2002 AAPP Monograph Series: African American Professors Program

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FOREWORD

Wonderful writings of fourteen African American Professors Program scholars who are completing doctoral programs in a range of disciplines including English literature, pharmacy, international business, chemical engineering, and others at the University of South Carolina are contained within this monograph. To be truthful, only a few years ago, even the possibility of so many phenomenal African American graduate students pursuing graduate degrees at the University of South Carolina was remote. However, through the vision of such people as Drs. Aretha Pigford, Leonard Pellicer, and John McFadden, our University has embarked on a fantastic voyage of addressing the underrepresentation of African American professors on college and university campuses throughout the United States. The vehicle created for this journey is the African American Professors Program (AAPP).

With the support and assistance of the W.K. Kellogg Foundation, the South Carolina General Assembly, the South Carolina Commission on Higher Education, and the University of South Carolina, the African American Professors program has sought out the Abest and the brightest minority students across the nation who are interested in joining the ranks of college and university faculties. Young people from all walks of life have become AAPP scholars. They have not only engaged in a rigorous curriculum in their chosen field of study but have been exposed to an intimate insight into the life of a college professor through work with faculty mentors, small group seminars by faculty across the University, and through other development activities such as attending and presenting at professional conferences.

However, as the program has continued to develop, it has become increasingly clear that if we are to expose the AAPP scholars to the full rigors of what they can expect when they assume a higher education faculty position, they must be given opportunities to conduct rigorous research and produce quality scholarly works. Through the imagination and energy of Dr. John McFadden the program has now developed a medium to allow the AAPP scholars to showcase both their writing abilities and research skills. This second annual edition of the African American Professors Program monograph series contains fourteen fantastically
diverse and thought-provoking works that validate those in the AAPP Program as true student scholars and as productive future college and university faculty members.

All of the papers contribute to our understanding of the world in which we live. Whether examining the works in the monograph that provide insight into the challenges of being African American or those that present classic research in such content areas as chemistry and engineering. Readers will make new discoveries, not only about the content presented but about themselves.

These young scholars are to be congratulated for a job well done. It is obvious that each has spent a significant amount of thought, time, and energy in producing the works contained in this monograph. It also is obvious from those works that these scholars in the African American Professors Program have wonderful futures ahead as academicians. And, as importantly, it is evident that higher education institutions have a growing cohort of well-prepared African Americans who are capable of being successful faculty members in an array of content areas and settings.

Kenneth R. Stevenson  
Professor and Chair  
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PREFACE

The African American Professors Program (AAPP) at the University of South Carolina is pleased to produce the second edition of its annual monograph series. It is fitting that the program contrives to assume a leadership role in promoting scholarly products that prove to be useful in research endeavors by faculty and students in higher education.

Scholars who have contributed manuscripts for this monograph are to be commended for adding this additional responsibility to their academic workload. Writing across disciplines adds to the intellectual diversity of these papers. From neophytes, relatively speaking, to an array of very experienced individuals, the chapters have been researched and comprehensively written.

Founded in 1997 through the Department of Educational Leadership and Policies in the College of Education, AAPP was designed to address the underrepresentation of African American professors on college and university campuses. Its mission is to expand the pool of these professors in critical academic and research areas. Sponsored by the University of South Carolina, the W. K. Kellogg Foundation, and the South Carolina General Assembly, the program recruits students with bachelor’s, master’s, and doctoral degrees for disciplines in which African Americans, currently, are underrepresented.

An important component of the program is the mentoring experience that is provided. Each student is assigned to a mentor professor who guides the student through a selected academic program and provides various learning experiences. When possible, the mentor serves as chair of the student’s doctoral committee. The mentor, also, provides opportunities for the student to team teach, conduct research, and co-author publications. Students have opportunities to attend committee, faculty, and professional meetings, as well as to engage in a range of activities that characterize professional life in academia. Scholars enrolled in the program also are involved in programmatic and institutional workshops, independent research, and program development.
The continuation of this monograph series is seen as responding to an opportunity to be sensitive to an academic expectation of graduates as they pursue career placement and, also, one that allows for the dissemination of AAPP products to a broader community. We hope that you will read this monograph of the African American Professors Program with enthusiasm or enlightenment.

John McFadden, Ph.D.
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FAMILY THERAPY WITHIN A TRANSCULTURAL DYNAMIC

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Family therapy emerged out of the realization that human behavior could not be understood in isolation from its family context. Family behavior makes sense only when considered or evaluated within the larger cultural context. It, therefore, becomes imperative to shift to a broader perspective in order to gain understanding of the family dynamic (McGoldrick, Pearce, & Geordano, 1982).

Prior to family therapy, behavior was considered to be a product of individual personalities influenced by discrete events in the past. This view is based on linear causality, the idea that one event is the cause, the other the effect. It was replaced by the idea that behavior is a product of family systems that run according to circular causality; events are related through a series of interacting loops or repeating cycles (Nichols, 1984).

Individual therapists operate under the belief that family influences shaped the personality but that internal representations of childhood events exerted more influence than ongoing family interactions. On the other hand, family therapists believe that the dominant forces in personality development are located externally in current interactions in the family (Nichols, 1984). The fundamental premise in family therapy is that people are products of their social context, and that in order to understand the individual, one must have an appreciation of the individual’s family. By method family therapy usually, but not always, works to include the whole family together for treatment. But all interventions are designed to affect family interaction. Usually the therapist will work with the extended family system, meaning two or more nuclear families affiliated by blood ties over at least three generations (Nichols, 1984).

The concept of circular causality changes the way we think about treatment and our role as therapists. The therapist in family therapy and the client(s) are part of a larger environment in which we, as well as many other elements, act and react upon each other exerting multiple and circular influences.

In order for family therapists to assist families, they must engage in the process of joining. This is the process of coupling that occurs between the therapist and the family, leading to the development of the therapeutic system. The therapists’ data and diagnosis are achieved experientially in the joining process.
Joining as a diagnostic strategy requires one to attempt an alteration of the family's rules and then to observe how the family reacts (L'Abate, Sauber, & Weeks, 1985).

Family therapy also recognizes and assesses families in terms of boundaries and triangles as realized particularly by Murray Bowen, a theorist within the field of family therapy. Boundaries are invisible lines drawn within and among family members, i.e., the lines within the individual self and the marital coalition and the children. They must be clearly drawn in order to attain psychological distance between the members or subsystems (L'Abate, et al., 1985). It is important to consider these boundaries when assessing families to determine enmeshment, as termed by Salvador Minuchin, or loss of autonomy due to blurring of psychological boundaries, which leads to dysfunction or crisis within the family system (Nichols, 1984).

Murray Bowen also called attention to the importance of triangles in all human interactions. According to Bowen, two-person emotional systems always form three-person systems when they are stressed. This occurs when one person who is most anxious triangles in a third person to relieve tension between the original two. This prevents meaningful resolution to problems (Nichols, 1984).

In addition to these concepts, family theorists believe families have a unity of wholeness that is greater than the sum of its parts, and change in one family member means change in the family system as a whole. Members of the family will function in such a way to maintain homeostasis, a balanced state of equilibrium. This is true even when the family operates with great dysfunction or stress within the system. Family systems often may fight change even if health can result due to the state of relative imbalance they may need to endure to actually achieve this health. A family fighting change is a mechanism of system survival.

Family structure, the organized pattern in which family members interact, is an important construct of family-systems therapy. These patterns determine how, when, and to whom family members relate. Hierarchical structure is family functioning based on clear generational boundaries with the parents maintaining control and authority (L'Abate, et al., 1985). Families are separated into subsystems of members who join together to perform various functions. Every individual is a subsystem and he/she may combine with other family members to create dyads
or larger groups, which are often determined by generation, gender or common interests. These may be significant covert coalitions which cause family distress or dysfunction that may not be as obvious when observing structural patterns, but such coalitions are vital to understanding the family system (Nichols, 1984).

Observing family structure also aids the therapist in understanding communication patterns within that system. Various techniques within family systems theory exist to aid families in not only understanding how they communicate but also the content of their communication (Nichols, 1984).

**Cultural Influences**

The family-centered approach to problem solving has generated many treatment theories, and the techniques employed by some actually may oppose the cultural values and family structures of certain ethnic groups. Family therapy with ethnic “minorities” requires an organized culturally-sensitive theoretical framework from which existing family therapy principles, techniques and cultural-specific principles can be used (Ho, 1987).

Defining what is a problem or a symptom of a problem is subject to cultural influence since the language and customs of a culture will affect whether or not a symptom is defined as a problem at all. Different cultures have varied perceptions of health, illness, and sources of help. Therefore, a culturally-sensitive framework is vital when therapists work to provide effective family therapy. One approach to achieving this framework is to understand the cultural-historical base of the family in therapy (McFadden, 1999).

There are major factors to consider when developing a culturally-sensitive framework such as ethnic reality and the impact of external systems on an ethnic minority. Transculturalism is essential in achieving effectiveness when counseling across cultures (McFadden, 1999). Prejudice exists in the lives of many ethnic groups, and this prejudice has a great influence on the family's perceptions of systems or institutions and whom they perceive as sources of help. This occasionally will influence the trust level that the family may have toward the therapist. In addition to racism and other prejudices, the ethnic “minority” family also must adjust to the tension created by conflicting value systems with the White American
society. An example would be the middle-class American lifestyle of competitiveness and upward mobility reflecting a “doing orientation” as compared to American Indians and Hispanic Americans who may prefer a “being-in” and “becoming” mode of activity (Ho, 1987).

Migration effects and the stage of assimilation of ethnic minorities also will influence the family-counseling dynamic. Immigration status can play a determining role in the living experiences of ethnic groups. Depending on the country of origin, individuals may never be able to return home, and they consequently may experience an emotional cutoff from their extended family and culture that could have adverse implications for family structure and functioning. Even several generations later, the complex stresses of migration will continue to influence a family's outlook (McGoldrick, et al., 1982). The assimilation process represents how individuals begin to become a working or intricate part of the majority culture in which they live. Family members may assimilate at different levels and rates, depending on their age and level of interaction with the larger majority culture. These differences between family members often can create problems in the function of the family. This also can disrupt the family's progressions through the family-life cycle.

Biculturalism signifies participation in two cultural systems and often in two sets of behavior; it involves two distinct ways of coping with tasks, expectations and behaviors. Hence, family-therapy theory must consider levels of acculturation within ethnic and mainstream cultures, the degree to which clients are able to choose between two cultures/worlds, and the level of participation that is desirable and obtainable by each family.

Social class’s reference to differences based on wealth, income, occupation, community power, etc. also intersects with ethnic-group membership and influences the outlook of the family system. This also can be a dynamic that helps the therapist/counselor see the family's cultural reality in the larger world.

Language, cultural norms and traditions likewise are important to the process of developing a sensitive theoretical framework. Ethnicity is experienced and maintained significantly through language. A common language provides a strong psychic bond. It is often comforting to speak one's dominant language
particularly when under stress. Bilingual family services, therefore, should be made available if possible when speaking English creates an obstacle for therapy. Even if a family is bilingual, problems of miscommunication still may exist. If one is forced to speak English (whose primary language is one other than English), the therapist may lose much of the expressiveness of the individual that would be evident in one's primary language. In some cases, this loss of expressiveness/affect (and possible disruptive speech patterns) can be mistakenly construed as some type of psychological disturbance or pathology, which can be damaging particularly to the therapist/client relationship (Aponte, Rivers, & Wohl, 1995). Interpreters can be helpful but this still may be limiting in regard to the accurate evaluation of the family dynamics by the therapist or counselor (Ho, 1984).

Cultural norms and traditions can be communicated through language as well. Religious services and beliefs, family ways of celebrating, family hierarchy, coming-of-age rituals, sex-role expectations, etc. of a culture also are important for the therapist/counselor to understand. How assimilation affects those norms and traditions can be the root of intrapsychic stress.

**ASIAN AMERICAN CULTURE AND CONSIDERATIONS FOR FAMILY THERAPY**

A more specific example of cross-cultural family therapy dynamic can be seen with the Asian American population. For the purpose of this paper, “Asian American” family refers to people with roots in East Asia: China, Japan, and Korea. Western civilization has stereotyped this unique cultural form as the “mysterious east”. Its extensive history provides a background very different from the West. The culture has a philosophical approach to life that is dictated in traditional systems of the East such as Confucianism and Buddhism. These systems do not emphasize independence and autonomy of the individual but rather that the individual is superseded by the family (McGoldrick, et al., 1982). Rules of behavior and conduct are more formalized in family roles than in most other cultures. An individual's behavior is a direct reflection of the family and that person's kinship network, one that is responsible for maintaining the status of the family.
name or lineage. Relationships among husband, wife and in-laws are strictly
defined, as are relationships between children and parents. Male offspring are
more valued than the females, and expectations of each gender are quite
different.

There also are differences among Chinese, Japanese and Korean cultures
although Westerners may observe these as minimal. Language difference is the
most obvious, but historical, social and economic developments also represent
variation within these cultures. There are, however, strong similarities in family
structure and family functioning of these East Asian groups.

The concept of family extends backward and forward in East Asian culture,
and individuals are seen as the product of their ancestry. This concept is rein-
forced through rituals and customs such as ancestry worship and family record
books, tracing family members throughout centuries. There is a burden of
responsibility that transcends the individual’s personal concerns. Highly-developed
feelings of obligation govern much of the traditional life of people of East Asian
cultures. The ultimate goal of maintaining group harmony dictates proper conduct
and attitudes (McGoldrick, et al., 1982).

Observations made during a two-year sabbatical in Japan by family therapist
Linda Bell, in her article, “Song without Words”, reflected this concept of group
harmony. She stated, “While harmony is the ideal in Japan, conformity is often the
experience” (Bell, 1989, p. 50). She also observed that “Japanese culture is
organized around the principles of wholeness and complimentarily, a respect for
all elements of being, and a refusal to divide experience into mutually contradic-
tory categories” (p. 52). Bell noted that there was also a stronger emphatic com-
munication level with less reliance on words.

There is much emphasis placed on the education of children and academic
excellence in Asian culture. It may be the children in the Asian American family
that draw the system into a family therapy session (Atkins, Morton, & Sue, 1979).
Since problem solving within East Asian cultures is supposed to occur primarily
within the family context, there may be much reluctance from older members of
the family merely to come into therapy. It may not happen until the family has
exhausted not only its own internal resources but also the resources within its cul-
tural community. When they enter therapy, they frequently may feel ashamed and defeated. Therapists must be sensitive to these issues if they are going to engage the family successfully (McGoldrick, et al., 1982).

Therapists/counselors must develop a strong therapeutic alliance with the family in order to be recognized by the family as a knowledgeable expert who could assist them. The therapists are seen as authority figures and will be expected to be more directive in the proceedings of the session, but they should not expect to tell the clients how to live their lives.

Additionally, it is important that therapists understand the traditional cultural roles because, even though assimilation and acculturation may have modified Asian Americans, the majority of them maintain some of the traditional family values. Respecting these roles also may be expressed through initiating contact with or addressing the perceived head of the family first (Ho, 1987).

American emphasis on self-reliance and independence presents difficulties in therapists' understanding specific aspects of family dynamics. For example, therapists may interpret relationships between children and their mother as symbiotic and over dependent. Again, it is useful to understand this bond from a cultural perspective. Also, communication of feelings is different in the Asian culture. Open communication, a typical expectation of therapists, may be even more difficult in front of an outsider, the therapist. Developing open communication can be a slow process to understand, but the therapist must be careful not to judge this dynamic too quickly and/or based on European American values. Disagreement may be less overt and the therapist may need to look for more non-verbal cues in the family to identify these conflicts. There must be a great deal of education and sensitivity restructuring before family members feel comfortable enough to express feelings openly. It may be more useful to use structural family-therapy-model techniques to create change in interactions rather than relying on direct and open expression as necessary (McGoldrick, et al., 1982). By applying a therapeutic approach that focuses on family structure in lieu of ethnicity, the therapist is better able to address changes taking place within the family system, particularly those relating to immigration. These changes in family structure often are similar across different ethnicities/cultures; thus, the therapist is relieved some-
what of having to know/broach certain intricacies involved in varied cultures (Richeport-Haley, 1998).

Finally, the therapist’s ethnic heritage has some relevance to providing effective family therapy. Non-Asian therapists choosing to work with immigrant families must be aware continuously of their own feelings, attitudes and stereotypes about Asian Americans. The complexities of Asian family systems call for a therapist/counselor to have language skills, familiarity with class, background and experience with immigrant families. Asian therapists who have a good understanding of and appreciation for their own cultural background ultimately may be most preferred to work with this population, when available.

SUMMARY

By exploring the subject of family therapy in a transcultural dynamic, it is obvious that the therapist/counselor must have a strong curiosity of, appreciation for, and knowledge of ethnic groups that comprise our very diverse American society. It is as vital to understand counseling theory, because the use of some techniques or models may not only be ineffective but may deter a family from further attempts to seek help from outside sources. Development of a culturally-sensitive framework or adoption of an existing one would be essential in order to practice family therapy with various ethnic groups. One potential example of this type of therapy is Brief Strategic Therapy as outlined by Madeline Richeport-Haley, Ph.D. This approach places emphasis on strategies that minimize ethnic issues as much as possible while focusing largely on family structure and social context (Richeport-Haley, 1998). This is not to say by any means, however, that ethnicity should be completely disregarded. Certain cultural/ethnic implications (especially those centered around speech and expression) are vital for the counselor to understand to some extent in order to maintain any level of trust, communication or rapport with client(s). In conducting research for this paper, it was evident that there is a paucity of articles addressing cross-cultural issues within family-therapy journals. Those individuals within the counseling profession may view this lack of representation regarding transcultural issues as motivation to fill the apparent void.
REFERENCES


PART 1: COLLEGE OF LIBERAL ARTS
The Emancipation Proclamation of 1863 freed all slaves in the Confederate South and disrupted the antebellum way of living. Slaves who knew no other way of surviving than by the generosity of masters and mistresses found themselves with the responsibility of caring for themselves and their families. With freedom came a definite uncertainty for those slaves with very little education or none at all. According to statistics less than ten percent of the Negro population could read prior to 1863; thus, we may assume that even with emancipation many slaves were not truly free because they lacked skills to take advantage of the freedom that had been put before them. However, those slaves who were among the less than ten percent who could read were in a better position to take advantage of their freedom. Usually, the slaves who could read were former house servants whose ability to read was vital to operation of household affairs. Benjamin Montgomery, the former slave of Joseph E. Davis, was a part of the small percentage of slaves who could read. Not only did his ability to read allow him to take advantage of his newfound freedom, but his awareness of the requirements of a genteel Southern Negro also allowed him to maximize the benefits of freedom with very little confrontation. Although Benjamin Montgomery supposedly and for the most part educated himself, his extremely clear and persuasive writing skills almost makes this assertion unbelievable and begs for further inquiry.

Joseph Davis’ relationship to Benjamin Montgomery partially helps to explain his level of literacy. Montgomery had been a slave in Virginia where he had a young master. With this young master, Montgomery developed a relationship that allowed

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him to begin acquiring his literacy skills. Montgomery convinced his young master to teach him the letters of the alphabet at first, and later he persuaded young master Davis to share his knowledge through private tutoring.\(^3\) At first glance, readers are somewhat intrigued by the rudimentary way in which Montgomery began his early education, but this way of learning—from a private tutor, so to speak—was more normal than not. In the South, there were no public schools that took on the responsibility of educating the young; public education as we now label it would not take shape until the Reconstruction Period.\(^4\) Formal education was a private venture that only those with wealth could afford. Montgomery was fortunate to be the companion of his young master because he received an early education that was usually reserved for the aristocratic classes of the South.

At the age of seventeen Montgomery was uprooted from his slave life in Virginia; one can only imagine the terror that he must have felt on his way to the deep South, since his life had been relatively free of hard labor. Montgomery actually resisted the bondage of slave life on the plantation; he made a daring escape but was captured and returned to his owner, Joseph Davis. Montgomery's rebellion marked a critical point in his life because he could have faced both mutilation and death. However, Joseph Davis did not punish him for rebelling; instead, Davis listened to the reasons that Montgomery gave for wanting to leave the plantation. He learned that Montgomery wanted to continue his education and that his literacy skills made him less likely to be productive as a field hand. Davis promised the young Montgomery that he would allow him to pursue his quest for knowledge if he promised not to run away again. Instead of being punished for his attempt to run away, Montgomery was provided the opportunity to pursue his interest—within the boundaries of slavery, of course—and to continue developing his knowledge.\(^5\)

One angle for viewing Montgomery's situation after running away reveals that he profited from his attempt at escape, yet if one looks at the alternatives, the decision of Joseph Davis could be viewed as an economic one. The situation reveals

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\(^3\) Ibid., 17.


that Davis had much to gain from a cooperative and educated slave rather than an uncooperative one. Davis obviously was able to look at the “the big picture” and to see the value of an educated slave like Montgomery. Davis acted in accordance with Robert Owen’s philosophy of creating a utopian society; in other words, a slave who is allowed to pursue a measure of his happiness and self resilience will be more productive than one who is unhappy and constantly running away.  

