… Child of Boyfriend/Girlfriend</td>
<td>4</td>
</tr>
<tr>
<td>… Common Law Spouse</td>
<td>0</td>
</tr>
<tr>
<td>… Ex-Spouse</td>
<td>4</td>
</tr>
<tr>
<td>… Grandchild</td>
<td>0</td>
</tr>
<tr>
<td>… Grandparent</td>
<td>0</td>
</tr>
<tr>
<td>… Homosexual Relationship</td>
<td>0</td>
</tr>
<tr>
<td>… In-Law</td>
<td>4</td>
</tr>
<tr>
<td>… Offender</td>
<td>1</td>
</tr>
<tr>
<td>… Other Family Member</td>
<td>9</td>
</tr>
<tr>
<td>… Parent</td>
<td>7</td>
</tr>
<tr>
<td>… Sibling</td>
<td>5</td>
</tr>
<tr>
<td>… Spouse</td>
<td>16</td>
</tr>
<tr>
<td>… Step-Child</td>
<td>1</td>
</tr>
<tr>
<td>… Step-Parent</td>
<td>1</td>
</tr>
<tr>
<td>… Step-Sibling</td>
<td>0</td>
</tr>
</tbody>
</table>

Furthermore, the officer is given latitude in deciding whether to arrest any parties in a DV investigation as provided in T.C.A § 36-3-619 (B): “If a law enforcement officer has probable cause to believe that two (2) or more persons committed a misdemeanor or felony, or if two (2) or more persons make complaints to the officer, the officer shall try to determine who was the primary aggressor. Arrest is the preferred response only with respect to the primary aggressor. The officer shall presume that arrest is not the appropriate response for the person or persons who were not the primary aggressor. If the officer believes that
all parties are equally responsible, the officer shall exercise such officer’s best judgment in
determining whether to arrest all, any or none of the parties.” Arrest is very important for
instilling the symbolic message that DV is not socially accepted or condoned by the justice
system. In not arresting the perpetrator of DV, the justice system is promoting the British
common law idea of DV as a private matter that should be worked out between the parties,
as well as providing an opportunity for further abuse. In addition, the 32 DV programs
covering 95 counties in the state of Tennessee designed to help DV victims may require
legal or police involvement before further measures can be taken. This law may create a
latent barrier to victims for safe escape of a DV environment.

Fidelity and Jealousy

An early component of the honor culture was that men were originally led
“to protect the women in their own family from sexual assault and thereby preserve the
family honor, whereas … men’s status and reputation within male culture rose as a
function of how many women they were able to conquer” (Vandello & Cohen, 2003). Para-
doxically, a female’s perceived lack of loyalty to her male partner could mar the male’s rep-
utation as honorable and trustworthy. Control of the situation, thereby provided reinforce-
ment of an “honorable” reputation and, if lost, could be reinstated by use of violence
(Vandello & Cohen, 2003).

Current laws and attitudes toward jealousy and violence could create a hazardous
environment in which DV is seemingly acceptable within the honor culture. Violence in a
jealousy-related incident may be viewed as more tolerable and conveying more love for
the partner than if there were no jealousy at all. North Americans have very ambivalent
attitudes towards jealousy, viewing it as a sign of insecurity, or of love or even both
simultaneously (Puente & Cohen, 2003). Jealousy-related abuse is therefore taken as more
understandable and less likely to be viewed as a sign of a relationship problem than abuse in
non-jealousy situations.

Public opinion of women in abusive relationships may also be a mitigating factor in
women’s response to DV. The perception of the nuclear family as the American model of
stability creates the idea that families should remain intact to provide an enduring foundation
at the most basic level of society. Marriage and children function as a domesticating tool for
men, hypothetically taming, creating structure, and invoking a sense of social responsibility
within their lives (Cohen, 1998). Within the honor culture, research has supported the idea
that women are to remain contrite and loyal to the abuser if they are to maintain a favorable
public impression. These women are viewed as strong, loyal, and good. The same ideals do
not hold true within the research participants from the Northern states; women who stay with
the abuser are viewed as weaker than those who portray intolerance and independence
(Vandello & Cohen, 2003). The public opinion of women in DV situations within an honor
culture could reinforce the notion that women should remain in violent relationships, thereby
creating a perpetual cycle of DV, fostering a resistance to seeking refuge from their abuser.

Methodology

Participants

Study participants were recruited from Middle Tennessee State University (MTSU)
during the summer and fall 2008 semesters. Participants were pooled by means of conven-
ience and purposive sampling. Eligibility criteria included currently enrolled students at
MTSU attending class during the summer and fall 2008 semesters and self-reported either having been or currently involved in a romantic relationship, and a resident of Tennessee. For purposes of the research, “romantic relationships” was defined as either dating, engaged or married. Students were informed of the nature of the research and that their participation was voluntary.

The sample consisted of 135 adult residents of Tennessee who were currently or had within the past 12 months been involved in a romantic relationship. Those eligible to participate were given an informed consent with a brief statement as to the nature and purpose of the research. In working with the university IRB staff, the study was identified as having minimal risk. To address any adverse reaction to survey questions, students were given a list of DV community-based resources located in Rutherford County and the State of Tennessee.

Measures

Hamby’s Dominance Scale (1996) was used as a quantitative assessment of the status of dominance in relationships among MTSU adult students in Tennessee. The Likert-scale survey is a 32-question psychometric test currently used as an evaluation measure at the Arizona Rape Prevention and Education Project at the University of Arizona College of Public Health. It measures three types of dominance, or “causes of violence,” within relationships: authority, disparagement, and restrictiveness. Authority questions relate to decision-making power and social desirability. Disparagement questions identify negative social assessments of one’s partner without gender bias. Restrictiveness questions are correlated to partner violence. Each of the subscales are reliable ($a = .73$) in reference to predominantly white Northeastern college students from mainly upper middle class socioeconomic backgrounds ($N=131$).

The Dominance Scale has also been used to explore the effect of culture and ethnicity within a Mexican American community in South Texas (Sugihana & Warner, 2002). The research addresses implicit cultural gender role scripts of machismo and feminine marianism. Statistical evaluation made modification to the original scale necessary; therefore, the authors created four new subscales from the original three. These four new subscales (power, possessiveness, decision making, and devaluation with alphas of .74, .74, .77, and .75, respectively) were used to examine the dominance among Mexican American participants. Men and women scored equally on power and possessiveness subscales, but men scored higher on decision making and devaluation. Low socioeconomic status was related to higher incidences of partner violence in this study. The study further indicates that Mexican American males using aggressive tactics such as psychological aggression, physical assault, and infliction of injury on their partners tend to be bossy and possessive. These men were also the sole decision makers. Women, however, were found to be just as aggressive as men.

Hamby’s Dominance Scale has further been used to examine construct validity in Straus’ (2004) “Cross-Cultural Reliability and Validity of the Revised Conflict Tactics Scales: A Study of University Student Dating Couples in 17 Nations.” A nine-item version of the scale was used. The scale was used because a principle of conflict theory is that inequality increases the risk of violence because the dominant person or group may use violence to maintain their position, or the subordinate person or group may use violence to make the balance of power more equal. Feminist theory also supports this idea in that women tend to be subordinate in the family. Dominance of one partner over the other shows greater probability of violence, as does the length of time one partner remains dominant over the other. The use of the Dominance Scale as a measure of construct validity for the CTS2 Physical Assault Scale has shown low correlations ($r = .39$ to $.44$) to dominance as a predictor of violence.
Design

The current quasi-experiment was conducted to explore the relationship between gender and dominance within Southern romantic relationships. The researcher’s hypothesis is that gender is highly correlated with levels of dominance in the South. The current research uses a survey design with questions taken directly from the Dominance Scale (Hamby, 1996). The likert scale responses ranged from 1 = strongly disagree to 4 = strongly agree. A non-probability sampling technique conducted in this study satisfied the researcher’s relative newness to the research process through the use of purposive and convenience sampling. Participants were informed that the data collected in current study would only be reported in aggregate and no personal data would be released. Revisions were made to recruiting procedures and data collection processes in adherence to MTSU’s Institutional Review Board review. All questionnaires were completed during scheduled class times with the permission of instructors. Cronbach’s alpha was used to determine the overall reliability of the Dominance Scale, and the three subscales (Authoritativeness, Restrictiveness and Disparagement) that make up the Dominance Scale.

Results

Participants

The study sample consisted of 100 females (74%) and 35 males (26%) between the ages of 18 to 40 ($m = 24, SD = 6.1$). Participants were more likely to reside in an urban/suburban area (70%) than a rural area (30%), with over 70% of participants’ self-identifying themselves as Caucasian. Over 77% of the study sample reported less than a $24,999 annual income and identified themselves as being in a current romantic relationship. See Table 2.

Table 2. Respondents’ Socio-demographic and Relationship Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Percent</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25.9%</td>
<td>35</td>
</tr>
<tr>
<td>Female</td>
<td>74.1%</td>
<td>100</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>24.35 (6.10414)</td>
<td></td>
</tr>
<tr>
<td>Hometown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban/Suburban</td>
<td>70.1%</td>
<td>92</td>
</tr>
<tr>
<td>Rural</td>
<td>29.9%</td>
<td>39</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>70.7%</td>
<td>94</td>
</tr>
<tr>
<td>African American</td>
<td>21.8%</td>
<td>29</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>3.0%</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>4.5%</td>
<td>6</td>
</tr>
<tr>
<td>Personal Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under $15,000</td>
<td>56.4%</td>
<td>75</td>
</tr>
<tr>
<td>$15,000-$24,999</td>
<td>20.3%</td>
<td>27</td>
</tr>
<tr>
<td>$25,000-$34,999</td>
<td>11.3%</td>
<td>15</td>
</tr>
<tr>
<td>$35,000-$44,999</td>
<td>4.5%</td>
<td>6</td>
</tr>
<tr>
<td>Over $45,000</td>
<td>7.5%</td>
<td>10</td>
</tr>
</tbody>
</table>
Relationship Status
<table>
<thead>
<tr>
<th>Status</th>
<th>Single</th>
<th>Dating</th>
<th>Engaged</th>
<th>Married</th>
<th>Divorced</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20.7%</td>
<td>48.9%</td>
<td>5.9%</td>
<td>20.7%</td>
<td>3.7%</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>66</td>
<td>8</td>
<td>28</td>
<td>5</td>
</tr>
</tbody>
</table>

Relationship Length
<table>
<thead>
<tr>
<th>Length</th>
<th>Less than 1 year</th>
<th>1-2 years</th>
<th>More than 3 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26.1%</td>
<td>36.6%</td>
<td>37.3%</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>49</td>
<td>50</td>
</tr>
</tbody>
</table>

Current or Past Relationship
<table>
<thead>
<tr>
<th>Relationship</th>
<th>Current</th>
<th>Past</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>77.6%</td>
<td>22.4%</td>
</tr>
<tr>
<td></td>
<td>104</td>
<td>30</td>
</tr>
</tbody>
</table>

Hamby’s Dominance Scale

Reliability and construct validity were measured using Cronbach’s (coefficient) alpha at the standard 0.7 level. Kaiser-Meyer-Olkin (KMO) was used to explore the inter-relationship among the items in each subscale. High KMO values (> 0.5) were used as a baseline to determine whether items within a subscale should be re-grouped into smaller sets of underlying factors. Principal-axis factoring was incorporated, as per the original Dominance Scale example for construct evaluation.

Subscales

All three subscales (authoritativeness, restrictiveness, and disparagement) indicated a factor analysis was necessary. Cronbach’s alpha (α = .631) and subsequent factor analysis of the authoritativeness subscale (KMO=.809) suggested the original subscale had four factor loadings. The restrictiveness subscale (α = .527) returned three factor loadings (KMO = .670). The disparagement subscale (α = .178) also returned three factor loadings (KMO= .839). In examining cross tabulations between response items within each original subscale, response frequencies associated with authoritativeness showed 65% disagreeing and 35% agreeing with exhibiting authoritative behaviors. Little difference was found between the other two subscales. The majority of males (55%) disagreed with exhibiting restrictive behaviors. The majority of females (63%) agreed with exhibiting restrictive behaviors. Among rural residential male respondents, no difference was found between agreement and disagreement when answering the restrictiveness subscale. Differences were found when comparing gender to urban residences, with 57% of males disagreeing that they exhibit behaviors associated with restrictiveness, as opposed to women at 48.5%. Gender was significantly correlated with self-reported jealousy in question 13 of the Dominance Scale, r (130) = .201, p = .021. Hometown is significantly correlated to self-reported jealousy in question 13, r (126) = .180, p = .043. Hometown was significantly correlated with question 2 of the Dominance Scale, r (129) = .263, p = .002. (See Appendix A.)
Discussion

The purpose of the study was to determine a correlation between gender and the role of dominance in romantic relationships within residents of Tennessee. Findings show that each subscale has low coefficient alpha levels (.178, .479, .527), suggesting that more reliable and valid measures are required for the South. Item-total correlations with a conventional cutoff value of .30 indicated that little, if any, increase in coefficient alpha would be attained by exclusion of items. Principle-axis factor analysis suggests ten subscales should be devised for the scale of 32 questions. Significant correlations were only found within questions 2 and 13 of the Dominance Scale regarding gender and hometown; however, significance testing was contraindicated due to the inability to establish construct and internal validity of the study instrument.

The implications of this study are not consistent with previous research using the Dominance Scale. Hamby (1996) indicated the subscales of authority (a = .80), restrictiveness (a = .73), and disparagement (a = .82) to have good internal validity when measuring predominantly Caucasian Northern college students (N = 131). Sugihara and Warner (2002) created four new subscales employing 14 of the original 32 questions: Power (.74), Possessiveness (.74), Decision Making (.77), and Devaluation (.75). These four subscales also showed consistent internal validity. Sugihara and Warner’s study included 316 (161 males, 155 females) Mexican Americans in South Texas. Their study included correlation of similar culturally based gender roles (machismo and marianismo) and domineering behaviors, concluding that males and females within this culture were equally aggressive. Within the researcher’s current study, none of these previous findings were consistent in examining dominant behavior in predominantly Caucasian Southern college students in Tennessee.

Limitations and Future Directions

Findings here should be considered preliminary. Because the primary objective was to explore the relationship between dominance and gender, focus on the measurement tool used to determine that relationship was not the original intention of the study. Rather, the focus on measurement developed in light of the initial results.

The current study’s sample size of 135 is comparable to that of Hamby’s original sample size of 131, though the relatively small sample may affect statistical testing. Male subjects are underrepresented in this study in comparison with female subjects. Internal validity of the scale may be further compromised within the geographic region or subject set. Social desirability bias, a tendency of respondents to make themselves appear “good” or “ethical,” should be tested with the Dominance Scale to further identify construct validity (Ballard, Crino & Rubenfield, 1988; Randall & Fernandez, 1991; King & Bruner, 2001; Kuentzel, Henderson & Melville, 2008). As the Dominance Scale may bring about thoughts of the aforementioned areas of concern, there is a likelihood of social desirability bias. In addition, given that the geographic area of the South is a component of the honor culture, in which actions are proposed to be founded on social reputation, the possibility of social desirability bias is not disregarded as a challenge to validity in the current research. Further testing should include increased sample size, higher male representation, and concurrent testing of the Dominance Scale with the Marlowe-Crowne Social Desirability Scale.
Appendix A

Dominance Scale and Sociodemographic Questions

Age: ______

Gender: Male  Female  LGBT

Ethnicity: Caucasian  African American  Hispanic/Latino  Other

Hometown Residence: Urban/Suburban  Rural

Personal Income: Under $15,000  $15,000-$24,999  $25,000-$34,999

$35,000-$44,999  Over $45,000

Education Level: High School/GED  Some College  Associate Degree

Bachelor’s Degree  Graduate or Professional Degree

Relationship status: Single  Dating  Engaged  Married  Divorced

Length of Relationship: Less than 1 year  1-2 years  More than 3 years

Current or Past Relationship: Current  Past (within last year)

The Dominance Scale

People have many different ways of relating to each other. The following statements are all different ways of relating to or thinking about your partner. Please read each statement and decide how much you agree with it.

4 = Strongly Agree
3 = Agree
2 = Disagree
1 = Strongly Disagree

1. My partner often has good ideas. ______
2. I try to keep my partner from spending time with opposite sex friends. ______
3. If my partner and I can’t agree, I usually have the final say. ______
4. It bothers me when my partner makes plans without talking to me first. ______
5. My partner doesn’t have enough sense to make important decisions. ______
6. I hate losing arguments with my partner. ______
7. My partner should not keep any secrets from me. ______
8. I insist on knowing where my partner is at all times. ______
9. When my partner and I watch TV, I hold the remote control. ______
10. My partner and I generally have equal say about decisions. _____
11. It would bother me if my partner made more money than I did. _____
12. I generally consider my partner’s interests as much as mine. _____
13. I tend to be jealous. _____
14. Things are easier in my relationship if I am in charge. _____
15. Sometimes I have to remind my partner of who’s boss. _____
16. I have a right to know everything my partner does. _____
17. It would make me mad if my partner did something I had said not to do. _____
18. Both partners in a relationship should have equal say about decisions. _____
19. If my partner and I can’t agree, I should have the final say. _____
20. I understand there are some things my partner may not want to talk about with me. _____
21. My partner needs to remember that I am in charge. _____
22. My partner is a talented person. _____
23. It’s hard for my partner to learn new things. _____
24. People usually like my partner. _____
25. My partner makes a lot of mistakes. _____
26. My partner can handle most things that happen. _____
27. I sometimes think my partner is unattractive. _____
28. My partner is basically a good person. _____
29. My partner doesn’t know how to act in public. _____
30. I often tell my partner how to do something. _____
31. I dominate my partner. _____
32. I have a right to be involved with anything my partner does. _____

References


Tennessee Code Annotated § 36-11-611.
Tennessee Code Annotated § 39-17-1322.
Tennessee Code Annotated § 36-3-619.


A Mystery On Our Plate: Beliefs about Agriculture from a College Peer Group

Jordan Dawdy

Dr. Angela Mertig
Sociology and Anthropology

Dr. Kevin Downs
Agribusiness and Agriscience

Agriculture and its practice are vital to life as we know it. Two decades ago the National Research Council released a report with the same sentiment, adding that all Americans must be “agriculturally literate.” The report called for a revamping of agricultural education, stating that it must be a top priority. We asked ourselves, “What do college students know about agriculture today?” An interview survey was created to gauge what typical college students know of current farming practices. Twenty-five college students were chosen using a convenience sample at Middle Tennessee State University during the summer session of 2008. Responses were analyzed using both qualitative and quantitative methods. We determined that although most students interviewed were interested in current topics, they lacked basic knowledge of current agricultural practices. We advocate enhanced and earlier agricultural information in the educational process.

Introduction

Food is, of course, a basic, necessary element for survival. As Terry and Lawver (1995: 65) maintain, “Agriculture is important because of its impact upon our society, the economy, the environment, and personal health.” The production of food has undergone immense changes over time to meet the ever-increasing population of humans. Within the past fifty years agriculture has witnessed significant leaps in technological knowledge. Never before have our agribusinesses been able to manufacture food on such a large scale, or to dramatically manipulate the genetic makeup of food on such a microscopic level. Changes in agriculture have affected what is fed to livestock and how they are contained as well as the size of the farm itself (Sapkota et al., 2007; Lyson and Guptill, 2004). Modern operations largely consist of large “commodity” farms where single food items are generated on a mass scale. While there are alternatives, such as small “civic” farms where a multitude of foods are produced in a sustainable fashion and based on the social values of a community of people (Lyson and Guptill, 2004; Keller and Brummer, 2002), much of modern agriculture relies on practices that can pose problems for consumer and environmental health, and the welfare of farm animals.

Since agricultural practices affect all those that they stand to serve, it is important that consumers be aware of them. The National Research Council (NRC) thought so and released a report two decades ago entitled Understanding agriculture: New directions for education (NRC, 1988).

The NRC report developed the concept of agricultural literacy. Frick et al. (1991:49) offer this definition: “Agricultural literacy describes the understanding and knowledge necessary to synthesize, analyze, and communicate basic information about agriculture.” This type of literacy is important to the entire adult population, a population that controls the voting process and “should be well informed when it selects those who
determine state and national policy in agriculture” (Pense and Leising, 2004:267). While some fear that agricultural literacy could lead to undue questioning of agriculture by the public (Nordstrom et al., 2000), declining agricultural literacy could lead people to ignore practices which can be harmful to their health or that of the environment. This is why agricultural education should be incorporated into the public educational system.

Agricultural educational frameworks have been in development since the release of the NRC report. In Arkansas, for instance, “Project Food, Land, and People (FLP), is a comprehensive K-12 curriculum that teaches the interconnectedness of the environment, food and society” (Powell et al., 2006: 76). This framework recognizes the importance of exposure to agriculture early in the educational process. In areas of the nation where funding for new programs may not be available a merging of agriscience into existing lesson plans may be necessary (Nordstrom et al., 2000). Pense and Leising (2004) have also pointed out the need for the agricultural sector as a whole to reach out to other areas of academia in order to disseminate information.

Interestingly, at the same time that public agricultural literacy appears to be declining, numerous standards have increased in our food and fiber system (Ransom, 2007). For instance, much attention in recent years has been given to agricultural animal welfare, as was clearly seen in the recent exposé of animal abuse at the Westland Meat Company of Chino, California. Early on, the United Kingdom recognized the need for an increase in animal welfare standards and the Farm Animal Welfare Council was created. This council developed the “Five Freedoms,” a credo that addresses common concerns of farm animal production (Farm Animal Welfare Council, 2007). As consumers demand higher quality standards for food in general, such as asking for more organic and fair trade products, the standards for animal welfare are also likely to increase (Ransom, 2007). With the “Five Freedoms” as the standard in the United Kingdom, one might expect American consumers to demand the same. However, low levels of agricultural literacy, as noted above, may actually preclude Americans from demanding higher standards. For instance, the welfare concern of farm animal feed in the United States is one that affects both animal and consumer, yet it has not prompted wide public concern. Sapkota et al. (2007: 665) say “. . . it is necessary to examine the full spectrum of feeding practices and assess their potential human health implications collectively.” They go on to note that, “in spite of the wide range of potential human health impacts that could result from animal feeding practices, there are little data collected at the federal or state level . . . .” (Sapkota et al., 2007: 667).

Williams (2000: 19) states, “In response to growing environmental and social concerns, steps are being taken by the agricultural industry to develop and use more responsible practices.” Despite these positive changes, it is worrisome that most consumers appear to lack adequate awareness of current food production practices. This study aims to explore the agricultural literacy and attitudes of a group of college students. As some of the most educated people in the country, college students represent future leaders, decision makers and consumers. Are college students aware of current agricultural practices? Are they concerned about the implications of food production?

**Methods**

A brief, qualitative interview survey was designed to evaluate college students’ knowledge of current agricultural practices and to assess their beliefs and attitudes regarding agriculture and animal production. The interview schedule was compiled by the chief investigator and faculty mentors from the school of Agribusiness and Agriscience, and department of Sociology and Anthropology from Middle Tennessee State University (Figure 1).
The first section (see “preliminary” within Figure 1) contained screening questions which preceded the actual interview. These questions helped determine who could participate in the interview survey. The “informative” set of questions was used to get students thinking about agriculture and food issues as well as to get some additional background information from them. After the “informative” section, a series of knowledge questions was asked, ranging in difficulty from simple to moderate to difficult. After the knowledge section, the first “belief” section was asked. The intent was to measure beliefs and attitudes about agriculture before the answers to the knowledge questions were revealed. Answers were then provided to respondents. The answers came from an answer key (see Appendix 1) and were accompanied by picture representation (see Appendix 2) when appropriate. The second section of “belief” questions was then asked to gauge whether beliefs or attitudes had changed. The entire interview was recorded by a digital voice recorder, accompanied by hand-written notes by the interviewer. The interviewer also noted the respondents’ gender and relative age.

Through convenience sampling, a total of 25 participants were chosen from the available student body at Middle Tennessee State University in the summer of 2008. The principal investigator canvassed the main library for a total of seven days, during the early afternoon hours. Approximately one in every four persons asked to participate did. Very few people were excluded from the interview because of the preliminary questions. We excluded anyone who indicated they grew up on a farm, were vegetarian or vegan, or had an agricultural major. The intent was to interview only those students who did not have a strong predisposition regarding agriculture and animal production.

The products of the interviews, both written notes and audio recordings, were analyzed using a combination of qualitative and quantitative methods. Qualitative analysis consisted of grouping common questions to illustrate themes in responses. These responses were compared to each other and how they contrasted to other question groupings. Exact quotes from participants were included when appropriate. The drawings from the informative section, question 5, were evaluated for common themes, such as gender, clothing, and farm implements. For quantitative analysis answers were coded in numeric form and entered into a Microsoft Excel spreadsheet. The data were then analyzed by SPSS® version 16. Although information was quantified, it should be noted that a larger number of participants are needed to rely strictly on statistical interpretations. The small sample size as well as the use of a convenience sample, made qualitative analysis the primary source of interpretation.

Results

The final sample consisted of 14 male and 11 female participants. Most (17 of 25) were 20-29 years of age, while six were 18-19 and only two were 30 or older. Of the participants, nine majored in Liberal Arts, eight in the Life Sciences and eight in Business or some type of production-oriented field. The majority (21) had visited a farm. Most of the participants either were concerned with what they ate (12) or were sometimes concerned (9). Four participants stated that they were not concerned with what they ate. Almost every participant (23) answered that they ate dairy or meat products at least seven times per week. The most common favorite food item was lasagna and the second most common favorite was sushi. Most said that their favorite food came from restaurants.

Respondents were asked to draw a picture of a farmer. (See Figure 2 for a selection of these drawings.) Of the 25 pictures drawn, three were female. Only one was clearly not Caucasian. Nine of the drawings displayed a farming implement. Sixteen drawings had a hat and sixteen drawings had denim. Eleven drawings had boots and eight had a plaid shirt. Three drawings were stick figures and relied on buildings and equipment to show that it was a farmer.
### Figure 1. Qualitative Interview Survey

<table>
<thead>
<tr>
<th>Dawdy Agricultural Interview</th>
<th>ID______________</th>
<th>Major______________</th>
</tr>
</thead>
</table>

**Preliminary**
1. Did you grow up on a farm?
2. Are you a vegetarian or vegan?
3. Is your major related to agriculture?

**Informative**
1. Have you ever visited a farm?
2. Are you concerned about what you eat?
3. Do you eat meat or dairy products every day? How many times a week?
4. What is your favorite food? How is it made? Where does it come from?
5. Please draw me a farmer.

**Simple**
1. Where does honey come from?
2. Where does milk come from?
3. What is an egg made of?
4. What is the difference between a dairy cow and a beef cow?
5. What is the #1 crop grown in the United States?

**Moderate**
1. What is the difference between “all-natural” and “organic”? What is sustainable?
2. Are farm animals fed antibiotics when they are not ill? Why?
3. On average, what is the salary of the US farmer?
4. How old are chickens when they are slaughtered?
5. On average, how old does the US dairy cow live?

**Difficult**
1. What is a GMO? Can you give an example?
2. On average, how far does the banana in the local grocery store travel to get there?
3. What types of feedstuffs are available to farm animals?
4. On average, how much living space is allotted to a US dairy cow? Hog? Chicken?
5. Which animal seems to be “smarter,” the hog or the dog?

**Belief #1**
1. Would you be a farmer?
2. Do you think that farming is a noble profession?
3. What is humane animal farming?
4. Do farm animals have some type of “intelligence”?
5. Are eggs good for you to eat?
6. Is it healthy to routinely feed antibiotics to farm animals?
7. Is it right to eat food that comes from thousands of miles away?
8. Would you pay more for food if you knew how it was raised?
9. Should farm animals have as much space as they want?
10. What do you think of practices that inflict pain on farm animals, such as cutting off tails or castration?
87

<table>
<thead>
<tr>
<th>Belief #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is it OK for a person to own a patent on a living being, such as a farm animal?</td>
</tr>
<tr>
<td>2. Would you pay more for your food if it improved the lives of farm animals?</td>
</tr>
<tr>
<td>3. Are you worried about where your food comes from?</td>
</tr>
<tr>
<td>4. If given the opportunity, would you eat more food that was produced locally?</td>
</tr>
<tr>
<td>5. Would you stop eating certain foods if it would improve the environment?</td>
</tr>
<tr>
<td>6. Can farm animals feel happy or sad? Depressed or enriched?</td>
</tr>
<tr>
<td>7. Should farm animals only be fed what they would naturally eat in the wild?</td>
</tr>
<tr>
<td>8. Should farm animals have rights? If so, what type of rights should they have?</td>
</tr>
<tr>
<td>9. Does it matter if farm animals get scared, or feel pain, before they are slaughtered?</td>
</tr>
<tr>
<td>10. Does talking, or now knowing, about agriculture and farm animals make you feel uncomfortable?</td>
</tr>
</tbody>
</table>

Knowledge of agricultural production

A key question asked in this research was how much do college students know about current agricultural practices. Knowledge questions ranged from what the principal investigator considered simple to moderate and difficult questions.

The majority of participants answered simple questions correctly regarding honey, milk and eggs. However, most could not tell the difference between a dairy cow and a beef cow. About half (13) were aware that corn is the most produced crop in the U.S. A substantial decline in the number of correct answers occurred with moderate questions. Only three answered correctly regarding the difference between “all-natural” and “organic.” Very few could define what sustainable was. Almost every participant knew that farm animals are fed antibiotics when they are not ill, but they could not answer why. Three answered correctly about the average salary of a U.S. farmer; the majority of respondents answered almost three to four times the average. Three answered correctly about how old chickens are when they are slaughtered and three answered correctly about how long cows last in the dairy industry. Those who answered incorrectly were off by a substantial margin.

None of the 25 participants could define a GMO, one of the difficult questions. Six answered correctly regarding where bananas come from. A low number of participants (4) could correctly identify the various feedstuffs that are given to farm animals. An even lower number (2) knew how much space on average is given to farm animals. The majority answered in great excess, such as a couple of acres per dairy cow or 20 square feet per chicken.
Figure 2. Selected respondent drawings of farmers
Figure 2 (continued)
Attitudes and Knowledge of Farming

Rather than follow the ordering of questions on the survey, the remaining results are presented in thematic groupings. While only three people answered correctly regarding the average salary of a U.S. farmer, most (22) believed that farming is a noble profession and about half (13) would consider being a farmer (Figure 3).

Figure 3. Attitudes and knowledge of farming: Humane treatment and animal rights

When asked about humane animal farming, participants had similar responses:
“Humane farming is that your animals are not suffering in any way.”
“Not torturing your animals, no veal. Keeping them free-roaming and healthy fed.”
“Not keeping them caged up. Letting them roam in a pasture.”
“Raising animals in a environment similar to humans. Not physically hurting them.”
“Treating the animals with respect.”
“I guess, letting the animals have the best life they could, until they don’t.”
“Humane animal farming would be giving them adequate space and adequate food. Making sure that it’s the right kind of food, obviously you don’t want to feed an organism that is primarily an herbivore meat. Giving them the adequate conditions to survive.”

Regarding animal rights, nineteen participants responded that farm animals should have some rights. Rights that were suggested were to forgo unnecessary pain and discomfort, receive larger amounts of living and land space, and be allowed to have longer life spans. Very few (5) stated that farm animals should not have any rights and one person said that it depends on other factors. Some of the comments provided on this question include:
“The trouble is they are someone’s property. Um, no.”
“Beyond the limitations of animal cruelty, no.”
“Yeah, right to live a life free of cruelty.”
“Yes, the right to not be mistreated.”
“Some, not abused.”
“They’re going to be killed so no.”
“Yeah, the right to space, the right to live out in the pasture, the right not to be shoved full of antibiotics, poor little guys.”
“Yes, humane treatment, locking an animal in a cage I know serves some purposes, but it’s bad.”
Animal Intelligence and Emotions

The vast majority of people answered that farm animals have some type of intelligence (20) and feelings (20), while only seven answered correctly to what animal seems “smarter”. Five respondents answered correctly to what animal was smarter (the hog) and also believed that farm animals have intelligence and feelings. Two respondents answered incorrectly regarding the smarter animal and also felt that farm animals lacked intelligence and feelings. When asked about whether animals have intelligence, participants noted:

“All animals do, not just farm animals. You can make friends with a farm animal.”
“I would say yes, but I’m sure they’ve been dumbed down though through a process of time, just from being locked in a cage.”
“As compared to wild animals, no I don’t think so.”

When asked if animals feel emotions, comments included:

“I’m sure they can, yes indeed.”
“Well of course, all animals can. Yeah, you need to treat them as beings.”
“I don’t think they know any difference. I think their lives are pretty crappy, so no.”

Pain and Farm Animals

A large portion of respondents (16) would pay more for their food if they knew how it was raised and 18 replied that they would pay more for food if it improved the lives of farm animals. The majority of participants (16) did not agree with practices that inflict pain on farm animals and 19 answered that it was not acceptable for farm animals to feel fear or pain prior to slaughter. When asked about inflicting pain on animals, respondents stated:

“What do I think about that, I think that it’s bad. Should not be done.”
“Cruel and unnecessary.”
“I understand castration and why it should be done, but cutting off tails, I don’t like that part. It seems cruel.”
“I think that it’s okay.”
“I don’t know if they’re necessary. I don’t know anything about it. It would surprise me if they really are necessary.”

When asked if it matters whether farm animals get scared or feel pain before they are slaughtered, participants noted:

“Yes it matters.”
“To a certain extent.”
“Not really.”
“Yeah, I think so.”
“I suppose it does matter. You should care about the animals enough to try and do it in the best way you can. Terrorizing an animal before it’s slaughtered seems pointless and cruel.”

Space Given to Farm Animals

Only two people answered correctly to how much space is allotted to farm animals, while 10 thought that farm animals should have as much space as they want:

“I believe they should have a good amount of space.”
“I don’t think as much space as they want is an issue in the world any more because we’re running out of it. But I think there should be enough space allowed for their comfort. I would probably say no, because they probably want more than is practical.”
“Yeah, they should have enough room to be an animal.”