Benjamin Montgomery began his education as early as 1825; he became an engineer, inventor, and a man of letters. The actual steps that he took to obtain his education are not fully known; there exists a gap in what we know about the actual day-to-day steps that Benjamin Montgomery—the slave—took in pursuing his knowledge. This chapter will discuss the available means to which Montgomery would have had access to develop his education. First, the historical development of educational opportunities for the Negro before 1861 will be examined. Next, the types of organizations that helped to provide Negroes with materials and places to pursue their educational rights will be discussed, and this chapter will end with an analysis of specific letters that Benjamin Montgomery wrote to Joseph Davis.

NEGRO EDUCATION BEFORE 1861

Readers learn that Benjamin Montgomery first began his elementary education under the tutelage of his young master; however, we also know that during young Montgomery’s era learning to read and write was illegal for the Negro. The decision to outlaw the teaching of the Negro has a revealing history that reaches as far back as the Revolutionary War when America declared its independence from Britain. America’s revolutionary period provides an adequate focal point to facilitate an understanding of the need and justification of Negro education and a lack thereof.

Religious organizations played an extremely important role in educating the Negro prior the Revolutionary War. Although enslaved, religious missionaries felt

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6 Ibid., 1-8.
7 Benjamin Montgomery to Joseph Davis. Selected photocopies of Joseph Davis Papers (1865-1870), Mississippi Department of Archives and History.
that slaves had a right to understand the Bible so that they could save their souls. The first missionaries to help the Negro learn were the French and Spanish missionaries who, at first, had taken more interest in Native Americans than enslaved Negroes. However, these missionaries were eager to bring individuals into the Church, and as they settled and acquired slaves, they felt obligated to help educate them. French and Spanish missionaries set a precedent that would be followed by British missionaries; that is, they would not be outdone in bringing souls into the Church. The British missionaries received legal permission from England to be allowed to provide basic literacy skills to slaves and Negroes. These initiatives provided Negroes with the beginning of their access to understanding American education.9

Although missionaries looked upon the education of the Negro as their divine duty, slave holders often educated Negroes for economic reasons. Slaves who were taught to read and write often became managers of their master’s plantation. Educated slaves who could help run a plantation became essential for productivity; that is, the slave holder saved money by educating his trusted slaves.10

Even though Benjamin Montgomery and Joseph Davis’ relationship develops after 1861, Davis’ decision to allow Montgomery to continue his education in spite of his attempt at running away exemplifies the gains that a slave holder could obtain by allowing his slaves to become educated. As an adult, Benjamin Montgomery successfully managed Davis Bend during Joseph Davis’ absences.11

The onset of the American Revolutionary War highlighted obvious hypocrisy. American colonists protested taxation without representation and argued that as human beings they had certain inalienable rights, such as the rights to liberty and freedom from oppression. “They [American colonists] looked with opened eyes at the Negroes. A new day then dawned for the dark-skinned race. Men like Patrick Henry and James Otis, who demanded liberty for themselves, could not but concede that slaves were entitled at least to freedom of body.”12 Because of the clarity of this hypocrisy, some colonists freed their slaves and helped to establish schools.

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9 Ibid., 1-17.
10 Ibid., 2.
12 Woodson, The Education of the Negro Prior to 1861, 5.
and missions to educate and prepare them for their responsibilities as citizens. However, not all slave holders conceded that Negro slaves should be given their freedom and basic rights as citizens, and when the colonists officially declared their independence from Britain, the language that they used to form the constitution of the United States declared that Negroes were not entitled to the same rights as Whites. The language of the constitution in essence eliminated the need to educate the enslaved Negro for citizenship. In fact, it became necessary to limit the education of the Negro to prevent him from understanding the reasons for his enslavement in a society that claimed to adhere to democracy.13

In the South, laws eventually were passed that made educating the Negro an illegal act, although this law was not severely enforced. Many of the myths that the Negro could not be educated were dismissed prior to the American Revolution, and missionaries and some slave holders continued to educate slaves. However, the driving force behind outlawing and limiting the education of the Southern Negro was the cotton industry.14

Techniques in weaving and sewing became more productive because of mechanical inventions. Such mechanical inventions created a high demand for raw cotton to supply the needs of consumers; and of course, this high demand for cotton created a need for cheap labor to help cultivate cotton crops in agricultural states in the South. Slave labor—free labor in essence—allowed cotton farmers to make large profits and made them dependent upon slave labor. Because Southerners knew that education usually made slaves unfit for menial labor, they had to outlaw educating slaves to ensure that they had access to a brute supply of inexpensive Negro labor. In other words, Southern Whites began to strangle the progress that Negroes had made during America's revolution and pre-cotton era.15

Before the boom in cotton production, Southern slaves, like Northern slaves, were being educated in various ways—apprenticeships, religion, letters, and economics. There were two basic principles guiding the education of the Negro at

13 Ibid., 8-9.
14 Ibid., 10.
that time: (1) Locke's views on the Rights of Man and (2) economic independence. In the late 1700's, John Locke's view of the Rights of Man influenced some Americans to question the evils of slavery. Slave holders who were moved by those political views began to right their wrongs through education. The guiding reason was that slaves needed to learn how to be responsible citizens in a society that depends heavily on democracy. Remnants of this social movement seemed to have been a part of Robert Owens' philosophy for a utopian society that Joseph Davis adopted on his plantation, which resulted in Benjamin Montgomery being allowed to continue pursuing his quest for knowledge.

Prior to improvements in transportation, Southern plantations were basically small self-governing and operating quasi-states, which was another reason that allowed Southerners to temporarily justify educating Negroes. Basically, plantation owners realized that educated slaves were more valuable and cost-efficient, especially ones that could be trained to produce raw materials such as farm tools and ones that could be taught management skills. For example, slaves were trained as artisans to supply the needs of the plantation, and when the plantation was not in operation, they could be hired out to produce off-seasonal income for their owners. Plantation owners also trained their slaves in the art of letters and economics so that they could manage the plantation affairs. Plantation owners realized that they could save money in shipment costs of raw supplies if their slaves could produce needed materials at a lower expense, and they realized that training slaves to oversee plantation operations proved more cost effective than bringing in Whites from outside the plantation who demanded fair salaries.

With improvements in transportation and shipping, plantation owners became less dependent on the efficiency of their slaves to make plantations self-operating entities; hence, the need to educate them dwindled. However, one would think that the social movement of the Rights of Man would have instilled in White Southerners the desire to educate their darker brothers for purposes of being productive individuals, but the enticement of money from the cotton industry

18 L.H. Whiteaker, "Adult Education within the Slave Community," 4-6.
seemed to outweigh the humanistic goals of any social movement. Consequently, Southerners began to justify why slaves should not be educated. 19

**ACTUAL EDUCATION OF SLAVES IN THE 19TH CENTURY**

Hermann informs readers that Benjamin Montgomery lived in Virginia until the age of seventeen. Knowing the general location of Montgomery’s rearing sheds much light on the literacy skills that he possessed when he was sold to Joseph Davis as a plantation slave. In other words, although the South during what would have been young Montgomery’s formative years (1826-1836) had already diminished its tolerance and initiative for educating slaves, Virginia—being further North than states such as Mississippi, Georgia, and South Carolina—was a place where educational opportunities for Negroes still existed, even if covertly. Based on an understanding of the actual steps that were taken in the North to educate Negroes, historical evidence supports the argument that young Montgomery’s high level of literacy skills are reflective of “trickled-down” Northern initiatives to improve the education of the Negro.

As previously discussed, early influences of religious sects were on improving Negro literacy skills; however, other factions played an important role in the education of the Negro, especially in the North. A simple division of these other factions would categorize them as White initiated and Black initiated. Most of these local influential groups operated as improvement “societies” or “benevolent” organizations; their purpose revolved around organizing the educational opportunities for slaves and freedmen. Organized opportunities included providing safe havens for slaves to learn to read, providing books for freedmen, raising funds to build schools for Negroes, and providing social clubs that engaged in readings and speaking events. 20

The American Convention of Abolition Societies and the Abolition Society of the State of Maryland are examples of typical White Northern societies that encouraged and supported efforts to educate Negroes. In 1794, the American

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19 Ibid., 7-8.

Convention of Abolition Societies officially proposed to its other branches to begin educating the children of free Negroes and the children of slaves. To accomplish this goal schools would need to be built, and teachers would need to be trained. The Abolition Society of the State of Maryland, in 1796, responded to this proposal when it officially began organizing the building of a school to educate free Negro children and the children of slaves.  

White society efforts were reinforced by self-improvement societies within the free Negro population of the late eighteenth and early nineteenth century. Although the economic and political power of Negro societies were not as strong as that of White ones, Negro societies provided opportunities for intellectual development in familiar social settings. “The most common types of intellectual organizations were literary and debating societies, although lyceums, oratory, and prose reading groups were also organized.”  

The following are recorded names of Negro societies that furthered the educational development of the race: (a) Young Men’s Union Friendly Association and the Mutual Relief Society of Providence, Massachusetts; (b) Daughters of Africa, Society among the Free People of Colour; and (c) the African Marine Fund, both of New York.  

Between 1800 and 1830, Black societies flourished in the North and provided a variety of educational opportunities for Negroes. “Next to the church perhaps, these societies provided more of a sense of identification for black communities than any other group. [In fact,] Some of the stronger ones offered talks about black heroes, discredited popular conceptions about black inferiority, and provided forums for emerging black community leaders.”  

The significant influence of Black and White societies is important to note in this chapter’s analysis of Benjamin Montgomery. What these societies reveal from an overarching perspective is that young Benjamin Montgomery, who was born in 1819, was reared in the midst of an educational enlightenment movement for Negroes—possibly the most significant one in the history of the U.S. up to that point. Thus, the

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21 Woodson, The Education of the Negro Prior to 1861, 75.
22 Ihle, “Education of the Free Blacks before the Civil War,” 16.
23 Ibid., 14.
24 Ibid., 13.
Benjamin Montgomery that Joseph Davis purchased from Virginia most likely had benefited from a vast source of educational improvement opportunities other than what we are informed of by Hermann who only mentions that Montgomery's education was the result of instructions from his boyhood master and his own self-discipline.

One may be inclined to discredit the above claim about Montgomery's education in Virginia—a Southern State—as a weak assumption; however, testimonies from the State of Virginia during this era provide strong evidence of an educational movement at work there around the same time young Montgomery would have been in the formative and mature years of his education. "Appealing to the Negroes of Virginia about 1755, Benjamin Fawcett addressed them as intelligent people, commanding them to read and study the Bible for themselves ..."26 For instance, advertisements in The Virginia Herald (Fredericksburg, 1800) described fugitive slaves from the area with descriptors such as, "artful" and "can write a pretty hand and has probably forged a pass."27 Historically recorded observations such as these add support to the posited statement that Montgomery's high level of literacy likely resulted from "trickled-down" Northern education initiatives. Furthermore, Virginia as a Southern State was more in line with Northern values than others states because as early as 1783 the slave trade had been abolished and schools for freedmen had been established.28

MONTGOMERY'S LETTERS TO JOSEPH DAVIS

During the Civil War, Joseph Davis left the Davis Bend Plantation in the care of Benjamin Montgomery, who at that time was still a slave. Montgomery and Davis had developed mutual respect and trust for one another. Years prior, Davis had allowed Montgomery to continue his education as long as he agreed not to run away again, and Montgomery had kept his promise. However, in 1863 when President Lincoln issued the Emancipation Proclamation, Benjamin Montgomery—like other slaves on Davis Bend—abandoned the plantation. Montgomery, who was about forty-four years old, quickly realized that Lincoln's

26 Woodson, The Education of the Negro Prior to 1861, 81.
27 Ibid., 82.
28 Ibid., 92.
declaration of freedom meant very little to a White society that had looked upon the Negro as subservient and less human for more than two hundred years. After returning to Davis Bend, Montgomery re-assumed the role as manager of the plantation, and he kept Joseph Davis informed of the events that took place at the Bend. Letters that Montgomery wrote to Davis reveal not only the daily events of the plantation but also reveal that Montgomery had achieved a high level of literacy and that he was very aware of Southern politics. The remainder of this chapter will focus on examining the content and purpose of Benjamin Montgomery’s letters to Joseph Davis.

In a group of letters written by Montgomery from October 1865 to November 1865, we learn much about the activities on the Davis Bend Plantation. With extreme clarity—in a letter dated October 14, 1865—Montgomery reports to Joseph Davis that he has been communicating with Colonel Thomas, an agent of the government’s Freedman Bureau, and he encloses copies of his correspondence with Thomas. Montgomery writes, “That you may have [illegible script] more time to examine the written correspondence between Col. Thomas and ourselves, I send [illegible script] rough copies that we sustained.” Montgomery also describes the monetary transactions taking place with the sale of cotton and how it affects the Negro sharecroppers who will be farming the land. “The colonel... is [to] buy seed cotton of in the profit at seven cents per pound, which is a lot to the producer of about $50 to $100 on the bale. And of those who owe for [illegible script] supplies and not able to pay in money until this cotton is ginned, they take pay in seed cotton at the same rate, which seems to be very heavy speculation [illegible script] that on the poor and most ignorant class.” Montgomery appears to believe that Colonel Thomas’ speculation about the production of the next crop of cotton is unrealistic, and he is concerned that the sharecroppers’ cost of supplies will not cover their future profit from the sale of their cotton crop. Montgomery ends this letter with details about the livestock that have been conscripted by the federal government, and he describes a government official that he has become aware of in the area, “Captain T. B. Norton, Provost Marshal.”

29 Benjamin Montgomery to Joseph Davis. Oct. 14, Oct. 30, and Nov. 18,1865, Selected photocopies of Joseph Davis Papers, Mississippi Department of Archives and History.
What we learn about Benjamin Montgomery from above is that he is aware of his position as a freedman, but he is careful not to extend his freedom too far in his relationship with Davis. Although Joseph Davis' property was no longer officially in his possession, Montgomery seemed aware that this would at best be only a temporary situation. In essence, Montgomery allies himself with a confederate sympathizer and even continues to address him as "Master J. E. Davis." Trust had to have been on the mind of Joseph Davis since a number of his former slaves had already deserted the Bend, and some had even raided his former home. Davis and Montgomery also must have known of accounts where slaves had blatantly disrespected their former owners through words and gestures. Montgomery, who had briefly fled the Bend earlier during the Civil War, also must have known of the violence that free Negroes faced in the South and the small value placed on their lives. Knowing this information helps us to understand why Montgomery frequently communicated with Joseph Davis; that is, Montgomery realized that in order for him to remain in his position as manager/overseer of the Bend, he needed the trust of his former master.30

The term "objective" best describes Montgomery's style of writing to Davis and his stance toward the government agents and workers at the Bend. Montgomery's letters show that he was extremely knowledgeable about managing a plantation, but he appeared to exert little authority or criticism during Union occupation. His mentioning of Colonel Thomas's purchase of cotton seed and "heavy speculations" read as factual comments rather than criticisms. Thus, Montgomery—to avoid criticizing another White man—knew that he had to paint a picture for Davis to communicate that improper operation of the plantation was occurring.

In another letter to Davis—October 30, 1865—Montgomery makes a similar comment that avoids openly criticizing the actions of Whites while at the same time inadvertently communicating that they were not efficiently running the Bend. He writes, "He further said that the condition of the other two engines on the Bend was such as to enable him to suffer colored Engineers to run them, but ours [Hurricane] required the constant attention of a white Engineer, whom wages are

$100 per month and he also pays a white superintendent one hundred per month for his service at the same gin. Of the arrived amounts of his statements it is not for me to judge, but experience knows that such expensive arrangements in performing the same work was never [illegible script].” Montgomery’s rhetorical strategy here, again, shows that he is aware of his cultural context. For example, when he writes that “it is not for me to judge,” he is purposefully writing himself into a subservient position to allow Joseph Davis to judge the described circumstances. The one possible critical statement made by Montgomery is detected when he informs Davis about Colonel Thomas’ misuse of federal money at the Bend, but he depersonalizes this statement by saying that “experience knows” rather than “I know from personal experience” that Colonel Thomas and his agents are misusing federal dollars.

Montgomery’s writing reveals that he probably knew a great deal about how to motivate Joseph Davis to action. For example, on November 18, 1865 after receiving correspondence back from Joseph Davis, Montgomery writes and apologizes for “agitating” him. Davis obviously had become infuriated about the way that Colonel Thomas was handling Davis Bend; although Montgomery apologizes for upsetting Davis, one could argue that he is not sincere. In other words, Colonel Thomas and Joseph Davis were two obstacles in the path of Benjamin Montgomery’s desire to control Davis Bend; thus, it is arguable that he carefully articulated his conversation between the two of them to further his own interest. Historical records reveal that Davis did eventually use his political connections to remove Colonel Thomas from his property, and he covertly mortgaged Hurricane and Brierfield (two of the plantations that comprise Davis Bend) to Montgomery and his sons. One could argue that Montgomery’s careful and objective style of reporting the happenings at the Bend did get him what he wanted; that is, complete control of his former master’s plantation.

This brief analysis of letters from Montgomery to Joseph Davis reveals not only that he was extremely literate but also that he was a shrewd user of the written language; Montgomery’s brief exit from the Bend during the initial arrival of Union soldiers and his quick return meant that he realized that he had more

31 Hermann, The Pursuit of a Dream, 104.
opportunities at Davis Bend than any other place in North America. Furthermore, his long relationship with Joseph Davis probably convinced him that he, Davis, would never return to a plantation where he could not exert his paternalistic rule like he had been accustomed to during the antebellum period. Knowing this, Benjamin Montgomery's letters read more like covert persuasive documents that served the purpose of further convincing Davis that he would no longer want to live on his plantation rather than letters that were written merely to report the daily happenings on a plantation.

CONCLUSION

Joseph Davis purchased Benjamin Montgomery in 1836, and he allowed Montgomery, a slave at that time, to fulfill his educational interest. This chapter reveals that Montgomery's education was well grounded before he traveled into the Deep South and into Mississippi, which allowed him to excel under the basically free reign that Joseph Davis allowed him to have. This chapter further highlights that Montgomery's level of education was more than likely influenced by a larger educational movement that was already in place during the formative years of his education in Virginia. In other words, Montgomery's level of knowledge and his literate abilities were the product of a larger movement. All of these factors helped to create the Montgomery who carefully wrote letters to Joseph Davis during the post antebellum period, letters that convinced Davis that Montgomery would be the best person to acquire his former Davis Bend Plantation.
A CRITICAL REFLECTION: CHRISTIANITY, AFRICAN AMERICAN INTELLECTUAL HISTORY AND LITERARY SCHOLARSHIP

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No doubt the beggar’s joy was not true joy; but it was a great deal truer than the joy which I, with my ambition was seeking. And undoubtedly he was happy while I was worried; he was carefree while I was full of fears. And if I were asked which I would prefer, to be merry or to be frightened, I should reply “to be merry.” But if I were asked next whether I would prefer to be a man like the beggar or a man like I then was myself, I should choose to be myself, worn out as I was with my cares and my fears. Was not this absurd? Was there any good reason for making such a choice? For I had no right to put myself in front of the beggar on the grounds that I was more learned than he, since I got no joy out of my learning. Instead I used it to give pleasure to men—not teach them, only to please them.

-St. Augustine, The Confessions of Saint Augustine Book VI Ch. VII

Many of the most engaging and enriching conversations that I have ever participated in have taken place at No Grease Barber Shop. Damion Johnson and his twin brother Jermaine are the owners of this barbershop, and they have chosen a rather intriguing phrase as their slogan. Although it appears trite at first glance, the slogan reads, “This is no ordinary barber shop.” When one walks into their shop, you immediately notice that the ceiling is covered with red paint. This may seem curious enough, but when coupled with the knowledge that the shop’s activities include—hosting famous gospel singers like Darryl Coley, holding weekly bible study sessions on Monday nights, producing skits, hair/fashion shows, and poetry readings with reverential respect paid to the history of African American...
barbering and African American Christianity—one recognizes that the red paint is symbolic of their deep and abiding commitment to the blood of Jesus Christ.

In one of our conversations, Damion asked rather pointedly, "What do you guys do?" He was referring to African American intellectuals and scholars. After I articulated the activities that most African American scholars engage in, Damion replied, "Well, it ought to bear witness with somebody other than yourself." This assessment of African American scholarly activity struck me as painfully correct. And even further, it led me into a rather sobering interrogation of my own pursuits as an aspiring African American scholar and intellectual. I realized that the activities of No Grease Barber Shop in a predominantly African American community reflected a very real and deep-seated African American engagement that is a viable terrain for future intellectual consideration in African American scholarship. Further, if future African American scholars were to consider the activities of this powerful institutional dynamic without recognizing the Christian engagement of these barbers, then their scholarship will be lacking depth at best, and be disingenuous at worst.

Damion’s invocation of “bearing witness” speaks profoundly to the notion of agreement and solidarity with persons who concur with your aims and ambitions. This consideration led me to the ensuing conclusion about African American scholarship’s utility within the African American community. The impact of African American scholarship in the African American community suffers because of its failure to appropriate and legitimate the rich, successful and prevailing engagement of African Americans with Christianity. African American engagement with Christianity presents enormous opportunities for serviceable scholarship in the larger African American community; a community that speaks and understands a language that many African American intellectuals are deeply familiar with, but eschew entirely—the language of biblical Christianity.

**SELECTED THEORETICAL BACKGROUND**

Mark Noll’s (1994) *The Scandal of the Evangelical Mind* argues in relation to the larger European American evangelical tradition that the “scandal” of the
evangelical community is the lack of attention paid to its rich intellectual heritage in the Protestant tradition. In explaining his sense of intellectual tradition, Noll writes, "By an evangelical 'life of mind' I mean more the effort to think like a Christian—to think within a specifically Christian framework—across the whole spectrum of modern learning, including economics and political science, literary criticism and imaginative writing, historical inquiry and philosophical studies, linguistics and the history of science, social theory and the arts...failure to exercise the mind for Christ in these areas has become acute in the twentieth century. That failure is the scandal of the evangelical mind." ¹ Noll's definition has strong reverberations when contextualized within an African American intellectual tradition.

Historically, African American intellectuals and scholars have viewed the academic "scandal" facing African American intellectual and scholastic thought in terms of a "crisis." Since Harold Cruse's (1967) *The Crisis of the Negro Intellectual*, African American intellectuals such as Nathan Hare, bell hooks, Cornel West, Hortense Spillers and Henry Louis Gates, Jr. have sought to respond directly or indirectly to Cruse's despondency about African American intellectual culture. The most notable of these respondents is Cornel West. In prophetic fashion, West may be "the voice of one crying in the wilderness" preparing the way and making straight paths for re-vitalizing African American intellectual and scholarly life in the 21st century. To be sure, West's intellectual positioning with regard to African American intellectual and scholarly life does not amount to overbearing advocacy or espousal of Christianity, but it does represent the kind of clearing of the land or demolition that is necessary before either erecting or re-constructing African American intellectual thought and scholarship. For West, the present state of African American intellectual and academic life is not a "crisis" but a "dilemma"—a quandary that has no solution amongst available alternatives.

In his essay, "The Dilemma of the Black Intellectual," West outlines and discusses four distinct frameworks for literate African American intellectual activity


that may be capitalized upon in future work. What is most compelling about West’s essay is what he does not suggest. Prior to discussing these four models of historical African American intellectual production, West suggests “that there are two organic intellectual traditions in African American life: the black Christian tradition of preaching and the black musical tradition of performance. Both [oral] traditions are rooted in black life.” And in concluding his essay, West remarks that the expansion of literate black intellectual activity:

...will occur more readily when black intellectuals take a more candid look at themselves, the historical and social forces that shape them, and the limited though significant resources of the community from whence they come. A critical “self-inventory” that scrutinizes the social positions, class locations and cultural socializations of black intellectuals is imperative... The future of the black intellectual lies neither in a deferential disposition toward the Western parent nor a nostalgic search for the African one. Rather it resides in a critical negation, wise preservation and insurgent transformation of this black lineage which protects the earth and projects a better world.

Contained within the whole of West’s argument—which tries to project some hope against the plight surrounding present scholastic difficulties in African American scholarship—is a latent framework for merging successful oral African American intellectual history with its less successful descendents of the letter. What is the most likely point of convergence between the intensely sermonic African American oral tradition and the African American intellectual tradition? Where are the most “significant [historical] resources” that African American scholars may draw upon when studying the African American communal experience in America? What would a “self-inventory” of African American culture reveal about African American intellectual and literate life? What intellectual “lineage” can African American scholars hope to rely upon that has sufficient institutional and communal interplay to promote genuine intellectual exchange between per-

3 West, 73.
4 West, 83.
sons within and beyond the academic academy? Finally, where might this “wise preservation” of a rich and complex intellectual tradition be found that is neither in the Western backdrop of the Guttenberg Press nor in the explicitly oral, dynamic and pluralistic African Diaspora?

**CHRISTIANITY AND AFRICAN AMERICAN LITERARY HISTORY**

African American literary scholarship should immerse itself into projects that ferret out distinctive Christian components. By revisiting an African American literary ancestry consisting of slave narratives, poetry, political/polemic/abolitionist tracts, novels, speeches, sermons, private journals, letter writing, newspapers and magazines, scholars might uncover the ways in which African American engagement with Christianity has created a vibrant and sustainable tradition of African American intellectual acumen. Such a task would perhaps resolve the “scandal,” “crisis” and “dilemma,” which all but ostracize African American scholars from the larger African American community and the predominantly European American academy alike. Such a task does not fail to recognize the very profound and traumatic impacts of America’s historical abuse of Christianity recorded by African American and European American writers alike. Racism in the European American community and patriarchal abuses in the African American community rightly should be taken into account when assessing a distinct African American intellectual tradition in relationship to its Christian underpinnings. Yet, this examination would not simply amount to Black liberationist theology either.

The sort of investigations that I am suggesting are tantamount to a recognition of a living and breathing historical Christianity, which has always and will ever remain a part of the African American community. In a universal life-cycle of births, weddings and deaths—including renunciations of the plausibility of Providence and the divinity of Jesus Christ—Christianity has always been a part of the air that African Americans live, move and breathe within; and, as a result, it is virtually impossible to extract African American thought from its deeply imbued
Christian framework. To borrow a proverbial phrase, “it’s like taking a fish out of water.”

George Marsden’s groundbreaking effort in *The Outrageous Idea of Christian Scholarship*—which argues for the acceptance of academically rigorous “faith-informed” perspectives in the academy—also provides an insightful, yet, perfunctory glance into the predicament of aspiring African American scholars who wish to pursue African American academic projects in relation to their Christian dimensions. Marsden writes:

African Americans, for example, are enthusiastically encouraged to enter the mainstream academy, but the condition typically has been that they do not bring the religious dimensions of their culture into intellectual life. Ever since African Americans began to be permitted to play a role in mainstream academic life, they were also sent the clear message that they must conform to the standards of the mainstream academy concerning religion. No matter how religious they might be, they were not encouraged to think about the implications of their religious beliefs for their intellectual life, unless they were studying in divinity schools.5

Marsden’s account is reason enough for aspiring African American scholars to resist Christian examinations as part of a distinct African American tradition. Far more disturbing, is that such sentiment is found in African American thought as well. Significant African American intellectual figures also have held hostile positions about Christianity’s influence upon African American nationhood. Richard Wright’s remarks in “Blueprint of Negro Writing,” are an example. Wright contends:

It was through the portals of the church that the American Negro first entered the shrine of western culture. Living under slave conditions of life, bereft of his African heritage, the Negroes’ struggle for religion on the plantations between 1820-1860 assumed the form of a struggle for human rights. It remained a relatively revolutionary struggle until religion began to serve as an antidote for

5 Marsden, 36.
suffering and denial. But even today there are millions of American Negroes whose only sense of a whole universe, whose only relation to society and man, and whose only guide to personal dignity comes through the archaic morphology of Christian salvation.  

Even while granting Wright's premises as fact, the question still remains: How does an intellectual assumption that identifies African American engagement with Christianity as inadequate, illegitimate, embarrassing and intellectually unworthy enough to grapple with, reconcile the overwhelming evidence of African American intellectual reliance upon Christianity? The historical fact remains that the African experience in America, conventionally speaking, does begin in Jamestown. Jamestown and other similarly situated slave-trading posts, without question, mark the beginning of the African American experience. Certainly, one way of proceeding as an African American scholar is to retreat to a intellectual framework that suggests that to examine one's history in light of the drudgery and demeaning nature of slavery is to produce uninspiring explorations of the earliest literary antecedents in the African American tradition.

On the other hand, one just as easily could consider American slavery as an intellectually viable pretext to ingenious African American intellectual activity. No ideological position in the African American community, and for that matter, in the European American community is ever free from the rubric of Christianity. It is the "oversoul" of all of Americana, ever serving as a referent or sounding board from Early American Puritanism to Contemporary American Postmodernism. Similar to EO. Mathiesson's suggestion that "one way to understand America's intellectual history is through Puritan orthodoxy, Unitarianism and transcendentalism," 7 if indeed African American literary scholarship serves a communal purpose by offering a variety of ways for students to theorize, understand and appropriate a intellectual and literary history, then it becomes increasingly problematic to fail to recognize Christianity as one of many justifiable scholarly approaches, methodologies and areas of investigation in African American scholarship.

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CONCLUSION

Extensive scholarly investigations of African American literary figures such as—Phyllis Wheatley, Jupiter Hammon, Zora Neale Hurston, Dr. Mary Mcleod Bethune Cookman, Frederick Douglass, Charles Chesnutt, William Edward Burghardt Du Bois, Williams Wells Brown, Maria W. Stewart, James Baldwin, Alice Walker, Toni Morrison, Nat Turner, David Walker, Frances Harper, participants in the American Negro Academy, Alexander Crummell, Jean Toomer, James Weldon Johnson, Amiri Baraka, Paul Laurence Dunbar, Harriet Wilson, Margaret Walker, Ernest Gaines, Absalom Jones, Richard Allen, Randall Kenan, Rudolph Fisher, Dr. Martin Luther King, Jr., Nathan Hare, Jesse Jackson, George Washington Carver, Fannie Lou Hamer amongst many, many others—which flesh out the Christian contours of distinctly creative intellectual projects is crucial for potent scholarly connectivity with students and community members. Still further, perhaps in the face of high African American illiteracy rates, inadequate inner-city education, and woeful numbers of African American college professors, Christianity and African American scholarship answers the most pressing question in the 21st century American academy—How do we promote authentic, innovative and representative scholarship among African American professors that will genuinely invite African American students and community members to participate in shaping 21st century American thought at American universities?
In his seminal study on slave religion in the antebellum south, Albert J. Raboteau argues: “More than the Presbyterians, the Separatist Baptists and the Methodists reaped a revival harvest of black and white members in the South. By the end of the [eighteenth] century these two denominations were in the ascendency in the South. Slaves and free Blacks were among those swelling the Baptist and Methodist ranks.”1 Much of this response by the African American slave community was a direct result of the Second Great Awakening. The Second Great Awakening not only kindled the spiritual growth of the slaves themselves, but it also pressed upon their White masters to introduce Christ to their slaves. The Reverend F. A. Mood, historian for the Methodist Episcopal Church of South Carolina for much of the nineteenth century, argued that Methodist worship tended to be more spiritual, emotional and therefore personal: “While the Anglican clergyman tended to be didactic and moralistic, the Methodist and Baptist exhorter visualized and personalized the drama of sin and salvation, of damnation and election. The Anglicans usually taught the slaves the Ten Commandments, the Apostle’s Creed and the Lord’s Prayer, the revivalist preacher helped them to feel the weight of sin, to imagine the threats of Hell and to accept Christ as their only Savior.”2

African American slaves in the South Carolina lowcountry were drawn in large numbers to the Methodist Episcopal church for its commitment to religious freedom, spiritual expression, and for its commitment to full inclusion. However, the Methodist Episcopal Church in America never fully embraced John Wesley’s

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1 Albert J. Raboteau, Slave Religion (New York, 1978), 130.
2 F. A. Mood, Methodism in Charleston: a narrative of the chief events relating to the rise and progress of the Methodist Episcopal church in Charleston, S.C., with brief notices of the early ministers who labored in that city. (Nashville, 1856), 133.
opposition to slavery, nor received African Americans into the church with full rights. Therefore, the Methodist Episcopal Church, in South Carolina, and throughout the United States would wrestle with the question of slavery throughout the antebellum period of American history. African Americans, both free and enslaved, held firm to John Wesley's belief in the ethic of Christian love and of brotherhood, which were intrinsic components of Methodist doctrine. Between the American Revolution and the beginning of the period called Reconstruction, most African Americans in the South Carolina lowcountry took a fork in the road that would lead them to an Afro-Methodist faith; a segregated Afro-Methodist faith governed, controlled, and supported by African Americans themselves.

Prior to 1815, the Colored members of the Methodist churches in Charleston held their own quarterly conference meetings. These meetings were similar to the larger state conference meetings. During these sessions, class leaders were appointed, revivals were organized, religious trials were conducted, members were inducted, and money was collected. Part of the money collected went to the general South Carolina conference, and a portion of the money was retained for the services of the Colored membership. In 1815, the Reverend Anthony Senter, the Presiding Elder of the Broad River District (which included Charleston), noticed discrepancies in the bookkeeping of the Colored member’s quarterly conference record. It was feared that the Colored members were using their collections to buy the freedom of some of their fellow members. According to the Reverend F. A. Mood, the segregated quarterly conference was cancelled and "their church trials, also, which had been hitherto entirely among themselves, were now conducted in the presence of the preacher in charge." The Colored membership perceived these actions as a direct assault upon their rights as Methodists. Mood claims the Colored Methodist community was agitated by the cancellation of its conference meetings. Even though the new rules required the Black classes to turn their money over to White stewards, enough money was withheld to send two of their leaders to Philadelphia (one being the Reverend Morris Brown) to be ordained by Richard Allen, the founder of the African Methodist Episcopal Church.

3 F. A. Mood, Methodism in Charleston, 131. The preacher in charge refers to the white presiding elder of that particular district.
Morris Brown was born in Charleston in 1770 and converted to Methodism in 1790. He was a free Black man of mixed heritage and worked in the city as a shoemaker. He traveled to Philadelphia the year before to be ordained and was briefed on how to start an African Methodist Episcopal congregation in Charleston. Upon returning to Charleston, he organized a Free African Society, which would later serve as the foundation for the African congregation in the city. Brown was not in attendance at the Philadelphia conference meeting, which officially chartered the African Methodist Episcopal (A.M.E.) Church in April of 1816.

The Reverend Richard Allen, acknowledged founder of the African Methodist Episcopal denomination, served as a class leader in the St. George Methodist Church in Philadelphia, Pennsylvania until 1787. Allen and the entire Negro membership walked out of St. George's Church after two Black parishioners were removed from their knees while praying at the altar during a Sunday morning service. Shortly after the 1787 exodus, Allen formed the Free African Society to cater to the spiritual and social needs of Philadelphia's free-Black community. The group petitioned Bishop Francis Asbury for a permanent place of worship, under the auspices of the Methodist Episcopal Church. On June 11, 1799, Allen was ordained a deacon by Bishop Asbury, and in 1800 was brought into "full connection," making him the first "ordained" Colored Methodist pastor. Bethel Methodist Episcopal Church was chartered, and the Reverend Richard Allen was assigned as its first pastor:

Your memorial of the 8th instant was laid before the Philadelphia Conference and provided the supplement to your act of Incorporation which you allude to, be not contrary to the allowed usages, customs, and privileges of the Methodist Episcopal Church according to the established principles and government of the said church, admitted of in case of incorporation among our white brethren for the protection and security of their rights and privileges, the Conference accepts your memorial and entertains a confidence that our African brethren will evince their unshaken stability and firmness as Methodists according to our Discipline.
from time to time, And we cordially wish you prosperity, unity, holiness and happiness. 4

Despite Asbury’s support, Allen and his followers did not receive succor from other Methodist ecclesiastical leaders. The relationship between Allen’s church and the Methodist hierarchy remained strained until Allen decided to completely separate from the episcopal powers of the Methodist Episcopal church. In April of 1816, Allen and the members of the Bethel Church met to form an “Ecclesiastical Compact” that later served as the charter of the African Methodist Episcopal (A.M.E.) Church. Correspondence between Allen and Bishop Asbury reveal that the leaders of the A.M.E. Church had no intentions of leaving the Methodist denomination. Asbury had ordained Allen and even provided him with a church to proclaim the gospel to members of his race. In many ways Allen felt indebted to Asbury and the Methodist Church. Because Asbury died on March 31, 1816, he did not witness the separation of the Methodist Episcopal Church along racial lines. It had been John Wesley’s intent to create a racially inclusive denomination; however, racism was so deeply interwoven into the fabric of America that the spiritual bonds that connected the two races could not maintain the prejudices that separated them. 5

Colored members of the Methodist Episcopal Church in Charleston played a significant role in the embryonic development of the A.M.E. Church. Even though Morris Brown was not present when Allen and his followers officially separated from the Methodist Church in Philadelphia, Brown organized a similar Free African Society in Charleston to address the spiritual and social needs of the city’s free-Black population. Two years after Brown was ordained by Allen in Philadelphia, he encouraged an overwhelming majority of the Colored members to leave the Methodist churches in Charleston. More than 3,000 Colored members left the three Methodist Episcopal churches and established the A.M.E. Church in Charleston and neighboring lowcountry communities. Bernard Powers suggests that: “The formation of the African Church in Charleston was a rebellious

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4 Letter dated April 9, 1807 “To the Trustees of the African Methodist Episcopal Church” found in The Journal and Letters of Francis Asbury, Vol. 3, 367. Full connection refers to a full-fledge member of the church with all of its rights and privileges. With regards to the ministers, it means that they were ordained and part of the Episcopal order.

act of revolutionary proportions." 6 Despite the various codified laws which restricted Black assemblies; the free and slave communities of the South Carolina lowcountry maintained three viable segregated congregations.

The self-segregation of the African American Methodist community and the subsequent creation of the A.M.E. Church in the lowcountry emerged from several factors. The cancellation of the Negro's quarterly conference was a major factor in the Black exodus from the Methodist churches in Charleston. Blacks also were agitated that the White membership had built a garage to house the congregation's funeral carriage on their burial ground on Pitt Street, without their permission. The Colored leaders demanded that the hearse house be used for their own purposes. Some records even indicate that the Colored membership had private services in the hearse house that had to be dissolved by the White clerical leaders. After the White leadership of the church refused to relinquish control of the hearse house, all of the Colored class leaders turned in their rolls and officially left the Methodist Episcopal Church. Their absence was felt throughout the White congregations and bothered those White members who sympathized with the spiritual needs of the African American community: "The absence of their responses and hearty songs was really felt to be a loss to those so long accustomed to hear them." 7 Despite the loss of over fifteen hundred of the church's Colored members, records indicate that at least 1,323 Colored members remained on the rolls of the Methodist Churches in Charleston. 8 Those members who left the three Methodist Churches in Charleston built a church on their burial ground on the corner of Reid and Hanover Streets in the Hampstead Community.

Not much is known about the original congregation of the African Church in Charleston, South Carolina. Most of the White Methodist ministers who chronicled the history of the Methodist Church in South Carolina only briefly acknowledge the exodus of the Colored membership. 9 What we do know is that over 3,000 Colored members left the Methodist Episcopal Church and began worship-

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6 Bernard Powers, Black Charlestonians, 21.
7 Ibid., 132.
8 see Minutes of the Annual Conference of the South Carolina Methodist Episcopal Church, 1818 for numerical records and F. A. Moods Methodism in Charleston pages 131-133.
9 Shreitzberg, Betts, Crum, all provide brief descriptions and narratives of the black exodus.
ping together as a branch of Richard Allen's A. M. E. Church. There are no surviving records that indicate what percentage of the original congregation was free versus those who were enslaved. Obviously, a majority of the congregation was still enslaved because the free Black population of Charleston, South Carolina in 1810 numbered 1,472 persons and only increased to 1,475 in 1820. Even if all the free Blacks attended the A.M.E. Church there was still a substantial slave membership within the new church.  

The Reverend Morris Brown served as spiritual leader of the group and organized several classes to continue the educational system created by the mother congregations. After their initial separation, the A.M.E. community had no place to meet for Sunday morning worship. However: "Measures were also commenced by them to obtain possession of Bethel Church by legal process, because as they had heard by tradition, the colored members at the time of its erection, had contributed liberally towards it." They sought to gain legal control over the Bethel property, but to no avail. The Reverend Mood stated that the Black congregation believed it had legal rights to the ownership of Bethel because they had financially contributed to the building fund. Mood claimed that the Black congregation felt they had ownership rights not just because they helped construct the church, but also because they supported the church financially. Mood's recollection was substantiated by other Methodist ministers who also realized that the African American congregation contributed generously to the aims and missions of the Methodist Episcopal Church.  

The African congregation grew in spiritual and numerical growth until 1822. For five years the African congregation, despite South Carolina laws and statutes prohibiting Blacks assembling without the supervision of Whites, met for religious worship. Their meetings and overt defiance of the law, however, did not go unnoticed. In 1817, 469 Black worshippers were arrested for disorderly conduct.  