**Antibiotic Usage and Feed Concerns**

The majority of people (21) answered incorrectly about why antibiotics were fed to farm animals when they are not ill and the majority of people (21) answered incorrectly about what types of feedstuffs are available to farm animals. About half of the participants (13) did not agree with feeding farm animals only what they would naturally eat in the wild, while 22 people did not agree with feeding antibiotics on a routine basis. Most of the people (17) answered that they are worried about where their food comes from (Figure 4).

**Figure 4. Antibiotic usage and feed concerns**

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Should farm animals only be fed what they would naturally eat in the wild?</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Is it healthy to routinely feed antibiotics to farm animals?</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Are farm animals fed antibiotics when they are not ill? Why?</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

**Food Travel**

Only 6 participants knew how far the average banana travels, while the majority (16) felt it was right to eat food that was produced thousands of miles away. Most people (20) replied that they would eat more food produced locally if given the opportunity and 17 said that they would stop eating certain foods if it improved the environment (Figure 5).
Figure 5. Food travel

<table>
<thead>
<tr>
<th>Question</th>
<th># answering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you stop eating certain foods if it would improve the environment?</td>
<td>17</td>
</tr>
<tr>
<td>If given the opportunity, would you eat more food that was produced locally?</td>
<td>20</td>
</tr>
<tr>
<td>Is it right to eat food that comes from thousands of miles away?</td>
<td>16</td>
</tr>
<tr>
<td>On average, how far does the banana in the local grocery store travel to get there?</td>
<td>6</td>
</tr>
</tbody>
</table>

Comfort Level

When asked whether talking about agriculture and farm animals made them feel uncomfortable, the majority of people (17) answered no to this question. Eight felt uncomfortable after talking about agriculture and animal production.

Discussion

From the results we determined that the college students interviewed have a limited understanding of current agricultural practices. The students could only answer the first three questions of the “simple” section correctly and were largely unable to correctly answer the rest. Pictures of farmers drawn by respondents also revealed that students’ ideas of farming do not reflect much of contemporary agriculture. This lack of agricultural knowledge leaves this group of students at a serious disadvantage when making food decisions. It is only logical to then ask why. We propose three factors that may interact with each other: lack of agricultural education, deception by manufacturers, and apathy.

Lack of Agricultural Education

This notion can be described as an absence of agricultural concepts being taught in K-12 education. If attempts have been made to weave agricultural concepts into existing lesson plans or to generate a separate course in agriculture they have failed. Upon leaving secondary school, individuals appear to be agriculturally illiterate. This seems to be at odds with what the National Research Council was trying to achieve by defining agricultural literacy and stressing the need for agricultural education in our public schools (National Research Council, 1988). The responsibility for an agricultural education is then placed on the individual to experience on his or her own.
Deception by Manufacturers

Food production practices are typically hidden — often deliberately — from the consumers’ view. For instance, slaughterhouses are typically located far from urban centers. Additionally, food is often misrepresented to consumers in the final product stage. Through a menagerie of psychological tactics used in packaging and marketing, an unwholesome food product can appear to be not only healthy, but also beneficial for the environment. Most recently in the U.S., two top chicken processors’ operating practices were called into question. The companies inject a solution of broth, salt and seaweed extract into their products and then label it “all-natural.” The added solution increased the sodium levels almost threefold over that of an untreated chicken (Skrzycki, 2007). Situations similar to this one may have something to do with why the majority of the college peer group could not answer the question related to the labeling of “all-natural” or “organic” foods, or why so many answered that they were worried about where their food came from.

Apathy

Apathy can occur when a situation appears to be out of one’s control. When faced with somewhat daunting problems, such as space for confined animals or the quality of feedstuffs available for agricultural animals, most participants shrug or sigh, as if to say there is nothing that can be done about it. A typical, apathetic response is to think that someone else will take care of the problem. The American Psychological Association has recognized this as the bystander effect (APA, 2008).

Conclusion

Although the results may seem a little bleak, most of the participants answered favorably to improving current agriculture. The majority of respondents indicated that they would improve their eating habits in order to alleviate environmental concerns, if given the opportunity to do so. This may be caused by the recent publicity that the “green” movement has attained, or recent efforts to conserve natural resources. However, if the average college student interviewed from this peer group did not hold an adequate understanding of agriculture, how does this predict how they will cast future food decisions?

The intention of the study was to examine the general knowledge level of agriculture held by college students. Admittedly, this study has areas that were not explored. Other factors that may have a direct effect on agricultural literacy include religion, ethnicity, economic status and regional descent. An additional limitation is that this study only represents the views of 25 college students chosen through convenience sampling, and we do not know how representative these students are of the larger college student population of the United States, or even Tennessee.

It is an age-old adage that our children are our future. College students are transitioning to positions that may impact the food and fiber system for society as a whole. By leaving our future leaders at a knowledge deficit in agriculture, we are inviting a calamity in public health and environmental turmoil. However, this era of ignorance can only last for so long, as compelling case studies are being done that link animal welfare concerns, such as nutrition issues, to human health concerns, such as diabetes and hypertension (Sapkota et al., 2007). We must also ask ourselves how far we have come in regards to the study of life itself. If no emphasis is given to animal welfare concerns in our educational system, in either the public or private sectors, then how can we attempt to address these emerging issues?
Agricultural literacy must be given a higher priority in our educational system nationwide. Current educational frameworks, similar to those mentioned earlier, should be re-examined for effectiveness and value. Methods to incorporate agriculture into our existing educational agenda should be explored. Another option may include creating a mandatory course in current agricultural practices at either the high school or university level. This course should not be designed to dismiss years of priming from the K-12 system, but should complement the fundamentals and update the student on current agricultural events.

These events include advancements in agricultural sciences. As technology progresses, every consumer of food should be current with how the practice and use of technology creates food. Agricultural manufacturers should be obliged to keep some level of transparency when dealing with the health and well-being of their benefactors. One area of concern is the vague and sometimes misleading labeling of food items. Universal, government approved and certified labels must be used to ensure that the maximum amount of helpful information about the contents is available. We must investigate ways to eliminate loop-holes in food labeling.

If the old saying “you are what you eat,” is true, then we are all in for a rude awakening. Using today’s standards, we would be an oppressed, synthetic, irradiated and homogenized product. It is up to our scientific communities to find solutions. These communities, from biological to sociological, should examine the importance of food and the role it plays in the quality of a life.

Fortunately, new self-empowered food investigators are emerging. These lay people are breaking the stereotype that all consumers are mindless and apathetic. Armed with knowledge, these consumers are purchasing organic, humanely raised, free-range, locally produced goods. They are using methods to encourage a sustainable future in our food and fiber networks, and they are seeking this information out on their own.
References


Appendix 1
Dawdy Agricultural Interview
Answer Key

Simple
2. “In addition to cows, the following animals provide milk used by humans for dairy products:
   * Sheep (the ewe)
   * Goats (the nanny)
   * Buffalo
   * Horses (the mare)
   * Donkeys
   * Camels (including the South American camelids)
   * Yaks
   * Water buffalo
   * Reindeer
   * Zebra”
3. “The avian egg, in all its complexity, is still a mystery. A highly complex reproductive cell, it is essentially a tiny center of life. Initial development of the embryo takes place in the blastoderm. The albumen surrounds the yolk and protects this potential life. It is an elastic, shock-absorbing semi-solid with a high water content. Together, the yolk and albumen are prepared to sustain life — the life of a growing embryo — for three weeks, in the case of the chicken. This entire mass is surrounded by two membranes and an external covering called the shell. The shell provides for an exchange of gases and a mechanical means of conserving the food and water supply within.” Mississippi State University Extension Service. Poultry: Contents of chicken egg, http://msucares.com/poultry/reproductions/poultry_parts_embryo.html. May 4, 2008.
4. “Early cattle served a triple purpose for the humans who raised them. They provided meat, milk, and labor. Cattle are no longer used as beasts of burden, but they still provide us with meat and dairy products.” “We get meat from beef cows and milk products from dairy cows. Although females from all cattle breeds produce milk and meat, some cattle are better at giving milk, and some are better at providing meat.” Oklahoma Ag in the Classroom. Dairy Facts. http://oklahoma4h.okstate.edu/aifc/lessons/extras/facts/dairy.html. May 5, 2008.

Moderate
b. “What is organic food? Organic food is produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality for future generations. Organic meat, poultry, eggs, and dairy products come from animals that are given no antibiotics or growth hormones. Organic food is produced without using most conventional pesticides; fertilizers made with synthetic ingredients or sewage sludge; bioengineering; or ionizing radiation. Before a product can be labeled ‘organic,’ a Government-approved certifier inspects the farm where the food is grown to make sure the farmer is following all the rules necessary to meet USDA organic standards. Companies that handle or process organic food before it gets to your local supermarket or restaurant must be certified, too.” USDA National Organic Program. Consumer Brochure. http://www.ams.usda.gov/nop/Consumers/brochure.html. April 5, 2008.

c. “The term sustainable agriculture means an integrated system of plant and animal production practices having a site-specific application that will, over the long term:

* satisfy human food and fiber needs;
* enhance environmental quality and the natural resource base upon which the agricultural economy depends;
* make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls;
* sustain the economic viability of farm operations; and


5. “It is generally accepted that the average productive life of a dairy cow is around three lactations.” Bruce L. Jones, Professor of Agricultural Economics, Department of Agricultural and Applied Economics, UW-Madison. The Economic Trade-offs Between Annual Milk Production and the Productive Lives of Dairy Cows. May 6, 2008. Or 48 months.

Difficult

1. “Genetically engineered foods are produced from crops whose genetic makeup has been altered through a process called recombinant DNA, or gene splicing, to give the plant a desirable trait. Genetically engineered foods are also known as biotech, bioengineered, and genetically modified”. U.S. Food and Drug Administration. Linda Bren. Genetic Engineering: The Future of Foods? http://www.fda.gov/fdac/features/2003/603_food.html. April 5, 2008.


An average of 4,700 miles.


b. “results suggest that performance of pens of mixed-sex pigs grown to (250 lbs) 113 kg live weight was maximized at the (10 sq ft) .93 m2/pig space allocation.” NCR-89 Committee on Confinement Management of Swine. Space requirements of barrows and gilts penned together from 54 to 113 kilograms. *Journal of Animal Science* 71(5): 1088-1091.


Appendix 2: Agricultural Interview Photo Credit Page

**Simple**
   g. http://fohn.net/camel-pictures-the-pictures/Arabian-Camel-800x600.jpg.

**Moderate**
1-2. N/A

**Difficult**
   g. http://ibenterprise.tradenote.net/images/users/000/035/169/products_images/4_000_000MT_Of_Urea_46_Urea_Carbamide_Grade_B_Ukraine_.jpg.
5. a. bp1.blogger.com/.../tamworth+pig+and+piglet.jpg.
Benefits of Physical Therapy from the Patient’s Perspective

Lauren Easley

Dr. J. Angela Hart Murdock
Mathematical Sciences

A patient’s view of physical therapy may depend on why they are choosing to receive the treatment, the type of physical therapy in which they are participating, or what methods the physical therapist is using. Although past research provides clinical evidence that physical therapy is beneficial to the rehabilitation process, there has been little research that provides the perspective of the patients receiving therapy. The intent of the current study is to develop an instrument to measure benefits of physical therapy as perceived by the patients, to clarify patients’ reasons for receiving physical therapy, to identify any correlations among patients’ attributes, and to identify obstacles from the patients’ perspective. A total of 100 patients are randomly surveyed about their treatment, healthcare policies, and personal views of physical therapy.

Introduction

Past research has shown that physical therapy is beneficial as a source of rehabilitation. Physical therapy helps patients build or regain strength, improve mobility, increase fitness, perform daily activities, prevent injuries, and relieve pain. Physical therapists use heat or cold packs, exercise, electrical stimulation, massage, and ultrasound to help patients rehabilitate. Also, patients can receive physical therapy at an outpatient clinic or hospital, a nursing facility, home health agency, rehabilitation agency, or public health agency.²

Although past research confirms physical therapy is beneficial for rehabilitation, most patients in need of therapy for recovery are not informed about the treatment nor do they receive physical therapy. Due to regulations stipulated by the government such as reports filed by the Medicare Payment Advisory Commission, patients must receive a referral from a physician before receiving physical therapy. So, the physician must prescribe it. Also, patients’ healthcare insurance may not cover physical therapy treatments or may not cover all of the costs. Obstacles patients may face are the inability to pay for treatment, lack of education and support from physicians for physical therapy, or lack of time to commit to treatment. These obstacles may override perceived benefits.²

The purpose of this study is to create an assessment tool to measure perceived impact on patients’ health. We intend to elucidate the patients’ reasons for receiving physical therapy, to identify the associations among healthcare insurance status, level of education, age, and personal attitude, and to explain the influences of physicians, the government, and healthcare policies on the experience of the patients. Surveys are used to determine why patients feel physical therapy is beneficial and to clarify which patients are receiving the benefits of physical therapy. Chi-squared analysis discerns these associations.
Methods

To determine the perspective of patients toward physical therapy treatments, 100 subjects who are receiving rehabilitation treatment are surveyed at a physical therapy clinic. The survey, a draft of which has been approved by a Middle Tennessee State University human research review board, consists of qualitative and quantitative questions. Patients are asked demographical information such as their age, sex, race, highest earned degree, and health insurance status and coverage. Furthermore, patients are questioned about their personal experiences with physical therapy and feelings toward physical therapy. After surveying 100 patients, chi-squared analysis is used to determine if patients feel that physical therapy is beneficial, and which subpopulations reap the most benefits. Chi-squared analysis is used in a significant number of studies by various investigators of the benefits of physical therapy. For instance, in a study about the interventions of physical therapy in home care after a hip fracture, investigators employ chi-squared analysis to determine if physical therapy helped patients recover faster after hip surgery than those who had personal home care.

The survey instrument in the present study is reproduced below:

**Age Range**

**Sex**
- □ Male □ Female

**Race**
- □ American Indian or Alaskan Native
- □ Asian, Pacific Islander, or Hawaiian native
- □ African American or Black
- □ White
- □ Hispanic/Latino
- □ Other

**Highest Earned Degree**
- □ Associate
- □ Baccalaureate
- □ Master’s
- □ Doctorate
- □ Certificate/GED
- □ High School

**Do you have health insurance?**
- □ Yes □ No

**Does your health insurance policy cover your physical therapy treatments?**
- □ Yes □ No

**How much does your health insurance policy cover of physical therapy treatments?**
- □ 0% - 20% □ 21%-40% □ 41%-60% □ 61%-80% □ 81%-100%

**When seeking rehabilitation, who gave you a referral to receive physical therapy?**
- □ Physician □ Physical Therapist

**What were some of the forms of rehabilitation that were prescribed to you other than physical therapy?**

**Why did you choose physical therapy as a form of rehabilitation?**

**What forms of physical therapy did your physician recommend? Check all that apply.**
- □ Exercise □ Taping and Bracing □ Hydrotherapy
What forms of physical therapy did your physician recommend? Check all that apply.
☐ Exercise ☐ Taping and Bracing ☐ Hydrotherapy
☐ Manual Techniques ☐ Electrotherapy

Which form of rehabilitation did you choose? Check all that apply.
☐ Exercise ☐ Taping and Bracing ☐ Hydrotherapy
☐ Manual Techniques ☐ Electrotherapy

Why are you receiving physical therapy? Check all that apply.
☐ To build or regain strength ☐ To improve mobility
☐ To prevent injuries ☐ To relieve pain
☐ To increase fitness through exercise
☐ To learn proper use of assistive devices like crutches
☐ To maintain range of motion, strength, flexibility, endurance, or coordination
☐ Other _________________________

How long are you to receive physical therapy?
☐ 1-4 weeks ☐ 5-9 weeks ☐ 10-14 weeks ☐ 15-19 weeks
☐ 20-24 weeks ☐ 25-29 weeks ☐ 30+ weeks

Will you choose to fulfill the required amount of time prescribed by the physical therapist? Why or why not?
☐ Yes ☐ No

How many times a week do you have physical therapy treatments?
☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7+

How long have you had physical therapy?
☐ 1-3 weeks ☐ 3-4 months ☐ 7+ months
☐ 1-2 months ☐ 5-6 months

How many times have you received physical therapy for treatments or for rehabilitation previously? Why?
☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4+

How were you informed about physical therapy? Check all that apply.
☐ A physician ☐ A physical therapist
☐ A health insurance representative or policy ☐ A family member or friend
☐ An ad in a magazine or newspaper ☐ Other ______________

Did that source of information influence your decision of seeking physical therapy?
☐ Yes ☐ No

Would you recommend physical therapy for others seeking therapy?
☐ Yes ☐ No

Do you feel that physical therapy is beneficial?
☐ Yes ☐ No

How is physical therapy beneficial?
Predictions

After surveying patients, chi-squared analysis will be used to determine if patients feel that physical therapy is beneficial when rehabilitating and determine which subpopulations are able to reap the benefits more than other patients. This study predicts that patients receiving physical therapy for rehabilitation will feel that physical therapy is beneficial. Furthermore, the subpopulations that may reap the benefits of physical therapy more than other patients are those that were referred by a physician and have high rate healthcare coverage.

Example Using Chi-Squared Analysis

One hundred patients completed the survey. One of the questions they answered is “How many times have you received physical therapy previously?” When using chi-squared analysis, a null hypothesis and alternate hypothesis are established. The null hypothesis here is that the proportion of patients who feel physical therapy is beneficial is the same for those with and without healthcare. The alternative hypothesis is that there is a difference in proportion of patients with healthcare and with no healthcare that feel physical therapy is beneficial.

Table 1. Observed Frequency

<table>
<thead>
<tr>
<th>Observed Frequency</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>&gt;4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>26</td>
<td>15</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>51</td>
</tr>
<tr>
<td>No Healthcare</td>
<td>39</td>
<td>9</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>49</td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>24</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>100</td>
</tr>
</tbody>
</table>

1. Survey 100 patients and report frequencies \( O_{ij} \) for the amount of times patients that have healthcare and no healthcare to compare which subpopulation of patients feel physical therapy is beneficial. For example, \( O_{11} \) is 26.

Table 2. Expected Frequency

<table>
<thead>
<tr>
<th>Expected Frequency</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>33.15</td>
</tr>
<tr>
<td>No Healthcare</td>
<td>31.85</td>
</tr>
</tbody>
</table>

2. Calculate the expected frequency \( E_{ij} \) by multiplying its row total \( \sum_{j=1}^{4} O_{ij} = 51 \) by the column total \( \sum_{i=1}^{4} O_{ij} = 65 \) by \( O_{11} \) and divide the product by the total of all frequencies \( \sum_{i,j} O_{ij} = 100 \). Proceed to follow the same steps for each \( E_{ij} \). See Table 2.
Table 3. $\chi^2$

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td></td>
</tr>
<tr>
<td>1.5422</td>
<td></td>
</tr>
<tr>
<td>0.6224</td>
<td></td>
</tr>
<tr>
<td>1.2299</td>
<td></td>
</tr>
<tr>
<td>1.412</td>
<td></td>
</tr>
<tr>
<td>0.942</td>
<td></td>
</tr>
<tr>
<td>No Healthcare</td>
<td></td>
</tr>
<tr>
<td>1.6051</td>
<td></td>
</tr>
<tr>
<td>0.6478</td>
<td></td>
</tr>
<tr>
<td>1.2801</td>
<td></td>
</tr>
<tr>
<td>1.47</td>
<td></td>
</tr>
<tr>
<td>0.98</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11.7314</td>
</tr>
</tbody>
</table>

3. Calculate the $\chi^2$ statistic for each cell by squaring the difference between the observed and expected frequencies and divide by the expected frequency for each cell then take the sum of all chi-squared values.

$$\chi^2 = 1.5422 + 0.6224 + 1.2299 + 1.412 + 0.942 + 1.6051 + 0.6478 + 1.2801 + 1.47 + 0.98 = 11.7314$$

4. Calculate the degree of freedom ($\nu$) to determine the cut off region, which is the total of rows ($r$) subtract 1 multiplied by the total of columns ($c$) subtract one from the frequency table.

$$\nu = (r-1) \times (c-1)$$

$$= (2-1) \times (5-1) = 4$$

$$\nu = 4$$

5. After calculating the degree of freedom, the rejection region is any value higher than the cut off value of 9.488 for a level of significance of $\alpha = .05$.

Graph 1. Cut-Off Value

The $\chi^2$ of the data is 11.7314, which is significantly higher than the cut off region value of 9.488, so the null hypothesis will be rejected. Thus, there is a difference in proportions among the patients receiving physical therapy that have healthcare and no healthcare.
Conclusion

Chi-square analysis shows that the patients’ perspectives about physical therapy is that it is beneficial to the rehabilitation process. Past studies provide evidence that physical therapy is beneficial and should be used when patients are trying to recover. Also, the sub-populations of patients that feel that physical therapy is beneficial are those that received a referral from a physician or have healthcare coverage since they will be informed about the importance of receiving physical therapy to ensure proper recovery. Furthermore, they are able to afford physical therapy because of their healthcare coverage. To provide other sub-populations with the same benefits, further research will be needed to find ways to inform patients seeking rehabilitation about physical therapy and find ways to make such treatments affordable.

References

The Economic Impact of Illegal Immigration in the United States

Jason N. Gerald

Dr. William Ford
Finance

Throughout the past decade, U.S. policymakers, researchers, and citizens have expressed a deep concern over the topic of illegal immigration into this country. With the millions of illegal immigrants now in the U.S. work force, their presence has many economic consequences. Although there are a variety of social issues flowing from the illegal population, this paper will concentrate on the economic factors such as their impact on U.S. labor markets, consumer and federal spending, and job opportunities for U.S. citizens. Furthermore, it outlines key issues related to the current immigration policy as well as what should be included in any reform legislation. Regarding reform, policymakers and citizens must keep in mind that the economy’s ongoing need for immigrant workers should be balanced with the costs and social issues that arise as their share of the U.S. labor force and population grows. From a review of sources, one thing remains evident: the current laws governing migration into the U.S. do not meet the needs of our growing economy.

Introduction

The United States is a nation which welcomes and appreciates immigration, but sound policy and structure makes it more beneficial to all. With an estimated 10.3 million illegal immigrants residing in the U.S. as of 2004, and increasing at a rate of 500,000 per year, this population has a growing fiscal and economic impact on the U.S. In 2006, Congress approved additional funding to tighten border enforcement along the U.S.-Mexico frontier to stem the flow of illegal immigrants into the country. Even politicians from across the political spectrum including Barack Obama, John McCain, Hillary Clinton, George Bush and Ted Kennedy all agree that basic immigration reform is necessary.

The Pew Hispanic Research Center estimates that of the 12 million illegal immigrants currently in the U.S., 7.2 million of them are undocumented workers. These workers, in addition to their 3 million U.S.-born children, utilize free emergency healthcare, public education, and government-funded programs which impose economic costs on our economy. Unless something is done to better control the illegal immigrant population, the costs from this group will continue to rise.

---

Because researchers have studied the importance of illegal immigration, there are many resources on the subject. Over the last 10-15 years, various studies have addressed both the alleged costs and benefits of various proposals for immigration reform. Because illegal immigration generates a flow of labor into the economy, immigration reform policies should incorporate provisions for meeting the changing labor needs of the United States.

A great wave of immigrants began to enter after the mobilization and draft of American troops in WWII, which caused a serious shortage of agricultural laborers. In response to this shortage, Congress enacted the Bracero Program in 1942 which granted temporary legal admission into the United States to more than 5 million Mexican agricultural laborers. When the program ended in 1964, more than 5 million Mexican workers had learned how to migrate into the U.S., find employment, and establish lasting contacts for the future. According to Dr. George Borjas, a Harvard immigration researcher, “it is very likely that the termination of the Bracero Program sparked the beginning of large-scale illegal immigration from Mexico to the U.S.” The Bracero Program essentially introduced Mexican laborers to the better quality of life available to them in the U.S.

Another meaningful piece of U.S. immigration legislation was the Hart-Celler Immigration Bill signed by President Lyndon Johnson on October 3, 1965. The president boldly asserted that “This bill we sign today is not a revolutionary bill. It does not affect the lives of millions. It will not restructure the shape of our daily lives.” That statement turned out to be far from accurate. The primary focus of the act was to eliminate the national origins quota system that many called discriminatory, and to substitute a preference towards immigrants with U.S. relatives. In 1995, 30 years after the bill was enacted, the number of legal immigrants in the U.S. more than tripled to 18 million, not to mention countless more that entered illegally. Because the bill favored family ties over skill levels, an influx of low-skilled immigrant labor surged across U.S. borders. Some describe the social, demographic, and economic changes resulting from the 1965 legislation as “truly historic.”

In 1986, Congress passed the landmark Immigration Reform and Control Act, which declared it unlawful to employ illegal immigrants, required monitoring systems for employers, allocated more funds to border enforcement, and granted amnesty to almost 3 million resident illegal immigrants. The newly legalized immigrants generated an estimated $78.7 billion in welfare, federal assistance, and education costs. In the accompanying figure, one can see a spike in the U.S. immigrant population from 9.6 million in the 1970s to over 37 million by 2008. These numbers resulted from the legislation cited above.

---

9Ibid.
Although amnesty generated some large alleged costs, there is still much controversy about what is an actual cost and what is an investment in the future well-being of the United States. Immigration proponents view some social costs that immigrants generate as necessary to protect the health and education of the illegal population, which can later yield benefits to the nation’s economy by ameliorating labor shortages in many industries. Should the portion of that $78.7 billion which paid for the birth of American citizens and sending them to schools really be looked at as just a cost to our country? When those 3 million children grow up and acquire skills which will allow them to contribute to the American labor force, they will then pay taxes and further this country’s economic progress over their lifetimes, repaying some or all of the costs of birthing and educating them.

Thus, the aforementioned Bracero Program, the 1965 Act, and the 1986 Act continue to impact the economic environment that all U.S. residents experience today. The degree of permissiveness evident in the reforms was what allowed an estimated 1.6 million legal immigrants into the country in 2005 plus about 500,000 illegal immigrants annually.12 Because the U.S.’s market-driven need for labor changes over time, it is necessary to enact policies that simultaneously balance the needs of employers with the costs immigrants impose on the U.S. economy.

Source prorev.com/immigrate.htm

---

Illegal Immigrants and the U.S. Labor Market

The United States has historically been a prosperous nation with a high standard of living. Consequently, immigrants consider this country an attractive place to move to because of the significantly higher wages that they can earn here, in addition to accessing federal- and state-funded social programs. However, as the current estimated 7.2 million illegal immigrant workers crossed our borders to enter the U.S. labor force, their low skills and minimal education impeded efficient assimilation of them into the labor markets. For the nation to maximize gains from immigration, the incoming immigrants should perhaps be selected based on skills that are scarce in the U.S. labor market.

Since more industries opt to lower their labor costs by hiring illegal immigrants, the impact on our native workers is also becoming an issue. Because illegal immigrants add to the supply of labor, simple rules of economics state that the wages of some competing U.S. workers will fall. This point fuels much of the opposition to illegal immigration. Borjas stated that from 1980 to 2000, immigration caused an annual drop in the earnings of native men by $1,700, or about 4 percent.13 The gradual decrease in wages of native workers, paired with the growing size of the illegal immigrant population, increases the impact on some native workers. However, unauthorized workers mostly affect U.S. citizens with a demographic profile similar to the illegal immigrants such as those without a high school degree, male, 18-25, low skilled and residing in regions with large immigrant populations.

Since the use of immigrant workers is necessary to further the nation’s macroeconomic growth, natives might limit the impact immigration has on them by increasing their education and skills through the use of the same government resources available to immigrants. By merely increasing their education and skill levels, natives are less exposed to competition from most illegal immigrant workers. Although the wages of a portion of the native population will inevitably fall due to immigration, the long-term benefits to the U.S. economy must also be considered.

With the current U.S. immigrant admission policy, illegal immigration is the best option available for many low-skilled workers in neighboring countries. By simply migrating to the U.S., a 25 year-old Mexican male can increase his estimated hourly wages from $2.30 to $8.50.14 Also, since many of their jobs only require moderate training, the vast majority of poorly educated illegal immigrants who enter the United States with few skills contribute less tax revenue to the economy compared to their more highly skilled legal immigrant counterparts.

Immigrants have been instrumental in allowing the nation to keep up with the changing demands for labor over the past two decades and will greatly aid the country over the next 30 years, when more than 76 million American “baby boomers” retire. The males in the U.S. immigrant population alone accounted for an estimated 79 percent of U.S. labor force growth from 1990-2001.15 Although the cost of illegal immigrants’ role in mitigating labor market shortages is not the focus of much literature on this subject, their presence certainly offsets some of the current and future labor shortages in the U.S. economy.

What is a country to do when its labor force, on average, grows at 1.5 million people per year yet the Bureau of Labor Statistics projects shortages of about 35.8 million workers in the next 30 years? To provide a better picture of the expected future population growth in the U.S., view the figure below. Since the immigrant population will continue to account for a larger portion of the total U.S. population, a viable option is to allow this flow of labor to compensate, to some degree, for the upcoming labor market shortages.

Though immigrants cannot compensate for all of the impending labor market shortages, at least with effective policy reform they can help prevent a decline in the U.S.’s economic growth rate. Whether it is in the restaurant business, construction, agriculture, or landscaping, illegal immigrants make their mark as a contributing factor to the continued economic growth and stability in those industries.

How have the estimated 7.2 million illegal immigrants made it into the U.S. labor force? If each employer only hired one illegal immigrant, then 7.2 million employers are blatantly disregarding the laws which govern this nation. Moreover, if each employer hired 10 of them, 720,000 employers are breaking the law. Whatever the number, these employers have such a need for a growing labor force that many of them knowingly risk employing illegal immigrants, which now account for about 4.5 percent of the entire U.S. labor force.

One industry which is constantly affected by the issue of immigration is manufacturing. According to the National Association of Manufacturers, “...we face a looming shortage of skilled manufacturing employees...this trend presents a real growing threat to the ability of the U.S. to compete in the world marketplace.” Thus, in order for the U.S. to keep up with the rest of the world’s growth, its labor force must expand to meet the economy’s increasing need for workers. The great degree of flexibility evident in the immigrant population makes them a part of the solution to labor shortages in many industries. It is not a matter of American citizens not wanting to fill the positions; the U.S. simply does not have enough working age natives to meet the economy’s growing labor market demands, going forward.

**Alleged Illegal Immigrants Costs**

The costs related to illegal immigration are often based on estimates, but they still provide insight into the characteristics of the immigrant population. There are disagreements about what an actual cost is and what is needed to ensure that illegal immigrants are healthy and skilled enough to contribute to the U.S. economy in the future. In the following table, the Center for Immigration Studies shows some of the key factors which cause the low fiscal contributions by illegal alien households. Notice the inverse relationship between educational attainment and use of federally funded social programs.

<table>
<thead>
<tr>
<th>Table 1. Characteristics of Households, 2002</th>
<th>Households Headed by Illegal Aliens</th>
<th>All Other Households1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Household Income</td>
<td>$30,019</td>
<td>$52,188</td>
</tr>
<tr>
<td>Number of Persons per Household</td>
<td>2.7</td>
<td>2.3</td>
</tr>
<tr>
<td>Per-Capita Income by Household</td>
<td>$11,230.45</td>
<td>$22,849.39</td>
</tr>
<tr>
<td>Share Without High School Degree2</td>
<td>66%</td>
<td>16%</td>
</tr>
<tr>
<td>Percent with at Least One Worker</td>
<td>89%</td>
<td>78%</td>
</tr>
<tr>
<td>Percent with Zero Federal Income Tax Liability</td>
<td>45%</td>
<td>32%</td>
</tr>
<tr>
<td>Percent with at Least One Uninsured Person</td>
<td>70%</td>
<td>20%</td>
</tr>
<tr>
<td>Percent Receiving Social Security</td>
<td>&lt;1%</td>
<td>25%</td>
</tr>
<tr>
<td>Percent Using Cash Welfare Programs3</td>
<td>&lt;1%</td>
<td>5%</td>
</tr>
<tr>
<td>Percent Using Medicaid4</td>
<td>17%</td>
<td>14%</td>
</tr>
<tr>
<td>Percent Using Food Assistance Welfare Programs5</td>
<td>28%</td>
<td>11%</td>
</tr>
<tr>
<td>Percent Using All Other Welfare Programs5</td>
<td>4%</td>
<td>8%</td>
</tr>
<tr>
<td>Number of Households</td>
<td>3,787,964</td>
<td>120,107,583</td>
</tr>
</tbody>
</table>

Source: Center for Immigration Studies analysis of March 2003 Current Population Survey

Another aspect of the table worth noting is the vast income disparity between native- and illegal-headed households. With an estimated $22,169 difference in annual earnings in 2002, illegal immigrant households consequently spent less and paid less in income taxes than other households. The data also show that people without high school degrees have relatively lower wages. An even larger social cost can be attributed to the 70 percent of illegal households living with at least one person without health insurance. Because the law requires medical assistance for all in need of emergency care, the United States absorbs the cost of emergency services to illegal immigrants. It should be noted, however, that these cost findings are relatively similar to other low income or poorly educated cohorts of the native population.

But it is difficult for researchers and policymakers to draw the thin line between what is a perceived social cost and an investment. When an illegal immigrant births a baby in America and he or she grows up to pay taxes, take out a mortgage, earn an education, and positively contribute to society, then should we still consider the basic healthcare needed to nourish and educate that child a cost? Although the nation may have to pay for such services now, some of these costs should not be included in the argument against illegal immigrants. To most opponents of immigration, anything that the United States spends on immigrants is purely a cost. The controversy over what is a cost and benefit is very subjective, but the only way to receive the maximum output from the U.S. illegal immigrant population is to keep them as healthy, educated, and skilled as possible — recognizing their lifetime earnings as a return on investments in their health and education.

This may be the quickest, most efficient method to enable immigrants to contribute more to the U.S. economy. The National Research Council suggested as much in 1997 when it released a study stating that “the immigrants’ education level is a key determinant of their fiscal impact.” The more skills people acquire, the higher their wages, the greater their tax contributions, and the more they will have to spend. However, if successive waves of immigrants arrive with fewer skills and schooling, then their decreased wages will compensate for a smaller portion of their alleged costs. Since the current immigration policy grants preference to immigrants with U.S. relatives, rather than those meeting some educational or skills benchmark, officials have no way of determining if an incoming immigrant’s skills are scarce in the U.S. economy. Table 3a indicates that the more years of schooling Mexican immigrants in the U.S. or Mexico have, the higher their average hourly wages.

<table>
<thead>
<tr>
<th>Age</th>
<th>4</th>
<th>5 to 8</th>
<th>9 to 11</th>
<th>12</th>
<th>13 to 15</th>
<th>16+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexican</td>
<td>18 to 22</td>
<td>7.83</td>
<td>7.60</td>
<td>7.45</td>
<td>8.07</td>
<td>8.76</td>
</tr>
<tr>
<td>Immigrants in U.S.</td>
<td>23 to 27</td>
<td>8.44</td>
<td>8.19</td>
<td>8.21</td>
<td>9.06</td>
<td>9.53</td>
</tr>
<tr>
<td>28 to 32</td>
<td>8.27</td>
<td>8.56</td>
<td>8.70</td>
<td>9.66</td>
<td>9.56</td>
<td>15.69</td>
</tr>
<tr>
<td>33 to 37</td>
<td>9.46</td>
<td>9.25</td>
<td>9.34</td>
<td>10.07</td>
<td>11.36</td>
<td>16.84</td>
</tr>
<tr>
<td>38 to 42</td>
<td>9.19</td>
<td>9.39</td>
<td>9.33</td>
<td>11.01</td>
<td>12.11</td>
<td>16.26</td>
</tr>
<tr>
<td>43 to 47</td>
<td>9.75</td>
<td>8.90</td>
<td>9.35</td>
<td>10.68</td>
<td>12.80</td>
<td>15.88</td>
</tr>
<tr>
<td>48 to 52</td>
<td>9.57</td>
<td>9.37</td>
<td>9.42</td>
<td>9.31</td>
<td>11.65</td>
<td>17.78</td>
</tr>
<tr>
<td>Residents of Mexico</td>
<td>18 to 22</td>
<td>1.36</td>
<td>1.56</td>
<td>1.76</td>
<td>2.06</td>
<td>2.61</td>
</tr>
<tr>
<td>23 to 27</td>
<td>1.43</td>
<td>1.80</td>
<td>2.10</td>
<td>2.79</td>
<td>3.77</td>
<td>5.20</td>
</tr>
<tr>
<td>28 to 32</td>
<td>1.56</td>
<td>1.93</td>
<td>2.42</td>
<td>3.22</td>
<td>4.80</td>
<td>6.63</td>
</tr>
<tr>
<td>33 to 37</td>
<td>1.65</td>
<td>2.08</td>
<td>2.56</td>
<td>3.45</td>
<td>5.25</td>
<td>7.07</td>
</tr>
<tr>
<td>38 to 42</td>
<td>1.64</td>
<td>2.14</td>
<td>2.88</td>
<td>3.74</td>
<td>5.62</td>
<td>7.42</td>
</tr>
<tr>
<td>43 to 47</td>
<td>1.69</td>
<td>2.30</td>
<td>3.00</td>
<td>4.40</td>
<td>5.86</td>
<td>8.05</td>
</tr>
<tr>
<td>48 to 52</td>
<td>1.66</td>
<td>2.30</td>
<td>3.15</td>
<td>4.21</td>
<td>6.11</td>
<td>8.71</td>
</tr>
</tbody>
</table>

Source: http://irpshome.ucsd.edu

Therefore, if illegal immigrants have an effective path to citizenship or amnesty, then they will have access to government funds for education, a wider array of employment opportunities and federal assistance benefits, which would increase their wages, consumption spending, and the taxes they pay over their lifetimes.

Illegal Immigrants and Consumer Spending

One of the benefits of having an additional 12 million people in the U.S. is that they have no choice but to spend money. Illegal immigrant spending keeps the U.S. economy growing and compensates for some of their putative social costs. There are two factors to keep in mind when considering illegal immigrant spending. The first is that due to the uncertainty of the size or annual incomes of this population, most amounts are rough estimates. Second, there is an ongoing transfer of wealth between the United States and Mexico since illegal immigrants remit almost 2.2% of Mexican GDP.\(^{19}\) Given these two factors, former Federal Reserve Bank president William F. Ford derived the table below to show the estimated macroeconomic impact of immigrants. Since these calculations account for 21 million immigrants in the work force, to see the impact of a third of the population which is illegal, simply divide by three and discount that by their estimated wage differential.\(^{20}\)

\[
\begin{array}{|c|c|c|c|}
\hline
\text{Imputed Share of $13.6 trillion GDP} & -15\% & -20\% & -25\% \\
\hline
$1.62 & $1.52 & $1.43 \\
\hline
\text{Imputed Share of $11 trillion U.S. Personal Income} & -15\% & -20\% & -25\% \\
\hline
$1.30 & $1.23 & $1.16 \\
\hline
\text{Imputed Share of U.S. Personal Consumption} & -15\% & -20\% & -25\% \\
\hline
$1.02 & $0.96 & $0.90 \\
\hline
\end{array}
\]

*Notes: The values shown are derived from the actual U.S. 2006 GDP of $13.6 trillion and personal income of $11 trillion. The imputed shares of GDP and personal income are derived by making the indicated productivity and earnings adjustments of 15 percent to 25 percent and then multiplying by .34, representing immigrants’ estimated 14 percent share of the U.S. labor force. Their imputed share of personal consumption is calculated as 70 percent of their GDP share, less 10 percent, the estimated level of their remittances to their relatives abroad.


Under the assumption that immigrants make 15 percent less than native-born workers, illegal immigrants supplied $5.4 trillion of the $13.6 trillion U.S. GDP in 2006, $4.3 trillion of U.S. personal income and $3.4 trillion of personal consumption. By averaging the estimates, the resulting $4.4 trillion that illegal immigrants use in each of the respective categories is almost equivalent to the GDP of Pennsylvania in 2007! Thus, even though immigration imposes some social costs on the U.S. economy, their contributions to the nation’s GDP clearly offset some, or all, of the alleged expenses that they generate.

**Policy Reform and Implications**

Although illegal immigration is not an issue that can be resolved overnight, consistent and comprehensive policies that are reevaluated regularly can start the process toward a more economically efficient flow of immigration. Two of the main concerns of immigration reform proposals are whether to admit immigrants based on the scarcity of their skills, and second, should quotas limit admittance. After reviewing past piecemeal reforms to immigration policy and their consequences, it is evident that merely “tightening up” U.S. borders, revising temporary visa quotas, and enacting new penalties for hiring illegal immigrants will not provide the type of change that the U.S. economy really needs.

The first method to curtail the flow of illegal immigrants would be by granting additional funding for border enforcement. However, since current border enforcement expenditures are already more than 0.1 percent of U.S. GDP and that amount still allows about 500,000 illegal immigrants across the border every year, it will take a significantly larger amount of funding to make a sizeable difference. It is apparent that the resources used to control the borders are being stretched too thin and that the only solution is to hire a larger cadre of officers to patrol our borders. Here is where policymakers must choose between having porous border enforcement which allows inflows of illegal immigrants who fill gaps in the U.S. labor market, or allocate millions more for border security. Either way, the costs and benefits unauthorized migrants impose on the U.S. can rise greatly.

Another option for coping with 12 million illegal immigrants in the U.S. is simply granting most of them amnesty. If the past is any predictor of the future, then amnesty will have results similar to the 1986 Immigration Reform and Control Act. Under the 1986 Act, the 3 million newly legalized immigrants caused estimated government spending on public education, federal assistance, and welfare programs to increase almost $78 billion in that year alone. However, with a Social Security card and access to federal assistance, the job mobility and increase in annual earnings of the legalized immigrants will also positively impact the U.S. economy. As stated earlier, by absorbing some expenses related to servicing the illegal immigration population, the nation will gain the benefits of their contributions to GDP, personal income and tax payments later.

A method of reform that is likely to be the most costly is the “find and deport them” option boldly advocated by the chairman of the Congressional Immigration Reform Caucus, Tom Tancredo, in response to Homeland Security secretary Tom Ridge’s

---

suggestion to “legalize” 12 million illegal aliens. To apprehend 12 million people, law enforcement agencies would have to hire countless more officers to locate, detain, incarcerate, legally process and deport these individuals. Each of those activities would cost billions of dollars should Congress ever approve such a policy. Furthermore, industries which rely heavily on illegal immigrants would suffer grave losses. According to Jeffry Passel, senior demographer at the Pew Hispanic Research Center, the “find and deport them” option would remove almost 1 in every 5 drywall installers, dish washers, agricultural workers, painters and roofers from the U.S. labor force. Such a sudden loss of 7.2 million workers would surely cause a rise in imports and prices of goods in industries which employ many unauthorized workers.

For U.S. employers to stop employing illegal immigrants, they must also have an updated visa program. Under the current visa program (H-2), employers must request an immigrant worker far in advance, somehow prove that no U.S. workers are able to fill the position, and show that the worker’s wages are fair. The program is clearly too cumbersome and restrictive, which in turn gives rise to illegal immigration. The conditions of the current U.S. visa program need to be reevaluated with more employer input, since ultimately they do the hiring and firing of illegal immigrants.

Final Thoughts

In the search for a more effective U.S. immigration reform program, policy makers and citizens must first acknowledge that there is a major economic flaw in the current policy. In addressing the many social and humanitarian immigration concerns, many would-be policymakers fail to consider the reasons why hundreds of thousands of U.S. employers feel compelled to hire illegal immigrants. If designed correctly, a market tested immigration program would address labor market demands for certain skills and the needs of the employers of illegal immigrants.

Although researchers and policymakers realize both social costs and future benefits associated with the growing inflow of illegal immigrants, they often disagree on where to draw the line between what is a cost and a benefit. Since many forecast labor market shortages in the U.S. economy as the native population ages, our nation may have to cover emergency healthcare, public housing and education now, but the future social and economic benefits created by immigrants must also be considered.

There will never be an easy route to comprehensive immigration reform in the United States. Due to the time it takes for Congress to enact a change in policy and see results, it will take years until this issue begins to be resolved. After years of seeing continued growth in the illegal immigrant population, policymakers still have not addressed the matter in its entirety. If immigration reform only focuses narrowly on maximizing the economic well-being of the native U.S. population in the short term, while ignoring the economic benefits that the growing population of immigrant workers generate, the social and fiscal results of such a policy will clearly be suboptimal.

---


Alternative mRNA Splicing Prevalent in Genes and Regions of the Brain Implicated in Bipolar Disorder

Suzanne S. Hicks

Dr. Rebecca L. Seipelt
Biology

All cells of an organism have the same genes; however, the expression of these genes is controlled differently in tissues, developmental pathways, or disease states. 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. These analyses indicate alternative splicing is prevalent in all four genes and brain regions. DISC1 shows two alternative forms in all brain regions tested, one of which was unexpected based on database analysis. In IMPA2, at least four alternative events are observed, including one unexpected form found specifically in basal ganglia and hypothalamus. Analysis of NRG1, shows at least six alternative events in all four regions. The most extensive alternative splicing is found in P2RX7. Three alternative splicing patterns are observed in one region alone with four additional splicing events occurring in a tissue-specific fashion in another area of the gene. Analysis of these isoforms and the encoded proteins is necessary to determine if the regulated expression is due to production of alternative or truncated proteins.

Bipolar disorder is a debilitating brain disorder that inhibits the ability to function in everyday life (Bipolar Disorder, 2008). 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 individuals suffer 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 have investigated the connection between bipolar disorder and genetics using family, twin, and adoption studies. A previous study of the Maudsley Twin Register found a concordance rate in monozygotic (identical) twins at 36% and dizygotic (non-identical) twins at 7% (Cardno, et al., 1999). Another study found the concordance rate for monozygotic twins is 43%; whereas it is only 6% for dizygotic twins (Kieseppa, Partonen, Haukka, Kaprio, and Lonnqvist, 2004). An additional study of the Swedish Psychiatric Twin Registry and Swedish Twin Registry same-sex twins born from 1886 to 1967 found a concordance rate of 38% for monozygotic twins and 4% for dizygotic twins (Kendler, Gatz, Gardner, & Pedersen, 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 been implicated in bipolar disorder, such as SLC6A4, TPH2, DRD4, SLC6A3, DAOA, DTNBP1, NRG1, DISC1 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 one gene producing one protein. One such complexity in gene regulation is that nearly 80% of human genes are estimated to be alternatively spliced (Alternative Splicing, 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 proteins with potentially unique functions. These different RNAs (isoforms) can be generated at different times in development, such as the antibody isoforms in B cell development (reviewed in Peterson, 2007), in different tissues, such as the troponin T isoforms in skeletal and smooth muscle (reviewed in Jin, et al., 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 (Morris, Kandpal et al. 2003; Miyoshi, Asanuma et al. 2004). A recent study with a large Scottish family identified DISC1 as a disrupted gene located on chromosome 1q42 which is associated with schizophrenia, bipolar disorder and depression (Blackwood et al., 2001; Millar et al., 2000). Genetic linkage and association studies have also shown DISC1 to be related to schizophrenia, bipolar disorder and depression (Harrison and Weinberger, 2005; Ishizuka et al., 2006; Mackie et al., 2007). There are eight supported spliced variants for this gene listed in AceView, a national database which houses human cDNA information (AceView, 2008).

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, Turner et al. 1997). A recent study found 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. There are fifteen supported spliced variants listed in AceView.

The third gene selected for study is NRG1, one of four neuregulin genes located on chromosome 8p12. Thomson (2007) reported a significant association of the NRG1 gene with schizophrenia and bipolar disorder. AceView indicated there are at least 22 splice variants recorded for this gene.

The final gene selected for this study is P2RX7. This gene belongs to a family of purinoreceptors 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, Buell et al. 1997). According to one study, P2RX7 influenced susceptibility to both bipolar disorder and unipolar depression (Barden, et al., 2004). Another study also identified P2RX7 as a susceptibility gene to bipolar disorder (Barden, et al., 2006). There are 14 spliced variants listed in AceView.

While all four genes are expressed in the brain as a whole, it is not known whether these genes are expressed or the expression is regulated in different sub-regions of the brain that have been implicated in mood disorders. The four areas of the brain utilized in emotion...
and moods, which have also been linked to bipolar or altered mood disorders are the amygdala, basal ganglia, hypothalamus, and substantia nigra.

Several independent studies have implicated these regions in particular in mood disorders. A 2004 study of the brain in bipolar disorder patients found significantly abnormal levels of hypothalamic-pituitary-adrenal axis function, indicating a potential trait marker for bipolar disorder (Watson, Gallagher, Ritchie, Ferrier, & Young, 2004). A study in 2005 utilizing the functional magnetic resonance imaging while performing an experimental task and a control task found an increased activation in the amygdala and decreased activation in the frontal cortex may represent disruption of a pathway involved in mania (Altshuler, et al., 2005). A 2006 report found shape alterations in the basal ganglia of those with bipolar disorder and indicated that the differences may be modulated by treatment (Hwang, et al., 2006). Another study found that Parkinson’s disease patients produced manic behavior when receiving deep brain stimulation mainly in the substantia nigra (Ulla, et al., 2006). And in 2007, reports of a significantly decreased neuron cell body size in the amygdala were found in bipolar disorder patients (Bezchlibnyk, Sun, Wang, MacQueen, McEwen, & Young, 2007). Since alternative splicing is prevalent and has wide-ranging effects, it is expected that alternative splicing will be found in four bipolar-related genes in four brain regions implicated in moods and bipolar disorder.

Methods

The purpose of this experiment was to observe which RNA isoforms are generated in distinct human brain regions for bipolar-related genes. Specific primers were selected that span across the different potentially alternative regions based on gene maps that were generated from data available at NCBI. Primers were purchased from Midland Certified Reagent Company and diluted to 10 picomoles/µl (table). RNA from the four different brain regions was obtained from Ambion. Reverse transcription-polymerase chain reaction (RT-PCR) was performed as directed by the manufacturer (Qiagen). The appropriate annealing temperature for each primer set was determined experimentally and are also indicated in Table 1. The cDNA products were fractionated on agarose gels and examined for size differences that were correlated back to a specific splicing choice.

Results

Evidence for alternative splicing is apparent in all four genes and all four brain areas that were examined. DISC1 analysis was divided into two regions; regions 1 and 2 were analyzed using primer sets 1 and 2, respectively. There was a problem with the assay and no results were obtained for set 1. Set 2 analysis indicated two alternative splicing patterns were observed in all four examined brain regions at 433 base pairs with the possibility of a smaller than expected cDNA in the 509 base pair region for all regions examined (Figure 1).
Table 1. Primers, sequences, and annealing temperatures utilized in reverse transcriptase-polymerase chain reaction assays.

<table>
<thead>
<tr>
<th>Gene Name</th>
<th>Set</th>
<th>Primer Name</th>
<th>Sequence (5’-3’)</th>
<th>Annealing Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISC1</td>
<td>1</td>
<td>DISC1_ASI_F01:</td>
<td>gacaccctgtaggaaatg</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>DISC1</td>
<td>1</td>
<td>DISC1_ASI_R01:</td>
<td>ggtgaaccagagaactgta</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>DISC1</td>
<td>2</td>
<td>DISC1_ASII_F01:</td>
<td>ggactcctcagaaagctg</td>
<td>59.5 degrees</td>
</tr>
<tr>
<td>DISC1</td>
<td>2</td>
<td>DISC1_ASII_R01:</td>
<td>gctttgctatctctcaca</td>
<td>59.5 degrees</td>
</tr>
<tr>
<td>IMPA2</td>
<td>1</td>
<td>IMPA2_ASI_F01:</td>
<td>ttgcaagagagtagtctct</td>
<td>59.5 degrees</td>
</tr>
<tr>
<td>IMPA2</td>
<td>1</td>
<td>IMPA2_ASI_R01:</td>
<td>ttgtaaatcactcgaatctcaaa</td>
<td>59.5 degrees</td>
</tr>
<tr>
<td>IMPA2</td>
<td>2</td>
<td>IMPA2_ASII_F01:</td>
<td>gggttcgtaatgcaccccatc</td>
<td>61 degrees</td>
</tr>
<tr>
<td>IMPA2</td>
<td>2</td>
<td>IMPA2_ASII_R01:</td>
<td>gcttgattgctttgga</td>
<td>61 degrees</td>
</tr>
<tr>
<td>IMPA2</td>
<td>3</td>
<td>IMPA2_ASIII_F01:</td>
<td>tcaagggccttgctctgac</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>IMPA2</td>
<td>3</td>
<td>IMPA2_ASIII_R01:</td>
<td>actctgcaagccctgagct</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>NRG1</td>
<td>1</td>
<td>NRG1_ASI_F01:</td>
<td>gcctgtgcaaatatatcactca</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>NRG1</td>
<td>1</td>
<td>NRG1_ASI_R01:</td>
<td>ccgctgtaatgcacccactct</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>NRG1</td>
<td>2</td>
<td>NRG1_ASII_F01:</td>
<td>gaaaaattcttcaaatgtct</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>NRG1</td>
<td>2</td>
<td>NRG1_ASII_R01:</td>
<td>ccgctgtaatgcacccactct</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>NRG1</td>
<td>3</td>
<td>NRG1_ASIII_F01:</td>
<td>tgctacccagactcactctc</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>NRG1</td>
<td>3</td>
<td>NRG1_ASIII_R01:</td>
<td>ggtgtctgtaatcagctcagactc</td>
<td>53.6 degrees</td>
</tr>
<tr>
<td>P2RX7</td>
<td>1</td>
<td>P2RX7_ASI_F01:</td>
<td>tttccgaagttgctcttcct</td>
<td>43.3 degrees</td>
</tr>
<tr>
<td>P2RX7</td>
<td>1</td>
<td>P2RX7_ASI_R01:</td>
<td>tgcccttgctcttctt</td>
<td>43.3 degrees</td>
</tr>
<tr>
<td>P2RX7</td>
<td>2</td>
<td>P2RX7_ASII_F01:</td>
<td>aaaaagaagccacagacag</td>
<td>49 degrees</td>
</tr>
<tr>
<td>P2RX7</td>
<td>2</td>
<td>P2RX7_ASII_R01:</td>
<td>tttccgaagttgctcttcct</td>
<td>49 degrees</td>
</tr>
<tr>
<td>P2RX7</td>
<td>3</td>
<td>P2RX7_ASIII_F01:</td>
<td>ggtccagacccctgacagtct</td>
<td>49 degrees</td>
</tr>
<tr>
<td>P2RX7</td>
<td>3</td>
<td>P2RX7_ASIII_R01:</td>
<td>aacggatccggaagacctt</td>
<td>49 degrees</td>
</tr>
</tbody>
</table>
**Figure 1.** The DISC1 gene and alternative splicing in human brain regions. The genomic structure of the DISC1 gene with alternative regions 1 and 2 is noted at the top. Exons are denoted as boxes and introns as lines. Alternative exons are highlighted in light gray and constitutive exons are dark gray. Arrows indicate potential transcription starts, while diamonds denote possible polyadenylation sites. Line-arcs indicate alternative events that were supported by cDNA and EST information in the NCBI databases. Agarose gel electrophoresis of RT-PCR products is shown in the middle with DNA sizes noted at the right. The diagrams at the bottom indicate the splicing events that occurred based on cDNA fragment sizes observed.

**IMPA2** alternative splicing is examined in three regions: set 1, 2 and 3. In IMPA2, set 1, there is one splicing pattern in all four examined brain regions at 200 base pairs (Figure 2). Set 2 analysis indicates 1-2 alternative splicing patterns in all four examined brain regions at 200 base pairs with a possibility of another isoform in the 500 base pair region in the amygdala and basal ganglia tissue. Set 3 analysis indicates two alternative splicing patterns in the basal ganglia and hypothalamus brain regions and one pattern in the amygdala and substantia nigra brain regions. Of these splicing patterns, one is expected at 292 base pairs and the other is unexpected at 425 base pairs.
Figure 2. The IMPA2 gene alternative splicing. The genomic structure of the IMPA2 gene with alternative regions 1, 2, and 3 is noted at the top. Exons are denoted as boxes and introns as lines. Alternative exons are highlighted in light gray and constitutive exons are dark gray. Arrows indicate potential transcription starts, while diamonds denote possible polyadenylation sites. Line-arches indicate alternative events that were supported by cDNA and EST information in the NCBI databases. Agarose gel electrophoresis of RT-PCR products is shown in the middle with DNA sizes noted at the right. The diagrams at the bottom indicate the splicing events that occurred based on cDNA fragment sizes observed.

NRG1 analysis is divided into three regions: set 1, 2, and 3. NRG1, set 1, there are two-three splicing patterns found in all four examined brain regions at 275 and 390 base pairs with one extra possible region at 539 base pairs in the substantia nigra (Figure 3). Set 2 analysis indicates there were two splicing patterns in all four examined brain regions at 296 and 272 base pairs. Set 3 shows two-three splicing patterns in all four regions at 395 and 253 base pairs with the possibility of an additional splicing event in the amygdala and basal ganglia at 725 base pairs.
Figure 3. The NRG1 gene alternative splicing. The genomic structure of the NRG1 gene with alternative regions 1, 2, and 3 is noted at the top. Exons are denoted as boxes and introns as lines. Alternative exons are highlighted in light gray and constitutive exons are dark gray. Arrows indicate potential transcription starts, while diamonds denote possible polyadenylation sites. Line-arches indicate alternative events that are supported by cDNA and EST information in the NCBI databases. Agarose gel electrophoresis of RT-PCR products is shown in the middle with DNA sizes noted at the right. The diagrams at the bottom indicate the splicing events that occurred based on cDNA fragment sizes observed.

P2RX7 is analyzed in three regions: set 1, 2, and 3. In P2RX7, set 1, there are three alternative splicing patterns found in all four brain regions at 390, 251, and 82 with a possibility of another 650 base pair splicing pattern in the basal ganglia (Figure 4). Set 2 indicates four alternative splicing patterns in all four tissues with amygdala and substantia nigra being similar at 232 base pairs, substantia nigra being different at 1000 and 75 base pairs, and another pattern in the basal ganglia and hypothalamus at 800 base pairs. A problem with the set 3 assay did not produce any results.
Figure 4. The P2RX7 gene alternative splicing. The genomic structure of the P2PRX7 gene with alternative regions 1, 2, and 3 is noted at the top. Exons are denoted as boxes and introns as lines. Alternative exons are highlighted in light gray and constitutive exons are dark gray. Arrows indicate potential transcription starts, while diamonds denote possible polyadenylation sites. Line-arches indicate alternative events that are supported by cDNA and EST information in the NCBI databases. Agarose gel electrophoresis of RT-PCR products is shown in the middle with DNA sizes noted at the right. The diagrams at the bottom indicate the splicing events that occurred based on cDNA fragment sizes observed.

Discussion and Conclusion

As expected, alternative splicing is observed in mRNAs produced from four bipolar related genes in four brain regions that had been previously implicated in moods and bipolar disorder. This is of importance 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. Further analysis is required to determine exactly how the 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.

Further research of these four genes in relation to bipolar disorder will include sequencing fragments by ligation into vectors, screening colonies, and sequencing the DNA. These sequences will be used to translate the potential mRNA isoforms into the encoded proteins. These proteins can then be compared using alignment software to determine how the proteins differ from one brain region to another. It is expected that at least some isoforms will generate truncated, nonfunctional proteins while others may be missing important regulatory domains. Taken together, these studies ultimately may lead to a clearer picture of how the cells in the brain may be involved in brain malfunction and disease.
Literature Cited


From Fright to Fight: The Evolution of the Female Action Hero

Tiffany Hughes

Dr. Susan Hopkirk

English

Billy: “It’s okay! The man is here to save the day.”

Prue: “Billy, it’s the twenty-first century. It’s the woman’s job to save the day.”

- Charmed

The Female Action Hero has become a predominant figure in popular culture in recent years. She can be found in comic books, video games, television, and film. While society has always been more accepting of the male action hero than the Female Action Hero, in recent years, the Female Action Hero has emerged in abundance. In recent years she has become more prevalent in popular culture and has even begun rivaling her iconic male counterpart. While some consideration has been given to her role as she appears today, there has been little discussion of her lineage. In order to fully understand why she has become so popular, a knowledge of where she comes from is important. The Female Action Hero is a direct descendant of the female character in horror film.

The woman’s role in horror film has been an evolving one, with a series of progressions through the years. There have been four dominant types of female characters featured within the horror and science fiction film genres. These types parallel pre-feminism and the three waves of the feminist movement, with each era featuring a dominant character. The “sacrificial virgin” appears in films such as the 1920s German expressionist film Nosferatu and mirrors the pre-feminist movement. The “damsel in distress” appears in 1930s monster movies like King Kong and mirrors the first wave of the feminist movement. The “final girl” of the 1970s slasher films, who embodies the second wave of the feminist movement, can be seen in movies such as Texas Chainsaw Massacre and Halloween. 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 Historical Evolution of Horror

According to the Oxford English Dictionary (online), horror is defined as “a painful emotion compounded of loathing and fear; a shuddering with terror and repugnance; strong aversion mingled with dread; the feeling excited by something shocking or frightful.” Horror films have become a major part of popular culture. They are meant to shock, frighten, provoke, and thrill the audience. These sensations have kept movie-goers coming back again and again for the better part of a century. While horror films generally seek to evoke these emotions, not all horror films are the same. The horror genre is diverse. It always changes,
always challenges, and constantly evolves. It criticizes, evaluates, and scrutinizes every aspect of human existence. However, the social and political messages are all too often ignored due to the horrific content of these films.

In order to fully understand how the roles of women have evolved in the horror film, a critical understanding of horror as a social and political vessel is necessary. From the 1920s to present day, horror films have gone through an evolutionary process, taking as critical a look at society as society does at them. Each decade saw a rise in new types of horror film, one that fed on the social and political fears of the time. The 1920s began with German Expressionist films that bridged the gap between art and the horrific. In the 1930s, the monster movie was dominant. The 1940s horror films came closer to home and questioned America’s societal views. During the 1950s, horror and science fiction began to blend together to create a new breed of monsters. Horror entered the family home in the 1960s. In the 1970s, the slasher film arrived, bringing about a new type of horror. In the 1980s, horror and science fiction became more firmly woven together.

1920s

In the 1920s, the term horror had not yet been applied to film. Many of the films now considered horror films were not initially viewed as such. Peter Hutchings, author of The Horror Film explains, “While most accounts of horror history published in the past thirty years refer to the German productions The Cabinet of Dr. Caligari and Nosferatu as horror films, it is clear that these films were neither produced nor originally marketed as horror films but instead as ‘art movies’” (3). Art films, including German Expressionist films were meant to attract the upper class to the cinematic world. Prior to the creation of these art films, movies only attracted the working and middle classes. Robert Sklar explains in his book, Movie Made America, “They were the first of the modern mass media, and they rose to the surface of cultural consciousness from the bottom up, receiving their principal support from the lower and most invisible classes in . . . society” (3). The creation of the art film sought to change this, and aspired to attract a more upper class audience to the cinema. In Horror: The Film Reader, Mark Jancovich writes in regards to the art film, “this movement . . . was not intended as a form of popular entertainment but was a self-conscious attempt to make the cinema respectable for bourgeois audiences, and give it the status of art” (3). This connection between art and horror films is significant because, as David Skal, author of The Monster Show, states, “horror has always had a certain affinity for modern art movements and it has often quoted their mannerisms, possibly because, at a root level, they are inspired by similar cultural anxieties” (55).

Nosferatu (1922) and The Cabinet of Dr. Caligari (1920) are two key examples of these art films, ones which gained horror status decades later. They have become horror films because the public has seen them as such and are only categorized so in retrospect. Because these films are now classified as horror films by many film theorists and critics, they will be treated as such here as well. The Cabinet of Dr. Caligari was revolutionary because it broke the established conventions of cinematography. A man named Cesare is under the control of a magician, Dr. Caligari. Cesare kills a young man named Alan and then abducts his fiancée. While the story itself is a fairly typical horror plot, what made the film so revolutionary were its sets. The settings were angular and distorted, their shadows created with paint instead of light. Everything was artificial and stylized. The film lacked any pretense of “realism,” and took a more expressionistic approach, a practice that had been “underway in the worlds of paintings and sculptures for decades” (Skal 39).

The Cabinet of Dr. Caligari worked in the realm of horror in American minds for one reason: it fed on American insecurities – specifically insecurities in relation to their ability to create art. Skal writes, “Caligari was a kind of cultural sputnik launched out of no-
where by Europe, a gauntlet not thrown down, but projected up on the shivering screen of America’s insecurities” (43). Until the release of The Cabinet of Dr. Caligari, America, and more specifically American filmmakers, believed they dominated the cinematic world. Caligari represented a kind of revelation to much of its audience, which felt it was witnessing an evolutionary leap in cinema, a leap that had American filmmakers both baffled and fearful. It gave a clear and present challenge, Skal suggests, to the preeminence of the American film industry (43).

1930s

Though the term “horror” in relation to film had not been created in the 1920s, it was defined in the 1930s. Hutchings writes, “Horror cinema began in the early 1930s in the American film industry . . . the early 1930s marked the point where the term ‘horror’ became understood as designating a particular type of film” (9). With the creation of a defined horror genre, the 1930s saw the rise of the monster movie. Many of these were initially produced, mediated, and consumed as film versions of contemporary theatrical hits. According to Jancovich, these films were “often used to prove the link between horror and the relatively respectable tradition of Gothic literature” (3). This is evident in films such as Frankenstein (1931), based on the Mary Shelley novel, and Dracula (1931), based on the Bram Stoker novel. These films drew on some of the techniques of German expressionism, and helped to establish the iconic images of Dracula and Frankenstein that are still prevalent today. The storyline took place in some distant land, and situated the monster at the center of the film’s concerns, often creating an almost sympathetic monster, as in Frankenstein, which the audience both feared and pitied.

The monster, in most cases, represented society’s fears in regards to war, race, and class. These films were saturated with social and political fears and often shrouded these fears under a mask of fairy tale themes, such as the Beauty and the Beast theme of King Kong (1933). The film King Kong is saturated with racial undertones, from the giant gorilla, to the natives of Skull Island. In King Kong: The Beast in the Boudoir – or, “You Can’t Marry That Girl, You’re a Gorilla!,” Harvey Roy Greenberg writes:

It is integral to the exuberant racism of King Kong that the Negro should be portrayed as the degraded repository of the white man’s forbidden impulses . . . It is always the other guy, the swarthy foreigner with the strange speech and natural sense of rhythm, who indulges in the dirty, delicious deeds denied us in the name of higher civilization (344).

Kong is the epitome of the white man’s fear of the “brute black,” the heartless, mindless foreigner, feasting on violence, who kidnaps the beautiful white woman from her protectors and threatens to defile her with his blackness.

Monsters also reflect what art historian Sidra Stich, in her book Anxious Visions, sees as the preoccupation with deformed and disfigured bodies, attributable to the sudden presence, following the war, of a sizable population of the crippled and mutilated. Stich writes, in regards to art, “The invasion of death into the world of the living and the representation of the human body as utterly violated are predominant in Surrealist configurations” (30). She goes on to say “With their missing, dislocated, and disproportioned body parts, Surrealist figures call attention to the body as a disunified entity in which absence and deficiency prevail” (30). Monsters became a central theme in post-WWI America, playing heavily on the fears associated with the war and its ramifications. Many maimed soldiers returning from World War I, having undergone battlefield surgeries, were being assimilated back into society in unprecedented numbers. Skal notes that “modern warfare had introduced new and previously unimaginable approaches to destroying or brutally reordering the human body,” (48). He adds, “Parallel advances in modern medicine made it possible for
soldiers to survive injuries that earlier would have been fatal” (48). And this theme of the “disunified” entity found its way into film. A prime example is Frankenstein’s monster, a creature that is sewn together from the body parts of corpses.