10 Bernard Powers, Black Charlestonians, 267.  
11 E. A. Mood, Methodism in Charleston, 131.  
12 Dr. Frank R. Veal, "Charleston Negro Congregation Believed about 160 Years Old," July 17, 1950, p. A 12. In 1950, the Charleston News and Courier printed a historical feature on Emanuel A.M.E. Church. Emanuel became the first A.M.E. Church in South Carolina after the Civil War. The author of the article noted that many of the free black members of the original African congregation owned slaves themselves and one even paid taxes on $648,000.00 worth of property.  
13 The City Gazette, December 4, 1817.
Then again, one Sunday in June of 1818, 143 members of the African church, both free and enslaved, were arrested by the city guard for assembling. *The Southern Patriot* reported on June 10, 1818:

> A few weeks since, some blacks constituted as Bishops and Preachers in one of the Northern cities came here and endeavored to hold meetings of black congregations exclusively; and one of their congregations was taken up and confined and the next day dismissed personally by the City Magistrates, who explained the law to them, and admonished them individually to abstain from a repetition of a like breach of the laws. The Black Priests afterwards endeavored to get the City Council to grant a dispensation and allow them to hold their meetings in the way they wished. Notwithstanding all these lenient measures, the same Preachers, in open violation of the law, and in defiance as it were both of the state, and city authorities, last Sunday held in a house in the suburbs of the city a large and unlawful assemblage of Free People of Colour and Slaves, as they had done before. This assembly was taken up by the City Guard ... yet the penalty was mitigated, and inflicted only on a few of the ring-leaders.¹⁴

Despite these two recorded attempts of suppressing the A.M.E. congregations, the free and enslaved Black communities continued to meet for worship. Even their leader and pastor, Morris Brown, was arrested but decided to serve a jail term rather than be banned from South Carolina. Unlike the scanty newspaper reports of the Stono Rebellion, the Charleston media was quick to publish accounts of the conduct and happenings of the congregation: “The City Council on Monday sentenced five of this group, a Bishop and four ministers, two are now imprisoned.”¹⁵ Despite vandalism to the church, incarceration of the churches’ leaders and laypersons, and publication of their criminal activity, the A.M.E. congregations continued to operate as an independent religious entity.

¹⁴ *The Southern Patriot*, Wednesday, June 10, 1818.
¹⁵ Minutes of the Charleston City Council, June 1818, MSS, Charleston County Library.
In 1818, with 1,600 members, the Charleston African Church was second in total membership to the Philadelphia church, which had 3,002 members. In 1820, a delegation from the African Church of Charleston, South Carolina, petitioned the South Carolina General Assembly for permission to have independent worship services in the Hampstead Community (a small community North of Charleston). They wrote the legislature outlining their desires: “The free persons of colour attached to the African Methodist Episcopal Church in Charleston called Zion, have erected a house of worship at Hampstead on Charleston Neck at the corner of Hanover and Reid Streets. Petitioners request to open said building for the purpose of Divine Worship from the rising of the sun until the going down of the sun…”

Laws were already on the books in South Carolina that prevented Blacks from having religious services without the presence of Whites. This radical movement by the colored citizens of Charleston fostered a growing concern about Blacks gaining too much freedom; whether spiritual or economic. Subsequently, their wishes, however, were not granted, but they continued to press ahead and hold illegal services in the Hampstead Community. By 1822, the African congregation in Charleston had organized three separate fellowships called the Bethel Circuit. Morris Brown was appointed presiding elder over the circuit. The three congregations met on Hanover Street, Anson Street and in Cow Alley. Each of these congregations had pastors and lay leaders. One of the lay leaders in the Hampstead Congregation on Hanover Street was a free Black named Denmark Vesey.

Vesey was as a ship servant for Captain Joseph Vesey during the late eighteenth century. Captain Vesey commanded a ship, which transported and traded slaves between South Carolina and Haiti. Vesey was well educated on the Haitian Revolution and believed that he could implement a similar plot in Charleston. Vesey bought his freedom in 1800 after he won a local lottery while in Charleston. As a free Black, he was able to secure various rights and privileges in Charleston, with its large free Black population. He moved freely through the streets and was able to communicate with various slaves who lived in the city and

16 “Free Persons of Colour to House of Representatives, 1818” Petitions to the General Assembly of the State of South Carolina South Carolina Department of Archives and History, Columbia, South Carolina.
on surrounding plantations. As a skilled laborer he also garnered considerable wealth, which improved his position in society. Vesey, a prolific reader of the Bible, served as a class leader in the Hanover Street African congregation. As class leader, Vesey commanded considerable respect and admiration for his biblical knowledge. He likened the bondage and enslavement of the Israelites in Egypt to the current conditions of Negroes in Charleston, South Carolina.

Bacchus, a slave of Mr. William Hammett, remembered that when he went to Vesey’s house there was a Bible on the living room table: “In a large room and a large Book upon it, probably the Bible, Denmark asked me who I belonged to and my name, Peralt immediately answered ‘Bacchus belonging to Mr. Hammet’.” On a separate occasion, Bacchus again reiterated the importance of religion and the Book of Exodus to Vesey: “Denmark read at the meeting different chapters from the Old Testament, but most generally read the whole of the 21st Chapter of Exodus and spoke and lamented from the 16 verse.” With the paternalism of Abraham and the spirit of Moses, Vesey sought to free the enslaved citizens of Charleston from the shackles of slavery. For over a year, Vesey, under the guise of the African congregation, organized a rebellion to take place on Sunday, June 16, 1822. However, before the rebellion could unfold, their plans were originally thwarted when a house slave by the name of Devany, servant to Colonel Prioleau, told his mistress of the impending insurrection. For the next two months, hundreds of slaves and free Blacks were questioned about the Vesey Conspiracy:

The Court of Magistrates and Freeholders convened again yesterday for the trial of sundry persons of color, charged with an attempt to raise an insurrection in this State, unanimously found the following guilty, and sentenced them to be hanged, on Tuesday, the 30th of July, inst. between the hours of 6 and 9 in the morning on the Lines and their bodies to be delivered to the surgeon for dissection, if requested.”

17 Documents Relating to the Insurrection, Document B.

18 Charleston Courier, Saturday, July 27, 1822, No. 7009, Vol. XX.
As a result of the trial, 35 members of the Charleston Negro community, including Denmark Vesey were executed; 37 were sentenced to leave South Carolina and never to return.¹⁹

Throughout the depositions of the free persons of color and slaves charged with participation in the conspiracy, constant reference is made to the “African Church.” Charleston’s city officials, despite minor means of squelching the activities of the A.M.E. parishioners, ultimately allowed slaves and free Blacks to worship together despite the state laws that prevented Negroes from holding religious services without a White person present. On Sundays, the conspirators coupled religious worship with revolutionary planning. Joe, a Negro man belonging to a Mr. LaRoche, testified that most meetings occurred on Sundays and that most importantly, the class leaders of the African church were active participants in the conspiracy: “He desired me to tell George Nilson on Sunday last (he was my class leader) to come up to him, that he wished to see him. George went up after church in the evening.”²⁰ States laws sought to prevent revolutionary activity by its Colored residents. However, because the laws were not strictly enforced, the free Blacks in Charleston mobilized, although unsuccessfully, to merge the free Black and slave community into one community.

Morris Brown, the pastoral leader of the African church, was implicated in the conspiracy, but actually he did not help in organizing Vesey’s plot. Several leaders of the conspiracy sought Brown’s advice and spiritual guidance on the intended rebellion, but he begged them to keep his name protected. Monday Gell confessed: “Robert told me that Gullah Jack was the head man in this business - he said that Gullah Jack went to father Morris Brown about this business, and that father Morris said he was going to the North — but if you can get men you can try this business, but don’t call my name.”²¹ Brown actually was in the North when the conspiracy unfolded but the mere fact that he was the pastor to

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¹⁹ Several books have been authored chronicling the Vesey Conspiracy and Denmark Vesey in totality. Some of these books are: John Lofton, Insurrection in South Carolina: The Turbulent World of Denmark Vesey, (Yellow Springs, 1964.), also by John Lofton Denmark Vesey’s Plot: a Slave Plot St 0828, South Carolina Department of Archives and History, Columbia, South Carolina.

²⁰ Documents Relating to Denmark Vesey St 0828, South Carolina Department of Archives and History, Columbia, South Carolina.

²¹ ibid., Document A.
most of the participants caused concern among the city's prosecutors. Several of the conspirators were questioned about Brown's role, and each of them denied he had a leadership role in the organization of the revolt. Monday Gell, who was executed for his role in the intended revolt, testified: "Morris Brown knew nothing of it, and we agreed not to let him." Brown returned to Charleston during the investigation and subsequent trials. Despite the conspirator's claim of Brown's innocence, Brown feared for his own personal safety. With the help of James Hamilton, Jr., the intendant of the City of Charleston and other White benefactors, Brown was smuggled out of the city. Reverend Morris Brown successfully escaped to Philadelphia and is believed to have never returned to Charleston, South Carolina. While in Philadelphia he reunited with the A.M.E. Church and in 1828 was elected the Second Consecrated Bishop of African Methodism.

By the request of the city council, Intendant Hamilton had an account of the intended insurrection published for the citizens of Charleston. The purpose of this document was two-fold: one, to let the citizens know that the city officials had taken control over the situation and, secondly, to squash any fears of future retaliation by the Colored members of the African church:

Religious fanaticism has not been without its effect on this project, and as auxiliary to these sentiments, the secession of a large body of blacks from the white Methodist Church, with feelings of irritation and disappointment, formed a hot-bed, in which the germ might well be expected to spring into life and vigour. Among the conspirators a majority of them belonged to the African Church, and among those executed were several who had been class leaders. It is, however, due to the late head of their church (for since the late events the association has been voluntarily dissolved) and their deacons, to say, that after the most diligent search and scrutiny, no evidence entitled to belief, has been discovered

23 Payne, History of the African Methodist Episcopal Church (Nashville, 1891), 289.
against them. A hearsay rumor, in relation to Morris Brown, was traced far enough to end in its complete falsification.24

The Reverend Richard Furman, a prominent Baptist minister, was also concerned that Whites in South Carolina would discontinue their conversion efforts because of the religious significance of Vesey’s intended insurrection. He wrote the Governor in October of 1822 hoping that the Governor would not support any efforts to prevent the missionary activities of the Christian church: “we believe they have had a good Influence on the general State of Society by the promotion of good morals as well as piety among that Class of People.”25 Despite Intendant Hamilton’s and Reverend Furman’s appeal, White citizens of South Carolina refused to live in fear and they petitioned the state assembly to create laws that would restrict the movement and liberty of South Carolina’s Colored residents.

The Vesey Conspiracy of 1822 had considerable consequences not only for the A.M.E. Church, but it also impacted all inhabitants of African descent residing in the State of South Carolina. Shortly after the trials of the conspirators and the subsequent executions, the churches on Hanover Street and in the Hampstead Community were both demolished. Bishop Daniel Payne recalled: “The slaveholders of South Carolina were not satisfied with punishing with death the conspiracy against slavery in that state; they did not stop their proceedings till our Church in that state; was entirely suppressed.”26 One petition to the State Legislature in the Fall of 1822, by a group of White Charlestonians, demanded that all free persons of color be expelled from the state and that they be prevented from holding real property: “The superior condition of the free persons of color, excites discontent among our slaves, who continually have before their eyes, persons of the same color, many of whom they have known in slavery, and with all of whom they associate on terms of equality ... the slave seeing this, finds his labor irksome, he becomes dissatisfied with his state, he pants after liberty!”27 Not all of these recommendations were codified, but the South Carolina legislature did resolve to

24 James Hamilton, Jr., Intendant, An Account of the Late Intended Insurrection Among A Portion of the Blacks of this City. . . . (Charleston, SC, 1822).
25 The Papers of Richard Furman, 1774-1823, South Caroliniana Library.
26 Daniel A. Payne, History of the African Methodist Episcopal Church, 110.
27 “Charleston Citizens Petition the State Legislature” in Denmark Vesey: The Slave Conspiracy of 1822, 144.
place closer restrictions on the liberty of free Blacks in the state. Statute Number 2277, which was signed into law in December of 1822 entitled “An Act for the better regulation and government of free negroes and persons of color; and for other purposes,” required all free Blacks visiting South Carolina via the Charleston port would have to spend their nights in the city jail. The Seaman’s Law was designed to quarantine free Blacks out of the city so they would not incite any further revolutionary activity. The second part of Statute 2277 also required that all free Blacks over the age of fifteen have a registered guardian who resided in the city.28

The demolition of the first A. M. E. Church in Charleston, South Carolina did not diminish the spiritual needs of the free Black and slave populations. Most of the dispersed congregation rejoined the Methodist Episcopal Church, and some even joined the Scots Presbyterian Church. Despite the efforts of the South Carolina legislature to curtail the freedoms of free Blacks and the education of slaves, the Methodist church continued its missionary activity. The post-Vesey Methodist church remained committed to educating and converting Negro slaves. In 1829, the South Carolina Conference created a missionary wing similar to the Society for the Propagation of the Gospel for the conversion of Negro slaves living on rural plantations. The Methodist church, coupled with interested free Blacks, such as Daniel Payne, fostered the development of a learned slave community, in spite of various legal ordinances that forbade the education of Negroes. Payne’s school was closed in 1835 after stronger legislation was passed making it illegal to teach slaves to read.

Despite the agitation caused by the Vesey Conspiracy and the backlash to the Methodist Episcopal Church, Bishop William Capers proceeded with his goal of a serious mission to the slaves in the lowcountry. Various groups of prominent Charlestonian citizens raised the query about halting all Christian missions to the slaves. The Vesey Conspiracy proved that religion was not only a means of bringing the slaves together, but it also could be used for revolutionary planning. Capers realized that the image of the Methodist church had been tarnished because of the Vesey conspiracy and that he needed to unite with Charleston’s

power brokers to alleviate any ill-will towards the Methodist Church. The Episcopal Church still remained the denomination of choice for most slave holders and the Methodists, from their origination, had been seen as a anti-slavery denomination. Capers developed a relationship with the Honorable C. C. Pinckney and convinced him that the lowcountry still needed a viable Christian mission for its slaves. In an oration at the Agricultural Society, Pinckney pleaded with his fellow members to continue their missionary zeal and allow for the Methodist church to provide their plantations with missionaries. Despite the volatile times, Capers and the Methodist church did not remain passive on the issue of Christianizing the slaves. More importantly, they believed that they needed to concentrate their efforts on providing spiritual instruction to those slaves in the South Carolina lowcountry.

Out of all the various denominations who instituted congregations in the South Carolina lowcountry, only the Methodist Episcopal Church and the Church of England organized a separate missionary wing, funded by the church, to provide religious education to African American slaves. In 1829, Capers developed a mission to those slaves living on the Ashley River, the Santee River, and the Pon Pon River. As Superintendent of the Missionary Society of the South Carolina Conference, Capers directed the missionary activity of the church to the various rural plantations in the lowcountry region. After receiving funds by the South Carolina General Conference, two full-time ministers were hired to proselytize slaves in the South Carolina lowcountry. In the very first year of operation, 107 slaves were brought into the mission in the Ashley River district. Mrs. St. Julien Ravenel recalled: “The gentlemen certainly showed great good sense and knowledge of the race which they desired to benefit. The Methodists worked with admirable zeal; their ‘riders’ went from place to place preaching, praying and singing, in plain simple language, but fervent tones, appealing to the imaginative and emotional Blacks. Some planters at first objected, fearing disturbance, but all objections soon gave way, and the exhorters and class leaders were eagerly welcomed.”

25 Minutes of the South Carolina Conference of the Methodist Episcopal Church, 1830, 54.
In the early 1830s, the Methodist church experienced record growth because of its missionary activity in the South Carolina lowcountry. Between the three inaugural missions there was an African American Methodist community of over 1,235 members. The Pon Pon mission was the largest with over 700 adults and 100 children in missionary activities. In 1832, the planters of Beaufort Island requested and were granted a Methodist minister to provide religious instruction to their slaves. The growth of the various missions demanded the church to allocate additional funds to pay the salaries of the ministers. In his annual address before the conference, Bishop William Capers, pleaded with the collective conscience to appropriate additional funds to the mission: “Can we have done our duty as a Christian people if we suffer those who are wholly at our will, by whose labor we have our wealth, and who have souls, to be saved as well as we, to live and die without scriptural instruction, either destitute of religion.”

The appropriation of additional funds allowed for the church to develop additional missions in the lowcountry. By 1839, there were nineteen individual missions to slaves living in the South Carolina lowcountry. These 19 missions covered 232 plantations and included a church membership of 5,483 African Americans. The missions also had been responsible for the catechizing of over 3,811 children. Not only were the missionaries exhibiting considerable success in the outlying plantations of the South Carolina lowcountry, but also the churches in Charleston recovered from the various splits in their African American congregations.

By 1833, the Colored membership of the Methodist churches in Charleston had returned to its pre-Vesey numbers: “At the time to which I am not about to allude, the Colored membership was rapidly recovering the injury sustained by the schism of 1818 and was enjoying great prosperity. They numbered in 1833, over three thousand.”

In 1834, the White membership of the Charleston churches was 653 and the Colored membership 3,249. Despite the role of acknowledged Colored Methodists in the Vesey conspiracy, the White membership grew considerably. There seems to have been no backlash to the pre-

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31 Minutes of the South Carolina Conference of the Methodist Episcopal Church, 1831.
32 F. A. Mood, Methodism in Charleston, 145.
existing White congregations and Blacks were even re-appointed as class leaders. The return of former African-American members to the Cumberland Street, Trinity, and Bethel Methodist Churches increased the total number of Methodists within Charleston.

It is interesting to note that despite the pronounced fears of future slave revolt or agitation among the free Black community, the Charleston Methodist community embraced the return of its Colored membership. Their return, however, caused considerable seating problems in all three churches. Balconies built for the Colored members in each church could not maintain the seating requirements for the entire membership. Boxes were constructed on the first levels of each one of the Charleston Methodist churches for the Colored membership. However, it appears that because of the already large size of the Black membership, the Colored community already was sitting on the first floor: "The fact of the matter was that free blacks had been sitting with whites on the main floor of the meetinghouse since time immemorial..." Boxes, however, could neither hold the entire free Black membership nor appease the Colored membership.

At the 1833 South Carolina Annual Meeting of the Methodist Episcopal Church, the church adopted an official position regarding seating for its Colored members: "The Gallery is the only proper place for the slaves in our churches, and the Trustees are requested to remove the boxes on the lower floor and place benches there with a railing up the centre aisle for the use of free persons of color." The Reverend William Capers, Presiding elder over the Charleston district, presided over the session and also requested that all churches construct a side door that would lead directly to the balcony. As soon as the trustees received word of the new regulations, they wrote the Reverend Capers explaining they would commence work as soon as they had a church meeting. The Reverend Capers, being the presiding elder, thought that once he had signed a regulation into the

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33 The South Carolina Historical Society has a collection of the Trinity Methodist Church’s Records which lists the names of several black class leaders.
34 Donald G. Matthews, Religion in the Old South, (Chicago, 1977) 206.
church code there was to be no further discussion. In a letter dated September 12, 1833, Capers expressed his anger and agitation with the policies the church leadership had taken against the Colored membership. The church leadership, however, replied: “When the subject of colored persons occupying the seat of whites was spoken of again and again at the leaders’ meetings, you expressed a firm determination to have nothing to do with it, as it was, no part of the business of a minister, but belonged to the membership.”

The trustees were challenging their presiding elder on the issue of who controlled church property. Competition for power was just one of the factors that caused the problems between the trustees and Capers. But more importantly, the churches' trustees also were concerned about the impact these new rules would have on its Colored membership.

When Capers asked the trustees of the churches why the renovations had not commenced, they complained that they did not have the necessary funds for construction. But this was only an excuse, because the conference was willing to provide the necessary funds for the renovations. The real reason for their procrastination was that they believed the alterations would: “injure and not promote the welfare of the church.”

The trustees did not want to disrupt the harmony between the White and Colored members of their churches. Missions to the slaves and other educational activities had been successful in bringing a large majority of the Black Charleston community back into the Methodist fold. These new church guidelines threatened to breed distrust and controversy which had precipitated the 1818 exodus: “Also, as the boxes were partly, if not wholly intended, for the accommodation of the infirm and lame old colored people, who were not able to get upstairs, by taking the boxes from them, they will be driven from the church, or compelled to stay out of doors.”

S. J. Wagner, treasurer of the Cumberland Street Church, also was concerned about the effect the new rules would have on the Colored membership because he feared “that one of the greatest sources of revenue would be cut off.”

On November 12, 1833, the trustees of

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36 Ibid., 9.
37 Ibid., 5.
38 Ibid., 17.
the Charleston Methodists churches sought to form a corporation that would allow them to control and regulate the churches. It seems that they wanted to preserve peace with their Colored members at all costs.

At the South Carolina Annual Conference held in Charleston, South Carolina on February 5, 1834, the controversy between Presiding Elder Capers and the coalition of the Methodist Church trustees remained unsettled. The Conference brought charges against several trustees who had tried to incorporate their body for breach of trust and contempt. Capers was outraged that this problem had not been resolved and claimed that he would never have made the new rule had he consulted first with the Colored membership. However, he could not let the trustees belittle his position nor allow them to continue this internal strife, even if money was an issue: “Thus, the peace and dignity of the church was to be sacrificed, and the feelings of the white members outraged to gratify the ambition and support the pride of a few men who, were of too much consequence to sit with persons of their own color; and because there existed an apprehension that the loss of a few pence might be the consequence.” The loss of the Colored membership’s tithes and offerings seemed like a plausible reason for concern among the trustees who regulated church finance and operation. Many of the trustees realized that some of the free Black members had more wealth at their command than a large majority of the Whites.

On July 29, 1834, several members of the Board of Trustees who tried to incorporate the Charleston churches were brought up on charges of breach of faith, breach of trust, immoral and un-Christian conduct. Five of the members signed a verdict of guilt and eight members were cut off from membership in the Methodist Church. As a result of the church trial and the continuing bickering between leaders of the church and the conference ecclesiastical hierarchy, 150 White members pulled out of the churches, once again splintering the Charleston Methodist churches. The Reverend Hilliard F. Chreitzberg, in his history of the Methodist Church in South Carolina, claimed: “This was the heaviest blow

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40 Ibid., 2.
41 “To The Public,” in Exposition of the Causes and Character of the difficulties in the Church in Charleston in the year 1835., 2. Also see Bernard Powers, Black Charlestonians.
Methodism ever received in Charleston, resulting in the formation of the Protestant Methodist Church, which was finally absorbed in the Wentworth Street Lutheran Church, in that city." The significance of the third major schism, like the second conflict, was that the Colored members of the church were at the heart of the controversy. Despite laws, which restricted the interactions between free persons and enslaved persons, White Methodists in Charleston felt obligated to allow African Americans to take part in Methodist worship services. Even in South Carolina, Methodist churches forged ahead with Wesley's mission to create a denomination that was racially inclusive.

During the 1830s, abolitionist rhetoric and propaganda from the North began to circulate throughout the South. South Carolina's White residents were fearful that abolitionist literature would further agitate their slaves. Despite their tactics, White southern planters could not derail the abolitionist train nor prevent its literature from entering the state. In December of 1833, a meeting was held in Philadelphia, to form the National Antislavery Society. One of the delegates to the convention was the Reverend George Bourne. Bourne was a biographer of John Wesley and espoused much of Wesley’s anti-slavery sentiment. In a pamphlet entitled “Man Stealing and Slavery,” he chastised and condemned his fellow ministers for owning slaves and promoting the slave regime. The conference was composed of both ministers and laymen of the Methodist and Presbyterian churches. Also present was William Lloyd Garrison, publisher of the Liberator newspaper. Bourne argued: “They [the Methodists and Presbyterians] join in unequivocally condemning the whole system as most corrupt in origin, of the vilest character and as accompanied with the most directful effects upon its victims and with everlasting punishment to the imperiled workers of that iniquity.” The group claimed that all slaveholders were sinners and were guilty of the highest kind of theft. Northern Methodist ministers who supported abolition thought that the church’s discipline was hypocritical because it allowed slavery in some regions of the country and prevented ownership of slaves for members in other regions.

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62 Chreitzberg, 160.

63 Reverend George Bourne, "Man Stealing and slavery denounced by the Presbyterian and Methodist Churches," (Boston, 1834), 12, Special Collections Library, Duke University.
Reverend George Bourne proclaimed that: “According to this ecclesiastical oracle, what is heinous sin in Maryland is paradisiacal innocence in Georgia; and an excommunicated man-stealer in the Shenandoah Valley of Virginia, as soon as he can cross the Alleghany Mountain to the South-West, becomes a good and acceptable member of the Methodist Episcopal Church.”

Charleston Methodists were indeed concerned by the wave of abolitionist literature reaching the South. The Vesey Conspiracy of 1822 left White Charlestonians cautious about anything that would disturb the peace that the city had restored. Also, it was believed that members of Vesey’s African Church were still holding private meetings. Abolitionist literature and persuasion, despite the wishes of the southern members of the church, could not be prevented from entering Southern territory. Not only did it influence Southern political debate but religious debate as well. At the 1844 Annual Conference of the Methodist Episcopal Church, the issue of whether or not Methodist ministers could own slaves was brought up for debate. A controversy was ignited when a group of Northern clerics demanded the resignation of Bishop James Osgood Andrew who owned slaves after he received two slaves from his wife’s estate. Bishop Andrew was angered by the intrusion into his personal life and decided to resign to keep peace within the church he loved so dearly. Southern delegates to the annual conference were outraged by his resignation hoping he would stand as a test case to measure the barometer of the anti-slavery sentiment of the general body. Even before the 1844 General Conference, South Carolinian Methodists realized that they were going to have to come to terms with the growing schism within the national body.

The Southern Christian Advocate newspaper served as a sounding board for the thoughts and theology of South Carolina’s Methodists. In the early 1840s, several articles and personal editorials dealt with the subject of the growing intrusion of abolitionism in the southern states. An author responded to a report that the New England Conference of Methodist ministers had published an anti-slavery document warning the South Carolina delegation headed to the 1844

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44 Reverend George Bourne, “Man Stealing and slavery denounced by the Presbyterian and Methodist Churches,” (Boston, 1834), 12, Special Collections Library, Duke University.
General Conference that the northern ministers were not ready to receive them with open arms: “It brands slaveholding Methodists, whatever their circum­stances, as sinners, and maintains that the main purpose of sending delegates to the General Conference from New England is to protest against the sins of the South and not for the object of worshipping, deliberating and praying on the same floor with the Southern sinners.”45 In December of 1844, the South Carolina conference resolved: “That it is necessary for the Annual Conference of the Slave-holding States and territories, and in Texas, to unite in a distinct ecclesiastical connection, agreeably to the provisions of the Report of the Select Committee of nine of the late General Conference, adopted on the 8th day of June last.”46 A Convention of the Southern Conference was held in Louisville, Kentucky on May 1, 1845, at which time the Methodist Episcopal Church, South was chartered.

Despite the split, the Methodists in South Carolina remained committed to their missions to the slaves in the lowcountry. In 1844, when the church split along sectional lines, there were 8,302 slaves in the mission program. In 1845, there was a total of 13,112 Colored members of the combined churches within the Charleston District. These numbers do not account for other Colored members in the nearby district of Wilmington that not only included churches along the eastern seaboard of North Carolina but also of South Carolina as well. Methodist churches and missions in Georgetown, Black River, Santee and the Waccamaw Neck had a total membership of 3,692 Colored members. Between the years 1845 and 1850, 410 persons of African descent joined one of the many churches in the Charleston District (See Table 1).

Not only was the Colored membership of the church growing but so were contributions to the mission program. In 1850, almost $5,000 was raised between the Charleston district churches for the sole purpose of Christian missions to the slaves.47 South Carolina raised more money for their slave missions than any other state conference in the entire Methodist Church. The members

45 Southern Christian Advocate, August 25, 1843, Vol. XII, No.11.
46 Minutes of the South Carolina Conference of the Methodist Episcopal Church, 1844, 24. Conversion per Walter Edgar, South Carolina: A History, 41.
47 Minutes of the South Carolina Conference of the Methodist Episcopal Church, South, 1850.
Table 1.
Colored Membership between 1845 and 1866 by Church and Mission Station

<table>
<thead>
<tr>
<th>Church</th>
<th>1845</th>
<th>1850</th>
<th>1855</th>
<th>1860</th>
<th>1866</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumberland</td>
<td>1122</td>
<td>1243</td>
<td>1291</td>
<td>1251</td>
<td>0</td>
</tr>
<tr>
<td>Trinity</td>
<td>1906</td>
<td>1778</td>
<td>1771</td>
<td>1603</td>
<td>0</td>
</tr>
<tr>
<td>Bethel</td>
<td>1515</td>
<td>1465</td>
<td>1166</td>
<td>1235</td>
<td>0</td>
</tr>
<tr>
<td>Spring Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>234</td>
</tr>
<tr>
<td>St. James</td>
<td>121</td>
<td>177</td>
<td>235</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Black Swamp</td>
<td>704</td>
<td>827</td>
<td>897</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Walterboro</td>
<td>517</td>
<td>810</td>
<td>795</td>
<td>140</td>
<td>195</td>
</tr>
<tr>
<td>Orangeburg</td>
<td>1001</td>
<td>1003</td>
<td>899</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Cypress</td>
<td>1380</td>
<td>1025</td>
<td>899</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Cooper River</td>
<td>795</td>
<td>912</td>
<td>799</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Savannah Mission</td>
<td>540</td>
<td>565</td>
<td>461</td>
<td>592</td>
<td>0</td>
</tr>
<tr>
<td>Edisto Island</td>
<td>370</td>
<td>581</td>
<td>512</td>
<td>518</td>
<td>0</td>
</tr>
<tr>
<td>Beaufort</td>
<td>221</td>
<td>334</td>
<td>488</td>
<td>447</td>
<td>0</td>
</tr>
<tr>
<td>Pon Pon</td>
<td>650</td>
<td>879</td>
<td>600</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Pocotaligo</td>
<td>362</td>
<td></td>
<td></td>
<td></td>
<td>0</td>
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<tr>
<td>Cambaho &amp; Ashepoo</td>
<td>939</td>
<td>911</td>
<td>691</td>
<td>716</td>
<td>0</td>
</tr>
<tr>
<td>Cooper River Mission</td>
<td>696</td>
<td>703</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>St. Andrews</td>
<td>125</td>
<td>204</td>
<td>160</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>St. George</td>
<td>365</td>
<td>81</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Georgetown</td>
<td>1200</td>
<td>899</td>
<td>829</td>
<td>864</td>
<td>0</td>
</tr>
<tr>
<td>Black River</td>
<td>1134</td>
<td>1119</td>
<td>1299</td>
<td>765</td>
<td>0</td>
</tr>
<tr>
<td>Santee Mission</td>
<td>807</td>
<td>78</td>
<td>522</td>
<td>756</td>
<td>0</td>
</tr>
<tr>
<td>Waccamaw Neck</td>
<td>545</td>
<td>187</td>
<td>190</td>
<td>221</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>16525</td>
<td>15621</td>
<td>13414</td>
<td>10183</td>
<td>246</td>
</tr>
</tbody>
</table>

Source: Minutes of the South Carolina Conference of the Methodist Episcopal Church South
of the South Carolina Methodist Clergy and the board of directors for the slave missions took great pride in the fact that they were so successful in their mission programs:

In reviewing the history of this society and its operations since its organization and in looking over the wide field of domestic missions, it is a matter of no ordinary gratification to remember that we claim the honor of having been pioneers in the missions to the African race. It is likewise a source of peculiar and grateful satisfaction, that the progress of these labors instead of awakening fears as to their political effects, have, on the contrary, dispelled such apprehensions, and shown that the teachings of the gospel are in the highest degree compatible with our institutions, and afford additional security to the public peace.48

Because the White and Black membership financially supported the slave missions and the clergy, the mission was able to expand to the outlying areas of the lowcountry. A total of $26,000 dollars was collected for the purpose of missionary activity in 1855. This money allowed the mission program to expand once again, and by 1856, there were 24 operating missions at Cooper River, St. Andrews, St. George, St. Paul, Pon Pon, Ashepoo, Combahee, Prince William, Savannah River, Oakate, Edisto, Jehosce, Beaufort, Santee, Sampit, Black River and Pee Dee, Black Mingo, Waccamaw River, Society Hill, Liberty Chapel, Congaree, Wateree, Dutchman’s Creek, and Tiger River.49 The total membership for the 24 missions was reported as 11,026 members with 5,682 children.

On December 20, 1860, 169 White South Carolinians met in Institute Hall in Charleston to decide the future of the state as a member of the United States of America. All 169 delegates unanimously agreed that it was in the best interest of the citizens of the State of South Carolina to sever all ties with the Union. Lincoln, as defender of the Constitution of the United States of America, saw secession as a breach against the Constitution and decided to use military force to bring South Carolina and the rest of the defecting southern states into the Union. Despite the

48 Ibid.
49 One might notice that there were a few missions in what we call the backcountry of South Carolina. But the overwhelming majority of the missions were in the South Carolina lowcountry.
Civil War that ensued, the Methodist Episcopal Church, South, remained firmly committed to its churches and to its slave missions. The question of secession, however, did not remain absent from entering the official business of the state's ecclesiastical leaders. During the 1860 meeting of the South Carolina Conference of the Methodist Episcopal Church, South, the delegation approved this report concerning the church's view of secession:

While we leave to the leaders of secession to state the civil reasons which sustain their movement, we believe that the full development of Christianity among the negroes of the South, demands an immediate and final separation from a government which, so far from quieting, has been the willing agent of excitements and agitation that have proved powerful obstacles in 'the spread of Scriptural holiness through the land.' The secession of South Carolina will settle forever the question of slavery. The vague dreams of abolition-redemption will soon fade away from the mind of the slave, and leave him happy and contented. Satisfied with the condition in which God has placed him, he will the more certainly and rapidly advance in religious enlightenment and Christian morality.50

According to the Minutes of the South Carolina General Conference, the Civil War did not hinder the missionary activity of the Methodist Church. Over 6,000 slaves were added to the Methodist membership roles during the Civil War period (See Table 2).

The success of slave missions by the Methodist Episcopal Church prompted the activity of other denominations within the lowcountry. Both the Protestant Episcopal Church and the Presbyterian Church constructed separate edifices for their African-American parishioners. In 1849, the Protestant Episcopal Church began the construction of Calvary Protestant Episcopal Church. Its construction was interrupted midway through the building process because a group of White citizens believed creating a new church for the Black population was antithetical to the goals of the slavocracy.

50 Minutes of the South Carolina Conference of the Methodist Episcopal Church South, 1860, 26.
Table 2.  
Recapitulation for White and Black Membership 1860-1866

<table>
<thead>
<tr>
<th>District</th>
<th>1861</th>
<th>1862</th>
<th>1863</th>
<th>1864</th>
<th>1865</th>
<th>1866</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White</td>
<td>Black</td>
<td>White</td>
<td>Black</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>Charleston</td>
<td>2075</td>
<td>9104</td>
<td>2034</td>
<td>7867</td>
<td>2089</td>
<td>6352</td>
</tr>
<tr>
<td>Orangeburg</td>
<td>3619</td>
<td>4460</td>
<td>3809</td>
<td>4625</td>
<td>3619</td>
<td>4081</td>
</tr>
<tr>
<td>Marion</td>
<td>4067</td>
<td>7113</td>
<td>4783</td>
<td>6821</td>
<td>4661</td>
<td>5955</td>
</tr>
<tr>
<td>Total</td>
<td>10661</td>
<td>20677</td>
<td>10626</td>
<td>19313</td>
<td>10369</td>
<td>16388</td>
</tr>
</tbody>
</table>

Source: Minutes of the South Carolina Conference of the Methodist Episcopal Church South

However, “After a public meeting and subsequent investigation explained the benefits of the church and revealed the safeguards proposed to preserve order and discipline, white fears were assuaged. Construction was completed, and Calvary Protestant Episcopal Church was dedicated just before Christmas in 1849.”

Likewise, the Presbyterian Church initiated a mission to bring the city’s African American population into its congregation. The church operated a Sunday school for the religious instruction of the slaves. Zion Presbyterian Church originated as the Anson Street Slave Mission. In 1860, the mission moved to a permanent building on the corner of Calhoun and Meeting Streets. It is estimated that the Zion Presbyterian Church had a membership of 1,500 parishioners.

As soon as the war was over, free persons of color and slaves left the Methodist Episcopal church in droves. The statistics from the South Carolina conference reveals a steady decline in the years during the Civil War. Many slaves were displaced during this period, escaped behind Union lines, or failed to be counted as members of the organized churches. In spite of the war, the Methodist Church clergymen continued to meet annually. Minutes during the Civil War period are not as detailed as before the war and also fail to recount the progress of the slave mission. After 1863, there are no reports about the missionary activity to the slaves. In 1865, there were only eight mission stations: seven for Whites

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51 Bernard Powers, Black Charlestonians, 17.
and one for Black South Carolinians. The South Carolina membership also
stopped giving generously to the mission program; only $300 was collected in
1876.

In spite of the fact that African Americans left the Methodist Episcopal
Church in South Carolina for various reasons, some remained faithful to
Methodism: “Also there were the slave missions which with the end of slavery
left groups without churches or pastors. In many cases the white preachers
either because of the war or because they were not in sympathy with Negro free­
dom, simply abandoned their Black charges. Many Blacks, in turn, were anxious
to get out of everything that looked like white direction or control, and through
race pride wanted to be associated with black institutions.” They understood
that it wasn’t the Methodist doctrine that was opposed to their religious and
spiritual equality, but rather it was those men and women who led the church.
The national A.M.E. church body also knew that many newly freed persons were
still attached to the Methodist church. For this reason, Charleston became the
first southern city in which A.M.E. missionaries were sent during the war.

On May 28, 1863, Bishop Daniel Payne with the Reverend James Lynch of
Baltimore, Maryland and the Reverend James Hall, of New York, set sail for
Charleston, South Carolina. As they sailed on the U.S.S. Arago, surrounded by
Union soldiers, they envisioned a new South. A new South that they hoped
would find a means of supporting the A.M.E. Church. After touring several other
defeated confederate states, Bishop Payne and his delegation reached Charleston
in 1865:

At Hilton Head we visited the rude sanctuary first erected by our
first Missionary to South Carolina. We soon left for Charleston.
About six o’clock we were in sight of Folly Island; gradually Morris
Island came in sight; then James; then Sullivan. Now we neared
Fort Wagner; then Fort Sumter – places that shall be immortal in
American history – then came Fort Moultrie and Castle Pinckney.
The first sight of my native state was followed by indescribable

52 Harry V. Richardson, *Dark Salvation: the story of Methodism as it developed among blacks in America*. (Garden
feelings, that of my native city by pleasurable and sad emotions rapidly interchanging, and the passage through the city was attended by the same. 53

Their first goal was to rebuild Morris Brown's congregation and organize new A.M.E. churches in surrounding lowcountry areas. On Sunday, May 1, 1865, the old and new members of the A.M.E. Church met at Zion Presbyterian Church and the South Carolina Conference of the A.M.E. Church was re-instituted: “On May 16, 1865, we organized the South Carolina Annual Conference. An important fact connected with the laboring classes of the two races came to my notice at that time – as significant in 1865 as it was important.” 54

The hymnologist, Isaac Watts, penned these lyrics in the fourth stanza of his hymn entitled “I am A Soldier of the Cross”: “Sure I must fight if I would reign, Increase my courage, Lord, I bear the toil, endure the pain, Supported by Thy Word.” 55 This fourth stanza characterizes the story of a journey to an Afro-Methodist Faith in the South Carolina lowcountry. It reflects the lives of those African Americans who arrived on slave ships, endured months of pain and suffering during the middle passage, those who worked in the fields of the lowcountry, and those who demanded to express their religious faith. Despite the tears that were shed, the moans that were uttered, and the blood that was spilled, African Americans embraced Wesley's concept of a racially inclusive religious denomination embodied in the Methodist faith. Denmark Vesey and his followers were prepared to take up arms and fight for their right for religious and physical freedom. Religious tolerance, from the beginning, was a central feature of the South Carolina landscape. The African American community simply embraced and coveted their God-given right to worship Him in spirit and in truth. Clearly, African Americans, both free and enslaved, became Methodists in the South Carolina lowcountry. After the war, three separate Methodist denominations would meet the spiritual needs of the African American community: The African Methodist Episcopal Church, the African American Zion Episcopal Church, and the Colored

53 Daniel A. Payne, Recollections of Seventy Years. 16.
54 Ibid., 163.
Methodist Episcopal Church. All of these denominations provided their congregations with a place of refuge, comfort and peace, which we most welcomed after a long and tedious journey.
PART 2: THE MOORE SCHOOL OF BUSINESS
NEW PRODUCT DEVELOPMENT IN THE HIGH TECHNOLOGY MARKETPLACE

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Department of Management Science
Moore School of Business

During the last several years, the study of high technology markets has emerged as an important research area in the marketing literature (Gatignon & Robertson, 1989; Glazer, 1991; Norton & Bass, 1987). In the extant literature, the term “high technology” is typically used to define markets characterized by a rapid pace of technological change (Bourgeois & Eisenhardt, 1988; Norton & Bass, 1987) and a wide variety of technological alternatives, frequently lacking a dominant technological design (Teece, 1986; Tushman & Anderson, 1986). High-technology markets have been characterized as more complex, information intensive, turbulent, and uncertain because of rapidly changing and heterogeneous technologies, competitive, and differentially responsive to structural arrangements that can affect the information-processing patterns of buyers (e.g., Glazer, 1991; Heide & Weiss, 1995). Also, these markets are characterized by offerings that are based on significant amounts of scientific and technical know-how (John, Weiss, & Dutta, 1999). To a large extent, the emerging stream of research on such markets is a response to two particular problems, a historical bias in the marketing literature towards low technology products (Robertson & Gatignon, 1986) and a growing recognition that a high technology context imposes unique demands on market participants (Glazer, 1991). Though recent studies have added considerably to our knowledge about high technology markets, several important issues remain for research exploration, particularly those related to new product development.