1940s

A similar concern, in regards to war, was also present in films of the 1940s. However they differed from their 1930s predecessors. Jancovich notes that, “despite their Gothic elements, these films often located their narratives within a recognizably modern world” (3). As Jancovich states, “The horror no longer takes place in some exotic never-never land but erupts within the normal and everyday” (3). While they might, as in the case of Cat People (1942), “present conflict between modern rational America and a traditional and superstitious old world,” the drama often takes place within the modern American city, and “calls into question the very certainties on which this world depends” (3). Unlike Frankenstein or Dracula, where the events take place in a distant land, these films brought horror home. The places and people were normal American cities and normal American people, but with outsiders among them.

Along with World War II, immigration was a key issue during the time when these films were produced. Those who could afford to fled their home countries and Nazi persecution for safety within the United States. And for the first time, many Americans did not know their neighbors, where they came from, or who they were. There was immense fear associated with this penetration of Europeans into the States. For example, Skal tells that Cat People was originally conceived as a contemporary war story, focusing on the conflict associated with Nazi Germany. In the original concept, a Nazi Panzer invades a Balkan village. The inhabitants of the village put up no immediate resistance, because at night they are able to transform into giant “were-cats” and kill their oppressors. A village girl flees the village and journeys to New York, bringing the cat-people curse with her. In the final script, the Nazis were dropped, but the character of the emigrant cat girl remained the centerpiece.

What was most fascinating about Cat People, was Val Lewton’s producing style. Lewton, himself, was an outsider. Born in Yalta, Ukraine, he, his mother, and sister immigrated to the United States in 1909. His familiarity with being an outsider at a time of great distress and distrust of immigrants gave him a different perspective on how to construct his films. Lewton allowed the audience to create horrific details in their own minds, a technique, Skal states, Lewton had “developed before and during the war years in another medium”: radio (221). Lewton left several questions unanswered in his narratives, giving the audience creative reign to fill in these gaps with their own theories, hypothesis, and personal fears. Lewton believed not everything should be spelled out for the audience and some mystery was necessary to create good horror, and good horror had to hit close to home (222).

1950s

Lewton’s 1940s films brought horror closer to home, into everyday reality. The 1950s introduced a series of monsters that were clearly associated with the real world of modern science. The 1950s saw the first blurring of the lines between horror and science fiction, and Jancovich points out that it is unclear whether many 1950s films should be classified as one or the other. This was a source of argument among many critics. For example, in his book, American Film Genres, Stuart Kaminsky distinguishes horror from science fiction by arguing that “horror films are overwhelmingly concerned with the fear of death and the loss of identity in modern society” while by contrast “the science fiction film deals with fear of life and the future, not fear of death” (101,111). However he then discusses, as horror, a number of films thought by other critics to be science fiction, including It Came from
Outer Space (1953), The Creature from the Black Lagoon (1954), and Invasion of the Body Snatchers (1956). Jancovich states that films of this time “often involved alien invading forces from outer space, or else a horde of invaders caused by human science itself” (4).

These films grew out of the aftermath of World War II, which had claimed the lives of more than 40 million soldiers and civilians, and had “introduced two radical new forms of mechanized death – the atomic bomb and the extermination camp – that seriously challenged the mind’s ability to absorb, much less cope with, the naked face of horror at mid-century” (Skal 229). The advancements in modern science, in combination with the race for space, raised the question of what their ramifications might be. The atomic bomb had been dropped, so the fears of what science could accomplish were heavy in people’s minds. Skal states, “Dracula’s threat of a quaint, venous invasion was tired indeed . . . An enveloping cloak was no longer an image of dread. But a mushroom cloud was” (247). As the prospects of exploring the reaches of space became more attainable, UFO fears arose as to what could be found out there.

The threat of mass destruction was now heavier than ever in the minds of Americans, and so were its movie monsters. The monsters of the 1950s came in two basic types: gigantic, destructive mutations, such as Godzilla (1954), explicitly the product of atomic testing; and alien invaders, sometimes monstrous in size themselves. An example of the latter is the film Invasion of the Body Snatchers (1956) which played on the fears of what lay beyond earth’s atmosphere. In the film, an invasion of “vegetable pods” created human doppelgangers who assume the identities of the humans living in a small California town. Many of these films gained popularity among the teenage demographic, and AIP (American International Pictures) produced a number of alien-invasion narratives that were aimed directly at teenage audiences.

For science-produced horrors, Godzilla is a key example of the “mutation-metaphor variety” (Skal, 248). Fittingly, the film was produced in Japan, the only society to have endured nuclear attack, but the fear associated with this form of attack resonated deeply in American society as well. The film added atomic trauma to the King Kong formula. Skal states, “Oversized radioactive monsters were lightning rods for atomic war anxiety, and one of the most successful and imitated Hollywood formulas since the Western . . . the only thing the Bomb was capable of distorting and magnifying was cultural dread” (248). In the film, a 400-foot lizard-like creature springs to life in the wake of heavy nuclear weapon testing over the Pacific Ocean. The creature then proceeds to wreak havoc on Tokyo. Because of the mass destruction of the atomic bomb, fears of how far modern science could go resonated in these films. These fears successfully launched a series of other giant-monster films, including Them! (1954), It Came from Beneath the Sea (1955), Tarantula (1955), and The Beginning of the End (1957), to name but a few.

In the latter part of the 1950s, horror films returned to the Gothic elements of the genre. Roger Corman began creating a series of films loosely based on the works of Edgar Allen Poe, such as The House of Usher (1960), The Black Cat (1961), and Pit and the Pendulum (1961). These films were made on small budgets but were “lavish colour films that used visual excess to create a nightmarish world of melodramatic fantasy” (Jancovich, 4). In Britain, a small company called Hammer had huge success with its own film versions of Frankenstein and Dracula. These films were also cheaply made but used color and strategic set designs to create a vivid Gothic world that “shocked audiences with its gore” (Jancovich, 4). This revival of the Gothic horror continued into the early 1960s.
1960s

The 1960s revolutionized horror for two reasons. First, in this era critics began to recognize horror films had possible political dimensions to it, which opened the door to reexamining horror films of earlier decades. As Hutchings notes, “The idea that horror might have a political dimension, that it could provide a meaningful engagement with key social and political issues of the day, was a relatively new one” (171). Second, the 1960s placed horror within American society and the American family. While the 1940s placed horror in “our own backyard,” the 1960s placed horror, for the first time, within the walls of the family home, much like Gothic tradition. Horror now began to take place within the family, as in *Psycho* (1960), or within a manufactured family unit, as in *Night of the Living Dead* (1968). Indeed, Jancovich credits Alfred Hitchcock’s *Psycho* for single-handedly transforming the horror film.

It was also in this decade that horror developed a more modern feel, leaving behind the old Gothic tradition. Hutchings reiterates: “It was in this decade that certain horror films issued challenges to the established conventions of the horror genre” (169). *Psycho* swept aside some of the Gothic trappings of earlier movies and offered instead a recognizably up-to-date modern world. In the film there are no castles, monsters, or sinister villains. The monster is not a supernatural being but a seemingly ordinary young man, Norman Bates, who is psychologically unstable. Bates suffers from a split personality: being both son and mother, he is not only unable to control his killer impulses, but is unaware of their existence.

While Jancovich sees *Psycho* as “initiating a cycle of family horror films,” the cycle “does not seem to have started until eight years later with the release of *Night of the Living Dead* (1968)” (4-5). In *Night of the Living Dead* a group of humans are forced into a “family” unit in order to survive a horde of flesh-eating zombies who are after them. The fact that this family is a manufactured one creates much of the tension, and the film focuses largely on this aspect. Most of the horror within the film centers around the trials the group undergoes in order to survive, including struggles to define traditional roles and how to adequately interact within this construct. Since the group in the film was created out of force instead of willingness, the tension is even greater. This trend of the “family horror film” continued into the early 1970s.

1970s

In the 1970s, horror completely lost its gothic feel with the emergence of the slasher film. The slasher has been classified as the bane of the horror film’s existence by many film scholars. Hutchings explains: “Their cheapness, crudeness, and formulaic repetitiveness, along with their apparent pandering to unsophisticated teenage audiences, led to their being seen as degrading experiences” (193). Carol Clover echoes this sentiment in her book, *Men, Women, and Chain Saws*, stating, “Drenched in taboo and encroaching vigorously on the pornographic, the slasher film lies by and large beyond the purview of the respectable audience . . . Even commentaries that celebrate “trash” disavow the slasher, usually passing it over in silence or bemoaning it as a degrading aberration” (21). These films were intended to be cautionary tales, warning teens of what could happen if they strayed from their “American values.” The 1970s saw a general push for a return to these values, a push which came on the heels of the Free Love movement of the late 1960s and early 1970s. Hutchings notes, “The slasher offered ‘a conservative moralism regarding sexuality’ which was itself just one part of a broader turn to the right that took place in American film and American society towards the end of the 1970s” (193). In the slasher film, the sexually promiscuous characters of both sexes are killed early in the film. The genre is full of couples trying to find places to have sex, and immediately afterward, or even sometimes during sex, they are
killed.

Jancovich argues that in many ways, the slasher film is considered very “conservative . . . in regards to its attitudes towards women” (5). He believes that this is for two reasons: first, the slasher film forces the audience to identify with the killer and his violence instead of his female victims. The slasher film usually relies on subjective camerawork, and in particular the killer’s point of view. As Hutchings points out, “this emphasis is clearly present in the opening sequence of two key early slashers, \textit{Halloween} (1978) [and, overlapping into the 1980s] \textit{Friday the 13}\textsuperscript{th} (1980)” (195). In both films, the killer’s stalking of his (or in the case of \textit{Friday the 13}\textsuperscript{th}, her) victims is shown via point-of-view shots, shot from the killer’s perspective, thereby forcing the audience to witness the events from the killer’s perspective. Secondly, 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 therefore argued to be part of a violent reaction against feminism” (5). Robin Wood, in his book, \textit{Hollywood from Vietnam to Reagan} elaborates further, stating the slasher is 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). Hutchings states, “The slasher’s reliance on the stalking and terrorization of women lead to a new charge, that of misogyny, with the films themselves branded as violent and pernicious reactions against feminism” (193). However, as will be discussed later, the slasher film provides a notable character for closer examination in the evolution of the female character within the horror genre.

1980s

The 1980s saw the emergence of two different horror hybrids. \textit{Aliens} (1979), which was released only a year after \textit{Halloween}, has been central to the development of these two hybrids. There was a return to the horror/science fiction hybridization, which had begun in the 1950s, and now became more tightly knit, along with the creation of the “body/horror” subgenre during this time. Body/horror is essentially horror played out upon or within the body (Jancovich 5). Films of this time consisted of many re-workings of 1950s science fiction tales, giving them more horrific themes than the originals had possessed. The threat found in these films was no longer physically external, but rather physically internal.

These internal fears played on the fears in society associated with the rising of the then-still-unnamed epidemic now known as AIDS. Skal writes:

Edgar Allen Poe’s macabre short story “The Masque of the Red Death,” first published by \textit{The Broadway Journal} in July 1845, required a cultural gestation of a century and a half before its full significance would be revealed to America . . . as an urgent plague parable for the age of AIDS. By the mid 1980s, all of America was living in Poe’s dream in one way or another (333).

In Poe’s “The Masque of the Red Death,” a disease known as the red death plagues the country where the tale is set, and causes its victims to die quickly and gruesomely. Prince Prospero, the ruler of the land, decides to lock the gates of his palace in order to fend off the plague, ignoring the illness ravaging the land. After several months, he throws a masquerade ball, full of multi-colored rooms the guests visit. At midnight, a new guest appears, dressed more ghoulishly than the other guests. His mask resembles the face of a corpse, his garments resemble a funeral shroud, and his face reveals spots of blood suggesting that he is a victim of the red death. Prospero becomes angry with the guest’s presence and confronts him, but at this moment of confrontation Prospero dies. The other party-goers, outraged, enter the room to attack the cloaked man, only to find there is nobody beneath the costume. Everyone then dies, for red death has infiltrated the castle. The twentieth-century social and political response to the new blood-borne epidemic had much in common with Prospero’s
defeating strategy of denial. 1980s America denied the reality of AIDS, locking its doors against the victims of the plague.

With the obsession of blood and death, popular culture became rancid with sanguinary themes; splatter movies and blood-spilling serial killers became fixtures in the cinema. And unsurprisingly, vampire movies reemerged and became a constant presence in film and television. The threat of transformation occurring within the body was a key element in the vampire’s revival. Barbara Creed, in her essay, *Horror and the Monstrous Feminine* writes, “The modern horror film often ‘plays’ with its audience, saturating it with scenes of blood and gore, deliberately pointing to the fragility of the symbolic order in the domain of the body” (74). Vampires, needing blood to survive, and transforming their victims into vampires by “injecting” their victims with their own blood resonated heavily with the fears associated with the AIDS epidemic.

**Feminism and the Women of Horror**

Horror films and their creators have provided interesting insights into the changes society has undergone through the years. But why does horror’s social and political history matter? Understanding horror’s social and political messages makes it easier to decipher significant meaning contained within the evolution of the female character within this genre. This evolution features three specific types of heroine: the sacrificial virgin, the damsel in distress, and the final girl. Each evolves into a stronger character as time progresses, with this evolution leading to the creation of the female action hero. In many ways, this evolution of the horror heroine mirrors the three waves of the feminist movement.

Susan Shaw and Janet Lee, in *Women’s Voices, Feminist Visions* note that, while feminism itself is hard to define, there is agreement on two core principles underlying this ideal. First, “feminism concerns equality and justice for all women, and it seeks to eliminate systems of inequality and injustice in all aspects of women’s lives” (9). Second, “feminism is inclusive and affirming of women; it celebrates women’s achievements and struggles and works to provide a positive and affirming stance towards women and womanhood” (9). Through the workings of many women over the years, the feminist movement has become an important vessel for social change. The history of the feminist movement has been divided into three waves by feminist scholars. The first wave lasted from the 1800s through the 1920s. The second wave peaked in the 1960s and 70s. Society is currently in the third wave, which began in the 1990s.

**Pre-feminism and the Sacrificial Virgin Archetype**

During pre-feminism, Shaw and Lee note, “Women had few legal, social, and economic rights in the nineteenth-century U.S. society” (7). Many women lived lives of oppression, silence, and submission. Shaw and Lee explain, “They had no direct relationship to the law outside of their relationships as daughters or wives; in particular, married women lost property rights upon marriage. Women were also mostly barred from higher education until women’s colleges started opening later in the nineteenth-century” (7). Prior to the first wave of the feminist movement there was a belief that the ideal woman was what Virginia Woolf calls the “angel of the house.” Woolf writes, “She was intensely sympathetic. She was immensely charming. She was utterly unselfish. She excelled in the difficult art of family life. She sacrificed herself daily . . . Above all – need I say it – she was pure” (51). Elaine Showalter, in her article “A Literature of Their Own,” reiterates this idea: “The middle-class ideology of the proper sphere of womanhood, which developed in post-industrial England and America, prescribed a woman who would be a Perfect Lady, and Angel in the House, contentedly submissive to men, but strong in her inner purity and religiosity, queen in her
own realm of the Home” (13). The woman’s duty was to her family and home first and foremost, and she was expected to sacrifice herself for the good of this unit.

Women’s rights outside of the home were extremely limited. Charles Conrad, in his article, “The Transformation of the ‘Old Feminist’ Movement” writes, “Laws regulating the economic sphere virtually eliminated any opportunity for women to own or operate a business or, with single exception of teaching school, to engage in any occupation that took them outside the home. In the economic sphere women were regarded as any other item of property . . . Wife-beating was sanctioned by law on the grounds that, like slaves and children, wives must be disciplined occasionally” (286).

Societal norms and legal proscription forced almost all women into the same role, a role of subservience, dependence, and submissiveness.

In film, pre-feminism is personified by the sacrificial virgin archetype of the 1920s. Like the angel of the house, her duty was to sacrifice herself for the good of those around her, giving her life if necessary to maintain the patriarchal order.

This idea of the sacrificial virgin dates back to ancient Greece and Rome. Although they did not practice human sacrifice, the myth of the sacrificial virgin resonates powerfully as a subject in the visual arts of ancient Greece, Etruria, and Rome for over a millennia, from the early seventh-century BCE on, with several sacrificial virgins found in ancient myth.

Edith Hamilton, writes of the Greeks traveling to Troy to start the war:

The only way to calm the wind and ensure a safe voyage to Troy was to appease her by sacrificing to her [Artemis] a royal maiden, Iphigenia, the eldest daughter of the commander in chief, Agamemnon. (261).

The sacrifice of Iphigenia signified the start of the Trojan War, while the sacrifice of yet another virgin, Polyxena, ended the war (289). These women gave their lives for the betterment of patriarchal society. Like angels of the house, they were limited by the world they lived in, and were expected to do this willingly. In her article, “Δόμων ἄγαλμα: Virgin Sacrifice and Aesthetic Object,” Ruth Scodel writes, “While no representation of human sacrifice entirely lacks moral ambiguity, some treatments present sacrifice as the exchange of one life for many and as the salvation of the city” (111). Virgin sacrifices are usually of the young, female, pure-minded, often raised from birth to accept, or even to celebrate, their honored position as virgin sacrifice. Virginity suggests moral purity; greater moral purity is equated with greater access to the gods.

This use of the virgin is an important part of the horrors associated with the idea of human sacrifice. Like Ellen, in Nosferatu (1922), who could have chosen to resist the thrall of the villain Orlok, a vampire, but chose to lay her life down for the betterment of the town, her duty is not to herself, but instead to her family and society. In Nosferatu, Hutter, Ellen’s husband, is sent to Transylvania by his employer to arrange for Count Orlok to purchase a house in Bremen. While there, Orlok sees a picture of Ellen and becomes obsessed with her. Leaving Hutter behind, Orlok leaves for Bremen, where he moves into the house he has purchased across the street from Hutter and Ellen’s home. One night Orlok goes to Ellen’s home to feed on her, but Ellen prolongs this feeding until sunrise, and Orlok is destroyed by the rising sun. Subsequently, Ellen dies as a result of this prolonged feeding. Robin Wood, in his article, “Burying the Undead: The Use and Obsolescence of Count Dracula,” writes that Ellen’s sacrifice of herself “again enlists the woman in the battle for patriarchy, but the nature of the sacrifice is profoundly ambiguous, and the price of victory is her own destruction” (375). The use of Ellen throughout the film is skillful. She stands perfectly positioned between Hutter, her husband, and Orlok, her would-be suitor. She is a pivotal character who alone possesses the power to destroy or save both man and monster. Hutter and Orlok can both be viewed as husband/lover figures for Ellen, and the decision of who to accept is hers. However, in giving herself to Orlok, Ellen becomes Orlok’s destroyer.
Nosferatu is based loosely on the Bram Stoker novel, Dracula, which was written in the Victorian period. Wood claims:

The ultimate horror of the novel is horror at the possibility of the arousal of female sexuality. The virtuous Victorian woman was, after all, supposed not to enjoy sex but to endure it . . . Sexuality is also energy, power, activity: sublimated, it is the source of all creativity, pleasurable work, achievement. If woman became sexual beings, who knows where it might all end? Only two options could be permitted: women must be either asexual, passive, and pure, or sexual and degraded. (373).

Ellen dutifully resists Orlok’s calling and therefore maintains her purity. This denial of her sexual desire positions her as a sacrificial virgin, one able to save her town from the vampire’s threat.

The Damsel in Distress and the First Wave

The First Wave of the feminist movement was a period of activity during the late 19th and early 20th centuries. It came about in response to the limited rights women had during this time. Conrad writes, “The central feature of feminist rhetoric was the demand for destruction of this mold, for universal recognition that women were fully human individuals” (286). The first wave set out to earn women certain freedoms that had previously been denied them, such as the right to property, education, and suffrage, and was a breaking away from women’s dependence on their male “owners.”

In film, the first wave is represented by the damsel in distress of the 1930s. The damsel in distress, or the persecuted maiden, is a classic theme that occurs frequently in literature, art, and film. She is usually a young, nubile woman who is placed in a dire predicament by a villain or monster. The word “damsel” is derived from the French word, demoiselle, meaning “young lady.” The word is now an archaic term, not often used in modern English, except in this context. The damsel is a woman in peril who is in need of rescue by an outside force, typically male.

Much like the sacrificial virgin, the damsel in distress is rooted in Greek mythology. One famous example is Andromeda, whose mother offended Poseidon. Poseidon sent a beast to ravage the land, and Andromeda’s parents fastened her to a rock in the sea to appease him. The hero Perseus slew the beast, saving Andromeda (Hamilton 207-208). Andromeda’s plight, chained naked to a rock, became a favorite theme of later painters.

Today the theme of the damsel in distress is most prevalent in fairy tales. Evil witches trap Rapunzel in a tower, curse the princess to die in Sleeping Beauty, and put Snow White into a magical sleep. In all of these fairy tales, a valiant prince comes to the maiden’s aid, saves her, and ultimately marries her.

The damsel in distress has also continued to be a mainstay in film and television throughout the 20th century. Ann Darrow, played by Fay Wray in the 1933 film King Kong, is among the most iconic instances of the damsel in distress. In the film, Ann, is taken captive by the natives of Skull Island while shooting a movie. The natives offer Ann to Kong, a giant gorilla. Kong takes Ann and escapes into the depths of the island with her. Ann’s lover, Jack, and his comrades pursue the monster in a quest to rescue Ann. Upon rescuing her, they capture Kong and return to the U.S. with him, where he escapes only to capture Ann again. Once more, Jack must save her from the beast.

Monster movies of the 1930s such as King Kong depict a female character which is central to the issues of first wave of feminism which fought against notions of women as helpless beings. The damsel in distress functions on two levels in respect to first-wave feminism. On one hand, she represents the state from which women desired to break away: their dependency on their male counterparts for safety and security. On the other hand, she appears as a form of backlash against the feminist movement. These films served as a warning
to women of what could happen to them if they were contrary and sought independence.

The damsel in distress is constituted by the males around her, whether human or monster who treat her as property. The monster film presents her as the object of the monster’s desire, and as his victim. She is incapable of saving herself and must rely solely on the male hero to rescue her. She represents the embodiment of desire for both the beast and the male hero – a prize to be won. In her essay, “Visual Pleasure and Narrative Cinema” Laura Mulvey writes, “Traditionally, the woman displayed functioned on two levels: as erotic object for the characters within the screen story, and as erotic object for the spectator within the auditorium, with a shifting tension between the looks on either side of the screen” (63). More importantly, she is the pivotal figure in the male’s struggle to overcome his primal instincts. Skal writes, “Monster movies opened up the possibility of psychic lawlessness; a monster, for Hollywood, was a gangster of the id and unconscious” (114). If one views the beast and the male hero as two sides of the same person (primal and civilized), one can view the damsel in distress as the catalyst for this conflict within the male ego. The damsel is a plot device. Harvey Roy Greenberg echoes this sentiment by stating, “[Jack] Driscoll and his simian adversary are also two sides of the same adolescent ego. For Kong may be read as Driscoll’s naked ape, Driscoll’s unconscious pubescent lust” (345).

Like most fairy tales, King Kong (1933) functions as a cautionary tale, created for women. The damsel in distress character seems to serve as a warning to women, cautioning them of the dangers they may fall prey to upon leaving the sanctuary of the home.

The notion that woman cannot take care of herself is made exceedingly clear through Carl Denham, the director who hires Ann to play in his movie within a movie. Greenberg writes, “Denham regards women as a weak but potentially dangerous vessel. He is comfortable with her as long as she can be treated either as a desexualized buddy or a mere block of talent to be shoved dumbly before the camera” (342). Prior to Denham hiring her, Ann is trying to make it on her own in the world. He finds her near a mission for destitute women, where she has just been caught stealing an apple, so the director must rescue her before he can hire her.

The film’s underlying function is to prove that women are unable to survive in society on their own. This point is made repeatedly through the film, as time and time again, Ann must be rescued from horrible situations by her male counterparts. Ann’s first encounter with Kong is saturated with rape imagery. The enormous gate towering over the village on Skull Island is flung open, and the natives tie her wrists to two posts set on a massive altar. They leave her spread invitingly before Kong. The gate is shut, with what Greenberg suggests is “a mighty phallic bolt driven home” (345). As Kong approaches, Ann screams in fear of what is to come. Despite the rape imagery, however, the audience knows there is no immediate threat to the life of the damsel. Still, as Mulvey suggests, the “male gaze” is focused on Ann through the entire course of the film. She is the beautiful blonde woman that must be, and is, rescued by Jack. Ann has become a metaphor of woman not in control of herself, swept away against her conscious will by the dark sensuality of the man-beast. The helplessness of the damsel in distress, who can be portrayed as foolish and ineffectual to the point of naiveté, along with her need for others to rescue her, has made this stereotype the target of feminist criticism.

The Second Wave and the Final Girl

The Second Wave of the feminist movement came about in response to the late 1940s post-war boom, an era characterized in America by unprecedented economic growth, the baby boom, suburban expansion and the triumph of capitalism. This era began to set the standards for a socio-economic model that favored middle-class development. However, it was also an era marked by a consistent effort to re-establish the pre-war patriarchal social
trends. The second wave fully emerged in the late 1960s and early 1970s at “a moment of social turmoil as various social movements questioned traditional social and sexual values, racism, poverty and other inequalities in the U.S.” (Shaw, 2-3). It encouraged women to understand the psychological implications of sexist stereotypes, and helped them realize they could achieve more in life than being a housewife and mother, in ways the first wave had not. Shaw and Lee tell us, “The objective was to improve women’s status in society and therefore the conditions of women’s lives” (3). The movement opened up the eyes of American women to a world of careers and achievements. The second wave brought about legal changes such as the Equal Pay Act in 1963 which sought equal pay for men and women performing the same work, Title VII of the 1964 Civil Rights Act which forbade workplace discrimination, and the creation of the Equal Employment Opportunity Commission to enforce antidiscrimination laws in the early 1970s (Shaw 5).

If the second wave of the feminist movement brought about more equality for women in the world around them, the slasher films of the 1970s brought about more equality for women in terms of horror film heroes. This new-found hero came in the form of what, Carol Clover, in her book, Men, Women, and Chain Saws, has named “the final girl.” In the slasher films of the 1970s and 80s, such as Halloween or Friday the 13th, there is an unknown assailant, either unseen or masked, who is determined to kill as many people as possible, either for revenge or out of sheer insanity. In these films, no male character survives the ending and the killer is either himself (or, rarely, herself as in the case of Friday the 13th I) killed or otherwise removed from the story. “The one character of stature who does live to tell the tale is of course female” (Clover 44). Clover explains that the final girl is introduced in the beginning of the film and is the only character to be fully developed. She is able to save herself by either escaping or killing the murderer.

While the slasher film brought about a female character who is able to survive on her own, outliving the male characters in the film, it still maintains elements of the gender roles of earlier films. The final girl is not entirely feminine, but takes on some “masculine” traits. The final girl is the “investigating consciousness” of the film, moving the narrative forward, and as such, she exhibits intelligence, curiosity, and vigilance. She is typically sexually unavailable or virginal, avoiding the vices of the victims (sex, drug use, etc.). She sometimes has a unisex name, such as Teddy, Marti, Billie, Georgie, Sidney. Clover writes: “The gender of the final girl is likewise compromised from the outset by her masculine interests, her inevitable sexual reluctance, her apartness from other girls, sometimes her name” (48). However, Peter Hutchings differs with Clover’s analysis stating, “It is interesting that while Marti [Hell Night] uses her skills as a mechanic to save herself, Laurie [Halloween] fights back with domestic implements – a knitting needle, a coathanger – more associated with femininity” (203). Yet he does agree with Clover’s analysis that the final girls are “separated out in a schematic way from other women in the film” (204). This separation is apparent in their clothes, which are more modest than those worn by other females within the film, and in their abstinence from sexual activity. Hutchings suggests that the real difference is a difference between the women in the film, as opposed to a difference that “betrays or compromises the femininity of particular women” (204).

What both Hutchings and Clover fail to mention is the dynamic of the virgin/whore dichotomy that exists in the slasher film. Characters such as Marti and Laurie survive because they are perceived as virginal characters, while their female counterparts in the films, who are clearly not virginal are killed, seemingly for their impurity. The dichotomy seems to state that only the good girl can survive the ending. But this survival does not come without a price. The final girl is able to survive, but it is at the expense of extreme torture. She not only witnesses the deaths of her friends, but she herself is in perhaps more danger than even they were. In some instances the final girl will have a shared history with the killer, one that makes her his primary target. Clover writes, “She is abject terror personified. If her friends
knew they were about to die only seconds before the event, the final girl lives with the knowledge for long minutes or hours” (35). Whether the difference of the final girl is that her role is in opposition to another type of woman, or combines elements of femininity and masculinity, the final girl is inherently different than other characters in the film.

Clover suggests that when the slasher film’s final girl, such as Laurie in Halloween, 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). Conversely, Clover points out that the villain of slasher films is often a male whose masculinity and sexuality are in crisis. The reason the final girl is so pursued by the killer is due to the threat she represents to him. Mulvey states that the woman in film “symbolizes the castration threat by her real lack of a penis” (59). To the killer, whose gendering is already in question, the threat of the final girl is even more significant. Her asexual nature and her denial of him serve as a catalyst for his rage. She becomes the ultimate conquest, one he cannot and will not obtain.

This fear of the powerful female was an issue that also arose in the wake of the second wave of feminism. Some men felt threatened by the intrusion of women into their world which was perceived as a sort of “manning” of the woman’s role. Thus, Hollywood responded with a “mannish” version of the female character. Because the final girl is sexually ambiguous, male viewers more easily associate with her. Clover argues that for a film to be successful, although the final girl is masculinized, it is necessary for this surviving character to be female, because she must experience abject terror, and many viewers would reject a film that showed abject terror on the part of a male character. Clover argues that the final girl “is (apparently) female not despite the male audience, but precisely because of it” (53), and “She alone looks death in the face, but she alone also finds the strength either to stay the killer long enough to be rescued or to kill him herself. But in either case, from 1974 on, the survivor figure has been female” (35). The slasher film forces the male audience to identify with a young female character in an ostensibly male-oriented genre, usually associated with sadistic voyeurism. The final girl could be viewed as man’s way of coping with the changing dynamics of the second wave of feminism, because of her seeming gender neutrality, allowing men the buffer for the transitions they themselves were experiencing, while still granting women the hero they desired in film because she is inherently female.

The Female Action Hero and the Third Wave

Beginning in the early 1990s, the feminist movement entered the third wave, where it finds itself today. Still defining itself, the third wave focuses on issues that were neglected in the first two waves of the movement. It seeks to challenge or avoid the second wave’s “essentialist” definition of femininity, which often assumes a universal female identity. Third-wave feminists are more diverse than their predecessors in regards to identity, sexuality, and ethnicity. In her article, “We’ve Only Just Begun: Translating Third Wave Theory Into Third Wave Activism,” Amy Schriefer writes:

Third wavers believe that the negotiation and contradiction of our differences is the main concept of modern feminism, requiring us to rethink what our movements and activism look like as well as our meanings of identity and community. This celebration of difference welcomes the influence of feminists of color and queer feminists who feel that their voices [were] previously left out. (no pagination)

Third-wave feminism deals with issues that seem to limit or oppress women, as well as other marginalized identities and a post-structuralist interpretation of gender and sexuality is central to this wave. Schriefer writes, “The third wave is young and we are still learning to negotiate the differences in not just our cultures, races, sexualities, and classes, but our experi-
ences that were shaped by these factors. Theorizing and understanding these differences will help us break down the barriers that differences cause so we may work together without sacrificing our identities” (no pagination). However, this diversity poses a potential problem for the third wave. Amelia (Amy) Richards, in her article, “Body Image: Third Waves Feminism’s Issue” notes, “Because we now have many different paths to – and definitions of – empowerment, it’s become difficult to organize a unified movement” (220).

It was not until the 1990s that Hollywood created its now dominant female character in horror and science fiction. The creation of the female action hero took off in response to the overwhelming number of male action heroes in films, and the lack of a female presence in this genre. While there has been some movement in film with the creation of this character, television is still the forefront in this movement. Shows such as Charmed, Alias, Dark Angel, Bionic Woman, and Buffy the Vampire Slayer have led the way in constructing the new female character, who enters on the heels of the third wave of the feminist movement. This heroine is a transformation into a stronger, more independent woman who is no longer the victim fighting for her life, but instead challenges Hollywood’s former creations of the female character in horror. She no longer saves herself because she must, like the final girl, but instead saves the world because she is the only one who can.

Joss Whedon’s Buffy the Vampire Slayer premiered in 1992, reflecting both Whedon’s attraction to gothic horror and his anger at the omnipresent reality of male violence against women: “This movie was my response to all the horror movies I had ever seen where some girl walks into a dark room and gets killed. So I decided to make a movie where a blonde girl walks into a dark room and kicks butt instead” (quoted in Tracy, 6). Buffy the Vampire Slayer achieved what no other film in the horror realm had been able to do. Buffy balances on the line between femininity and power. Irene Karras writes, “The images presented in the show are indicative of the third wave feminist philosophy and activism, and act as metaphors for the tension between second and third wave feminists” (1). The film and the show challenge Hollywood’s former creations of the female figure in horror and science fiction. With the third wave’s “commitment to girl power” (1), the character of Buffy herself transforms the victim role typical of the female into a role of power. She represents a new form of female action hero.

Films such as Buffy the Vampire Slayer (1992), Aliens (1980), Underworld (2003), and Resident Evil (2002), represent the evolution of the final girl. They are a transformation of that character into a stronger, more independent woman who is no longer the victim fighting for her life. She is no longer defending herself in order to survive, but instead is the heroine who must save the day time and time again. In many of these films or shows, as in the case of Buffy, she is one who is chosen to do the job. She alone must bear the burden. The first season of Buffy the Vampire Slayer opened with the following voice-over: “In every generation there is a chosen one. She alone will stand against the vampires, the demon, and the forces of darkness. She is the slayer” (“Welcome to the Hellmouth”). Buffy must fight the forces of darkness continuously to save the world, risking her life many times over in the process and even dying twice in the television series.

In 2001, three prime time television shows – 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: Female Heroes Snapped into Sacrificial Heroines” Sara 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 undercut the rhetorical posture of feminist transcendence” (154). Crosby goes on to suggest that before they reach this point these heroines 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 forces them to want to alienate their power. Because of their guilt and their passive “nature,” female heroes do not want their transgres-
sive toughness. Third, the only stable or pragmatic community is a patriarchal one (155). In other words, Crosby suggests that the dominant patriarchal society has guil ked these female heroes into becoming the more admirable sacrificial virgin, reverting back to early horror films. Because these modern female action heroes are tough, strong, and resilient, they challenge the status quo that demands that power remain within the confines of patriarchal masculinity. Their femininity in combination with their strength threatens this patriarchal agenda and it is for this reason they should feel guilty. In order to ease this guilt, they must sacrifice themselves in order to save this patriarchal world that has knowingly guil ed them. While society has, in theory, moved past Virginia Woolf’s notion of the angel of the house, this self-sacrificing character still exists today. However, it is important to note that these characters, unlike Nosferatu’s Ellen, all returned in the subsequent season of each show.

Like the sacrificial virgin, the damsel in distress has continued to be a mainstay in film and television throughout the 20th century. One of the most well-known damsels in distress that appears in television, film, and, in this case, comics, is Lois Lane of the Superman stories. However, unlike the feeble, vulnerable Ann of King Kong, some modern-era damsels in distress are actually very strong and capable women, who happen to end up in such a predicament while undertaking important and dangerous tasks. In other cases modern television writers and movie makers have reacted to the perceived cliché of the damsel in distress by presenting her in a campy style or by reinventing her as a character who can be every bit as tough as the male hero or the villain. Daphne Blake from the Scooby-Doo cartoon series (who earned the nickname Danger-Prone Daphne) is reinvented in the Scooby-Doo film (2002). In the film, Daphne is now transformed into a wisecracking feminist heroine (stating: “I’ve had it with this damsel in distress thing!”), who takes on the demons of Spooky Island single-handedly, thus echoing Sarah Michelle Gellar’s previous television character, Buffy.

The quote featured at the start of this paper is taken from an episode of the television show Charmed entitled “Chick Flick.” In the episode, the “Demon of Illusion” causes horror movie killers to come off the screen and attack the Halliwell sisters. Along with the killers, a male hero from a 1950s horror film, Billy, comes to life. While the sisters are battling the movie monsters that have been brought to life, trying to figure out how to vanquish them, Billy rushes in with the intent to save the day. At this point, Prue tells him, “Billy, it’s the twenty-first century. It’s the woman’s job to save the day.” Billy accepts this.

The exchange between Prue and Billy in this episode says a great deal about the state of the female character in film today. The role of the woman in horror and science fiction has evolved, and a new evolution of women in film is beginning, one that balances femininity and heroism. The female character in horror film has transformed from the damsel in distress who requires rescue from the male hero, to the final girl, who saves herself in the end by defeating the killer because she is the only one left, to what has finally developed now: the female action hero – a character not only capable of defending herself and defeating the monster, but a character who is the only one who can. She has become the only one who possesses the power and ability to save the day; no longer in need of rescue, she has instead become a strong, empowered woman who does the rescuing. It has now become her birthright, her duty, even why she is here on this earth. No one but she can fight the forces of darkness and save the world. It is now in her hands. And ultimately it is her choice to save the day. Will she? Like the third wave of the feminist movement, the female action hero is still in progress, still growing and evolving. So the audience will have to continue to watch and see.
Works Cited

*Buffy the Vampire Slayer.* Dir. Fran Rubel Kuzui. Twentieth Century Fox Film Corporation, 1992.
*Cat People.* Dir. Jacques Tourneur. RKO Radio Pictures, 1942.
“Chick Flick.” *Charmed.* Spelling Television. 20 April 2000.


*Dracula.* Dir. Tod Browning. Universal Pictures, 1931.


*Hell Night.* Dir. Tom DeSimone. BLT Productions, 1981.


*King Kong.* Dir. Merian C. Cooper and Ernest B. Schoedsack. RKO Radio Pictures, 1933.


2004.
Radio-Frequency Identification: A Risk and Benefit Analysis

Ryne Joyner

Dr. Charles Apigian
Computer Information Systems

Recently Radio-Frequency Identification (RFID) has become an integral part of business because of its ability to track goods, save shipping costs, and individualize marketing. While many industries praise the idea of RFID, other privacy advocates view RFID as a threat to information assurance. As with any breakthrough technology, the risks involved in the deployment of RFID must be identified, not only from a business standpoint, but also from a consumer standpoint. Slowly, but surely, and sometimes unknowingly, RFID systems are being integrated into our everyday lives. The purpose of this study is to analyze the awareness of the use of RFID systems across different industries. Another goal of this study is to analyze consumer perceptions of the risks and benefits involved with the deployment of RFID in various industries.

Radio-frequency identification (RFID) is a way to tag objects with data — like bar codes but readable at a distance or even when hidden from view (theinstitute.com). RFID works with a tag that is programmed with a unique number and attached to a case, palette, or item. This tag is read by scanners (called readers) that do not need a line of sight or human intervention. Tags are read by simply being moved through a reader (Shutzberg, 2004). RFID technology dates back to the radio-based identification system used by Allied war planes during World War II. Nighttime missions were common then because both Axis and Allied troops were at risk of being shot down by anti-aircraft artillery. Early Identification Friend or Foe (IFF) systems made it possible for Allied fighters and anti-aircraft systems to distinguish their own returning bombers from aircraft sent by the enemy (Holtzman, 2005). RFID is now being deployed in a wide variety of industries, from speed payment systems to product logistics.

There are two types of RFID tags: active and passive. An active tag contains a battery that transmits a constant signal, regardless of whether a reader is in the area. Active tags are commonly seen in applications such as On-Star, automated toll-taking systems on major freeways, and pets. Passive RFID tags lack a power source and draw energy from the radio waves broadcast by a nearby reader. This process is known as inductive coupling. When passive RFID tags are in the vicinity of the reader, the reader “wakes up” the tag, enabling it to be read from and written to. The typical range for a passive RFID system is anywhere from a few centimeters to a few meters. If a battery is incorporated into the tag, the range is increased dramatically to many tens of meters or more (Hodges and McFarlane, 2005). Passive tags are often used in applications where the proximity to the reader is assured, such as retail stores, warehouses, and transportation-based supply chain environments.
Due to its growth in use, Radio-Frequency Identification has recently become a hot research topic, not only here in America, but worldwide. There has been research on a variety of topics such as RFID application implementation, RFID security, and RFID marketing. A Landt (2001) study outlines the history of RFID decade by decade. Agrawal, Padmanabhan, and Ravindranath (2008) conduct an experiment in the Microsoft Research India Lab to test the correlation between range and performance of the Impinj Speedway reader. They also discuss the issue of safeguarding user privacy while RFID systems are being implemented. Hunt and Strickland and Hunt (2005) attempt to determine if the public understands the application of RFID and the possibility that their personally identifiable information may be collected, maintained, used, and disseminated. A survey was conducted to determine if the public supports and consents to these information practices. Dalal (2006) studies the use of RFID versus the U.S. Fourth Amendment. This study was meant to determine if the Fourth Amendment (concerning unreasonable search and seizure or, more generally, the right to privacy) stretches far enough to protect citizens in the network of radio waves.

Lin, Nystrom, Wu, and Yu (2006) explore challenges and obstacles to RFID’s quick adoption, the potential resolutions, approaches to the challenges, and the migration strategies to expand the RFID industry. Sarma (2005) provides a prophetic study about the components of the RFID tag and explains how the cost of the system can be reduced to five cent tags. Avoine and Oechslin (2005) study the three layers of RFID security and identify the main threats and give tentative solutions. Rosochatius (2006) proposes that current legislations and guidelines are not adequate to handle the privacy and social issues that arise with the implementation of RFID technology. Ngai, Moon, Riggins, and Yi (2008) conduct a comprehensive literature review to determine how much research has been done on RFID in the time period 1995-2005. Their study concludes that most of the research done was based on the technology itself (operation, communication infrastructure, etc.). Trailing not far behind were the applications of RFID in various industries. Yet very few studies have focused on who matters the most, i.e., society. In 2004, the BIGresearch Company launched a survey about consumer RFID awareness. The survey concludes that 28.2 percent of consumers in 2004 were aware of RFID and could describe it accurately to others. Two-thirds of adults aware of RFID were concerned or somewhat concerned about the abuse of RFID. Their biggest concern was retailers tracking shopping and sharing with other businesses and government agencies. Since 2004, the adoption and growth of RFID systems has more than doubled. Each year, more businesses are implementing RFID systems. While businesses are greatly affected by the adoption of RFID systems, consumers will be impacted to an even greater degree as more and more RFID systems are being adopted each year. Very few have stopped to ask consumers how they feel about RFID systems in various industries. RFID is a double-edged technology; it can reap many benefits such as time-saving and cost efficiency, but can also be associated with many privacy and environmental risks.
Table 1: Benefits of RFID

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique identification</td>
<td>Each RFID tag can have its own code that allows every tagged item to be individually accounted for.</td>
<td>Wyld, 2005</td>
</tr>
<tr>
<td>No need for human intervention</td>
<td>RFID tags can be hidden and scanned without human intervention.</td>
<td>Wyld, 2005; Lampe and Strassner, 2004</td>
</tr>
<tr>
<td>Simultaneous transactions</td>
<td>RFID allows for simultaneous and nearly instantaneous reading of multiple tags.</td>
<td>Wyld, 2005; Roberts, 2006</td>
</tr>
<tr>
<td>Data storage</td>
<td>RFID tags can hold far greater amounts of information, which can be updated.</td>
<td>Wyld, 2005</td>
</tr>
<tr>
<td>Durability</td>
<td>RFID tags are far more durable than barcodes.</td>
<td>Wyld, 2005</td>
</tr>
</tbody>
</table>

In the technology sector, innovation is a key to success. RFID technology is steadily making leaps and bounds into markets that one would have never imagined possible. For example, Mobile Speedpasses. Ten years ago it was unheard of to make a purchase by simply waving an item in front of a reader. In an effort to become more competitive in the business world, many companies are adopting RFID for various reasons. RFID has limitless capabilities that can improve business processes in every industry. These are all beneficial factors that are associated with RFID:

*Unique Identification*

Each RFID tag can have its own code that allows every tagged item to be individually accounted for. Every item gets its own ID known as an Electronic Product Code (EPC). With this (EPC) every product has its own identifier. This can be beneficial to retail stores in theft protection and inventory management. Regarding theft protection, it can track exactly which product and what time the product was stolen. An EPC can also help manage inventory by keeping track of when the item arrived and what time it left the shelf.

*No need for human intervention*

RFID tags can be hidden and scanned without human intervention. Unlike barcodes, EPCs do not need a human to “scan” its code. The EPC is automatically scanned when it passes through the reader via radio signal. Not needing a human can make the use of the EPC cheaper and more accurate. A grocery cart full of RFID-tagged products or an intermodal container full of tagged pallets could be read instantly as they move from one location to another, all in one shot. The customer or employee would not need to take any action themselves to accomplish the data transmission. Less human intervention leads to reduced cost. Furthermore, since less human intervention is required, human errors are eliminated and laborious manual data gathering is avoided. More efficient processes and new services will be the result.
Simultaneous transactions

RFID allows for simultaneous and nearly instantaneous reading of multiple tags. Barcodes must be scanned one item at a time because the UPC system does not have the capabilities to read multiple barcodes simultaneously. With a response time of less than 100 ms, an RFID reader can read many (several hundred) tags virtually instantaneously. Since products in the EPC system are all unique and are read using radio signals, one can move a load of products through an interrogator and each product will be scanned with its unique EPC being stored.

Data Storage

RFID tags can hold far greater amounts of information, which can be updated. RFID tags are computer chips that are capable of reading, writing, and storing information. The RFID tags can read and store information such as store location purchased, product price, time of purchase, and so on. It can also identify the purchaser the product, and whether or not a card was used. This feature alone has led to many consumer privacy concerns, which will be discussed later.

Durability

RFID tags are far more durable than barcodes. Barcodes do not work well when exposed to weather elements, if dirty, or if damaged. Anything that blocks the line of sight between the barcode and scanner is a hindrance to the UPC system. RFID is much more suited to work in environments with little visibility such as snowstorms, sandstorms, wet climates, and complete darkness.

Risks

With any emerging technology there will always be risks. As we have seen with the internet, criminals will always find a way to corrupt the system. Hackers, phishers, social engineers, and most of all, identity thieves prey on innocent web users. This has resulted in companies investing large sums of money to the security and implementation of their systems. Risks are not limited to just fraud issues, technical issues can cause problems before RFID systems are fully implemented. The issues are as follows:

Data storage and access

Tracking every object at the individual item level generates a massive amount of data that must be stored and accessed quickly. The information generated results in terabytes of information sent to either a central database or distributed databases. Access control is being investigated in a number of research efforts, especially those focusing on privacy-preserving identity management systems.

Accuracy

As operations and their underlying information systems grow to rely more on real-time data, automated product identity data, the specifications placed on the identification system, will tend toward the absolute accuracy of location information generated. Another technical glitch plaguing some cold chain RFID tags is inaccurate time-keeping. Minor time inaccuracies can multiply quickly, particularly on lengthy journeys, leading to inaccurate and potentially misleading data records.
Interference

With the proliferation of wireless devices (cordless and mobile phones, PDAs, consumer electronic devices), there is potential for electromagnetic interference with RFID systems. Also, because they are wireless, RFID tags may be susceptible to fault induction, timing attacks or power analysis attacks.

IT integration

Companies typically have a number of legacy IT systems. While some IT systems providers furnish off-the-shelf solutions to address such implementation issues, it is likely that integration of RFID systems with existing systems may be difficult, time-consuming, and expensive. U.S. assembly industry research indicates that many of the RFID tests underway do not include the impact of RFID on the data warehouse and business-intelligence applications. Due to IT integration complexity with the legacy systems already in place in the factory, developers often have not estimated accurately the amount of RFID data that will be created and stored.

Difficulty tagging items

The performance of an RFID system depends on its environment and the type of object being tagged. Objects with a high metal or liquid content typically absorb radio-frequency energy emitted by a reader significantly, thereby reducing the range of the system or even disabling it.

Radio-Frequency Legislation

RFID systems traditionally operate in regions of radio spectrums that are unlicensed. This means that as long as the RFID reader follows some basic operating principles, it can be operated without the need for a special radio-transmission license. The lack of standardization and the lack of harmonization of frequency allocation are hampering growth in this industry. There is a proliferation of incompatible standards with major RFID vendors offering proprietary systems. Without regulation, anyone can operate RF applications. There is also no authority to oversee who is operating RF technology and where. This could result in a large number of security breaches.

Recycling and the environment

Disposal is also a big factor. Companies that package RFID tags in their products must develop a way to dispose of these tags. RFID tags primarily are composed of silicon, with a metal antenna. This electronic equipment may contain heavy metals and other materials that can become hazardous to human health and the environment, including lead, mercury, both of which are toxic, and cadmium. The USEPA (United States Environmental Protection Agency) currently classifies such discarded electronic equipment as Characteristic Hazardous Wastes under the Resource Conservation and Recovery Act. They are not biodegradable, so dumping is not an option.

Health and safety

Since RFID is becoming more widespread, the general public has increasingly come into contact with radio frequencies. Concerns about the health and safety impact of
exposure to the radio waves generated by readers are likely to be heard in the future. The primary concern with regard to RF fields in the 10 MHz to 10 GHz range is the heating of tissue due to the absorption of radiation. There is currently no evidence of potential harm to human health but, as with mobile telephone radiation, it is important to continue to study this area.

Criminal activity

As technology develops, there is a trend away from physical operations and processes and toward electronic ones. One downside of this is that these operations and processes may become more open to abuse in certain respects. Criminal scenarios seem plausible. A thief looking for wealthy shoppers might simply wait in front of a high street jewelry shop, or look for shoppers carrying huge oversized boxes with the words “plasma TV” written across them.

Hypotheses

RFID falls in the category of Automatic Identification and Data Collection (AIDC) technology along with bar codes, magnetic stripes, and magnetic ink character recognition (MICR). It is estimated that between 20 and 50 million Americans carry an RFID chip in their pockets every day, either in a proximity card used for entering buildings and garages or in an automobile with an immobilizer chip molded into the key’s plastic handle. According to Experian Information Services Inc., a credit-reporting agency based in Costa Mesa, California, the average person today carries four credit cards (magnetic stripe technology). All banks use magnetic ink character recognition to process and verify the authenticity of checks. These technologies alone have saved consumers countless numbers of hours in everyday life. AIDC technology has shaped society to the point where consumers greatly value convenience and want their transactions to happen as fast as possible. A majority of consumers are convenience-oriented. Morganosky (1986) defines a convenience-oriented customer as one who seeks to “accomplish a task in the shortest amount of time, with the least expenditure of human energy.” The emergence of the barcode system significantly sped up a typical trip to the grocery store. With RFID technology, consumers can exponentially speed up their already rapid trip to the grocery store and RFID greatly increases the transaction convenience. Transaction convenience involves consumers’ perceived expenditures of time and effort to effect a transaction and focuses strictly on the actions consumers must take to secure their purchase or right to use a service.

**H1.** Therefore, it is hypothesized that consumers value convenience (the speed of purchase with the least physical effort by the consumer), and will perceive RFID technology as being more beneficial than risky.

Since 2004, the adoption and growth of RFID systems has more than doubled, while RFID tag prices have been cut almost in half. Each year more businesses are implementing some form of RFID, either by choice or by force. In 2004, Wal-Mart (the world’s largest retailer) demanded that its top 100 suppliers adopt RFID systems by January 1, 2005. In 2004, Evans Data Corporation, an IT market research organization, accurately predicted that RFID usage would increase by 450% in 2005 and a further 96% in 2006 (Roberts, 2006).

**H2.** With the increase in the use of RFID in mainstream markets, it can be hypothesized that: Consumers are already exposed to RFID technology in their everyday lives, and most consumers are aware and knowledgeable of RFID.
### Table 2: Risks of RFID

<table>
<thead>
<tr>
<th>Risk</th>
<th>Description</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data storage and access</td>
<td>Tracking every object at the individual item level will generate a massive amount of data that will have to be stored and accessed quickly.</td>
<td>Hodges and McFarlane, 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gunther and Spiekerman, 2005</td>
</tr>
<tr>
<td>Accuracy</td>
<td>As operations and their underlying information systems grow to rely more on real-time data, automated product identity data, the specifications placed on the identification system, will tend towards the absolute accuracy of location information generated.</td>
<td>Hodges and McFarlane, 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Edwards, 2007</td>
</tr>
<tr>
<td>Interference</td>
<td>With the proliferation of wireless devices (cordless and mobile phones, PDAs, consumer electronic devices), there is potential for electromagnetic interference with RFID systems.</td>
<td>Hodges and McFarlane, 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sarma, Weis and Engels, 2003</td>
</tr>
<tr>
<td>IT integration</td>
<td>Companies typically have a number of legacy IT systems.</td>
<td>Hodges and McFarlane, 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ranky, 2006</td>
</tr>
<tr>
<td>Difficulty tagging items</td>
<td>The performance of an RFID system depends on its environment and the type of object being tagged.</td>
<td>Hodges and McFarlane, 2005</td>
</tr>
<tr>
<td>Radio-frequency legislation</td>
<td>RFID systems traditionally operate in regions of radio spectrums that are unlicensed.</td>
<td>Hodges and McFarlane, 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Roberts, 2006</td>
</tr>
<tr>
<td>Recycling and the environment</td>
<td>Disposal is also a big factor. Companies that package RFID tags in their products must develop a way to dispose of these tags.</td>
<td>McFarlane and Parlikad, 2004</td>
</tr>
<tr>
<td>Health and safety</td>
<td>Since RFID is becoming more widespread, the general public has increasingly come into contact with radio frequencies.</td>
<td>Hodges and McFarlane, 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agrawal, Padminabhan, and Ravindranath, 2008</td>
</tr>
<tr>
<td>Criminal activity</td>
<td>As technology develops, there is a trend away from physical operations and processes to electronic ones.</td>
<td>Hodges and McFarlane, 2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Langheinrich, 2006</td>
</tr>
</tbody>
</table>
Research Methodology

To test my hypotheses, a survey was developed and administered to upper division Jennings A. Jones College of Business students with ages ranging from 20 to 47. The average age of respondents was 25 years old. Majors of study were Computer Information Systems (27%), Accounting (5%), Business Administration (21%), Business Management (10%), Economics (2%), Entrepreneurship (3%), and Marketing (24%). In the class rankings, 14.5% of respondents were juniors and 85.5% were seniors. The survey was broken up into three sections of Likert scale questions about the use of RFID in libraries, airports, school, prisons, casinos, speed pay systems, weapons, automobiles, government issued identification, retail, inventory management, animals, and humans. Respondents were asked the following: “How aware are you about the use of RFID tags?” Responses ranged from 1 = fully unaware to 5 = very aware. “How do you perceive the benefits of using RFID tags?” Responses ranged from 1 = no benefit at all to 5 = very beneficial. “How do you perceive the risk of using RFID tags?” Responses ranged from 1 = no risk to 5 = very risky. Other questions asked were: “Have you ever heard of RFID? Where did you hear about RFID? Would you allow an RFID chip to be implanted into the body of a pet? Would you allow an RFID chip to be implanted into your body?” A total of 62 respondents were part of the sample. The survey was then compiled and analyzed.

Results

Out of 62 respondents, 81 percent have heard of RFID, which supports the second hypothesis. Respondents who have heard of RFID heard it mostly from classes. Twenty-four percent of respondents say they would implant RFID in the bodies of their pets, with only 10 percent of respondents stating that they would allow an RFID chip to be implanted inside their bodies. In the awareness section, the overall average consumer awareness was 3.62. Figure 1 shows, 1 out of 5 respondents were aware of RFID being used in animals (4.81), humans (4.72), inventory management (4.42), automobiles (4.15), and speed payment systems (4.15). Respondents were least aware of RFID being used in casinos (2.83) and military weapons (2.96).
Figure 2 indicates an aggregate score for both the benefits and risks sections of the survey. As can be seen from the figure, consumers perceived RFID almost two times more beneficial than risky.

![Benefits vs Risks](image1)

**Figure 2: Aggregate scores for Benefits and Risks**

In the benefit section, the overall average of consumer response was benefits 4.09 compared to risks 2.53. Respondents felt that RFID tags are more beneficial in inventory management (4.67), airports (4.55), prisons (4.47), and automobiles (4.41). See Figure 3. On the other hand, consumers found little benefit in implanting humans (2.65) and animals (3.88) with RFID chips.

![Benefit Survey Results](image2)

**Figure 3: RFID Benefit Results**
In the risk section, the consumer average was 2.53. Consumers found it far more risky to implant human beings (4.21) with RFID tags. Coming in second was government issued IDs (2.92), then speed payment systems (2.88).

Figure 4: RFID Risk Results

Figure 5: Comparison of Awareness, Benefits, and Risks of RFID
Table 3: Summary of RFID Awareness, Benefits, and Risks

<table>
<thead>
<tr>
<th>Survey Averages</th>
<th>Awareness</th>
<th>Benefit</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>... library systems (checkout without scanning, digitized cataloging, etc.)</td>
<td>3.68</td>
<td>4.22</td>
<td>1.81</td>
</tr>
<tr>
<td>...airports (baggage tracking)?</td>
<td>3.51</td>
<td>4.55</td>
<td>1.94</td>
</tr>
<tr>
<td>...school systems (identification, building access, etc.)</td>
<td>3.70</td>
<td>4.41</td>
<td>2.17</td>
</tr>
<tr>
<td>...prison systems (tracking inmate movement)</td>
<td>3.39</td>
<td>4.47</td>
<td>2.44</td>
</tr>
<tr>
<td>...in Casinos (chip tracking, tracking customer movement, etc.)</td>
<td>2.83</td>
<td>3.61</td>
<td>2.56</td>
</tr>
<tr>
<td>...speed payment systems (credit cards, mobile speed passes, EZ passes, etc.)</td>
<td>4.15</td>
<td>4.27</td>
<td>2.88</td>
</tr>
<tr>
<td>...in weapons (military)</td>
<td>2.96</td>
<td>4.16</td>
<td>2.85</td>
</tr>
<tr>
<td>...automobiles (On-Star, keyless entry, rental car tracking, etc.)</td>
<td>4.15</td>
<td>4.41</td>
<td>2.58</td>
</tr>
<tr>
<td>...government issued IDs (drivers licensing, passports, etc.)</td>
<td>3.28</td>
<td>3.88</td>
<td>2.92</td>
</tr>
<tr>
<td>...consumer retail products (packaging...soap, batteries, etc.)</td>
<td>3.92</td>
<td>3.94</td>
<td>1.88</td>
</tr>
<tr>
<td>...inventory management systems (palettes, shipping labels, etc.)</td>
<td>4.42</td>
<td>4.67</td>
<td>1.81</td>
</tr>
<tr>
<td>...animals (pet tracking, wildlife tracking, etc.)</td>
<td>4.81</td>
<td>3.88</td>
<td>2.83</td>
</tr>
<tr>
<td>...humans (access to classified areas, keyless home entry, etc.)</td>
<td>4.72</td>
<td>2.65</td>
<td>4.21</td>
</tr>
</tbody>
</table>

Discussion

Consumer awareness played a major role in this risk-benefit analysis. Other than humans and pets, consumers were most aware of RFID systems in inventory management (4.42), automobiles (4.15), speed pay systems (4.15), and retail items (3.92) as shown in Table 3. These areas are a part of our everyday lives. Most consumers have come into contact with RFID inventory management systems, either at work or in a place of business. Since most of the newer cars have a keyless entry feature (which uses RFID), it is no surprise that consumers are very aware of RFID use in automobiles. RFID in the retail environment has come under scrutiny by many information privacy advocates including CASPIAN (Consumers Against Supermarket Privacy Invasion and Numbering). This has led to high visibility of RFID systems in retail, including the anti-theft readers that line the doors of supermarkets. These readers sound an alarm if there is an attempted theft or an item that was not scanned. For whatever reason, many consumers have either witnessed this, or they have experienced this first hand. Speed payment systems are also very prevalent. They are mostly found at gas stations and fast food restaurants.
Consumers make purchases simply by waving their speed pass over a reader. Their account information is processed, then the transaction is finalized. With oil companies reaching record profits in recent years, we should expect to see more speed payment systems at gas pumps. Overall, consumers found the use of RFID to be more beneficial than risky. The data shows that the more aware consumers are about the use of RFID in various industries, the more beneficial they perceive in the use of RFID in those industries. For example, consumers were very aware of RFID use in inventory management systems (4.42) and consumers found it to be the most beneficial (4.67). The only exception was the implanting of humans with RFID tags. This exception was not surprising because only 10% of respondents stated that they would allow an RFID chip to be implanted in their own bodies. It is also not surprising because respondents found it 70% more risky to implant humans with RFID tags than any other use. As mentioned, the data also shows that the more aware a consumer is about the use of RFID in various industries, the less risky consumers perceive RFID will be in those industries. Consumers were very aware of the use of RFID in retail products (3.92) and they found the use of RFID in this industry of very low risk (1.88). The only exceptions were industries that gather and use personal identifiable information. These include human implantation, pet implantation, government identification, and speed payment systems. Consumers found these uses to be more risky because their personal lives are encroached upon and there is more at stake. In these four areas there is no anonymity because the consumer’s life can be uniquely identified. There is a high risk of exposure of social security numbers, bank account numbers, home addresses, and other unique information.

This study has some limitations, based on the sample size and type of subjects. In future studies, I would like to trace consumer awareness of RFID as it becomes more prevalent each year. I would also like to conduct another risk-benefit analysis to analyze if consumer perceptions change with future implementation. RFID technology has a great potential to increase logistical efficiency, customized marketing, and other applications; however, the potential drawbacks are serious enough that a full-speed approach could cause a backlash from both consumers and governments. RFID tags on individual items are not a problem. RFID tags on individual items in the hands of consumers are (Kelly and Scott, 2007). Before there is a full-scale launch of RFID systems, there is still a tremendous amount of testing that needs to be performed in every system.

**Works Cited**


Alexithymia and Coping Styles in College Students

Jeremy Minton

Dr. Gloria Hamilton
Psychology

The current study examines relationships between family expressiveness and alexithymia (defined as impaired ability to comprehend, process, or elaborate on emotions) and aims to show the ways in which people with alexithymic tendencies cope with stress in their lives. Participants completed the 20-item Toronto Alexithymia Scale (TAS-20) and the Coping with Stress Scale (CSS) to determine whether they display tendencies of alexithymia and how they deal with stressful situations. Findings were that self-reports of unhealthy coping behaviors, such as denial, substance use, behavioral disengagement, and self-blame, were positively correlated with the presence of alexithymic tendencies. Healthy coping behaviors, such as planning and religion, were negatively correlated with the presence of alexithymic tendencies. Given these results, the role of alexithymia in selection of negative coping strategies such as fighting, bullying, depression, and anxiety can be understood to a much greater degree, giving parents and other authority figures a different avenue to pursue solutions to these problems.

Introduction

Although research on alexithymia has increased recently, studies assessing how people cope with difficulty in expressing emotions are of great need. This study is designed to examine the relationships between alexithymia and coping skills. Alexithymia, defined as lack of ability to process, elaborate on, or comprehend emotions, is measured by scores on the 20-item Toronto Alexithymia Scale (TAS-20). Coping styles, defined as the general ways in which people respond to stressful events in order to reduce, deal with, or avoid tension in their lives, is measured by student responses to the Coping with Stress Scale (CSS).

This study is designed to add to existing literature on alexithymia and the styles people use to cope with their problems and focuses on how a sample of university students cope with stresses in their everyday lives. While the majority of coping research deals with people who have problems such as health issues, a study addressing how people cope when they are unable to express emotions appropriately has implications for counseling. As background for this study, a survey of related literature is presented.

Alexithymia

In a study by Mattila, Salminen, Nummi, and Joukamaa (2006), many aspects of alexithymia in a European population are examined. Among the aspects of alexithymia considered by these researchers are the general pervasiveness, connections with environmental and health factors, disbursement across ages, and comorbidity with depressive symptoms. A total of 8028 participants, representative of the adult inhabitants of Finland, were asked to complete the Toronto Alexithymia Scale and the Beck Depression Inventory. After data analysis, the authors concluded that the overall pervasiveness of alexithymia within this population was 9.9 percent. The researchers found alexithymia to be 3.8 percent more common in males than females. In addition to its increased pervasiveness in men, alexithymia
was found to correlate with depressive symptoms, rising age, negative opinions of personal health, and decreased levels of academic achievement.

Mikolajczak and Luminet (2006) look at whether alexithymia results from the increased stress involved in a particular crisis or exists as part of a person’s personality that adds to the likelihood of experiencing mental distress. As such, researchers set out to determine the constancy of alexithymia when significant alterations regarding the degree of emotional strain within individuals is measured. This study is unique because for the first time, instead of analyzing the impact of a reduction of emotional strain on alexithymia, Mikolajczak and Luminet evaluate the effect of an addition of emotional strain on alexithymia. After testing alexithymia for four different kinds of constancy (relative stability, absolute stability, rank-order stability, and mean-level stability), the researchers found alexithymia to be fairly constant, even in the event of an immense amplification in emotional strain. These findings support the notion that alexithymia is a core trait that is part of one’s personality.

Other studies support the notion that alexithymia can result from stress. In a study by de Vente, Kamphuis, and Emmelkamp (2006), researchers examine whether alexithymia is a result of stress or an element of personality that increases the chance of mental illness. In their study, the researchers investigate these possibilities with regard to work-related stress. To do this, a group of 69 individuals who reported difficulties with stress in the workplace and a control of 62 people who did not experience these difficulties are instructed to complete three different questionnaires. The measures used in the study included the TAS-20, scales used to assess stress levels and the presence of anxiety and depression in participants, and a questionnaire designed to assess levels of occupational burnout within individuals called the Maslach Burnout Inventory (MBI). Through assessing the constancy of alexithymia in individuals over time, correlating relief from occupational stress with a regression of alexithymic tendencies, and by manipulating levels of alexithymia to account for its likelihood of being due to stress or burnout, these researchers are able to come to conclusions regarding the two different types of alexithymia. As expected, degrees of alexithymia are much higher within the occupationally distressed sample. Providing support for alexithymia among distressed workers being caused by job stress, the occupationally distressed sample in this study exhibit alexithymia with lesser degrees of stability than those in the control group. Levels of alexithymic tendencies within individuals tend to change with decreases in emotional stress in the workplace. Given these findings, it can be assumed that alexithymia in distressed individuals may partially result from stressful situations.

Zimmermann (2006) evaluates the relationship between alexithymia in male juveniles and their propensity for aberrant behavior. In the study, 36 delinquent youths and a control group of 46 non-delinquent youths completed a battery of questionnaires, including the TAS-20, the Liste d’Adjectifs Bipolaires et en Echelles de Likert (LABEL), a set of demographic information, and the Revised Children’s Manifest Anxiety Scale (RCMAS). In analyzing the completed questionnaires, Zimmerman finds that delinquent youths are more alexithymic and more likely to be living in a less harmonious family environment than non-delinquents. Zimmerman concludes that environment and the organization of the family as well as alexithymia are valid risk factors for criminal behavior in adolescents.

Coping Behaviors

A study by Carver and Scheier (1994) examines the way students cope with the task of completing an important examination. After the ways students typically deal with stress had been recorded, students were asked to report how they coped in response to challenges, threats, incidents of harm, and whether they benefited from the coping experience a few days prior to a test, immediately after the test, and after the test had been graded. How the students dealt with stress in a particular situation was not indicative of reduced distress in the future. Students reporting being harmed by the prospect of an exam prior to taking it
typically engaged in largely unhealthy coping styles after they had taken an exam. Surprisingly, belief about one’s ability to perform is a stronger forecaster of emotions than any of the ways the students deal with stress.