Technology is creating new imperatives for the conduct and structuring of new product development (NPD) activities because new knowledge is being
applied at a faster rate, greater numbers of new products are being introduced over time, the time between innovations is decreasing, and technology fusion is occurring across and within industries. Increasingly, NPD represents the focal point of competition for many firms (Brown & Eisenhardt, 1995; Clark & Fujimoto, 1991). In a very dynamic business environment, such as that of high-technology firms, the value and uniqueness of knowledge-intensive resources can be swiftly lost to competitors. Therefore, this study will examine the relationship between new-product development and business performance in the high-tech sector through the theoretical lens of the resource-based view of the firm and market orientation. The chapter is organized as follows: (1) the resource-based theory of the firm is presented as it relates to competitive advantage as well as to new product development; (2) the product-innovation literature is surveyed as it relates to new product development as well as to market orientation; and (3) the conceptual model and hypotheses are then developed and proposed.

LITERATURE REVIEW

According to the resource-based theory of the firm, firms are heterogeneous in terms of the resources they control. Organizational resources consist of all the assets, capabilities, attributes, and knowledge a firm possesses that enable it to develop and implement strategies that improve its performance (Barney, 1991). A firm's resources can be a source of competitive advantage in markets when it is difficult for the firm's rivals to obtain like resources. Scarce resources create entry barriers for firms that do not have them (Wernerfelt, 1984). For example, a biotechnology firm that develops a new drug that is superior to other products for treating a serious disease will patent the drug and take legal action against those who infringe on the patent, thus, establishing entry barriers that make it more difficult to imitate the drug until the patent expires. Both the patent to make the drug (which grants the patent owner legal rights to protect its intellectual property) and the capability to make other innovative drugs are examples of resources that may provide a competitive advantage to a firm.
A RESOURCE-BASED MODEL OF COMPETITIVE ADVANTAGE

The resource-based view of the firm is based on two underlying assertions, as developed in strategic management theory (Barney, 1986, 1991; Rumelt, 1984; Wernerfelt, 1984): (1) that the resources and capabilities possessed by competing firms may differ (i.e., resource heterogeneity); and (2) that these differences may be long lasting (i.e., resource immobility). In this context, the concepts of a firm's resources and capabilities are defined very broadly, and they include the ability of a firm to develop and market new technological innovations.

The impact of resource heterogeneity and immobility on competitive advantage can be organized into the model presented in Figure 1 (Barney, 1991, 1994). This model is organized with reference to a set of three questions about a firm's resources and capabilities. The first question is: Does a particular resource or capability add value to a firm (i.e., does its exploitation reduce a firm's cost below and/or increase its revenues above what would have been the case if these resources or capabilities were not exploited)? As suggested previously, resource value is a necessary but not a sufficient condition for competitive advantage. Firms that possess resources or capabilities that are not valuable will gain a competitive disadvantage from exploiting these resources. On the other hand, firms with valuable resources and capabilities may gain at least competitive parity from exploiting these resources. The second question in the Figure 1 model is: Is a particular

![Figure 1. A Resource-Based Model of Competitive Advantage (adapted from Mata, et al., 1995)](image-url)
resource or capability heterogeneously distributed across competing firms? Obviously, resources and capabilities possessed by many competing firms cannot be a source of competitive advantage for any of them, although they will be a source of at least competitive parity. On the other hand, if a resource or capability is valuable and heterogeneously distributed across competing firms, then that resource or capability will be a source of at least a temporary competitive advantage for firms that possess that resource. The final question in this model is: Is a resource or capability imperfectly mobile? If firms without a valuable resource are at no disadvantage in acquiring, developing, and using it compared to firms that already possess this resource, then it will only be a source of temporary competitive advantage for the firms that originally controlled it. On the other hand, when a resource or capability is immobile, then firms without this resource face significant challenges in acquiring, developing, and using it. This resource or capability may then be a source of sustained competitive advantage for firms that control it.

In general, a firm is said to have a sustained competitive advantage when it is implementing a strategy not simultaneously implemented by many competing firms and where these other firms face significant disadvantages in acquiring the resources necessary to implement this strategy. A firm has a temporary competitive advantage when it is implementing a valuable strategy currently pursued by few competing firms but where these competing firms do not face significant disadvantages in acquiring the resources necessary to implement this strategy. A firm experiences competitive parity when it is implementing a valuable strategy being simultaneously implemented by several competing firms. A firm is at a competitive disadvantage when it is implementing a strategy that is not valuable (i.e., a strategy that does not reduce its costs or increase its revenues).

Resources that can provide competitive advantage to a firm (1) are valuable, (2) are rare, (3) are difficult to imitate, and (4) have qualities that make them irreplaceable (Barney, 1991). In the high-technology marketplace, the capability to be a technology innovator has the potential to be a resource that is valuable, rare, hard to imitate, and difficult for which to find a substitute (Grant, 1991). It is a major challenge to obtain talented scientists and engineers and to develop
protocols that lead to successful product innovations that can be taken to the market. In high-technology markets, firms that have the capability to innovate can be expected to generate greater profits than those that are non-innovators. To generate profits, a firm must continuously make large expenditures in research and development (R&D) in order to sustain its capability to innovate at the cutting edge of technology (Jelinek & Schoonhoven, 1993). By sustaining R&D spending, an organization increases its absorptive capacity to learn and to take advantage of technological knowledge that is available by scanning the external environment (Cohen & Levinthal, 1990). The capability to take advantage of new technological information with a first-mover product or a fast-follower product (i.e., one that comes to market soon after the pioneering firm's product) is a critical performance factor in high-technology industries.

**A RESOURCE-BASED VIEW OF PRODUCT DEVELOPMENT**

Recently, scholars have gained new insights regarding new product development, thanks to a growing body of empirical work that embraces the resource-based view of the firm (e.g., Henderson & Cockburn, 1994; Iansiti & Clark, 1994; Leonard-Barton, 1995). According to this influential perspective, the presence of different organizational capabilities positively affects the outcome of the product development process and, thus, can be used to extend the findings gained by past research streams on this subject. In an influential review, Brown and Eisenhardt (1995) thoroughly analyze most of these past findings related to a-theoretical studies and empirical works from the theories of information processing, resource dependence, and problem solving. Their main claim is that process efficiency and product effectiveness are affected by the behavior of different agents, including team members, project leaders, senior managers, customers, and suppliers. Despite having included the capabilities partly identified by the above mentioned streams, the two scholars consider agents primarily responsible for performance improvements. They ultimately argue that product performance is influenced by the actions of multiple players (Brown & Eisenhardt, 1995).
However, during product development, a firm's capacity for action resides in its capabilities (Iansiti & Clark, 1994). While acknowledging the direct contribution of players to product-development performance, one must also observe that part of their actions focuses on leveraging organizational capabilities. By drawing from resource-based theory specifically focused on identifying capabilities affecting firm performance, one can offer a more analytical explanation of the product-development drivers and extend previous findings.

**PRODUCT INNOVATION**

Product-innovation research splits into two broad areas of inquiry. The first, an economics-oriented tradition, examines differences in the patterns of innovation across countries and industrial sectors, the evolution of particular technologies over time, and intra-sector differences in the propensity of firms to innovate (e.g., David, 1985; Dosi, 1988; Nelson & Winter, 1977). The second, an organizations-oriented tradition, focuses at a micro-level regarding how specific new products are developed (Clark & Fujimoto, 1991; Zirger & Maidique, 1990). Here, the interest is in the structures and processes by which individuals create products. In this chapter, the focus is on this latter area of the broader product-innovation literature.

Product development is critical because new products are becoming the nexus of competition for many firms (e.g., Clark & Fujimoto, 1991). In industries ranging from software to cars, firms whose employees quickly develop exciting products that people are anxious to buy are likely to win. In contrast, firms introducing "off-the-mark" products are likely to lose. New product development (NPD) is thus a potential source of competitive advantage for many firms (Brown & Eisenhardt, 1995). Also, NPD is important because, probably more than acquisition and merger, it is a critical means by which members of organizations diversify, adapt, and even reinvent their firms to match evolving market and technical conditions (e.g., Schoonhoven, et al., 1990). Thus, NPD is among the essential processes for success, survival, and renewal of organizations, particularly for firms in either fast-paced or competitive markets such as the high-technology market.
MARKET ORIENTATION AND PRODUCT INNOVATION

Characterizations of market orientation (e.g., Kohli & Jaworski, 1990; Narver & Slater, 1990) and product innovation, or NPD (e.g., Gatignon & Xuereb 1997; Olson, Walker & Ruekert, 1995) have become very rich in the strategic-marketing literature. The growing body of research not only allows for a marketing-based view of strategy but also facilitates a more detailed examination of market orientation and product innovation in a strategy context.

Market orientation is defined as the process of generating and disseminating market intelligence for the purpose of creating superior buyer value (Kohli & Jaworski, 1990; Narver & Slater, 1990). There are three components of market orientation: (1) customer orientation, (2) competitor orientation, and (3) inter-functional coordination. Customer orientation and competitor orientation represent a relative emphasis on collecting and processing information pertaining to customer preferences and competitor capabilities, respectively. Inter-functional coordination encompasses the coordinated application of organizational resources to synthesize and disseminate market intelligence (Narver & Slater, 1990). Product innovation is defined as the process of bringing new technology into use (Galbraith, 1973; Schon, 1967). Product innovation can be separated into three basic categories: (1) line extensions, (2) me-too products, and (3) new-to-the-world products. Line extensions are products still familiar to the business organization but new to the market. Me-too products are considered new to the business organization but familiar to the market; that is, imitations of competitors’ products. New-to-the-world products are considered new to both the business organization and the market (Booz, Allen, & Hamilton, 1982; Olson, et al., 1995). Several studies indicate that market-driven businesses create products that transform market needs (e.g., Jaworski & Kohli, 1993; Narver & Slater, 1990). Deshpande, Farley, and Webster (1993) and Kohli and Jaworski (1990) suggest that market-oriented behavior yields superior innovation and greater new-product success. Narver and Slater (1994), extending this view, conclude that businesses with a strong market orientation are best situated for new-product success, no matter what the business environment.
Taking a different position, a number of authors suggest that a strong market orientation may lead to imitations and marginally-new products (e.g., Bennett & Cooper, 1979, 1981). Others add that listening too closely to current markets can constitute a barrier to commercializing new technology and lead to reduced competitiveness (e.g., Christensen & Bower, 1996), reiterating Tauber's (1974) contention that a market orientation is inherently biased against radically new products. Surprisingly few studies have addressed this issue empirically. In an early attempt, Lawton and Parasuraman (1980) found no significant relationship between implementation of the marketing concept and product innovation, but they acknowledged a need for alternative measurement. More recently, Atuahene-Gima (1996) reported a significant relationship between product innovation and market orientation, while Gatignon and Xuereb (1997) only detected a significant relationship between product innovation and the extent to which market orientation was inter-functionally coordinated. All told, knowledge of the marketing-innovation relationship remains fragmented and inconclusive. Market orientation and product innovation are core strategic capabilities of market-driven businesses (Day, 1994). When properly implemented, they are likely to be highly interrelated (Han, et al., 1998). By examining the link between market orientation and product innovation, we can develop a finer-grained understanding of the relationship between these strategic capabilities.

With the scope of market orientation fairly well defined, research has begun to explore its influence on organizational processes and performance (Jaworski & Kohli, 1993; Narver & Slater, 1990; Ruekert & Walker, 1992). To this end, several conceptual writings suggest that the importance of market orientation for organizational performance depends on environmental conditions (Houston, 1986; Narver & Slater, 1990). For example, Kohli and Jaworski (1990) suggest that market orientation may not be critical for organizational performance in turbulent environments. They caution managers to consider the cost-benefit ratio of developing market orientation in different environmental conditions. However, recent empirical research shows that the strength of the relationship between market orientation and performance is not influenced by the environment (Jaworski & Kohli,
A similar debate surrounds the relationship between market orientation and NPD activities and performance. Some scholars argue that a strict adherence to the tenants of the marketing-concept philosophy leads to poorer innovation activities and performance in the long run (Bennett & Cooper, 1981; Hayes & Abernathy, 1980). Others provide strong anecdotal evidence of the potential benefits of market orientation to NPD (Kohli & Jaworski, 1990). However, empirical research provides inconclusive evidence on the influence of market orientation on NPD activities (Lawton & Parasuraman, 1980). Despite this debate, few attempts have been made to explore empirically the relationship between market orientation and NPD performance (Narver & Slater, 1990). Further, although the influence of market orientation on NPD performance is conceptualized as contingent upon several environmental factors (Houston, 1986; Kohli & Jaworski, 1990), little empirical research is available on the factors internal to the firm, as well as external to the firm, that are likely to moderate this relationship. It is recognized that several variables could theoretically be candidates as moderators; however, these particular variables were chosen because of the attention they have received in the literature.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

This section of the chapter presents the conceptual framework and develops hypotheses for future research (See Figure 2). Potential moderators that could illuminate the NPD performance relationship also are explored.

Firm Functional Capabilities and NPD Performance

Figure 2 presents the conceptual framework of the relationship between NPD and business performance. A single capability is rarely the main success factor of a firm. In general, it is the combination of capabilities that leads to a competitive advantage. The three critical capabilities that influence the NPD performance of firms in high technology markets are marketing, research and development (R&D), and manufacturing.
**Marketing Capability.** A firm with a strong marketing capability will be able to achieve better targeting and positioning of its brands relative to competing brands. This higher level of product differentiation will enable the firm to enjoy higher margins (Jaworski & Kohli, 1993; Day, 1994); therefore, they exhibit better performance. This capability requires skill at monitoring the environment and building strong relationships with customers, which is a complex undertaking (Deshpande, et al., 1993). Such a capability, once built is not easily imitated or transferable since it is often firm specific and has a high level of tacitness (Day, 1994).

![Diagram of Conceptual Framework](image)

**Figure 2. Conceptual Framework of the Relationship between a firm's resources, capabilities and market orientation on NPD success in the high-technology marketplace**
**R&D Capability.** R&D capability is critical to achieving a superior performance in high-technology markets. These markets are characterized by short product lifecycles and a high rate of new-product introductions incorporating newer generations of technology. In such markets, a firm with a superior innovative capability will enjoy strong consumer loyalty (Givon, Mahajan, & Miller, 1995). An important characteristic of R&D in high technology markets is a significant learning-by-doing effect, which makes it very difficult for competitors to simply buy this know-how in the market and also makes it extremely difficult to imitate (Irwin & Klenow, 1994). These characteristics of R&D capability enable a firm that has a superior competency in R&D to achieve superior sustained performance relative to its competition.

**Operations Capability.** A strong operations capability in high-technology markets entails the integration and coordination of a complex set of tasks, i.e. combing components and materials from different sources and industries, while enabling the firm to offer its final products at a lower cost (Hayes, Wheelwright, & Clark, 1988). The complexity of the operations function helps to make a superior-operations capability imperfectly mobile and imperfectly imitable, which would provide a competitive advantage to firms that possess it.

To summarize, in high-technology markets, a firm's capabilities in its marketing, R&D, and operations functions, are critical drivers of competitive advantage. Therefore, it is expected that there is a significant positive relationship between a firm's functional capabilities and NPD performance. This conclusion leads researchers to investigate the following hypothesis:

$H_1$: there is a significant positive relationship between a firm's functional capabilities and NPD performance.

**Market Orientation and NPD Performance**

Previous research (Narver & Slater, 1994) has shown there is a direct impact of market orientation on new-product performance. The extant literature (Jaworski & Kohli, 1993; Narver & Slater, 1990, 1994) argues that market orientation embodies organizational values and beliefs that guide its activities, including
NPD activities (Despande, et al., 1993; Kohli & Jaworski, 1990). For example, Kohli and Jaworski (1990) assert that “a market orientation appears to provide a unifying focus for the efforts and projects of individuals and departments within the organization, thereby leading to superior performance” (p. 9). Narver and Slater (1990) agree, noting that market orientation “creates the necessary behaviors for creating superior value for buyers, and thus, continuous superior performance for the business” (p. 23). In a recent working paper, Narver, Slater and MacLachlan (2000) present a conceptual argument for two forms of market orientation that are empirically differentiable; they are a reactive- and a proactive-market orientation. A “reactive” market orientation is the attempt to understand and satisfy customers’ expressed needs whereas a “proactive” market orientation is the attempt to understand and satisfy customers’ latent needs. A proactive market orientation provides an even deeper insight into customer needs than that of a reactive market orientation. This insight leads to the development of innovative products and services that address these latent needs in ways that create customer value (Hammer, 1997). In today’s economy, latent needs are especially frequent news topics particularly in the high-technology markets such as the software industry, electronic commerce, and R&D intensive industries (Narver, et al., 2000). Since market orientation, whether reactive or proactive, is a process that, in principle, “always” begins with identifying/discovering target-customers’ needs and only then developing the customer benefits to satisfy the needs (Narver, et al., 2000), it is expected there would be a positive relationship between either form of market orientation and NPD performance in the high-technology marketplace.

The following relationship would be expected to be studied:

\[ H_2 : \text{there is a significant positive relationship between market orientation and NPD performance}. \]

**Moderators of the Strength of the Market Orientation-NPD Relationship**

Market orientation is hypothesized to have a direct influence on NPD performance; however, this relationship is posited to be contingent upon degrees of technological uncertainty. Past research suggests that there are various types of
perceived uncertainty about the environment, including technological uncertainty, consumer uncertainty, competitive uncertainty, and resource uncertainty. Therefore, an overly broad conceptualization of uncertainty may not be particularly useful (Jauch & Kraft, 1986; Milliken, 1987). This observation suggests that uncertainty should be studied in relation to specific components of the environment in order to properly attribute its effects. Given the accelerating rate of the invention, diffusion, and utilization of new technology, perceived technological uncertainty would be the moderating variable in this study.

Perceived technological uncertainty refers to an individual’s perception that he or she is unable to accurately predict or completely understand some aspect of the technological environment (Milliken, 1987). When the technological environment is perceived to be uncertain, synergy among a firm’s functional capabilities are less likely to occur in terms of NPD activities. That is, under conditions of perceived technological uncertainty, the existing functional capabilities and resources may not be the right ones for the project. The resource-based view of the firm, however, suggests that better synergy between a firm’s capabilities and resource base, and project requirements, serves to enhance NPD outcomes (Brown & Eisenhardt, 1995; Prahalad & Hamel, 1990). Therefore, it is expected that the functional capabilities would have stronger relationships with NPD outcomes under conditions of low perceived technological uncertainty. As a result, the following hypothesis is put forth for a proposed study:

\[ H_3: \text{there is a positive relationship between a firm’s functional capabilities and resource base, and NPD performance when perceived technological uncertainty is low rather than when it is high.} \]

**Market Orientation and NPD Performance**

The possibility of an environmental moderating effect is consistent with a long tradition of support for the theory that environment moderates the effectiveness of organizational characteristics. The purpose of this proposed study is to test whether technological turbulence in the environment influences the strength
of the relationship of a business's market orientation, specifically within the context of NPD in the high technology marketplace. Various performance measures have been used in past research, but the discussion that follows illustrates the problematic nature of using general measures of overall firm performance when investigating the market orientation-performance relationship.

In a working paper, Jaworski and Kohli (1992) report results from a test for the moderating effects of market turbulence, competitive intensity, and technological turbulence on the market orientation-performance relationship and find no evidence of environment affecting the strength of the relationship. However, their particular measures of business performance (market share, return on equity [ROE], and a subjective measure of "overall performance") weaken this finding. As they acknowledge, market-share leadership is not an objective of all businesses and may not be an appropriate performance measure. Regarding ROE, this indicator is a function of return on assets (ROA) and capital structure. Though market orientation should affect ROA, it should have little influence on capital structure, thus diluting its influence on ROE. Finally, their general measure of overall performance allows a broad interpretation by managers while reducing the interpretability for researchers. Thus, the important question of whether there are moderators of the market orientation-performance relationship remains open.