Ebata and Moos (1994) examine the situational, personal, and contextual associations of ways of dealing with stress employed by 315 teenagers. The adolescents filled out surveys twice, the second time coming a year after the first. These surveys evaluated the ways participants dealt with the biggest event that caused them stress in the past 12 months. The researchers also look at personality variables, ongoing causes of stress, the nature of the stresses, individual assets, and overall negative occurrences in life. The extent to which individual ways of handling stress are utilized hinge on a variety of factors, including personality variables, the actual stressor, sex, age, and participants’ social lives. Different attempts to manage stress are correlated with divergent sets of situational, personal, and contextual factors. Participants choosing to try to solve their problems are more vigorous, older, perceived the event causing stress as challenging and something over which they felt they had complete control, and reported an increased level of social support. Adolescents who are more apt to run away from their problems are easily upset, have more ongoing stressful events and more negative occurrences in life in general. The researchers find that the ways participants coped with stress in the past were often the same methods they used presently.

McCrae and Costa (1984) conduct a study of the ability of 406 adults to deal with stress. Their research details the impact of participant personality variables on coping, the assumed efficiency of ways to cope with stress, and individuals’ overall health. Events that cause stress are labeled threats, challenges, or losses. Extraversion, openness to experience, and neuroticism are associated with different ways of coping. Disregarding the nature of the event that causes stress, 27 different ways of coping and the efficiency of each were determined. Results of the study indicate that participants who use more healthy ways of dealing with stress usually report being happier and more satisfied with life. Personality is a significant factor in determining individuals’ overall health; the correlations between dealing with stress and overall health decreased when personality was factored out.

Research by Billings and Moos (1994) utilizes a tension and coping model to inventory coping reactions. The researchers address the functions of social capital, stress, and ability to deal with stress in 424 people who sought professional help for depression. Billings and Moos develop extensive inventories of stresses to better tabulate instances of stress in people’s everyday lives. In contrast to most studies, which focus on major events in life that cause stress, Billings and Moos focus on more chronic cases of ongoing stress. They find that when people try to cope by solving problems or regulating their emotions, fewer problems persisted, while cathartic responses correlate with greater problems. Events that cause stress, social capital, and coping efforts interact to predict people’s emotional well-being; coping and social capital in general do not reduce tension or protect from stress when negative events occur.

Bijttebier, Vertommen, and Vander Steene (2001) evaluate situation-response inventories’ effectiveness in determining coping styles by examining reliability and validity of seven of these inventories. The authors make three main points. Assessing styles of coping by way of situations deviating maximally regarding the ability to predict and control outcomes is most likely inappropriate because adapting to stress does not demonstrate the necessary cross-situational constancy assumed. Similarly titled questionnaires and checklists count on principally unlike operationalizations and cannot be viewed as determining like concepts. Blunting/avoidance and monitoring/vigilance usually come out as self-determining concepts, which is evidence against utilizing scores to summarize all of the concepts in the inventories.
As one can see, research dealing with both alexithymia and coping has increased a
great deal in the past few years. The purpose of the current study is to assess how a sample of
college students, some with normal emotional tendencies and some with alexithymic
tendencies, cope with stress. While somewhat similar studies have been conducted, this study is unlike most of the research related to coping in that it addresses how students with alexithymic tendencies cope with stresses in their lives. The first hypothesis for this study is that participants who report high levels of alexithymic tendencies, as measured by the TAS-20, will cope with their problems in more negative, unhealthy ways, such as denial, substance use, behavioral disengagement, and self-blame. The second hypothesis is that participants who report low levels of alexithymic tendencies, as measured by the TAS-20, will exhibit more positive and healthy coping behaviors such as active coping, use of emotional support, planning, positive reframing, and religion.

Method

Participants
Participants were 42 undergraduate and graduate college students, all of whom were volunteers from courses at a state university in the southeastern United States. The sample included 12 males and 30 females ranging in age from 18 to 53. Of those who took part in the study, 32 were white, eight were black, and two did not identify by race.

Instruments
The 20-item Toronto Alexithymia Scale (TAS-20; Taylor, 1992) is designed to measure levels of difficulty involved in communicating, comprehending, and thinking about emotions. The three subscales of alexithymia within the TAS-20 measure the emotional, social, and mental aspects of alexithymia. Participants are asked to rate the degree of difficulty they experience with the emotional task presented in each item. Each item is related to one of the subscales and the total of items for each subscale is combined to provide a measure of overall alexithymia within individuals.

The Coping with Stress Scale (CSS), an adaptation of the brief Cope (Carver, 1997), is a 28-item measure designed to measure the ways people cope with stress. For each item, participants are asked how often they engaged in a specific behavior to reduce stress. Responses are marked on a scale ranging from one (lowest frequency of occurrence) to four (highest frequency of occurrence). Each scale item is related to one of 14 types of coping identified by Carver: self-distraction (SD), active coping (AC), denial (D), substance use (SU), use of emotional support (UES), use of instrumental support (UIS), behavioral disengagement (BD), venting (V), positive reframing (PR), planning (P), humor (H), acceptance (A), religion (R), and self-blame (SB).

Procedure
After completion of consent forms, participants completed the measures of alexithymic tendencies (the TAS-20) and coping styles (the CSS). Participants were categorized into groups based on the coping strategies they were most likely to use, as measured by the CSS. Following that, data were analyzed to determine whether levels of alexithymia correlated with the various styles of coping that were reported.
Results

Data were analyzed using a Pearson Product Moment Correlation analysis. Table 1 shows the correlations between alexithymia, as measured by the TAS-20, and the 14 different styles of coping, as measured by the CSS. As Table 1 makes evident, several different types of coping styles correlate with self-reports of alexithymia by college students. Hypothesis one, that student report of unhealthy coping strategies, as measured by the CSS, will positively correlate with self-rating of alexithymia, as measured by the TAS-20, was supported. As can be seen in Table 1, participants who reported engaging in denial were significantly more likely to report having alexithymic tendencies, \( r = .56, p < .01 \). Participants reporting that they engaged in substance use to deal with stress were significantly more likely to report high levels of alexithymia, \( r = .39, p < .01 \). Participants reporting that they utilized the strategy of behavioral disengagement to deal with stress were significantly more apt to report high levels of alexithymia, \( r = .53, p < .01 \). Participants reporting that they often blamed themselves for their stress were significantly more likely to report high levels of alexithymia, \( r = .48, p < .01 \). These findings suggest that having alexithymic tendencies is related to engaging in negative coping behaviors.

Hypothesis two, that student report of healthy coping behaviors, as measured by the CSS, will negatively correlate with self-rating of alexithymia, as measured by the TAS-20, was partially supported by the results of the study. Many of the most positive coping behaviors, namely active coping, use of emotional support, use of instrumental support, positive reframing, and acceptance were not significantly correlated to the absence of alexithymic tendencies. However, participants saying they were likely to engage in planning activities to try to fix stressful situations were significantly less likely to report alexithymic behavior, \( r = -.36, p < .05 \). Those reporting that they turned to religion for help with stress were significantly less likely to report alexithymic behavior, \( r = -.32, p < .05 \). These results confirm the hypothesis that the presence of alexithymia is negatively correlated with the healthy coping behaviors of planning activities to fix stressful situations and turning to religion to help with stress. Hypothesis two was partially supported by the data.

Table 1. Correlations of Alexithymia (TAS-20) and Coping Styles

<table>
<thead>
<tr>
<th>COPING STYLE</th>
<th>TAS-20</th>
<th>COPING STYLE</th>
<th>TAS-20</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>.21</td>
<td>V</td>
<td>.12</td>
</tr>
<tr>
<td>AC</td>
<td>-.23</td>
<td>PR</td>
<td>-.18</td>
</tr>
<tr>
<td>D</td>
<td>.56**</td>
<td>P</td>
<td>-.36*</td>
</tr>
<tr>
<td>SU</td>
<td>.39**</td>
<td>H</td>
<td>.18</td>
</tr>
<tr>
<td>UES</td>
<td>-.28</td>
<td>A</td>
<td>-.20</td>
</tr>
<tr>
<td>UIS</td>
<td>-.29</td>
<td>R</td>
<td>-.32*</td>
</tr>
<tr>
<td>BD</td>
<td>.53**</td>
<td>SB</td>
<td>.48**</td>
</tr>
</tbody>
</table>

\( ** = p < .01, * = p < .05 \)
Discussion

Much of the research in the area of coping suggests that trying to cope in positive ways helps deal with stress of many kinds effectively. The results of this study suggest that the presence of alexithymic tendencies interferes with effective coping with stress. Further, the data suggest that alexithymia may be a predictor of an individual’s inability to cope with problems effectively.

The connection between negative coping styles and alexithymia found in this study could have major implications for families and authority figures. Some of the behaviors of acting out, depression, anxiety, and substance abuse might result from an impaired ability to deal with stress because of alexithymia. Appropriate interventions for negative coping behaviors that compound the individual’s stresses might include teaching identification and expression of emotion.

Although the study yielded promising results, considerations for future research need to be made. For future studies, it is recommended that more participants be included to form a more representative sample and increase the validity and power of the study. In addition to an increased number of participants, a more diverse sample would enable future studies to make inferences with greater confidence.

References


Rates of Depression Among Refugees and Immigrants

Rahma Mohamed

Dr. Margaret Fontasia-Seime
Social Work

The purpose of this study is to (a) determine if depression exists among refugees and immigrants; (b) test to see whether differences in rate of depression exists among the various groups of refugees and immigrants; and (c) examine if length of residence in the United States has an effect on the rate of depression. Approximately 30 English-speaking refugees and immigrants from various ethnic groups, currently residing in Murfreesboro, and Nashville, TN, participated in this study. A questionnaire was used consisting of two parts. Part one contained the 20-item Self-rating Depression Scale (SDS; Zung, 1965). Part two contained demographic questions such as age, ethnicity. The 20-item SDS examined three basic aspects of depression: (1) pervasive affect, (2) physiological concomitants and (3) psychological concomitants. Analyses were conducted using binominal and multivariate cross-tabulations and Spearman’s correlations. Results indicated that a low to moderate rate of depression exists among refugees and immigrants.

Introduction

Each year, the U.S. Congress sets the refugee admission at approximately 70,000 (Bruna, 2006). Statistics provided by the U.S. Department of Homeland Security (DHS), indicated in 2007 a total of 1,052,415 refugees have been granted Legal Permanent Residents (LPR) or a green card in the United States. Legal Permanent Residents vary by regions and country of birth. LPR holders are from Asia (383,508), Africa (94,711), Europe (120,821) and North America (339,355). In addition, the Department of Homeland Security continuing data revealed approximately 4,227 refugees with LPR status or a green card living in Nashville (Davidson County), Murfreesboro, and Franklin, Tennessee (U.S. Department of Homeland Security, DHS, 2007). In addition to these legal forms of entry into the United States, there is illegal immigration from Mexico, Central America, Cuba, and Haiti. Immigration, legal or illegal, represents a time of great change and challenges that create new demands, stress and depression. This researcher’s interaction with refugees and immigrants strongly suggests that many families may experience a high rate of depression due to their new life in the United States. For example, professional men may find themselves working in unskilled jobs, earning low incomes not adequate to support a family. Financial need may require the wife to find a job. This change in gender roles can lead to marital strife. Children in immigrant families are also likely to challenge their parents’ authority. All of the above, paired with having a serious language barrier and learning the ways of a new life, can cause depression.

In order to further investigate whether refugees and immigrants are depressed, this study will focus on depression among refugees and immigrants in Murfreesboro and Nashville, Tennessee. It is expected that both refugees and immigrants in these cities will have a high rate of depression.
That refugees and immigrants are expected to have a high rate of depression is supported in the literature. D’Avanzo and Barahs (1998) find a high rate of depression among Cambodian refugees. Kim’s (2002) study of Asian immigrants shows a high rate of depression among Korean immigrants. In addition, Lacky (2008), finds a high rate of depression among Mexican immigrants. A study by Fazel, Wheeler, and Danesh (2005) on the prevalence of serious mental disorders of 7000 refugees that resettled in western countries revealed 3% to 80% of the refugees experienced major depression. In the United States, of a sample of 1802 refugees, 451 or 8% of the sample population experienced depression (Fazel, Wheeler, and Danesh, 2005). In all these studies, refugees and immigrants were found to have a high rate of depression. Whether or not they are generalizable to the entire refugee/immigrant population in the United States, however, is not certain. Nor do these studies, described in more detail below, distinguish between rates of depression.

The specific goals of this study will be to (a) determine if depression is present among refugees and immigrants; (b) test to see whether a difference in rate of depression exists among the various groups of refugees and immigrants; and (c) examine if length of residence in the United States has an effect on the rate of depression. Results will help educate professionals in areas of social work, psychology, and health and human services about depression among refugees and immigrants. Just how depressed refugees and immigrants really are and what implications this has on social services will be addressed in this study.

**Literature Review**

Currently, there appears to be little research that addresses the issues raised in the previous paragraph regarding depression among refugees and immigrants. Most studies look at the rate of depression among refugees and immigrants from different ethnic groups such as Asians, Africans, and Europeans. A high rate of depression is reported among the various ethnic groups but these studies do not rank order group differences in terms of level of depression. When investigating length of residence and level of depression, however, differences are found in level of depression among refugees and immigrants (Avanzo and Barahs, 1998; Hwang and Myer, 2007; Kirn, 2002; Lackey, 2008; Kibour, 2001; Fazel, Wheeler, and Danesh, 2005; Nguyen, 2007; Beiser, 1988; Sluzki, 1986; Chung and Kagawa-Singer, 1993; Frank and Faux, 1990; Aroian and Norris, 2002, 2003).

In addition, the literature indicates that refugees experience depression at some point in their lives (Avanzo and Barahs, 1998; Hwang and Myer, 2007; Kirn, 2002; Lackey, 2008; Kibour, 2001; Fazel, Wheeler, and Danesh, 2005). A study by Fazel, Wheeler, and Danesh (2005) finds a prevalence of serious mental disorders of 7000 refugees that resettled in western countries. Findings further reveal 3% to 80% of the refugees experienced major depression. In the United States, out of a sample population of 1,802 refugees, 451 or 8% experienced depression.

A study by D’Avanzo and Barahs (1998) shows there is a high rate of depression among Asian refugee women from Cambodian. The population sample consisted of 155 Asian Cambodian refugee women who relocated to France and the United States. The findings of this study revealed 87% of the Cambodian refugee women residing in France experienced depression and 65% of the Cambodian refugee women residing in United States experienced depression. Additionally, Cambodian refugee women residing in America reported three times as much depression versus the average woman in America (D’Avanzo and Barahs, 1998). Recent studies conducted by Hwang and Myer (2007) show that there is a higher risk of major depression among Chinese immigrants.
A study conducted by Kirn (2002) also shows that 30% of 100 Korean refugees reported having significant depression symptoms and 17% experienced major depression. Furthermore, Korean immigrant women in this study were four times more likely than refugees to be depressed. Lackey’s (2008) study of Mexican immigrants provides evidence that Mexican immigrant men suffer from a higher rate of depression than Mexican immigrant women. Finally, a study of Ethiopian refugees shows a high rate of depression among Ethiopian refugees (Kibour, 2001). From these studies there seems to be a consensus that immigrants experience major depression.

Recent research focusing on length of residence and depression among refugees and immigrants indicates that the level of depression tends to be higher during the first decade of the initial resettlement of the refugees and immigrants (Nguyen, 2007). “It takes more than a decade for non-English speaking individuals or refugees to adjust psychologically into his or her host country” (1). Previously, Beiser (1988) observed high levels of distress among immigrants during their first two years of initial resettlement. Sluzki (1986) suggests that families of immigrants tend to experience a brief honeymoon period of happiness followed by a prolonged period of stress. Other researchers find that depression increases with length of residence (Chung and Kagawa-Singer, 1993; Frank and Faux, 1990). However, other investigations indicate that the depression experienced by immigrants decreases over time (Aroian and Norris, 2002; 2003).

In summary, the research cited in this paper appears to support a high rate of depression among immigrants and refugees. At this point, the main research question is not if depression exists among refugees and immigrants, but rather which group(s) of refugees and immigrants are more depressed than others. Likewise, because it is suggested that the length of residence in the host country has an effect on the level of depression (depression higher during the first decade), this investigation will also look directly at the relationship between length of residence and level of depression.

Methodology

Sample Population

The sample for this study is 30 refugees and immigrants from different areas of Murfreesboro and Nashville, TN. The sample comprises 18 males and 12 females, ranging in age from 18 to 70 years. Those who took part in the study were 19 Africans (Somalis and Ethiopians), or 63.3%; five Asians (Chinese, Lao, and Japanese), or 16.7%; and six Middle Easterners (Pakistanis and Indians), or 20.0%. All the participants were knowledgeable in reading, writing, and speaking the English language.

Research Design

Based on strong evidence that refugees and immigrants suffer from depression, it can be hypothesized that refugees and immigrants will have a high rate of depression. In accounting for this prediction, evidence suggests several factors which need to be considered: ethnicity, length of residence in the United States, age, gender, marital status, socioeconomic level and religion. In this study, quantitative data are gathered to determine if a high rate of depression exists among various refugees and immigrants in Murfreesboro, and Nashville, Tennessee. The central independent variable is refugee and immigrant status. The dependent variable is rate of depression. Other background variables thought to have a direct effect on the dependent variable (depression) are length of residence in the United States, ethnicity and age. Although marital status, religion, and gender may not seem to be related to depression, these areas need further investigation, so they are included in this study.
**Instrument**

The main instrument used in this study consists of 20 questions that examine three basic aspects of depression: (1) pervasive affect, (2) physiological concomitants and (3) psychological concomitants. The 20-item Self-Rating Depression Scale, (*SDS*; Zung, 1965) is designed to assess depression as a clinical disorder among adults. Ten items are worded symptomatically positive and 10 items are worded symptomatically negative. Respondents were asked to rate each of the 20 items on a sliding scale as to how it applies to them at the time of data collection. The scale had a range of 1 to 4 in which 1 = little of the time, 2 = some of the time, 3 = a good part of the time, and 4 = most of the time. Scoring occurs by summing the values of each item to produce a raw score range from 20 to 80 (higher scores equal greater depression).

**Procedure**

Eligible refugees and immigrants were recruited from the Somali Community Office, Mosques, and refugee centers in and around the city of Murfreesboro and Nashville, Tennessee. The researcher first called and emailed the informed consent forms to the centers’ leaders and they gave permission to conduct and pass out the surveys. A brief verbal explanation of the study and verbal instructions regarding completion was provided. Written consent forms (approved by the Institutional Review Board) were obtained from the participants. After signing the consent form, participants completed the Self-Rating Depression Scale (*SDS*; Zung, 1965). Thirty surveys were completed by the participants. Data were analyzed to determine whether (1) a relationship exists between refugee and immigrant status and high rate of depression, (2) some ethnic groups have a higher degree of depression than other groups, (3) length of residence in the United States affects degree of depression and (4) age is correlated with depression. Other background variables (marital status, religion, and gender) were also investigated.

**Results**

The questionnaire data was examined to investigate various relationships. The analyses of these data are presented on the following pages. Gender and nationality, previously described, are summarized in Table 1. In addition, the majority of participants were Islamic 70% (21), followed by Buddhist 16.7% (5), Christian 3.3% (1) and other religious preferences 10.0% (3). Also, the majority of the participants were single 60.0% (18), followed by married 30.0% (9), and divorced 10.0% (3). As shown in Table 2, participants were typically 18-70 years of age (*M* = 2.23, *SD* = 1.00); the majority have been in the United State for three decades (*M* = 1.47, *SD* = .681). In summary, the majority of the participants were single, Islamic, African males aged 18-70 years.
Table 1

Demographic Characteristics of Nominal Measurements

<table>
<thead>
<tr>
<th>Indicator</th>
<th>N= 30</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>18</td>
<td></td>
<td>60.0%</td>
</tr>
<tr>
<td>Female</td>
<td>12</td>
<td></td>
<td>40.0%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africans</td>
<td>19</td>
<td></td>
<td>63.3%</td>
</tr>
<tr>
<td>Middle Easterners</td>
<td>6</td>
<td></td>
<td>20.0%</td>
</tr>
<tr>
<td>Asians</td>
<td>5</td>
<td></td>
<td>16.7%</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islam</td>
<td>21</td>
<td></td>
<td>70.0%</td>
</tr>
<tr>
<td>Christian</td>
<td>1</td>
<td></td>
<td>3.3%</td>
</tr>
<tr>
<td>Buddhism</td>
<td>5</td>
<td></td>
<td>16.7%</td>
</tr>
<tr>
<td>Catholic</td>
<td>0</td>
<td></td>
<td>0.0%</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td></td>
<td>10.0%</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>18</td>
<td></td>
<td>60.0%</td>
</tr>
<tr>
<td>Married</td>
<td>9</td>
<td></td>
<td>30.0%</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td></td>
<td>10.0%</td>
</tr>
</tbody>
</table>

Table 2

Demographic Characteristics for Ordinal Measurement

<table>
<thead>
<tr>
<th>Indicator</th>
<th>N= 30</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td>2.23</td>
<td>1.00</td>
</tr>
<tr>
<td>18-20yrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-30yrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-40yrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-50yrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-60yrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-70yrs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of Residence</td>
<td>1.47</td>
<td>0.681</td>
<td></td>
</tr>
<tr>
<td>1st decade</td>
<td>0-10yrs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd decade</td>
<td>11-20yrs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd decade</td>
<td>20-30yrs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Descriptive statistics were used to investigate relationship variables (x and y). Data were examined using SPSS analysis. In addition, missing data was not an issue in this research because the participants responded to all of the survey questions. In the first set of analyses, this researcher used a binominal crosstabulation of two ordinal levels of measurement between age and rate of depression among refugees and immigrants. The results indicated that age has no effect on the rate of depression. Out of eight respondents, ages 18-20, results indicated three had a low rate of depression and five had a moderate rate of
depression. In comparison, out of 10 respondents, ages 24-30, results indicated nine had a low rate of depression and only one respondent experienced a moderate rate of depression. In addition, out of 10 respondents, ages 30-40, seven experienced a low rate of depression and only three had experienced a moderate rate of depression. Finally, two respondents from each age group, 40-50 and 50-60, experienced a low rate to a moderate rate of depression.

In the second analysis, gender was the independent variable. Males in this study overall experienced a low to moderate rate of depression. For example, out of 18 males, only six had experienced a moderate rate of depression while 12 experienced a low rate of depression. Out of the 12 female respondents, only four had experienced a moderate rate of depression while the other eight experienced a low rate of depression.

In the third analysis, religion was examined. Out of 21 Islamic respondents, eight had experienced a moderate rate of depression, while 13 experienced a low rate of depression. In comparison, out of the five Buddhists, only two had a moderate rate of depression and three had a low rate.

The fourth analysis concentrated on ethnicity. Nineteen African refugees and immigrants participated in this research study. Six of them experienced depression while 13 reported a low rate of depression. Out of the five Asian refugees and immigrants, two reported experiencing some depression while the remaining three had experienced a low rate of depression. Of the six Middle Eastern respondents, four reported a low rate of depression while the other two others indicated a moderate rate of depression.

Finally, length of residence and depression were crosstabulated. Six of the respondents who have resided in the United States for a decade indicated a moderate rate of depression. The remaining respondents indicated a low rate of depression.

**Discussion**

This study has attempted to determine if there was a high rate of depression among refugees and immigrants currently residing in the Murfreesboro and Nashville, TN area. Even though the results indicated this was not true (see Figure 1), participants aged 18-20, male and female, tend to have a moderate rate of depression while the participants, both male and female, aged 24-70, generally experienced a low rate of depression. Overall, gender and age are important factors and indicate a relationship on how participants responded to the survey questionnaire.

Findings regarding the main hypothesis and two sub-hypothesis are as follows. First of all, there is a low correlation \( p = .115 \) between refugee and immigrant status with depression. (See Table 3.) Second, there was a low to moderate correlation between ethnicity and depression among the various refugee and immigrant groups \( p = .445 \). (See Table 4.) Third, length of residence in the U.S. has no significant effect on rate of depression among refugees and immigrants \( p = .115 \). (See Table 5.)

In summary, the general hypothesis is not confirmed. That is, there does not appear to be a high rate of depression among refugees and immigrants currently residing in the Murfreesboro, and Nashville, TN area.
Figure 1. Descriptive Statistics

Table 3
Main Hypothesis: A high rate of depression exists among refugees and immigrants.

<table>
<thead>
<tr>
<th>Status</th>
<th>M</th>
<th>SD</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refugees and Immigrants</td>
<td>46</td>
<td>7</td>
<td>.115</td>
</tr>
</tbody>
</table>

Table 4
Sub-hypothesis 1: Depression will vary among the different ethnic groups.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>1.53</td>
<td>.776</td>
<td>.445</td>
</tr>
</tbody>
</table>

Table 5
Sub-hypothesis 2: Length of residence will have effect on the level of depression among refugees and immigrants.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of residence</td>
<td>1.47</td>
<td>.681</td>
<td>.115</td>
</tr>
</tbody>
</table>
Limitations

Limitations in this study include: (1) a small N of 30, (2) respondents were from a restricted area of Murfreesboro and Nashville, TN, and (3) not all ethnic groups were surveyed. In addition, most of the respondents (70%) were Islamic.

Implications

Although the findings indicate a low to moderate rate of depression among refugees and immigrants, which contradict other studies on this topic, one must take into consideration the limitations noted above. Perhaps with a larger sample of respondents, sampling a larger area and including a more diverse pool of respondents different results would have been found. More attention to this issue is needed to reconcile the disparate results between this and previous studies.

References


The Environment of Microfinance Institutions: The Role of Economic Freedom

Phil Njoroge

Dr. E. Anthon Eff
Economics & Finance

Introduction

Microfinance provides saving and lending services to the poor. It is not conceptually different from conventional banking. People can save money at and borrow money from microfinance institutions. They are compensated for saving and charged for borrowing by an interest rate that compounds on savings or loans. It is different primarily in the magnitude of the financial transactions. Loans to the poor are much smaller on average than loans traditionally given by banks; these loans can be as small as $71. Also, because of their poverty, borrowers tend to have little or no collateral to secure loans (Murdoch, Dec. 1999).

The Grameen Bank was one of the first microfinancing institutions. This bank was founded by Mohammad Yunus in Bangladesh. He came upon a group of villagers that were unable to pay off their debt to a money collector. He was able to loan them what they needed out of pocket. He decided that it would be best for him to start a lending service that avoided the high interest rates that the traditional moneylenders charged. The moneylenders charge rates as high as 100% per month on the loans they give; the current average rate for the Grameen Bank is around 79% annually. The Grameen Bank was able to solve the collateral problem by lending to “solidarity groups.” Solidarity groups are composed of five people who take loans out together. The groups are held responsible for each individual’s portion of the loan. However, it seems that the factor that makes solidarity groups work to keep repayment rates high is the social elements of the solidarity group rather than the enforcement of group repayment (Pankaj, 1996). Furthermore, the Grameen Bank has been able to help poverty-stricken women in a country that is traditionally male-dominated. The bank serves 95% women and maintains a high repayment rate, usually cited around 98%. Having a lower bad debt expense helps to keep interest rates down. The model of the Grameen Bank has been copied numerous times, many with high levels of success (Hassan, 2002).

Microfinance has been hailed as having the means to end poverty in the world, but this is not a consensus in the literature. One important criticism of microfinance is that there is not empirical evidence to support the claims that microfinance actually improves the condition of the poverty-stricken. Unfortunately, there is not sufficient data to analyze effects of microfinancing institutions on their customers (Hulme, 2000). Another criticism of microfinance is the higher interest rates charged. Since each account is small in relation to the expenses incurred for maintenance of these accounts, costs are relatively higher for microfinancing, and higher interest rates must be charged. Entrapment of borrowers will happen with the high interest rates that are charged on loans made to the poorest borrowers. The argument follows that, once a borrower takes a loan from a microfinance institution, the borrower will use up all of his available income to pay off the loan and need to borrow again to survive. This will create a debt trap that will keep borrowers permanently indebted to their microfinance bank (Murdoch, Jun. 1999). Despite the criticisms of microfinance, it seems that it is a worthwhile subsidy for governments to undertake (Schreiner, 2003).

In the literature, individual microfinance banks have been shown to be stable even
in cases where their respective country’s economy is not (Rhyne, 2004). However, it is not discussed if instability and lack of freedom will inhibit the operation of these banks. Due to the importance of microfinance, understanding correlates to its prevalence becomes important. If it is indeed the single institution that will end world poverty, the possibility of using government policy to encourage the practice of microfinance is of utmost importance. This research will examine political indices that are commonly considered to have an effect on economic institutions. We will look at indices that measure levels of freedom and stability. We expect that economic freedom and stability will positively correlate with the prevalence of microfinance institutions.

**Analysis**

For this project, research on the correlates to the prevalence of microfinance is based on data from 80 countries across five continents. Data were gathered to predict the prevalence of microfinancing institutions by measures of freedom and instability. The number of microfinance institutions is normalized by population for the countries. We use cross-sectional data for 2006. Most of the indices for freedom are given in a scale from zero to 100. Higher ratings are correlated with higher levels of freedom, but the data should not necessarily be interpreted as ratio data. GDP is measured in purchasing price parity (PPP) per capita to capture the overall level of poverty in each country. The percent change variables are an attempt to capture instability in each country. Ordinary least squares regression analysis is used to analyze correlations between groups of independent variables and our dependent variable.

**Figure 1.**

**Regression Output**

| Variable   | Estimate | Std. Error | Pr(>|t|) |
|------------|----------|------------|---------|
| (Intercept)| -5.75E+00| 1.24E+00   | 1.48E-05|
| Efscore    | 1.27E-01 | 2.63E-02   | 7.53E-06|
| PropRights | -3.02E-02| 1.17E-02   | 0.01167 |
| PchEF      | -4.17E+00| 2.95E+00   | 0.16197 |
| POP        | -2.87E-09| 6.37E-10   | 2.54E-05|
| POPdens    | 6.27E-04 | 3.14E-04   | 0.04942 |
| GDP        | -1.00E-04| 3.24E-05   | 0.00283 |

R²=.4622, n = 79

The model is tested for endogeneity using the Hausman test. The variables being tested for a feedback relationship are lnMFIPOP and GDP. If there is endogeneity, the parameter estimates and the standard errors will be incorrect. GDP is estimated using an OLS linear regression, and the residuals from this regression are used in the restricted model. If the residuals are statistically significant, the Hausman test shows that GDP is endogenous. The p-value for the residuals is .69, indicating that GDP is not endogenous and that no correction is needed for GDP in the restricted model.

The model is tested for multicollinearity using Variance Inflation Factors (VIFs). If there is multicollinearity, it is possible that the standard errors are biased and may lead to the inclusion of variables that should be excluded from the model.
Figure 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efscore</td>
<td>2.394261</td>
</tr>
<tr>
<td>PropRights</td>
<td>2.423072</td>
</tr>
<tr>
<td>PchEF</td>
<td>1.218998</td>
</tr>
<tr>
<td>POP</td>
<td>1.095187</td>
</tr>
<tr>
<td>POPdens</td>
<td>1.108737</td>
</tr>
<tr>
<td>GDP</td>
<td>1.379923</td>
</tr>
</tbody>
</table>

The VIF scores show that there is not multicollinearity in the model. The standard errors are not biased, so no correction for multicollinearity is necessary.

The model was also tested for heteroskedasticity using a LaGrange Multiplier test. If there is heteroskedasticity, it is possible that the standard errors are incorrect, which could lead to the inclusion of variables that should be excluded from the model. We find the p-value for this test is 0.0056969, indicating that the model has heteroskedasticity. To correct for this, robust standard errors are calculated.

Figure 3.

<table>
<thead>
<tr>
<th>Robust Standard Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>(Intercept)</td>
</tr>
<tr>
<td>Efscore</td>
</tr>
<tr>
<td>PropRights</td>
</tr>
<tr>
<td>PchEF</td>
</tr>
<tr>
<td>POP</td>
</tr>
<tr>
<td>POPdens</td>
</tr>
<tr>
<td>GDP</td>
</tr>
</tbody>
</table>

PchEF is not significant when heteroscedasticity is corrected. This variable is removed from the restricted model.

The model is tested for spatial autocorrelation using Moran’s I test. If there is spatial autocorrelation, it is possible that necessary variables are being left out of the model. It can also cause the standard errors and the p-values to be incorrect. The p-value for the spatial autocorrelation test is 0.00000000133, indicating that there is spatial autocorrelation. To correct for the autocorrelation, an estimation technique that accounts for spatial autocorrelation is used.
Discussion

In the final model, general economic freedom has a positive effect on microfinance activity. PropRights has a counterintuitive negative sign. Free market economic theory suggests that economic freedom encourages economic activity. There might be some correlation between the nature of public subsidization of many microfinance institutions and the negative correlation of property rights to microfinancing. Population is negatively related to microfinance. Because the number of microfinance institutions is used, the size of the microfinance institution cannot be considered in this analysis. It is possible that microfinance institutions expand rather than multiply to meet the needs of the poor so that population does not discourage microfinancing institutions from operating. Countries with higher population densities have higher levels of microfinance activity. Higher population density lowers transaction costs for microfinance activities and makes it more attractive to operate in densely populated areas. GDP is negatively correlated with microfinance: poorer countries attract microfinancing institutions. The instability indices did not prove to be statistically significant, so the annual changes in market freedom did not affect the prevalence of microfinance in the data.

The scope of this research is limited severely by the availability of reliable data. Only data on number of borrowers and number of microfinance institutions were available to predict. Having the amount of microfinance activity measured in the size of savings and loans made would be more desirable.

These data are self-reported, subject to bias that self-reporting may cause among microfinance institutions. Another problem with the data used for this project is the bias for the countries that had to be excluded due to lack of data. Afghanistan and Sudan had to be excluded from this analysis, which would, for example, seem to bias our analysis against countries that were engaged in war in 2006. Six out of nine countries that were excluded due to lack of data were African countries, which would also bias the data against Africa.