In the proposed study presented here, the hypothesis suggested by Kohli and Jaworski's propositions regarding environmental moderator effects are tested; however, rather than in the general context of market orientation-performance relationship, the effects are tested in the more specific, market orientation-NPD performance relationship. There are several environmental-moderator variables that could theoretically be employed; however, due to the context of a high-technology marketplace, technological turbulence is the moderator variable that will be tested.

As Kohli and Jaworski (1992) define it, "technology" refers to the entire process of transforming inputs to outputs and the delivery of those outputs to the customer. They hold that in industries characterized by rapidly changing technology, a market orientation may not be as important as it is in technologically stable...
industries because, in such industries, many of the major innovations will be
developed R&D efforts outside the industry. This perspective is consistent with the
manufacturing strategy arguments of Hayes and Abernathy (1980) and Hayes et al.
(1988). In order to test this particular effect within the specific context of NPD in
the high technology marketplace, rather than the general context of overall busi­
ness performance, the following hypothesis is put forth for a research study:

**H4:** The lesser the extent of technological turbulence, the
greater the positive impact of market orientation on NPD
performance.

**CONCLUSION**

Markets in which technology assumes a central role are becoming driving
forces of the economy. Technology is at the core of diverse contemporary mar­
kets, ranging from common business and consumer products (e.g., fax machines,
personal digital assistants) to esoteric products with diverse yet fundamental
applications (e.g., routers, digital signal processors, gene sequence analyzers).
Though there is a general recognition that product development in high-tech
industries is different from the more widely studied consumers-goods industries,
there has been little research in marketing that attempts to understand how high­
tech firms make product-development decisions (Workman, 1993). To that end,
this chapter has examined the relationship between NPD and firm performance in
the high-tech arena. Market orientation and the resource-based view of the firm
provided the theoretical foundation. An empirical study of the conceptual model
and hypotheses presented here will be a timely addition to the existing research
base.
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COLOR: A CROSS-CULTURAL COMPARISON

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The heart of the debate about culture is the extent to which cultural differences are manifest when explaining differences in human behavior. Some argue that cultural differences explain most observed differences. Others maintain that cultural differences do not exist or at least, if they do exist, they do not explain significant differences in human behavior. This later viewpoint maintains that other factors offer better explanations of human behavior than an intangible concept such as culture.

The concept of culture also is open to criticism regarding its construct validity. There is little agreement on defining and measuring culture (Erez & Earley, 1987). Many studies of culture span regions of the world, at most, but are not all encompassing (Hofstede, 1980; Rokeach, 1973; Kluckhohn & Strodbeck, 1961). Besides debate over the extent to which culture influences human behavior, the fact that its measurement also is suspect, further weakens confidence in its use.

Anthropologists have struck a “middle ground” in the culture debate. Middle ground does not imply that anthropologists as a group discount the existence or necessity of accounting for cultural differences. Instead, anthropologists have incorporated the ideas of commonly shared traits across all of humankind with those traits that are individually derived or of societal construction. The bio-cultural model of “Man” proposes just this (Morris, 1968; Lorenz, 1970). As a result, there may be situations where cultural differences do manifest themselves and readily can be identified. However, there also may be situations where culture does not play a significant role or offer additional explanatory power.

This research attempts to test the bio-cultural model of Man by investigating whether or not there are cultural differences in the interpretation of colors.
Colors are universal. All cultures have them, and all cultures identify them (Berlin & Kay, 1969). The question is whether cultures interpret colors differently. In addition, since “Mankind” is comprised of men and women, this research attempts to determine if the sexes interpret colors differently. It is hoped that quantification of these questions will lend support for the existence of culture, cultural differences, and for the general taxonomy of the bio-cultural model of Man.

FOCAL AND EXTENDED RANGES OF COLOR TERMS

In the late 1960’s, Brent Berlin and Paul Kay undertook a cross-cultural study of color terminology. The results were reported in their book, Basic Color Terms (Berlin & Kay, 1969). Many of the concepts that had been developed in working with taxonomies of flora and fauna were used in their investigations of color. Berlin and Kay elected to restrict their investigations to generic basic color terms. According to Berlin and Kay (1969), basic color terms are:

1. Terms that are monolexemic, i.e. terms that cannot be predicted by decomposing their parts (Berlin & Kay, 1969). This criterion eliminates terms like “blue-green, dark red, pinkish,” and “lemon-colored.”

2. Terms that are not included within an identified color, i.e. defined by, any other term (Berlin & Kay, 1969). By this logic, “crimson” and “scarlet” are eliminated because they are types of red.

3. Terms that are not restricted to a narrow usage (Berlin & Kay, 1969). For instance “blond(e)” is mainly used to describe a color of hair or wood.

4. Basic terms must be psychologically salient, as measured by a tendency to occur at the beginning elicited color lists and be stable across informants’ responses and occasions of use. For example, non-salient terms would be “puce” and “chartreuse” (Berlin & Kay, 1969).

5. Terms that have the same distributional potential as previously established basic color terms. In English for example, the suffix “-ish” can be added to a basic color terms, but it cannot be added to aqua or
flesh-colored. Therefore, “aqua” and “flesh” are not basic color terms (Berlin & Kay, 1969).

6. Terms that are also the name of an object characteristically having that same color are normally not basic colors (Berlin & Kay, 1969). For instance, “salmon” and “lime” would have to pass the other criteria without question. In English, “orange” is an exception.

7. Loan words recently incorporated into the language are suspect (Berlin & Kay, 1969).

8. In cases where the criterion of monolexemic status is difficult to ascertain, morphological complexity is given weight (Berlin & Kay, 1969). For instance, the English word “blue-green” could be argued to have a meaning not completely predictable from its constituents, but its morphological complexity eliminates it from consideration.

The Berlin and Kay strategy for defining basic color terms is derived from the process of determining generics in folk taxonomy. The assumption is that in every language there is a terminological level that names the perceptually salient objects or events, i.e. that names the things that obviously need names (Berlin & Kay, 1969). Using these criteria, there are eleven basic color terms in Standard English. They are: “black, white, red, green, yellow, blue, brown, purple, pink, orange, and grey” (Berlin & Kay, 1969).

To investigate basic color terms Berlin and Kay used Munsell’s array of 320 color chips as a stimulus. A Munsell color chip is a small rectangle of cardboard painted with a highly standardized color. The full Munsell Book of Color contains several thousand chips. Each page contains chips of a single hue. There are forty pages in the book, representing forty equally spaced hues, beginning with the red end of the spectrum and ending with the purple end of the spectrum. On each page the chips are arranged in eight rows with the lightest chips at the top of the page and the darkest chips at the bottom. This dimension is called lightness. The chips also are arranged by level of saturation across the page, with the most saturated chip at the far edge of the page and the least saturated towards the spine of the book. Saturation is hard to explain without looking at the Munsell book, but a
“saturated” color is “brilliant” or “vivid.” Whereas unsaturated colors are viewed as being “dull” or “weak.” Also, as the level of saturation of the color declines, the chips become almost achromatic, i.e. “white, grey or black,” depending on the level of brightness.

Berlin and Kay (1969) used an array of only the most saturated colors for each hue and level of lightness. There are eight levels of lightness and forty hues, making for an array of 320 chips. In addition, Berlin and Kay used nine extra chips ranging in hue from black through grey to white. This brought the total number of chips in the sample to 329.

These researchers collected their data in two stages (Berlin & Kay, 1969). First, the basic color terms were worked out using classic anthropological interviewing techniques (D’Andrade, 1995). Second, each subject was asked to select “...all those chips you would under any conditions call x...” (the extended use of the term) and “...the best most typical example of x...” (the focal use of the term). The informants were native speakers of their own language who were living in the San Francisco Bay area (Berlin & Kay, 1969). They investigated 20 diverse languages, including English, Mandarin, Korean, Japanese and Arabic (Berlin & Kay, 1969). They found a high level of agreement across languages about where the best or most typical color chips were located; this was especially true for red and yellow (Berlin & Kay, 1969). They found somewhat more dispersion for green, blue, and purple.

While the focal colors were very similar across languages, the boundaries for the extended uses of color terms were found to be quite different across languages (Berlin & Kay, 1969). Sometimes the extended use of a particular color term in one language covers a large area of color space and overlaps that of the extended use space of another language. In plotting the distribution of basic-level terms in color space, Berlin and Kay uncovered surprising findings. First, they found that the number of basic color terms varied — some languages had as few as two basic-level color terms, while others had as many as eleven. What was especially interesting was that the basic color terms appeared in a particular order across languages. They found that in languages with two basic color
terms, the focals for these terms were always black and white. Their results indicate that if the language had three basic color terms, the focals were always black, white and red (Berlin & Kay, 1969). The rest of the progression evolves adding an additional color in sequence, i.e., yellow, green, blue, brown, and purple. Pink, orange, and grey complete the last stage of the evolution found in their research.

This kind of ordering is called an “evolutionary sequence” because it predicts the sequence in which language will develop new basic-level terms. Berlin and Kay (1969) identify the number of colors salient within a language as a stage of color evolution. Further, these findings support a correlation between the number of basic-level color terms and a society’s level of technological development (Berlin & Kay, 1969). All of the languages from highly industrialized societies are at Stage VII, while all languages at stage III or lower are found in societies with small populations and limited technological development (Berlin & Kay, 1969).

Since languages have a larger number of color terms than just the basic-level color terms, it may seem that selecting just basic-level color terms for analysis is psychologically arbitrary. However, there is good evidence that the basic-level color terms are psychologically different than the non-basic color terms (Boynton & Olson, 1987).

**DIMENSIONS OF CULTURE**

Culture can be defined as the collective programming of the mind (Berlin & Kay, 1969). The word “culture” is reserved for describing entire societies. Societies are social systems. Social systems can exist only because human behavior is a non-random event. Therefore, it is possible to predict, to some extent, how systems will function.

One way of describing culture is as a mental program (Hofstede, 1980; Triandis, 1972). Hofstede (1980) viewed these programs as being composed of two parts—values and culture. He also stated that all mental programs carry a component that is value-related and another that is culture-related. Looked at in this way, he viewed every individual's mental programming as partly unique and
partly shared with others. The shared component can originate from immediate members of an individual's primary society or "Mankind" in general.

The profile of an individual's mental programming is given in Figure 1. As can be seen, there are three broadly-defined mental levels. Hofstede called them the "universal," the "collective" and the "individual." The least unique and basic-level in an individual's programming is the universal level. This is the biological equivalent to a computer's operating system. It is the basic coding that provides use with similar instincts, emotions, awareness, and other cognitive functions. In anthropology, this concept is the root of the bio-cultural model of Man (Morris, 1968; Lorenz, 1970).

![Figure 1. Hofstede's (1980) Model of Mental Programming](image)

The collective level of mental programming is shared with some, but not with all other people. Generally, these are the people with whom we have daily contact—our families, friends, relatives, co-workers, colleagues and other aspects of the societies we identify as our own. At this level it is common for people to belong to a certain group and share "programming" with this group that is different from people belonging to another group (Triandis, 1972). This level of mental programming includes language and the societal formalities, such as marriage, family, privacy, physical distance from others (i.e., proxemics), among other factors.
Last, there is the individual level. This is the level of the individual personality. It provides a wide range of alternative behaviors within the boundaries of a collective group. This is truly the most unique part of an individual's mental programming, and it is also the part that most likely contributes to variance in studies of culture and society. Hence, culture is manifest within the collective part of an individual's mental program, yet personality allows all of a culture's membership to be uniquely different from each other.

Mental programs can be inherited or they can be learned (Hofstede, 1980; Triandis: 1972). This is the nurture "versus" nature scenario. If a mental program is derived from nature, then it is expected that the program will be at the universal level and, therefore, common to all people. If on the other hand, a mental program is nurtured, that is learned or acquired, then it is expected that the program will be culture specific.

PROXIES AND OPERATIONALIZATIONS OF CULTURE

In this research, "country" is used as a proxy for culture; however, national boundaries do not necessarily coincide with cultures. Belgium is a perfect example of when culture, combined with language, can be considered useful identifiers (Hofstede, 1980). The following table lists and defines the major definitions of culture. This is followed by a brief review of each major conceptualization of culture. Principally, these reviews identify the weakness and extent of use the various conceptualizations have received in business academia.

There appear to be two general views of culture. The first is a broad definition of culture variously defined in several different academic fields: anthropology, psychology, international business, and sociology. These definitions vary widely, but in many ways share the same elements. The other view of culture is really an operational definition (i.e., "country" is culture). The assumption in this second view is that sovereign boundaries define the extent of a country's culture. Here are a few examples of the broad definitions of culture:
Table 1. Definitions of Culture

<table>
<thead>
<tr>
<th>Authors</th>
<th>Key Defining Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hershovits (1955)</td>
<td>Culture is the man-made part of the environment.</td>
</tr>
<tr>
<td>Parsons &amp; Shils (1951)</td>
<td>On a cultural level we view the organized set of rules or standards as such, abstracted, so to speak, from the actor who is committed to them by his own value-orientations and in whom they exist as need dispositions to observe these rules. An individual’s value-orientation is his commitment to these standards.</td>
</tr>
<tr>
<td>C. Kluckhohn (1954)</td>
<td>Culture consists of patterned ways of thinking, feeling and reacting, acquired and is transmitted mainly by symbols, including their embodiments in artifacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values.</td>
</tr>
<tr>
<td>Hofstede (1980)</td>
<td>...a set of mental programs that control an individual’s responses in a given context.</td>
</tr>
<tr>
<td>Triandis (1972)</td>
<td>...a subjective perception of the human made part of the environment. The subjective aspects of culture include the categories of social stimuli, associations, beliefs, attitudes, norms and values, and roles that individuals share.</td>
</tr>
<tr>
<td>D’Andrade (1984)</td>
<td>A culture is viewed as a pattern of symbolic discourse and shared meaning that needs interpreting and deciphering in order to be fully understood.</td>
</tr>
</tbody>
</table>

These definitions conceptualize culture in terms of the “value models.” The actual values used and their definitions vary from field to field and by author. All of the above authors generally define values as being the broad tendency to prefer certain states of affairs over others. Two general types of values are postulated: (1) values as being “desired,” and (2) values as being “desirable.” Values can be attributable to individuals and to whole societies. Values determine our subjective definition of rationality, and as a consequence our irrational value systems are viewed as being rational. This is one of the fundamental weaknesses in the conceptualization of value models, which will now be discussed as a foundation for this research.
Model of Parsons and Shils (1951)

This is one of the earliest conceptualizations of culture and was presented in the Parsons and Shils’ book, *The Structure of Social Action*. The basic model presented by these authors posits that any social or individual action occurs within three independent systems (i.e., social, personality, and cultural). These authors also indicate that within each system there are further gradations. The social system includes three characteristics (i.e., the situation, the interaction, and the collective behavior of the actors in a group-orientation). The personality system includes the interconnectedness, the organization and the goals of actions. The cultural system comprises values, norms, and symbols, a classical anthropological framework. It appears that the Parsons-Shils framework can be viewed as a three-dimensional topology of culture (See Figure 2).

![Figure 2. Parsons and Shils Topology of Culture](image)

Parsons and Shils (1951) argue that any actor, whether it is an individual or a society, must choose among the various options presented above. To do so, the actor employs five value-orientations: (1) affective vs. affective neutrality; (2) self-orientation vs. collectivity-orientation; (3) universalism vs. particularism; (4) ascription vs. achievement; and (5) specificity vs. diffuseness.
The major drawback with this conceptualization of culture is that the value-orientations are postulated, not derived. There appears to be no empirical support for the Parsons and Shils' model. Unfortunately, the authors' do not provide a rationale for why there are five dimensions and not more or less. This argument also raises the possibility of enthocentric thinking on the part of the authors.

**Model of Kluckhohn and Strodbeck (1961)**

These authors also presented a model based on five basic value-orientations. Their value-orientations included: (1) "human nature," i.e., concepts of good and evil; (2) "man-nature," i.e., one's subjugation to, in harmony with or mastery over nature; (3) "time," i.e., past, present, future; (4) "activity," i.e., passive versus proactive; and (5) "relational," i.e., lineality, collaterality, and individualism. The Kluckhohn and Strodbeck (1961) work is a classic anthropological model.

Kluckhohn and Strodbeck tested their model on five cultures in the American southwest. These cultures included Texans, Rimrock Navahos, Spanish Americans, Zunis, and Mormons. The authors demonstrated that their model could discriminate between these five cultures. Unfortunately, no test of the model was made using non-American cultures. Further, the implementation of such a test is problematic given the complexity of the Kluckhohn and Strodbeck survey.

**Model of Triandis (1972)**

Triandis used Herskovits' (1955) definition of culture to build a "subjective" cultural model. Triandis (1971) describes subjective culture as the typical way a specific cultural group perceives the man-made aspect of its environment, and it includes the way they perceive the rules, norms, roles, and values of their group. The most notable aspect of Triandis' model is its breadth in trying to include relationships between and among the environment, social structure, values, and psychological processes. Unfortunately, a recent literature search found this model never has been operationalized or tested fully.
Value Model of Rokeach (1973)

Rokeach (1973) developed a general model of values and the self that, even though it was not designed originally to be a model of culture, has been widely applied to this area of research. The Rokeach Value Survey consists of two separate lists, on which the respondent is asked to rank order 36 value statements. These 72 value statements are the entire universe of values, according to Rokeach. This presumption is likely the most troubling aspect of this specific value-orientation model.

Some weaknesses in the Rokeach model are as follows. First, Rokeach gives little proof of the universality of his value statements. The “proof” he does give is an assertion of completeness. Second, the Rokeach model has been tested primarily on Americans; little or no testing has taken place in the international arena. Third, the methodology of the value survey requires each respondent to process thirty-six different value statements simultaneously. Given that the human capacity for mental processing is limited to roughly six or seven independent items, this procedure seems to be a nearly impossible task. Fourth, the rank-ordering procedure informs the researcher of the relative order of importance of the values, but it does not show the relational “level of importance” between each of the value statements. Hence, problems in interpretation of results can occur when using this system.

Model of Hofstede (1980)

Probably the best known of the values-orientation models, Hofstede’s (1980) work, is based purely on international data and covers nearly sixty-nine countries. Hofstede’s work originally proposed four dimensions of human values: (1) Power Distance, (2) Uncertainty Avoidance, (3) Individualism, and (4) Masculinity. Later, Hofstede added the Confucian Dynamism dimension. Power Distance is supposed to represent how society handles unequal individual status. Uncertainty Avoidance measures how society handles an uncertain and unknown future. Individualism states the relationship between an individual and society.
Masculinity details the role between the sexes. Power Distance and Uncertainty Avoidance were eclectically derived, while Individualism and Masculinity were empirically derived. Confucian Dynamism is supposed to be a measure of a society’s collectivism.

The strengths of Hofstede’s dimensions are that they are based on both a theoretical structure and a broad international database. The weaknesses are fairly fundamental. First, Hofstede’s dimensions are based on data collected from an attitudinal work survey at one firm, IBM. The use of one firm for data collection was a part of the constraints of this work, but it still leaves open the question of source bias. After all, IBM in the 1960s was not representative of the “typical” firm. Second, using an attitudinal work survey as a proxy for culture is an unprecedented approach to cultural research. Third, support for the specifically identified dimensions is somewhat limited. Research has found little to no support for the Confucian Dynamic, and Individualism and Power Distance are highly correlated with each other ($r = -0.67$). Fourth, Hofstede’s sample only included one Asian country, even though people of varying cultural groups participated. Because of this, Hofstede’s dimensions may be viewed as being Western-oriented. Fifth and finally, Hofstede’s dimensions may be limited in their scope of application to societies or, at the least, to large groups of people. This is due to the manner in which the data were analyzed. By not being able to make direct inferences to the individual level, the true usefulness of Hofstede’s dimensions is highly constrained; thus, it is not useful regarding the current study.

**Chinese Value Survey of Bond (1987)**

Partially in response to the lack of inclusion of Asian countries in Hofstede’s initial sample, Bond (1987) devised a new survey instrument to measure the particular cultural elements present in Asian societies. The resulting survey has been used in many research studies; unfortunately, the very reason for its creation is also its major weakness. If there ever was an enthocentric instrument, this is it. Due to the nature of its development, this operationalization of culture is purely
focused on Asian societies, i.e., specifically Chinese; thus, its application to non-Asian societies is a misuse of the instrument. For these reasons, the Chinese Value Survey yields very little societal information, except in comparative terms between Asian cultures. The survey consists of forty items. Each respondent rated the forty items by their degree of perceived importance using a nine-point Likert scale. Unfortunately, the actual questionnaire could not be retrieved for review.

**Country as a Proxy for Culture**

The other definition of culture, mainly used in international business, is rather narrow. Instead of focusing on values, the measure simply looks for any difference between two societies. The operationalization of this simple cultural definition is normally the country of one’s origin.