As more data are made available from microfinance institutions, more thorough analyses can be conducted. Certainly time series analysis would be useful in determining the positive and negative effects that microfinance institutions have on the countries in which they operate. Being able to support or refute the claims on microfinance’s ability to end poverty would be useful. Also, determining the extent of the benefits of microfinance will enhance policymakers’ ability to alleviate poverty.

**Spatial Lag Model**

| Variable  | Estimate | Log likelihood | LR statistic | \( Pr(>|z|) \) |
|-----------|----------|----------------|--------------|----------------|
| Intercept | 4.89920  | NA             | NA           | NA             |
| Efscore   | 0.10843  | -117.43        | 20.06        | 7.52E-06       |
| PropRights| -0.02469 | -110.4         | 5.9996       | 0.014309       |
| POP       | -2.6E-09 | -116.78        | 18.7595      | 1.48E-05       |
| POPdens   | 0.000644 | -110.01        | 5.2046       | 0.022527       |
| GDP       | -0.0001  | -112.97        | 11.1409      | 0.000845       |

Rho= 0.46072, LR test value=9.3278, p-value: 0.0022571, Log likelihood: -107.4035 ML residual variance (sigma squared): 0.86578, (sigma: 0.93048)
Sources


Online Sources

http://www.themix.org/publications.aspx?level1=002-REG.
Freedom Indices were gathered from The Heritage Foundation's website Index of Economic Freedom. http://www.heritage.org/research/features/index/downloads.cfm.
For this project, indices were created to measure political instability from the Political Instability Task Force’s datasets at http://globalpolicy.gmu.edu/pitf/pitfdata.htm.
Data for GDP and government spending were gathered from the UN’s data website http://data.un.org.
Attitudes Toward Health and Healthcare Practices in Two Samples of Adult Populations in the Middle Tennessee Area

Brittney D. Oliver

Dr. Gloria Hamilton
Psychology

The current research is designed to study attitudes and reported behaviors of college students and non-college adults toward the field and practice of healthcare. Participants are asked to express their attitudes as consumers toward healthcare practices and practitioners as well as their personal willingness to utilize such resources for themselves and family members. Previous research comparing attitudes of groups that differ on race/ethnicity has generated additional questions that have been incorporated into the questionnaire. Such questions include, but are not limited to, why healthcare consumers use certain methods (e.g., prayer) while seldom using others (conventional medicine), where or to whom healthcare consumers go to resolve health-related issues and concerns, and what additional factors play roles in selection of healthcare practices and practitioners. This research was conducted to gain more insight into motives and use of complementary and alternative medicine, for which very few research findings exist. Results provide insights into healthcare choices and directions for further research. The study is intended to lead to more applied research on use of complementary and alternative medicine, helping to define its place in the healthcare industry.

Introduction

In the past decade or so, trends in healthcare techniques have gradually moved from a primary focus on conventional allopathic medicine to include complementary and alternative (CAM) methods of healthcare. CAM interventions currently account for more than 50% of out-of-pocket monies spent on healthcare. Significant differences between an allopathic approach and a CAM approach are reflected in consumer attitudes toward healthcare techniques and practitioners. One of the more common complaints against conventional Western medicine is that it focuses more attention on the illness than on the person within his or her social environment. While some demographics data exist on individuals who choose CAM treatments for part or all of their healthcare, much remains unknown as to why CAM is gradually becoming a preferred form of treatment.

Literature Review

Conflicting views as to what constitute appropriate approaches to healthcare in the United States have been in existence as long as the healthcare industry itself (NCCAM, 2007a). Standard medical care is termed conventional Western medicine and comprises practices that focus on treating the disease and symptoms. A very different view of healthcare is held by practitioners who use a more holistic approach that differs in focus, goals, and practices, and is considered by many to be compatible with conventional Western medicine (NCCAM, 2007a).
This approach is collectively referred to as complementary and alternative medicine (CAM). The National Institutes of Health (NIH) has added a division, named the National Center for Complementary and Alternative Medicine (NCCAM). This division operationalizes CAM as a variety of healthcare treatments, practices, and supplements that work with (complementary) or in place of (alternative) conventional Western allopathic medicine (NCCAM, 2007a). It is important to note that the design of this study is not intended to support or discount CAM as an effective alternative to conventional medicine but rather is meant to examine attitudes and practices of college students of differing ethnicities toward healthcare practices.

Research addressing the effectiveness of CAM has increased support of these approaches to healthcare and expanded its position in the market. An important role of the National Center for Complementary and Alternative Medicine is to evaluate and fund studies that investigate the use and effectiveness of various CAM therapies (NCCAM, 2007a). Funded studies have focused on healthcare practices of minority populations and the data from these studies are available for analysis. Minorities represented in NCCAM data sets include African American, Asian, Pacific Islander, Chinese and Hispanic American populations living in the United States (2008).

In understanding the place of complementary and alternative medicines in American healthcare, it is vital to acknowledge the various components which define CAM, therapies that fall under the umbrella of CAM, and characteristics of typical CAM patients and endorsers. First, CAM’s interacting components have characteristics that may not be found in conventional methods of treatment. Second, CAM therapies frequently derive from ancient traditions and naturalistic beliefs. Lastly, in speaking of the effectiveness of its procedures, patients and endorsers of CAM help its expansion into mainstream healthcare.

According to NCCAM (2007a), CAM encompasses diverse interventions usually not recognized as conventional medicine, especially in Western cultures. Several categories comprise CAM’s numerous treatment techniques: whole medical systems, mind-body medicine, biologically based practices, manipulative and body-based practices, and energy medicine, the latter of which has two subcategories: bio-field therapies and bio-electromagnetic-based therapies (NCCAM, 2007a). For instance, manipulative and body-based practices place emphases on the body’s structures and systems. Techniques are based on systems of medicine from ancient cultures in China, India, or Egypt and honor the concept of the human body as self-regulator and self-healer. Incorporation of ancient and cultural techniques reflects the valuing of culture and tradition. In addition to appreciation of traditional practitioners of practices such as massage therapy and reflexology tailor their treatments to the needs of each patient (NCCAM, 2007c). Contemporary researchers have suggested that these patient-centered methods function as intermediary stress reducers (Center for the Advancement of Health, 2000).

Biologically based practices incorporate the use of botanicals, vitamins, minerals and a subset of dietary supplements. Two categories, herbal medicine and orthomolecular medicine, provide additional distinctions among techniques. Herbal medicine utilizes botanicals for health treatment and promotion while orthomolecular medicine places emphases on nutrition for maintenance and restoration of health (NCCAM, 2007b; Merck Manual, 2005b). An emphasis on nature as influence in biologically based practices brings to mind centeredness and spirituality, practices prized in mind-body medicine.

The strategies used in mind-body medicine support an understanding of the role of a unity of mind and body in health promotion and practices. The focus places emphases on interrelated functioning of body, mind, and spirit. Complementary and alternative medicine incorporates techniques such as guided imagery, meditation, biofeedback, relaxation techniques and yoga (NCCAM, 2007d). Acceptance of the mind’s importance in the functioning of the body is integral to traditional Chinese and Ayurvedic medicine and is used in CAM
healing practices today. The concepts of mind-body medicine and the aforementioned categories of CAM incorporate aspects of nature, illness, and the individual patient in creating individualized approaches to healthcare treatment.

CAM and its more naturalistic characteristics have become alternatives as well as augmentations to Western medicine (Committee on the Use of Complementary and Alternative Medicine by the American Public, 2005; NCCAM, 2007a). Contrary to the continuing support by the American Medical Association and the pharmaceutical industry for conventional medicine, the preferences of patients have been important in the expansion of CAM practices into Western healthcare. Perhaps the most visible indicator of patient preference for CAM techniques is shown by the out-of-pocket payments of healthcare consumers.

Research regarding healthcare consumers' behavior in terms of CAM healthcare practices is scarce within academia; however, some survey data are available from sources in the business of researching healthcare information. In 2008, Deloitte Center for Health Solutions, a part of Deloitte & Touche USA LLP, a respected research and consulting company, surveyed 3,031 persons 18 years and older in regard to behaviors, attitudes, and unmet needs. The stated goal of the study was to provide healthcare policymakers and industry leaders with information on healthcare consumerism (Deloitte Center for Health Solutions, 2008). The results of the survey permit insight into consumer opinions on healthcare and implications of such for redesigning focus, goals, and practices of the healthcare industry in light of consumer preferences.

Results of the Deloitte study include the statistic that 19% of participants endorsed a preference for natural remedies while 40% stated that they are open to using an alternative treatment approach. Given these findings, it is no surprise that the surveyors found that 20% of respondents were currently using an alternative approach to treatment. In doing so, 12% were consulting with an alternative provider rather than a practitioner of conventional medicine (Deloitte, 2008). Asked about alternative therapy in place of prescription medication, 32% of the participants reported they would consider use of an alternative therapy as a substitute for a prescription drug. Results reveal that 9% of participants were currently using an alternative therapy in place of a prescription medication (Deloitte, 2008). Alternative therapies to prescription drugs include biologically based medicines and manipulative and body-based practices, or mind-body therapy, depending on the illness and needs of the individual patient. The summary statistics of the Deloitte (2008) survey depict CAM’s current position and significance in the healthcare field.

As with other nontraditional healthcare practices, funding for research on the effectiveness of interventions that fall under the CAM umbrella (acupuncture, herbal supplements, and energy therapy, to name a few) is uncertain. Organizations such as NCCAM (2007) fund studies for CAM; however, research on CAM is often expensive and extensive. Levin, et al. (1997) document the challenges in conducting studies to establish evidence of the effectiveness of treatment and prevention of chronic disease. Many of the health issues for which CAM is commonly used (back, neck, or joint pains; head colds; arthritis; anxiety/depression; insomnia; recurring pain; stomach upset; headaches) require longitudinal research (NCCAM, 2007). In their research, Herman, Benjamin, and Opher (2005) find CAM therapies to be cost-effective as the objective of CAM therapies is to harness the natural ability of the body to heal itself. In instances such as acupuncture to alleviate migraine, spa therapy for Parkinson’s disease, and a potassium-rich diet as alternative to potassium supplements for postoperative cardiac patients, alternative treatment has been found to be more cost effective than conventional medical treatment.

A major obstacle to the use of CAM is that the majority of would-be users do not have the option of paying for CAM therapies through insurance. This affects consumers by requiring out-of-pocket payments for treatment. The most common reason given for health insurers’ lack of coverage of CAM is a lack of proof of effectiveness of such practices. Tra-
ditional clinical trials, considered the “gold standard” in medical studies, are rare with respect to CAM, partially because there is an absence of funding for clinical trials (which are staggeringly expensive) on CAM practices. Additionally, evidence of CAM effectiveness often comes in the form of personal experience and patient anecdotes rather than documentation through clinical trials.

In the United States, between $36 billion and $47 billion were spent on CAM therapies in 1997 (Eisenberg, Davis, Ettner, et al., 1998). Within this amount, anywhere from $12.2 billion to $19.6 billion was out-of-pocket (Center for Medicare and Medicaid Services, 1997). Five years later, research indicated that for interventions that fall under the label of CAM, the amount of money voluntarily directed to CAM therapies rather than to conventional therapies increased to over $34 billion (MacLennan, Wilson, and Taylor, 2002). Typically, this was paid to practitioners such as chiropractors, massage therapists, and acupuncturists. Significantly, out-of-pocket expenses for CAM therapies exceeded the out-of-pocket expenses for all hospitalizations and approximately half that directed to out-of-pocket physician services (MacLennan, Wilson, and Taylor, 2020). These numbers indicate that consumers are willing to pay for the therapies themselves (Herman, Benjamin, and Opher, 2005).

Without a substantial number of studies conducted within a specific area of healthcare interventions, insurance companies are much less likely to view these practices as mainstream. This leaves many CAM practices without broad acceptance as legitimate healthcare alternatives and the practitioners without acceptance by their healthcare peers. Other factors contributing to lack of accessibility include physician referrals and scarcity of established programs for training and certification of practitioners.

Research findings from studies of CAM practices and conventional medicine suggest connections between spiritual practices and health, yet the nature of the relationships among religion, spirituality and health are not well-known (Miller and Thoresen, 2003). Incorporation of spirituality has been found to positively affect patient ability to cope with serious and chronic illnesses. Brady, Perterman, Mo, and Cella (1999) find that spirituality was associated with quality of life even while patients were experiencing serious and chronic illnesses.

Research on health practices of African-American patients documents strong relationships between religion, spirituality and health. Researchers have noted the role of churches as a central focus in African-American communities and lives. As the focal point of many communities, the church and its leaders carry the roles of spiritual advisor and resource for health-related concerns and efforts (Chatters, Levin, and Ellison, 1998; Chatters, 2000). Felix, Aaron, Levine, and Burstin study (2003) focus on spiritual beliefs to determine how church participation affects healthcare practices of African-Americans in a low-income community. Study results depict a strong association between church attendance and healthcare practices. Respondents who attended church frequently were more likely to engage in positive healthcare practices including visiting physicians for regular screenings and dentists for check-ups. Church attendance and related spiritual practices have deep roots in African-American communities. One of the most popular spiritually based practices is that of prayer (Taylor, Chatters, and Levin, 2004).

African-American patients who report the use of at least one CAM intervention are the most likely of all racial groups to use prayer to support health and wellness (Barnes, Powell-Griner, McFann, and Nahin, 2004). Minority patients are typically those in the most danger of not receiving adequate healthcare though they are often those with the highest needs (Office of Minority Health, 2008). Adequate access to healthcare involves both financial and employment issues since health insurance is typically tied to employment (U.S. Census Bureau, 2007). It is not known whether prayer is selected by preference or because of lack of access to other treatments that are often costly. Additionally, studies reveal that
weekly church attendance correlates with reduced mortality risk (Strawbridge, Cohen, She-
ma, and Kaplan, 1997). Religiosity has been correlated with optimistic attitudes toward life,
greater life satisfaction (Levin, Chatters, and Taylor, 1995), greater resilience in stressful
situations (Pardini, Plante, Sherman, and Stump, 2000), and lower levels of tobacco use and
alcohol consumption by African-American women (Gallant and Dorn, 2001). These findings
may reflect a sense of control that patients experience because of their religion which may
carry over to healthcare.

Holt, Clark, and Klem (2007) use a spiritual health locus of control scale in their
research. Participants rate their beliefs with respect to the roles they believe God and/or
themselves to have in promotion, regulation, maintenance, and recovery regarding health-
related issues. The scale includes four beliefs about spirituality and health: “God would keep
one healthy if they led a faithful life,…both God and the self each [do] their part for health,
…and a powerful but good God…has control over health,…[and] God has control over one’s
health, and thus they need not do anything to impact their health” (Holt, Clark, and Klem,
2007: 603). Differing loci of control (external and internal) influenced the participants’ atti-
tudes about what contributed to and/or controlled their health.

When religious attitudes and behaviors of African-Americans are compared to
those of Caucasians several differences appear. For instance, the correlation between health
and measures of religiosity for African-Americans is generally stronger than for Caucasians.
Additionally, African-Americans are more likely to experience and report higher levels of
participation in behaviors (prayer, church attendance) associated with religiosity than
Caucasians. Approximately half of African-Americans questioned report attending church at
least two to three times monthly (Taylor, Chatters, Jayakody, and Levin, 1996) and were
more likely than whites to report valuing personal involvement in religion (Taylor, Chatters,
and Levin, 2004).

While researchers have found differences between conventional healthcare prefer-
ences and practices of African-American and Caucasian adults, little is known with respect
to healthcare preferences and practices involving CAM. Demographic data and self-reports
of healthcare practices are analyzed here to examine relationships between race, ethnicity,
gender, age, endorsement and self-report of specific healthcare practices. The following hy-
potheses are tested:

Hypothesis One: African-American respondents will endorse CAM interventions
more than will Caucasian respondents.

Hypothesis Two: African American respondents will endorse prayer as an interven-
tion more than will Caucasian respondents.

Method

Participants

Participants were college students and/or their adult family members. Students in
select psychology courses completed questionnaires and invited adult members of their fam-
ilies to complete questionnaires. Participants included 114 African-Americans, 121
Caucasians, and five who did not report race/ethnicity. Ages ranged from 19 to 83 with a
median age of 30.81. Participants included 164 females, 72 males, and four who did not in-
dicate gender.
The survey was designed to elicit both quantitative and qualitative information about healthcare attitudes, beliefs, and practices. Quantitative questions were followed by either a five-point scale with responses that ranged from *always* to *never* or a scale with choices that ranged from *very helpful* to *not helpful*. Open-ended questions were designed to elicit qualitative responses that were coded into quantitative data for statistical analysis.

**Procedures**

Students were awarded college credit for completion of the survey by themselves and/or family members; students were offered an optional way to receive the same amount of credit, although all decided to complete questionnaires.

**Results**

Statistical analyses were conducted to indicate the frequency of specified healthcare consumer behaviors and attitudes involving their primary care provider. In response to survey questions, 17.3 participants agreed that their doctor *always* listened while 27.4 percent of participants responded that their doctor *seldom* listened. Asked whether they told their doctors everything that may be of value for medical care, 21.2 percent responded *always* and 28.8 percent responded *seldom*. In terms of trusting their doctors, 10 percent responded *always*, 20.4 percent responded *often*, 30.4 percent responded *sometimes*, and 27.1 percent responded *never*. Independent samples t-test indicate no significant difference between African-Americans and Caucasians when evaluating trust, disclosure, listening behavior between the participant and his/her primary care provider. Independent samples t-test indicate no significant difference between African-Americans and Caucasians in regard to use of or finding complementary and alternative therapies helpful when ill.

Correlational analyses were conducted on selected variables to determine relationships among these variables. The linear combination of age and race/ethnicity is a significant predictor of whether participants felt that the doctor listened, $F(1, 233) = 216.33$, $p<.0001$; told their doctor everything of value for medical care, $F(2, 232) = 123.16$, $p<.001$; and trusted their doctor $F(2, 232) = 102.01$, $p<.001$. The linear combination of age and education level is a significant predictor of whether participants felt that the doctor listened, $F(2, 230) = 128.83$, $p<.001$; told their doctor everything of value for medical care, $F(2, 231) = 140.69$, $p<.001$; and trusted their doctor, $F(2, 231) = 109.30$, $p<.001$. The linear combination of age and gender is a significant predictor of whether participants felt that the doctor listened, $F(2, 231) = 105.80$, $p<.001$; told the doctor everything of value for medical care, $F(2,233) = 117.01$, $p<.001$; and trusted their doctor, $F(2,233) = 100.17$, $p<.001$.

**Discussion**

These results provide insight into the complex field of healthcare utilization and variables that may affect healthcare consumers’ perceptions of practitioners as well as techniques. The findings of this pilot study are that substantial numbers of those surveyed chose CAM practitioners and techniques. Utilization of healthcare practices beyond those used in traditional allopathic medicine reflects attitudes, beliefs, and preferences held by adults of varying ages and cohort groups.
Consumer preferences for various integrative CAM mind-body practices and reliance on religious practices, including prayer, suggest that healthcare consumers interpret health and healing as involving more than techniques and practices considered appropriate by conventional allopathic medicine. No significant differences were found to exist between use of mindful, spiritually based practices and techniques and race/ethnicity.

References


Playing Doctor: Problematic Sexual Behavior or Normal Child Development?

Sandra Plummer

Dr. Kim Ujcich Ward
Psychology

Sexual behavior in children is necessary to understand for several reasons. Some sexual behavior by children may be linked to abuse of that child. Similarly, early sexual behavior may be predictive of more dangerous behavior as the child ages. However, these findings apply only to some children in some situations; other data suggest such behaviors are more isolated events or are a part of typical child development. Current research suggests agreement on some sexual behavior as normal, including spontaneous and explorative behavior such as masturbation or playing “doctor” at age five. Perceptions of abnormal sexual behavior are less clear, with agreement on primarily extreme behaviors. However, decisions about what is normal or not is mostly a gray area. How professionals decide depends on many factors such as frequency, interference with development, intensity of the behavior, use of coercion or force, and the power differential (age, status of children involved). A dearth of literature exists on how such decisions are made by mental health care professionals. This study involves soon-to-be-professionals in mental health and education specialties who are involved in such decision making. Scenarios describing sexual behaviors of children are assessed to determine perceptions of normalcy/abnormality of the behaviors. Factors including child age, power differential, type and intensity of behaviors are varied. Results are assessed to determine which factors are most influential in deciding if a child’s behavior warrants further investigation or treatment.

Sexual behavior in children is a young field of study that maintains many assumptions with limited support from current research. Within this field are myths, biases, and misconceptions mixed in with data-based evidence concerning problematic sexual behavior, its origin, and its long-term implications. Although some sexual behavior by children may be linked to abuse of that child and sexual behavior problems can be useful discriminating variables between sexually abused and nonsexually abused children (Friedrich, Grambsch, Broughton, Kuiper and Beilke, 1991; Friedrich et al., 1992; 2001), many lay persons and professionals still assume that most or all children with sexual behavior problems must have been sexually abused (Silovsky and Letourneau, 2008). Research does not support this popular assumption but shows that exposure to family violence has an even stronger association with sexual behavior problems than sexual abuse (Silovsky and Letourneau). Although children who have been sexually abused often exhibit more frequent and intrusive sexual behaviors than nonabused children, many children who have been sexually abused actually do not develop sexual behavior problems. Sexual behavior problems can have multiple contributing factors: sexuality within the family, exposure to sexual materials, familial violence, and physical abuse (National Center on Sexual Behavior of Youth [NCSBY], 2004).

Similarly, early popular opinion involved sexual behavior as predictive of more dangerous behavior as the child ages. Burton (2000) found that more than 46% of the sexually aggressive teens in his study began their deviant behaviors before the age of 12. He determined that the earlier and more continuous the pattern of offending, the more likely a preteen will go on to more severely problematic sexual activities in life. However,
these findings apply only to some children in some situations; other data suggest such behaviors are more isolated events or are a part of typical child development (e.g., Chaffin, 2008; NCSBY, 2003; Silovsky and Chaffin, 2006). The work of Chaffin (2008) indicates that only about 20% of children with sexual behavior problems go on to commit criminal sexual acts as adolescents and only 5-15% of those adolescents go on to commit sexual crimes as adults. Chaffin suggests that what a child may or may not progress to be depends on the constructs of the child’s personality. As a group, children with sexual behavior problems pose a low long-term risk for future child sexual abuse perpetration and sex crimes (Carpentier et al., 2006; Chaffin, 2008). Letourneau, Schoenwald, and Sheidow (2004) find little evidence to support that problematic sexual behavior in children graduates to criminal behavior and stress that children with sexual behavior problems have more in common with children without such problems than they do with adolescent and adult sexual offenders.

This review will outline the current empirical evidence regarding sexual behavior in children. Specifically, it will present the challenges to defining behaviors as acceptable or problematic, how those decisions are made, and by whom, then what to do when behavior is problematic. Finally, directions for future research in this area will be presented.

Differences between Normal or Typical Sexual Behavior and Sexual Behavior Problems

It is difficult to define normal sexual behavior in children, as is apparent in the literature. One of the pioneers of the field, Friedrich (2007), writes that “far too many sexual behaviors that children exhibit are pathologized, while a small subset of children, usually older preteens, commits sexual behaviors that are not appreciated for the pathology they represent” (3). Sandnabba, Santtila, Wannas, and Krook (2003) also agree that due to limited knowledge of usual sexual behavior patterns in children, there is a possibility that adults will either underreact and minimize problematic behavior or overact to typical behaviors and consider them deviant. It is imperative that clinicians, researchers, and scholars come to establish a baseline of normal sexual behaviors in order to better recognize and treat that which is deviant.

Friedrich et al. (1991) suggests that psychosexual development begins as early as infancy and that 40-75% of children participate in some form of sexual activity before the age of 13. By sampling a large number of “normal” preadolescent children, screened for history of abuse and mental illness, researchers used a variety of popular surveys given to the mothers that measured the child’s sexual behavior. Friedrich et al. indicated that it is common for children to exhibit a variety of sexual behaviors including erections in male infants, orgasmic like responses by boys as young as 5 months, thigh rubbing by female preschoolers, exhibitionism and voyeurism with other children, undressing, or sexual exploration games in girls and boys by age of 4 years, and asking about sex by boys and girls by the age of 5 years. Genital interest for both sexes increased in the 2-to-5-year-old period; genital play also was common (Friedrich et al.).

According to Burton, Rasmussen, Bradshaw, Christopherson, and Huke (1998), masturbation is common among infants, toddlers, and preschoolers. Once they discover their genitals, toddlers may attempt to see or touch the genitals of others, typically motivated by naive curiosity. For a prepubescent child, normal behavior consists of the age old “show me yours, I’ll show you mine” among peers, playing “doctor,” occasional masturbation without penetration, imitating seduction (e.g., kissing, flirting), general conversation among peers or similar age group that involve genitals or reproduction, and using dirty words around peers. These behaviors are deemed “healthy sexual play” by Johnson (2004).

Sandnabba et al. (2003) conducted an exploratory study of care providers for Finnish day care children, ages 2-7, with an aim to provide a frequency of child sexual behaviors in a nonscreened representative sample of children. Their results found that
playing house, playing doctor, looking at and showing genitals were common sexual play activities. Their results also suggested that by age 2, children often hug, cuddle, kiss, climb on top of one another, and touch each other’s genitals. By 4 or 5, children are more sexually curious and engage more frequently in masturbation, begin sexual games with each other, and are intrigued with toilet behaviors.

The NCSBY (2004) and Chaffin et al. (2008) studies agree that normal sexual activities typically occur between same-aged peers, are mutual, are intermittent, and are often spontaneous, playful or may cause embarrassment. It is likely that sexual interest and some sexual activity continues in childhood, but that as children learn the cultural standards these interests are concealed. There are clear findings across both sexes of the decline in overt sexual behavior with age (Friedrich et al., 1991). Eventually the child begins to adopt social norms and taboos regarding sexuality (Friedrich et al., 1992).

Sexual Behavior Problems by Children

When a child’s behavior is considered to be deviant, abnormal, abusive, or problematic the general term used is sexual behavior problems (SBP). This definition includes self-focused sexual behavior, intrusive or aggressive sexual behavior toward others that may include coercion or force, behavior that occurs at a frequency or age earlier or later than developmentally expected, behavior associated with emotional distress, and behavior that recurs in secrecy after intervention by a caregiver (Chaffin et al., 2008; Chaffin, Letourneau, and Silovsky, 2002; Silovsky and Niec, 2002). Pithers et al. (1998b) define SBP as behavior equivalent to a criminal violation if performed by an adult. Although the term “sexual” is used in this label, the children’s intentions or motivation for these behaviors are often unrelated to sexual gratification (Silovsky and Bonner, 2003).

Chaffin et al. (2008) report that “Sexual Behavior Problems do not represent a medical or psychological syndrome or a specific diagnosable disorder, but rather a set of behaviors that fall well outside acceptable social limits” (201). According to the NCSBY (2004), some specific examples of child sexual behavior problems include excessive sexual stimulation of self or masturbation with objects, puts mouth on sexual parts, simulates adult sexual intercourse (with or without clothes on), puts objects in rectum or vagina, and makes sexual sounds. These reports attempt to clarify specific behaviors or patterns that are viewed as problematic.

Sandnabba et al. (2003) conduct a study where the extremely rarely reported behaviors and the behaviors not reported at all included oral, vaginal, or anal penetration of other children or themselves. Likewise, Friedrich et al. (1991) sample 880 children, ages 2-12, assessing the occurrence of 36 sexual behaviors using the Child Sexual Behavior Inventory. They report only .1% of this sample to have put their mouth on another’s sexual parts. These behaviors are considered not only to be highly intrusive, but peculiar sexual behaviors that are outside of the expected development of sexual activity for children.

Burton et al. (1998) assert that some behaviors are not only problematic, but abusive in nature: “oral, vaginal, or anal penetration of dolls, children or animals; forced touching of genitals; simulating intercourse; intercourse; and/or forcibly penetrating an anus or vagina of another child with fingers, sticks, or other objects” (8). Friedrich (2007) echoes the findings of his colleagues and asserts that insertion is serious and concerning as the act can be painful and it represents an unusual developmental knowledge of anatomy. However, Johnson (2004) suggests that a child is within normal limits to perform this behavior if it occurs once for the sake of exploration.

Chaffin et al. (2008) report that childhood SBP can range widely in the degree of severity and potential harm to other children. Some features are common, but no characteris-
tic is universal and no profile exists to characterize these children. It is the consensus of clinicians and experts that there are wide variations in sexual development and interest during childhood, a continuum of sexual behavior among children that ranges from normal to problematic. Early attempts to more clearly define “abnormal” sexual behavior in children involved researchers proposing categories or groupings of behaviors that represent this continuum. For example, Johnson (2004) proposes four categories of behavior: natural and healthy sexual play; sexually reactive behaviors; extensive mutual sexual behaviors; and child perpetrating behaviors. Berliner, Manaosis, and Monastersky suggest one of the first classification systems for SBP that is broken down into three levels: (1) precocious – includes oral genital contact or intercourse without force; (2) inappropriate – persistent and/or excessive masturbation, preoccupation with sex; and (3) coercive – sexual acts in which force is used or threatened, and where a significant disparity in development or size exists (Berliner et al., as cited in Bonner, Walker, Berliner, 1999).

Another attempt to categorize childhood SBP introduces five subtypes: nonsymptomatic, abuse reactive, highly traumatized, rule breaker, and sexually aggressive (Pithers et al., 1998a). Other researchers have shied away from classifications systems and do not agree that behaviors can neatly fit inside these boxes or that a child should carry such labels as “sexually offending.” Instead, the current common model is to consider behaviors on more of a continuum and less categorically, considering individual as well as situational factors.

Who Decides the Normalcy of Child Sexual Behavior?

The burden of deciding what behaviors are normal/deviant is placed on the adults of various roles and fields. Leading experts have been and continue to be surveyed and asked extensive questions about their own assumptions and perspectives regarding child sexual behavior (e.g., Horton, 2000). However, scientific results, not intuition or clinician beliefs, are required to move the field further (e.g., Friedrich, 2007; Silovsky and Letourneau, 2008).

Clinicians have produced a great deal of literature in the way of comparative research of the sexual behaviors of abused and non-abused children. According to Burton et al. (1998), when determining whether a sexual act committed by a young person constitutes an offense, clinical data are reviewed in relation to the definition of sexually deviant behavior, difference in power, use of authority, manipulation, methods of coercion, and intrusiveness within the context of the child’s developmental level. Statutes and legal guidelines also play a part in the decision-making process, as adolescent sex crimes vary by state, but generally refer to sexual behaviors that occur with much younger children and are categorized by non-consent from the victim (Letourneau et al., 2004).

During a child’s upbringing, many professionals and nonprofessionals may be involved in some capacity in the decision-making process, including teachers, day care workers, mental health workers, social workers, physicians, baby sitters, Sunday school teachers, judges, etc. And, of course, so are the parents and family. Friedrich (2007) suggests that although the individual behavior that a child exhibits can be very concerning, an important variable is the parent’s perspective about the behavior in question. As an example, the Sex Problems Scale on the CBCL relies heavily on the primary caregiver’s perception and interpretation of the child’s sexual behavior. Sandfort and Rademakers (2000) believe that parents’ perceptions are not always reliable, and phrasing items as problem statements (e.g., “masturbates too much”), as opposed to plain behavioral descriptions influences not simply whether or not a behavior occurs, but endorses a response of “too much,” which indicates it is a problem. One also must take into account the extent that a parent is able to observe the child’s sexual behavior, especially as the child increases in age.
Factors Impacting the Identification of SBP

Due to the great inconsistencies among professionals in determining if a sexual behavior warrants professional attention, practitioners often rely on other factors to help better identify the behaviors that fall on the problematic end of the continuum. Age is one of the first things assessed when defining a problematic sexual behavior. According to Johnson (2004), normal interests and sexual behaviors may vary across developmental stages; what is normal for a preschooler may be atypical for an older child and vice versa (Chaffin et al., 2008). Between the ages of 6 and 12 age is negatively correlated with frequency of sexual behavior problems (Bonner et al., 1999; Friedrich et al., 1991) and this sets an expectation for older children. For example, a preschooler may not be stigmatized for touching the private parts of a familiar adult or child; this behavior is easily viewed as innocent exploration and the child has not learned social norms yet or developed key inhibitions. The same behavior would be problematic if exhibited by a 12-year-old. When describing sexual behavior problems, clinicians often break down these behaviors by age, which emphasizes its distinguishing quality (e.g., Johnson, 2004; NCBY, 2003).

The history of a child’s background may also come into play when evaluating the normalcy of a child’s sexual behavior. Researchers have found that children who have suffered from sexual abuse, other forms of maltreatment, or who have been witnesses to domestic violence are more likely to develop sexual behavior problems than their peers who were unaffected by these conditions (e.g., Bonner et al., 1999; Friedrich et al., 1992; Hall, Matthews and Pearce, 1998; Pithers et al., 1998b; Silovsky and Niec, 2002). It also has been reported that the relationship between sexual victimization and demonstrating sexual behavioral problems may be stronger in preschool age children than in school aged children (Silvosky and Niec, 2002).

Some factors considered when determining the problematic nature of sexual behavior of children are characteristics of the behavior itself. If the behavior occurs at unexpected frequencies (very frequently), interferes with the child’s social or cognitive development, or has been resistant to caregiver intervention, it may be more likely identified as problematic (e.g., Chaffin et al., 2008; Johnson, 2004; NCBY, 2004; Pithers et al., 1998b; Silvosky and Niec, 2002). Johnson (2004) urges that sexual play should not be the only kind of play in which children engage in, they should be able to stop when redirected, and also be interested in normal nonsexual play activities. She further indicates that it is possibly problematic if the other children involved experience fear, shame, or guilt in their sexual play, or if it is connected with bribery, threats, manipulation, or other forms of coercion.

Power differential is another factor to help determine if a sexual behavior is problematic by examining if a child is being exploited or if one child possesses a level of authority or dominance over another. It is viewed as more problematic if a child engages in sexual play with a child much younger or older (Chaffin et al., 2002; 2008; Johnson, 2004; Silvosky and Niec, 2002). Sexual behavior between children who have a mutual relationship, are on the same developmental level and are relatively equal in size and status is less likely to be viewed as problematic (Johnson, 2004). One basic rule suggested by Johnson is that sexual play should not be something exclusively done outside of typical play nor should it accompany negative feelings or reactions.

Treatment for Child Sexual Behavior Problems

Children with sexual behavior problems are a heterogeneous group with a range of severity (Chaffin, 2008; Horton, 2000; St. Amand, Bard, and Silovsky, 2008), thus treatments should match their specific need. Investigating what works and what does not work should be the focus rather than subscribing to treatment that is not significantly effective.
The most common form of treatment of children with SBP is derived from the adult sexual offender model that stresses relapse prevention, offense responsibility, victim awareness, empathy, assault cycle, and thinking errors (Chaffin, 2008; Pithers et al., 1995; St. Amand et al., 2008). This model was originally intended to enhance the self-management skills of substance abusers (Pithers et al.) and the treatments are fairly long-term, restrictive, intensive, confrontational, and deviancy-oriented (Carpentier et al., 2006). This approach continues to be used even with growing evidence that these elements are outside of a child’s level conceptualization and are irrelevant to the cause of many of their sexual behavior problems.

Multiple randomized clinical trials have shown that restrictive settings are unnecessary and inappropriate, but there is a suggestion that this type of setting might benefit a small portion of youth who are dangerous and unresponsive to other treatment (Letourneau, Chapman, and Schoenwald, 2008). The NCSBY (2003) also agrees that inpatient treatment should not be the preferred treatment, but resorted to as an option for unusually severe cases, such as a child experiencing psychiatric disorders and/or highly aggressive behaviors that recur despite appropriate outpatient treatment and supervision. Chaffin (2008) says that as a general rule, changing childhood sexual behavior problems does not require complex, long-term, or in-depth treatment.

When shying away from the traditional adult sexual offender models, there is a tendency to swing to the other extreme and develop creative models specifically for children with sexual behavior problems that sound promising in theory, but are unproven empirically. One example of this is Play Therapy, a nondirective combination of client-centered and psychodynamic approaches (Carpentier et al., 2006). Studies show Play Therapy having the same effectiveness as a group that did not receive any treatment (Carpentier et al.). In outcome research conducted by Letourneau et al. (2008), short-term, sexual behavior-focused cognitive behavior therapy (CBT) that includes child caregivers is collectively supported. In a longitudinal study conducted by St. Amand et al. (2008) children with sexual behavior problems in the CBT group have significantly fewer sexual offenses than the other nine treatment groups. There is even greater effectiveness when CBT focuses specifically on sexual behavior problems and involves the primary caregiver. Carpentier et al. (2006) compare CBT with Play Therapy and find that CBT is significantly more effective. In this study, the CBT condition relies heavily on behavior modification and psychoeducational principles. The group is structured, uses a teaching-learning model, addresses the inappropriate sexual behavior while teaching healthy boundaries, and provides educational materials to caregivers on developmentally normal and atypical childhood sexual behaviors. The involvement of caregivers also includes teaching them skills for preventing and responding to problematic sexual behaviors as well as suggestions on supervision. St. Amand et al. (2008) compare CBT to parenting/management skills, which are combined with caregiver rules about sexual behaviors. Parenting/management skills produce a larger reduction in sexual behavior problems, but the CBT group is a more effective treatment compared to nine other treatment groups.

Research suggests that caregiver involvement, rather than specific treatment methods, may be the essential component in effective treatment with sexual behavior problems (Letourneau et al., 2004). Although most therapy is initiated to address the child’s inappropriate sexual behavior, parental involvement is critical for successful treatment. In most cases, a child cannot make the change needed to overcome sexual behavior problems without change taking place in the family environment as well. If further behavior is to be prevented, the principles learned in therapy need to be generalized to the home neighborhood and community (Burton et al., 1998).

Multisystemic therapy (MST) involves intensive home-based interventions that focus primarily on improving caregiver abilities to parent their children. This approach takes into consideration the variety of factors that can contribute to sexual behavior problems, and
in general, focuses on cognitive processes, family relations, peer relations, and school performance (Pithers et al., 1995). Randomized trials that compare traditional methods with MST show significant improvement with the MST treatment group (Letourneau et al., 2004; 2008). Interventions for sexual behavior problems have been systematically evaluated by St. Amand et al. (2008) to predominately fall within the broad category of either targeting sexual behavior problems or targeting effects of child sexual abuse that includes sexual behavior problems.

Trauma models fall within the latter category and are guided by psychodynamic, social learning, and humanistic theories that view internal conflicts and unresolved feelings related to traumatic experiences as important motivators of behavior (Burton et al., 1998). One clinical impression is that children who behave in a sexually aggressive manner are likely to have been affected deeply across these four sources of trauma: betrayal, powerlessness, stigmatization, and traumatic sexualization. Their behaviors are directly reflective of the abuse experience (Friedrich et al., 1992). The trauma model is used to help sexually abusive children identify their individual responses to traumatic events, determine if their responses are healthy or dysfunctional, and replace dysfunctional ones with adaptive responses (Burton et al., 1998). Trauma-focused interventions have been found to reduce sexual behavior problems and may be specifically warranted when a child exhibits a range of other trauma-related symptoms, such as posttraumatic stress disorder (St. Amand et al., 2008).

Summary and Future Directions

Popular myths suggest that all children with SBP have been sexually abused and are on their way to becoming adult sexual offenders, although neither assumption has been empirically supported. However, it is true that some sexual behaviors are indicative of sexual abuse and therefore emphasize the need to clearly differentiate what is normal and what is potentially problematic sexual behavior. Current research indicates that normal sexual behavior is spontaneous, playful, and may include activities such as playing doctor (e.g., Johnson, 2004; Sandnabba et al., 2003). Definitions of abnormal sexual behavior are less clear, with agreement on primarily extreme behaviors such as intercourse (e.g., Burton et al., 1998; Johnson, 2004). However, the overwhelming majority of sexual behavior falls on a continuum with less clear distinctions and boundaries. How professionals determine the normalcy of sexual behaviors depends on many factors such as age/developmental stage, consistency of behavior, intensity of the behavior, use of coercion or force, and the power differential of children involved (e.g., Chaffin et al., 2008; Johnson 2004).

Once these factors are used to wade through the “gray area” and a decision is made that a sexual behavior is problematic, the next task is choosing whether or not to intervene, who should receive the treatment, and what kind of treatment will be effective. Research has favored treatment models such as cognitive-behavior therapy and multisystemic therapy for the treatment of sexual behavior problems, in part for the active role of primary caregivers (e.g., Carpentier et al., 2006; Letourneau, 2008). However, older and less effective models (e.g., adult offender models) are still widely chosen (e.g., Chaffin, 2008; St. Amand et al., 2008).

Because the area of research regarding child sexual behavior is relatively new, several topics need further sound empirical work. First, a consensus needs to be reached among practitioners and professionals about which sexual behaviors are normal and which are problematic. Since not all children with SBP have been sexually abused, there is a need to identify the variables among abused and nonabused children with SBP and determine which problematic sexual behaviors are indicators of sexual abuse. Another area to focus on is intervention. Long-term residential facilities that have been used to treat children with SBP need to be evaluated to determine if that level of intervention is appropriate and effective. It also
also would be useful to conduct more research on treatment modalities, such as CBT, that have been found efficacious in smaller studies. Finally, policies that involve registering and tracking children with SBP should be evaluated in light of copious research that suggests the majority of children with SBP respond well to treatment. It is through sound empirical study of these issues that we will develop a more comprehensive understanding of sexual behavior problems among children.

References


“Tennesseans and for that matter the southern states were never disloyal — rather the individuals or groups thereof were,” proclaimed Tennessee Congressman Leonidas Houk. In contrast to the public memory of a united South during the Civil War and Reconstruction era, the region suffered from deep internal divisions as citizens struggled to determine their loyalties. Few states illustrate these divisions better than Tennessee. The secession crisis tested Tennesseans’ loyalties to country, community, and family. Many Tennesseans, including a significant number in Rutherford County, remained loyal to the Union, at great risk to their lives and property. The presence of these “Tennessee Tories” or “Homemade Yankees” created a war within a war and shaped the strategies of both sides for not only the war, but the peace as well. Rutherford County election returns during the secession crisis, the rosters of Federal units composed largely of local citizens, and the county’s Southern Claims Commission (SCC) reparations requests after the war detail the struggles of these Southern Unionists. Letters to Union officials detailing the plight of civilians in occupied areas contained in the files of military governor Andrew Johnson and correspondence in the Civil War’s Official Records also provide background on Unionists’ efforts to reclaim Rutherford County from rebels, guerrillas, and Radical Reconstructionists. By refocusing attention on these forgotten Tennesseans, we can better examine the effects of war upon communities and cultures.

Benjamin Taylor, his wife, and their seven children toiled on their farm in Eagleville, Tennessee. Surrounded by acres of land, the Taylor family farmed crops typical of Middle Tennessee, including corn and hay, without the use of slave labor. The Taylors’ struggled philosophically as well as financially. Their southern culture favored slavery, devaluing their labor yet providing them with a preferential position in southern society. Since the 1830s, the free labor philosophy had begun to spread west, and slave states believed their way of life was increasingly threatened with extinction. The secession of many southern slave states in 1860-61, including Tennessee, forced Taylor, and others like him, to choose between the two radically different ways of life and thus risk their families’ safety in order to determine their country’s future.1

The Taylors’ and other southern unionists later filed for compensation as a result of the property they had lost in support of Federal troops. Their post-war testimony before the Southern Claims Commission provides a rare perspective upon the trials and tribulations faced by southerners who remained loyal to the Union despite fear of persecution and

---

1Disallowed Claim, Benjamin Traylor, Rutherford County, Tennessee, September 21, 1872, Barred and Disallowed Case Files of the Southern Claims Commission, 1871-1880, www.footnote.com (hereafter referred to as Barred and Disallowed Cases).
physical injury or death. In studying these claims, historians can better understand the philosophical nature of southerners’ loyalties. Combined with the diaries, letters, and reminiscences of other Rutherford County residents, historians can reconstruct a picture of a society torn apart by war.

Though the Taylor’s did not own any slaves, a family living in nearby Smyrna, Tennessee owned several. During this time, Charles Davis and Benjamin Taylor led similar lives. Charles farmed wheat, Indian corn, cotton, potatoes, among other crops on real estate valued at $50,000, not far from Benjamin’s $16,700 plot. Charles, known as “Old Straight,” fathered thirteen children from two marriages, but the Davis children worked far less than the Taylor children because of the Davis dependence on slave labor. Eventually Davis increased his slave labor force from twelve to fifty-one and expanded his property holdings along Stewart’s Creek to 830 acres.²

As time passed, both families witnessed the building of the Nashville and Chattanooga railroad that passed through the center of Rutherford County and knew it would play an important role in the state’s future. This new means of transportation woke everyone in the county from their “dreaminess” and “lethargy.” Now, railroads could transport crops further and faster than ever before. The political landscape changed as well. No longer could Benjamin Taylor vote for the Whig candidate, as the party no longer existed. Though politicians attempted to compromise and avoid the question of slavery’s expansion, the Kansas-Nebraska Act (1854) irrevocably split the party along pro- and anti-slavery factions which ended in the Whig party’s demise.³

Both families continued to farm in the tumultuous 1850s as the debate over slavery swirled around them. Formed in 1860, the new Constitutional Union Party, with members from the now-defunct Whig party, refused to take a stand on slavery, whereas the Democratic Party, which stood for the “old order,” meaning the continuation of states’ rights, pressed for expansion of slavery into the new U.S. territories. The Democrats also ultimately divided over the expansion of slavery, and the competing factions each chose their own candidate in the 1860 presidential election. Each claimed its candidate would keep the Union together. The Northern Democrats voted for the pudgy Illinois Senator Stephen A. Douglas who constructed his platform around “popular sovereignty,” while the Southern Democrats placed their hopes in Kentucky states’ rights advocate John C. Breckenridge, James Buchanan’s vice-president. Nashville native, John Bell, ran under the Constitutional Union ticket, promising to maintain the status quo regarding slavery.⁴

Though many in Rutherford County believed in Breckenridge, the Democratic Party began to argue over the right candidate for the position. At this point the Constitutional Union saw an advantage to the situation and furthered the split among the Democrats

---

²Personal Papers of the Sam Davis Memorial Association, Sam Davis Home and Museum, Smyrna, TN.
“making the two great Democratic halves of the party fall to the ground, as useless lumber” as they “entered the arena” to win the big vote.⁵

Only thirty-five votes separated Bell from Breckenridge in Rutherford County. Known as the conservative Democrat, Breckenridge stood for protection of states’ rights and believed the union should remain intact. Between Breckenridge and Bell, Rutherford County strongly desired governmental rights and the law, but unrelentingly disagreed on the appropriate candidate. Davis did not see Republican Abraham Lincoln’s name on his ballot. In fact, Lincoln’s name did not show up on southern ballots, yet Lincoln won the north and became the president. Spence, like many southerners, lamented the results, saying, “Oh! the astonishment and disappointment.”⁶

Middle Tennesseans sensed the tension created by the crisis over slavery’s expansion and Lincoln’s election in 1860 and realized it created a dangerous potential for “revolution.” Charles owned fifty-one slaves and at any time they could decide to rise up against him. He needed the labor. If he lost it, his plantation would become unprofitable. Democratic governor Isham G. Harris believed Tennesseans supported his position on states’ rights and secession, and pushed the General Assembly for immediate action. After a protracted and heated debate between unionists and secessionists, Tennessee held a referendum on February 9, 1861, for a special convention that would decide the issue. Voters first had to decide whether they wanted a convention, then they decided on unionist or secessionist representation, should a convention be held.⁷

Figure 1: Results for February 9, 1861 Referendum⁸

<table>
<thead>
<tr>
<th></th>
<th>Convention</th>
<th>No Convention</th>
<th>% for Convention</th>
<th>% against Convention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rutherford</td>
<td>1,003</td>
<td>1,529</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>Middle TN</td>
<td>25,842</td>
<td>28,224</td>
<td>48%</td>
<td>52%</td>
</tr>
<tr>
<td>TN</td>
<td>56,232</td>
<td>69,387</td>
<td>45%</td>
<td>55%</td>
</tr>
</tbody>
</table>

As shown in Figure 1, Unionists dominated the election, leaving Harris and his secessionists publicly embarrassed. These results gave Unionists a false sense of confidence and they believed Tennessee loyalties stood with the North. Taylor supported the Unionist ticket in the February referendum, while Davis ardently supported the secessionists.⁹

When the attack on Fort Sumter created hysteria and panic, Governor Harris worked quickly to ensure Tennessee’s separation from the United States and called for a special legislative session and a referendum in June 1861 for representation in the Confederacy. Governor Harris guaranteed that Tennesseans would not embarrass him again. He and his secessionist cronies used the interim period to compel Tennesseans to vote for secession through fraud, violence, and intimidation. Many Tennesseans found Confederate soldiers guarding the ballot boxes and secessionists observing the voters for any sign of dissent.

⁵Spence, 144-145.
⁶Campbell, 284-287. Spence 146.
⁷Campbell, 104. For more on how geography of the state affected the war, see Campbell, 11 and Derek W. Frisby, “‘Homemade Yankees’: West Tennessee Unionism in the Civil War Era,” doctoral dissertation, University of Alabama, 2004) 6-8.
⁸Campbell, 265-289.
⁹Frisby, 40-45. Disallowed Claim, Benjamin Taylor, Rutherford County, Tennessee, September 21, 1872, Barred and Disallowed Cases.
Taylor believed wholeheartedly in the Union but because of the “pressure of public sentiment,” he was “afraid to vote against” the measure.\(^\text{10}\)

Harris’ tactics worked, as overwhelmingly, the county, the region, and the state voted for separation by incredible margins, as shown in Figure 2, reversing Tennesseans’ decisive rejection of secession just a few months earlier. In a letter to Andrew Johnson, Middle Tennessean Alvan C. Gillem explained that it was unlikely “that in the short interval from February to May 104,500 intelligent American Citizens could have changed their minds on so important an issue as the dismemberment of a nation.” Southern Unionist L.S. Houghton agreed, and in an 1863 letter to President Abraham Lincoln, he admitted that many Southern Unionists joined the “rebellion” out of fear. Whatever the reason, the nation careened toward war.\(^\text{11}\)

**Figure 2: Results for June 8, 1861 Referendum\(^\text{12}\)**

<table>
<thead>
<tr>
<th></th>
<th>Separation</th>
<th>No Sep.</th>
<th>% Sep.</th>
<th>% No Sep.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rutherford County</td>
<td>2,392</td>
<td>73</td>
<td>97</td>
<td>3</td>
</tr>
<tr>
<td>Middle Tennessee</td>
<td>58,265</td>
<td>8,198</td>
<td>88</td>
<td>12</td>
</tr>
<tr>
<td>Tennessee</td>
<td>102,172</td>
<td>47,238</td>
<td>68</td>
<td>32</td>
</tr>
</tbody>
</table>

According to John Spence only six persons in Rutherford voted “no separation.” Though he has his facts wrong (indeed seventy-three people voted “no separation”) Spence noted that it was an important matter to be known as one of the “six” in future months. After the Yankees occupied the county, over one hundred citizens claiming to have voted “no separation” attempted to gain favors and permits from the Federal authorities.\(^\text{13}\)

Southern Unionists found themselves wedged between their homes and their political beliefs. Secessionists considered Unionists as enemies and made every effort to persecute them. Understanding the impact “Northern” feelings might have on southerners, the Confederate government passed the Act of Banishment allowing Unionists forty days to “depart from the Confederate States…[or] be treated as alien enemies.” As the Confederate government took over, some Unionists did emigrate north, and according to one Middle Tennessee man, Union families fled “for their lives.” Others chose to remain in their homes and maintained a sort of twilight citizenship; they were not welcome by their neighbors and did not follow regional beliefs. Some Unionists went a step further and enlisted in the Federal army; a total of 45,073 Tennesseans joined – 24,940 whites and 20,133 colored. Rutherford County raised two companies for the U.S. Army: Company D, 4th Tennessee Mounted Infantry, and Company D, 10th Tennessee Volunteer Infantry. No doubt Union


\(^\text{12}\)Campbell, 265-289.

\(^\text{13}\)Spence, 151.
support existed in the South, but their voices fell silent after Confederates continually threatened and harassed those who dared to speak out. Taylor could not openly express his loyalist tendencies for fear of repercussions.  

Around this time, the Confederate Army also gained strength. Charles Davis had two sons who joined the ranks – John and Samuel. Both had attended the Western Military Academy in Nashville before the outbreak of war. Confederate troops occupied Rutherford County for about a year. For the Unionists, times were dangerous due to guerrilla attacks. Unionist Tennessee Fourth District Congressman William Stokes pled for assistance against the Confederates and, in a letter to Andrew Johnson, Stokes wrote, “We are in great distress. Our people are in great danger … The force here is not sufficient to give us aid. Send us help if you can on the spot. Can you let us have arms. I can raise 500 men in 48 hours to defend our homes … For Gods Sake Send the assistance Soon.”  

Not long after fighting their way into the area, the Federal troops took control of Murfreesboro. They replaced the Confederate flags at the Court House and began “pitching tents round town” as living quarters. Soldiers occupying Rutherford County took what they needed to survive, stripping the land and slaughtering livestock, leaving little for the citizens and farmers. Andromedia Davis, a Confederate and daughter of Charles Davis, recounted after the war that “at first the Yankees tried to buy stuff” but later in the war, they simply took what they wanted. “The Northern people stole 4000 pounds of meat from the smoke house” and killed 200 hogs at one point during the war.  

While the Union government sought control of the area, “all persons engaged in business in town” were required to take an oath of allegiance to the United States. In fact, all citizens picked up for being loyal to the Confederacy were required to take the oath, many, in order to gain freedom. At one point during the war, the Yankees arrested Charles Davis and took him to Lavergne, Tennessee. They made him run all night long, “part of the way, barefoot” before demanding he take the oath.

---

16 Spence 159. The Union troops built fortifications throughout town for their protection.  
18 Andromedia Davis Interviews, 1919 and 1932-1933, Sam Davis Memorial Association, Sam Davis Home and Museum, Smyrna, TN.  
19 Spence, 165.  
20 Andromedia Davis interview, 1919.
In 1862, the Federal government relayed a message to troops ordering them to use local products, no doubt so the military did not have to feed the men. In the same year a Federal order allowed the issue of certificates to citizens whose property the Union army used, providing the citizens could prove loyalty to them. Occasionally the Federal army gave the farm owner vouchers or money, but more often, they gave nothing. One major wrote to another informing him that 2,700 pounds of bacon were taken by his order and when the farmer came for the receipt, he gave it “knowing at the same time that she could get no vouchers for the bacon.” The Federal troops took 5000 cedar rails, two work mules, one mare, 2250 bushels of corn, and 800 pounds of fodder from Unionist Benjamin Taylor. Though he supported their troops, he needed those supplies to keep his farm running, and received a receipt for only some of his property. The impromptu formation of Federal occupation policy toward southern civilians led to confusion and bred mistrust between southerners and the Federal government at a crucial time when both parties needed to cooperate to overcome their common enemy.

By 1865, the Union troops defeated this common enemy and the long, bitter fight came to an end. When the displaced residents returned home, they often found little, if anything, left of what they once knew. A Murfreesboro preacher returned to his church to find only the cupola remaining. The rest of the building, like so many churches, was confiscated for army use and eventually demolished. Devastation was not limited to churches; most of Middle Tennessee lay in ruins, but few people with the knowledge, skill, and capital to rebuild were willing to risk the tumultuous post-war environment. Once people returned home and the situation settled, Southern Unionists impatiently demanded payment for property taken by the Federal troops during the war. Congressman Alexander McDonald heard their pleas and offered a bill for assistance. In 1870, during the 41st Session of the United States Congress, McDonald requested an amendment to the Army Appropriation Bill that would allow reparation claims from the South. Initially creating havoc, the Committee on War Claims calmed the fears of Radicals, assuring that the commissioners would only approve claims of those undoubtedly loyal to the Union. On March 3, 1871, President Grant signed the bill approving the Southern Claims Commission (SCC) and he appointed its three commissioners, Asa Owen Aldis, Orange Ferriss, and James B. Howell, not surprisingly all from the North.

The commissioners came together to form the rules and regulations they would follow for the next nine years, and since the claimants desired money, the commissioners knew the rules must remain strict. Because of the length of the war, debt consumed the Federal government, resulting in the commissioners being “jealous guardians of the public purse.” The SCC committee decided to accept claims from those who held American citizenship, resided in a Secessionist state, could document loyalty to the Union, and suffered from confiscation of their goods by Union armies.

Further, the commissioners determined a “loyalty test” to ensure that every allowed claim came from a true Southern Unionist and not a person who was “loyal to the flag of that army which happened to be floating in their neighborhood.” Thus, the commissioners created an extensive questionnaire for claimants to prove their loyalty before, during, and after the war. In the eyes of the commissioners, the claimant was guilty until proven

22 Stephen Ash, Middle Tennessee Society Transformed, 89 and 175-177. Klingberg, 53-56.
23 Klingberg, 42 and 93. Mills, ix.
innocent. Questions focused on residence, voting records, crops or goods sold, and family loyalties, among others. The commission required claimants to explain where they were, what they did, and who they associated with during the war. They were not to have crossed the “rebel lines” or take an oath to the “so-called Confederate States.” Because the commissioners knew intimidation occurred in Tennessee, they also asked about any damage done or injury received because of Union beliefs. Claimants then had to answer questions regarding the specifics of their taken property, including dates, witnesses, the regiment and company of the troop, and any high-ranking officials present. These latter details proved extremely difficult for many since the claim could be filed up to fifteen years after the incident.24

In addition to this, the commission required the claimant to provide several witnesses proving loyalty, validation of the confiscated goods, and comment on the claimant’s character. All witnesses had to list their age, occupation, relation to the claimant, and testify that they had no vested interest in the claim, meaning they would not receive money, goods, or services because of their testimony. The commission also required Southern Unionists to provide the exact amount taken and the price it would have been worth at the time.25

SCC commissioners knew several former Confederates would attempt to “steal” money from the Union government because of the damage the Federal army had caused. Some Confederate claimants saw the money as payment for their suffering, caused by “Northern aggressors.” Murfreesboro resident, Alfred Prior Lowe claimed the loss of several hundred pounds of crops and a farm mule, all worth $492. During cross examination in his case, Lowe’s neighbor, Henderson Anderson, told the commissioner, “I think he had a sympathy for his friends that were in the rebel army. I don’t think his sentiments underwent any change at any time during the war.” This testimony greatly undermined Lowe’s already weak case due to his son and two brother’s allegiance to the Confederate army. In requiring witnesses, the Commission hoped to learn the true character of the claimants.

In a few cases, the claimants gave away their true southern feelings. For example, E. L. Matthews told the commission he voted for the Union in Tennessee’s special election of February 1861, but in the June referendum, voted for “separation and representation under the excitement and passion for the times.” The Commission denied his claim because there was “nothing in the testimony to satisfy” them “that Mr. Matthews was anything else than a secessionist.” Because of claims like those of Lowe and Matthews, commissioners strictly enforced “guilty until proven innocent” sentiment. Some loyal Southerners, like Lowe, chose to claim damages despite the high cost and time-consuming process required by the SCC. Lawyers charged large fees for preparing a claim and commissioners required the public posting of claimant lists to test the legitimacy and the amount of the claim. Predatory legal fees and the public outing of claimants deterred many Southern Unionists from claiming damages for fear of harassment and violence from former Secessionists.26

25 Klingberg, 57-58 & 65. On many occasions, the commission readjusted the price, decreasing the worth of the goods.
The slightest misstep on the part of the claimant meant denial of the claim. The commissioners defined their ‘disloyalty test’ for claimants as aiding the enemy, voting for secessionist candidates, paying Confederate taxes, or selling goods to the Confederacy. Seemingly, the most difficult questions for Tennesseans on the loyalty test had to do with the vote for secessionist candidates and secession itself. Because of the intimidating and misleading tactics used by the Harris government before the June 8, 1861 referendum, many claimants voted for Secession and later attempted to explain their reasoning to the commission. Hilas Traylor, claiming $730 in damages, told the commission, “I voted for separation at the last vote [in June 1861]. This I done under the necessity of the times …. When I voted on the question of separation I was deceived. I supposed I was voting for the preservation of the Union.” Other Southern Unionists felt threatened by the secessionists’ reign of terror before the June 8 referendum. In Isaac Miller’s claim, he testified, “I voted for separation in June 1861 because my personal safety required it.” His witness, John McDermott, further solidified his status as a Unionist and told the commissioners, “I believe he was loyal or as near as the circumstances would provide.” Yet the commissioners rejected the claim because of Miller’s June 1861 vote. Thus, the commission cared only about his vote, not the reasoning behind it.27

The commission, often ignoring the exigencies of war, also immediately disqualified many claimants because they aided the Confederacy. Alexander Madison, “a quiet peaceful Christian and gentleman,” received a voucher for goods taken, but the War Department found paperwork proving Alexander sold fifty-two bushels of corn to the Confederate army in 1862 and received $31.60. The commission held no brief for this, nor did they in the case of Stanford Oakley. Though he voted for the Union in June and several witnesses testified to his loyalty, the commission rejected his claim because he received Confederate passes for travel. Oakley claimed he used the passes for loyal reasons, but the commissioners saw it as “a disloyal act.”28

Because of the desperate need for men during the war, women were left to run the farm and many made sure to claim damages to the SCC. Martha Murfree claimed approximately $725 worth of damage. In fact before the formation of the SCC, she wrote a letter to General Johnson in 1865 requesting information on repayment of lost goods. A Mr. McDougall responded, on the request of Johnson, and told her to take her claim to the Quarter Master Generals. McDougall hoped she would “be able to make the necessary proofs to establish” her loses and closed the letter with, “I know you have been a sufferer.” Years later, Martha established her losses and told the SCC commissioners that the Federal army tore down her horse shed, ice shed, fence, Negro cabins, and cut several hickory and walnut trees from her grove. She, along with several witnesses, also claimed the army took the goods after the fall of Fort Donelson and before the Battle of Stones River to Federal camps and used the items for building. Martha had inherited the land from her father, after his death in 1853. According to her carpenter and witnesses in the case, “Her character was such that she could not vote & did not take any hart [sic] in the war. She was an old maid living in her home … during most of the war so far as my knowledge extends …. She was a remarkably quiet & silent woman having little to say about any one thing.” Though contemporary laws prohibited Martha from voting, and therefore she could not have voted

28Disallowed Claim, Madison Alexander, Rutherford County, Tennessee, April 1, 1872, Barred and Disallowed Cases. Disallowed Claim, Stanford Oakley, Rutherford County, Tennessee, October 13, 1871, Barred and Disallowed Cases.
against secession, the commission denied her claim because her loyalty could not be established. The commissioners cared little about the lack of political opportunities for women and many times automatically denied their claims.  

In contrast to “quiet” Martha Murfree, Eliza Gooch was in no danger of saying too little about her situation. Requesting exactly $5704.50, Eliza ran a large household without the help of her husband who had died in 1853. Of her seven children, three of Eliza’s sons joined the Confederate army; her oldest, who was drafted, later returned home and took the oath of allegiance to the United States. In 1870, the census listed Eliza, five children ranging in age from seven to nineteen, and John Holloway, a farm hand.  

Eliza’s witnesses include John Holloway along with two former slaves. Since many slaves knew the true loyalty of their master, the SCC came to them requesting information, but because of the times and importance of skin color the commissioners did not believe everything they said. The commissioners evaluated slave testimony closely, never really knowing if the slave disagreed with the claimant out of vengeance or if they spoke the truth. Eliza’s slaves said nothing regarding her character and only detailed what the Union forces took, but the commission, in this case, discounted slave testimony and disallowed her case because her sons had joined the Confederate army and as any mother would do, she sent them money and clothing. The ‘guilt-through-association’ practice ended many potential loyal claims immediately.

The commission also received claims from former slaves. Annie Smith made a $150 claim for a stolen horse. Annie, slave of Mrs. House, alleged her brother bought the horse from Henry Byars after the Battle of Lookout Mountain, but the soldier involved maintained the horse belonged to the government. Annie did not testify in her case, nor did her white mistress, though other servants from the House farm spoke on Annie’s behalf. The commissioner believed the sum was mistaken and the horse was taken in 1866, after the war. Commissioners denied the case, believing it fraudulent, and due to its many errors, they would have denied this case regardless of the claimant’s skin color. The SCC did not always disregard race. Calvin Crockett, a black farmer, ran into a problem proving ownership of the land. The “outspoken and well known Union man” claimed $618 loss on goods taken from his land, but the commission did not believe Crockett, a black man, could acquire as much property as he had, and therefore denied the claim. In their remarks, the commissioners requested a white person, preferably his former master John Crocket, to testify. Congress began the SCC with the intention of repaying damages to true loyal southerners, but this did not necessarily mean black loyal southerners.

Mr. W. M. Fitzgerald was one of the special commissioners assigned to Rutherford County and reported that he knew of claims allowed though the claimants were not loyal. He surmised that “when a man who was a rebel files a claim he thinks he had just as well swear a big falsehood as a little one,” while “the loyal man thinks that everybody knows that he

---

29 Disallowed Claim, Martha Murfree, Rutherford County, Tennessee, September 21, 1872, Barred and Disallowed Cases.


31 Klingberg, 85. Disallowed Claim, Eliza Gooch, Rutherford County, Tennessee, May 22, 1871, Barred and Disallowed Cases.

32 Disallowed Claim Annie Smith, Rutherford County, Tennessee, October 27, 1873, Barred and Disallowed Cases. Disallowed Claim, Calvin Crockett, Rutherford County, Tennessee, September 14, 1871, Barred and Disallowed Cases.
was loyal” and he, along with his witnesses, “are not so plain and positive in their testimony as the rebel” so that the claim seems doubtful. Thus, the “rebel’s claim is paid and the loyal man is disallowed.” Loyalist Benjamin Taylor filed a claim with the SCC and his witnesses plainly and positively reported that he was a man of Union sentiment and his son reported that Taylor became angry when South Carolina left the Union. Yet his claim was disallowed. The commissioners stated that Taylor voted for secession in the June 1861 vote and that “there is no excuse given for this intensely disloyal act.” Loyalty versus disloyalty was a very thin line where the SCC was concerned.33

In the end, commissioners allowed only thirty-one claims and denied sixty-nine in Rutherford County. The gubernatorial votes, presidential vote, special elections, and SCC claims provide insight on the percentage of Southern civilians supporting Union causes. The votes and SCC claims document the confused feelings of Rutherford County southerners before, during, and after the Civil War. Many in the county held fast to their desire to remain a part of the “old government” and maintain a slave system, thus resisting the governmental “revolution” taking place in the Northern states. Despite their sacrifices on behalf of the Union, the post war political environment made them pariahs among both the northern SCC and their neighbors. Southern Unionists, therefore, suffered as much, if not more than their secessionist counterparts and failed to reap the rewards of the Federal victory. Through this historical data, the difficulties and prejudices encountered by Southerners increases knowledge on the battle between unionists and secessionists on the southern homefront.34

33William Fitzgerald to Commission of Claims, October 28, 1879, RG 56, Records of the Commissioner of Claims, 1871-81, Microfilm Publication 87, Reel 9, NARA. Disallowed Claim, Benjamin Taylor, Rutherford County, Tennessee, September 21, 1872, Barred and Disallowed Cases. Two of Taylor’s sons joined the Confederate Army, but the commissioner’s make no mention of this in their notes.

34Data compiled from claimant list in Mills, Southern Loyalists in the Civil War: The Southern Claims Commission. Author’s Note: At the time of publication, the Allowed Claims were not available. They would shed more light into the lives of the loyal SCC claimants (rather, those found loyal by the three commissioners).