The value-orientation models are theory because these models attempt to use measurable variables that can be applied to any societal grouping. These variables are observable across societies and are comparable. The second operationalization of culture, country, is more heuristic than a theory. This definition relies upon a country’s sovereign borders to correctly identify culture. The weakness with this definition of culture is that if you move the borders of a country, the defined culture automatically changes. The country-border model of culture also creates the problem of explaining hypotheses about culture with a difference that cannot be explained, but for a change in geographic location. The differences between two cultures are not quantified in this approach, so researchers are left with differences, but they are unable to explain why these differences exist. This is true, unless, the researcher has arguments for why location alone would determine cultural change.

**Research Objectives**

Given the works of Berlin and Kay versus Hofstede (1980), Osgood (1977) and Kulckhohn (1954), an interesting proposition would be to combine the theories of these two groups of researchers into one project. The question investi-
gated was whether cultural differences in the interpretation basic colors exist. The end result was the formulation of a questionnaire designed to assess the differences, if any, in the cultural perception on three of the main dimensions hypothesized by psychological-business scholars. The choice of dimensions was difficult; it was finally decided to choose dimensions that would be seen as universal throughout the world. The dimensions decided upon were: (1) a Male-Female continuum, (2) Strong versus Weak, and (3) Happy versus Sad. Notice all three dimensions are quite different from each other. One is gender related, which is an obvious feature of any society. The second is another concept known in all societies, the idea of strength and weakness. The third dimension represents two basic and diametrically opposed emotions. These emotions are known in and felt in all societies around the world. Given the differences in the measures used, the dimensions are assumed to be orthogonal. Research in the field seems to support this assumption.

**HYPOTHESES**

The following hypotheses were used to evaluate the results from the analysis. The first hypothesis relates to differences between the mean color scores of each country, i.e., culture. This is a measure of culture.

\[ H_{01} : \text{There will be no differences among the mean scores for the evaluations of color by each culture.} \]

This hypothesis reflects the findings of Berlin and Kay (1969) and agrees with the base assumptions of the bio-cultural model of Man (Berlin & Kay, 1969; Lorenz, 1970). Berlin and Kay found that cultures of a similar technological development recognized and had specific, unique names for the same number (i.e., eleven) of colors. Given their findings, they conclude, congruently with the bio-cultural model of Man, that colors are similarly recognized by all cultures. However, the bio-cultural model does allow for differences in interpretation of colors on both the individual and on the individual-societal levels. In absence of evidence suggesting otherwise, it was assumed that all cultures simply interpret all colors in a similar manner.
The second hypothesis compares the means of the color scores by gender. This is a test to see if there are general differences between males and females in the interpretation of color.

\[ H_{02} \]: There will be no differences among the mean scores for the evaluations of color by gender.

This hypothesis is not explicitly stated by either the bio-cultural model of Man or supported by the findings of Berlin and Kay (1969). It would stand to reason that gender differences might alter significantly the perceptions of color. In their study, Berlin and Kay did not state that they found gender differences in the recognition of color, even though their samples appear to have included both genders. It could be that they simply were not looking for such differences. Either way, they maintain that the recognition of colors is affected by technological development, not by gender. As such, the null hypothesis for the current study should assume no gender differences exist.

The bio-cultural model of Man also should support a similar finding, i.e., no gender differences exist. The underlying assumption of this model is one of shared basic programming. It seems that the recognition of basic colors may be related to basic programming (Berlin & Kay, 1969). It also might be highly likely that this basic programming extends to the interpretation of colors as well.

**Research Instrument and Survey**

A three-page questionnaire was developed to collect color-evaluation data. The survey instrument was written in English, and used the eleven basic colors identified by Berlin and Kay. Avery 3/4" round adhesive dots were used to represent most of the colors — yellow, green, blue, orange and red. Avery dots were not available in purple, grey, pink or brown. The dots were available in black and white, but were not used. Instead, the grey, black and white dots were programmed into the text of the questionnaire using Microsoft Word. The remaining three colors, purple, brown and pink, had to be manufactured by hand. This was accomplished by painting white Avery dots the color required.
It should be noted that true basic colors were not used in this survey. This is unfortunate, but it was an impossible constraint to engineer out of the experiment; however, the cost of fabricating true basic-color dots was out of the boundaries of this research. Care was taken to find colors that were as close as possible to basic-color hues.

The three selected survey dimensions (i.e., Male-Female, Strong-Weak, Happy-Sad) for evaluating colors were anchored at either end of each color scale. A continuous line was provided for the respondents to mark their opinions regarding the distance a color was perceived to be from the anchored words. Hence, a truly continuous range was achieved. In the case of the Male-Female dimension, the continuum transitions from very male to very female as one moves from left to right. Similar statements can be made for the Very Weak-Very Strong and the Happy-Sad dimensions. Survey scores were measured by taking the distance in millimeters from the end of the left-side of the line to the mark made by the subject. Measurements were made to the closest \( \frac{1}{2} \) millimeter.

The downside to this scale construction is the scoring of the survey results. Each survey takes approximately fifteen minutes to score. Given the number of countries covered (13) and the average number of questionnaires completed per country (20), over sixty-five (65) hours were devoted to scoring and data input.

The survey was not translated into foreign languages. There are two reasons for this decision. First, there is the issue of time, as little more than a month was available between final approval of the project and the required initial presentation. Second, it was necessary for costs to be kept to a minimum.

Given that the survey was administered to graduate students who spoke English, due either to their studies in this country or in their home country, it was concluded that translation of the survey was not crucial. In the instances where translation was deemed necessary, the local administrator of the survey either explained or translated the survey to the subjects, or the translations were written on the chalkboard.

The respondents for the survey were all graduate-level students either studying in their home countries or at the University of South Carolina. They ranged
from 17 to over 40 years of age. A balanced design was the initial aim of the survey, but given the difficulties of working through third parties and the inherent imbalances in graduate-school populations, the total number of subjects per cell varied as did the ratio of males to females per country. Given the nature of the design of the analysis, the imbalances do not severely weaken the study’s internal validity. Great care was taken to insure the inclusion of female subjects, particularly in the Latin American and European samples.

Subjects were limited to homogenous linguist groups where possible. For instance, only Mandarin speakers from the People’s Republic of China were surveyed. This was one attempt to insure that “cultures” were being measured and to finely differentiate between culture and nation-state boundaries.

The individuals who administered the data-collection instrument were friends the researcher made during many years of living overseas or while attending graduate school at the University of South Carolina. All contacts are currently professors at “professional” universities (i.e., business, engineering and other trade schools).

Of the 300 surveys constructed, 180 were returned as of November 11, 1997, the deadline for finalizing the analysis. Surveys sent to Australia, Japan, Saudi Arabia, Norway, and Malaysia were not returned and in some cases could still be in the mail to their destination. Initially, these surveys were to be couriered overseas, but the costs of doing so proved to be prohibitive. Of the 180 surveys returned, 171 were satisfactorily completed, leaving a rejection rate of only 5%. This rate is quite low. The most common reason for rejection was incomplete forms, i.e. age or sex or some dimensional evaluation missing. The usable sample constitutes 57% of the anticipated sample.

RESEARCH DESIGN

A repeated-measures approach is considered to be the appropriate research design for this study, since the experimental units in this research are people (Montgomery, 1997). Montgomery indicates that repeated measures designs control for the differences between responses of different people to the same treatment.
(e.g., marking 11 colors on three dimensions on the survey instrument). He points out that unless accounted for in the design, the variability associated with individual subjects will be included in experimental error, thereby, increasing mean-square error. In some cases, he concludes that mean-square error may be so inflated that the detection of real differences between treatments becomes nearly impossible. Repeated measures controls for the variability between people by using each of the treatments on each subject (Montgomery, 1997). In this case, each respondent marked three dimensions associated with their evaluations of each of 11 colors.

One consideration in setting-up the equations for analysis was the meanings of the interaction terms. Care and clear-headedness was compulsory to insure that the proper interpretation and logical significance were placed on each measure. To this end the following interaction terms were deemed to be the most important: (1) Color by Country and (2) Color by Gender. A third term was deemed to be important as well; this term is Gender. Gender was deemed important because, per the bio-cultural model briefly discussed previously, there could be specific interpretive differences of the basic colors between the sexes, irrespective of their culture. This gender factor is different from the term, Color by Gender. This interaction term specifies the differences by gender between the cultures. The same interpretation applies to the interaction term Color by Country, the interaction that highlights the cultural differences in the evaluation of color.

The interaction term, Color by Country by Gender, was left in the model even though its interpretation does not yield additional information to the research objective of this study. This interaction term actually compares gender-specific differences by culture for each color. This would seem to border too close to the level of the individual and was not specified as a hypothesis for this study. As such, concerns of level violation were raised; however, for purposes of complete specification, this interaction term was left in the initial runs of the model that tested the research hypotheses (See Table 2). Montgomery's procedures for evaluating F-tests for repeated measures designs were used to determine significant relationships (Montgomery, 1997).
The treatments in the experiment were the eleven colors (i.e., the eleven colors were the factors for the repeated measures). The blocking variable was “Country.” All factors, except “Subject,” were deemed fixed. Again, this seems rational and logical given the nature and design of the study. The colors were literally pre-assigned; only their hue was near randomly selected. The countries were fixed per the researcher’s contact base.

Table 2. Full model for data analysis

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>Expected Mean Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td>B - 1</td>
<td>6</td>
<td>MSb</td>
</tr>
<tr>
<td>Gender</td>
<td>B - 1</td>
<td>1</td>
<td>MSb</td>
</tr>
<tr>
<td>Subject (Gender Country)</td>
<td>2 - a + 1</td>
<td>52</td>
<td>E(MS_{a,b})=\sigma^2 = n \sigma_{p}^2</td>
</tr>
<tr>
<td>Color</td>
<td>C - 1</td>
<td>10</td>
<td>MSb</td>
</tr>
<tr>
<td>Color*Gender</td>
<td>(c - 1)(b - 1)</td>
<td>10</td>
<td>MS_{a,b}</td>
</tr>
<tr>
<td>Color*Country</td>
<td>(c - 1)(a - 1)</td>
<td>60</td>
<td>MS_{a,b}</td>
</tr>
<tr>
<td>Country<em>Color</em>Gender</td>
<td>(a - 1)(b - 1)(c - 1)</td>
<td>460</td>
<td>MS_{a,b}</td>
</tr>
<tr>
<td>Error</td>
<td>sc - 2 + ab + ac + bc(c - 1)</td>
<td>460</td>
<td>E(MS_{e})=\sigma^2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>sc - 1</td>
<td>659</td>
<td></td>
</tr>
</tbody>
</table>

Gender, being fixed, fixed by God, was a forced-choice measure, but respondents marked a point on a continuum from very male to very female, providing consistency to measurement of the dimensions. Subjects were totally random from the researcher’s perspective, but they were not a random sample of a larger population of each country; thus, they are a convenience sample. The full model for data analysis is shown in Table 2 above.

**ANALYSIS OF DATA**

ANOVA was performed on the data using the repeated-measures design as discussed above. Three runs were performed, one for each dimension. The results were significant. The R-square for all three equations was greater than .50. The model accounted for about 57% of the variance in the Strong-Weak
dimension. The model performed better when applied to the Male-Female dimension, accounting for roughly 68% of the variance in the data. The model performed best when applied to the Happy-Sad dimension, where it accounted for approximately 78% of the variance in the data. The p-value for all equations was significant, with $p \leq .01$ for two of the three equations. Model fits with $p \leq .0001$ were achieved with the Gender dimension ($F = 2.30, df = 147, 160$) and the Happy-Sad dimension ($F = 3.87, df = 147, 160$). The model was less successful with the Strong-Weak dimension with $p = .013$ ($F = 1.44, df = 147, 160$), but the alpha was significant at the .05 level.

For purposes of evaluation, an alpha value of .10 ($p \leq .10$) was used throughout this study. This is a widely accepted level for significant testing in business-cultural research (Pindyck & Rubinfeld, 1991).

Significant terms varied for each dimension. For the Male-Female dimension, Gender and Color were significant with $p$-values < .10. The Color factor was the highest source of significance ($p = .0001$) in the analysis of the Male-Female dimension ($F = 19.64, df = 10, 40$). This would seem to indicate the type of Color and the Gender of the subject evaluating the color are the only variables of significance in determining the mean score on the Male-Female dimension. A mean score of 54.65 is rated as being neutral but leaning toward the Male direction. The median of the Male-Female dimension is 59.50.

For the Strong-Weak dimension, Color was the only significant term ($p = .0001$) in this run ($F = 11.80, df = 10, 40$). This would seem to indicate the type of Color is the only variable of significance in determining the mean score on the Strong-Weak dimension. With a mean score of 60.74, Strong-Weak dimension is rated as being fairly neutral leaning in the Strong direction. The median of 59.50 emerged on the Strong-Weak dimension.

In the Happy-Sad dimension, the terms that were found to be significant were many and varied. Color ($p = .0001$), Color by Country ($p = .0374$), Color by Gender ($p = .0098$), and Subject (Country by Gender) ($p = .0301$) were significant. This would seem to indicate that on the Happy-Sad dimension, many variables play a role in determining the mean score. The significance of the
Subject (Country by Gender) term, implies there are strong Subject effects within the sample for this dimension. With a mean score of 50.17, this dimension is rated as being fairly neutral leaning in the Happy end of the spectrum, while the median was 59.50 for this dimension.

Residual analysis was conducted for each dimension. The residuals showed no structural effect and were normally distributed. Residual analysis is required since it is not necessary, nor is it always possible, for an ANOVA model to perfectly fit the data. Though ANOVA models are fairly robust and can accommodate certain types of departures from the assumptions required for the use of ANOVA, an examination of the residuals is instructive. The primary reason for residual analysis is to determine the appropriateness of the model based on the presence or absence of serious departures from the conditions assumed by the model (Neter, Kutner, Nachtsheim, & Wasserman, 1996).

**DISCUSSION**

Culture appears to be like an onion, in that it is an intangible concept that has many layers. Seemingly, the more layers or levels that are revealed the more levels are left to be discovered. Also, the actual dimensions on which culture could be evaluated are numerous. The correct dimensions or even what the dimensions are is a continuing source of academic discussion. As a result, it is not surprising to find that some dimensions hypothesized to be significant in explaining culture turned out to be insignificant in this analysis.

First and foremost, it was noteworthy that the variable Color was significant in all three analyses. In addition, Color effects were found to be significant in all three dimensions. What information does this provide? One interpretation is that colors are perceived in pretty much the same manner worldwide, irrespective of gender or culture. This is an important result and is a finding that lends support to the bio-cultural model (Morris, 1968; Lorenz, 1970).

Besides Color, Gender was found significant in the evaluation of the Male-Female dimension. Gender was found to affect the interpretation of color. It appears that in the study of gender differences, the meaning of color is another
fertile ground for research. This finding would appear not to support the bio-cultural model, i.e., males and females are “hardwired” to interpret colors in the same manner. The finding, instead, suggests that gender differences exist in the interpretation of colors along the Male-Female dimension, irrespective of culture. However, in an F-test, no gender effects were significant at the $\alpha = .10$ level. This finding may seem puzzling, but since Gender was barely significant at the 90% confidence level, $p = .0853$, the gender effects must be slight.

Though the Subject (Country by Gender) interaction was not found to be significant in this study, an F-test of individual subject effects were found to be significant at the $\alpha = .10$ level. Hence, in the Male-Female dimension, Color and Subject (Country by Gender) effects are present. One way of examining these results is to return to the Hofstede (1980) model and apply it to the analysis of this data.

The three levels of culture Hofstede assigns to our mental programs are represented by the key elements in the ANOVA model. The population mean represents the universal level of the mental program (i.e., all programming that is inherent in all of humankind). Color could be interpreted as the manifestation of the population mean in this research. The interaction terms Color by Country and Color by Gender represent the collective aspect of mental programming, i.e., culture. The individual part of mental programming is captured by the Subject (Country by Gender) interaction term (See Figure 3). Significant effects on any one of these dimensions imply that the level of cognition

\[ \text{ANOVA Model} \]

\[ \text{Subject (Country*Gender)} \]

\[ \{ \text{Color*Country} \]

\[ \{ \text{Country*Gender} \]

\[ \text{Population Mean} \]

\[ \text{Figure 3. Application of Data Analysis to Hofstede’s Model} \]
affects the interpretation of the color in question. Hence, for the Male-Female
dimension, color cognition is affected by the universal and by the individual levels
as well. Apparently, on this dimension there is common mental programming in
all people, as well as significant individual variations.

The findings of the Strong-Weak dimension show there are no cultural or
gender differences associated with the interpretation of colors along this dimen­sion. This means that either the dimension is meaningless in this influence or
that, in general, we all agree on how to evaluate colors in this manner. Whatever
the reason, Color is the main effect of importance. From this finding it can be
supposed that the interpretation of color along this dimension is rooted in mental
programming common to all people.

The dimension offering the most interesting results was Happy-Sad. Besides
Color, Color by Country, Color by Gender, and Subject (Country by Gender) inter­
actions were found to be significant in the application of the full model to the
data. Given the significance of these variables, F-tests were performed to confirm
the significance of any effects. Color, Color by Country and Subject (Country by
Gender) were found to be significant at the $\alpha = .10$ level. It can be asserted that
there are cultural effects (represented by Color by Country), and there are indi­
vidual effects represented by Subject (Country by Gender). Possibly one reason
for this richness in the evaluation of this dimension is because it is measuring an
emotion. It might be expected to find cultural differences, when examining emo­
tions. Further, since emotions are deeply personal, they are part of the most
unique part of our cultural programming; therefore, it is not surprising to find
Subject (Country by Gender) effects are significant. They represent the individual
programming that varies regarding interpretation of colors.

The hypotheses previously stated in this paper now can be evaluated. Table
3 summarizes the results of the data analysis. $H_0_1$ was supported on the Male­
Female dimension and on the Strong-Weak dimension. $H_0_1$ was not supported on
the Happy-Sad dimension. This means that color is the prime predictor of the
mean score for the Male-Female and Strong-Weak dimensions. There was no
evidence of significant gender or cultural effects along either dimension.
Table 3. Hypothesis Testing Results

<table>
<thead>
<tr>
<th></th>
<th>Male---------</th>
<th>Strong--------</th>
<th>Happy---------</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho1:</td>
<td>Supported</td>
<td>Supported</td>
<td>Not Supported</td>
</tr>
<tr>
<td>Ho2:</td>
<td>Not Supported</td>
<td>Supported</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Ho$_2$ was supported on the Strong-Weak and Happy-Sad dimensions, but not supported on the Male-Female dimension. This result shows that gender does not have a significant effect on the evaluation of color along the Strong-Weak dimension or the Happy-Sad dimension, but gender does have significant effects on the Male-Female dimension.

On the Happy-Sad dimension, it is interesting to note that differences exist between the genders. That is, though there is no statistical difference between the genders in aggregate, there do exist differences by gender when the eleven individual countries are compared. This type of effect is supportive of the two schools of thought initially discussed at the beginning of this paper (i.e., Berlin & Kay, 1969; Hofstede, 1980). In this instance, cultural differences can be argued to exist or not, it simply depends on the level at which the argument is based. If the argument is based on the aggregate Gender level, then cultural differences do not exist and the bio-cultural model is supported. If, however, the argument is based on cultural-specific gender differences, then differences are found and the assumptions of the bio-cultural model can be questioned.

**CONTRASTS**

Appropriate contrasts were constructed in order to test sub-level alternative hypotheses. Contrasts test whether the observed difference between means is an actual statistical difference. In general, the contrasts support the contention that there are differences between individual countries (i.e., cultures and the totality of the rest of the data sample). For convenience, the totality of the rest of the samples will henceforth be referred to as “Rest of World.”
As shown in Table 4, on the Male-Female dimension, true statistical differences, using stringent alpha levels ($p < .001$), were found when the cultures of the United States and China were individually and independently contrasted with Rest of World averages. The similar Korea contrast is significant at the .0158 alpha level. These findings show that for these three cultures, the interpretation of colors along the Male-Female dimension displays cultural differences. This observation provides more evidence for the two schools discussion. The Male-Female dimension was seen not to be sensitive to cultural differences when the eleven cultures were compared to each other. However, the lack of differences evaporates when one culture is compared to all the rest. This may be an unfair comparison, in the sense that the statistical deck is stacked in the favor of showing a difference exists. The two contrasts of USA and China versus the world are significant ($p < .001$). It is instructive to note this effect, especially in light of the two schools discussion.

### Table 4. SAS Contrast Analysis for Male-Female Dimension

| Parameter          | Estimate | T for H0: Parameter=0 | Pr > |T| | Std Error of Estimate |
|--------------------|----------|-----------------------|-------|---|-----------------------|
| Americas vs Europe | 12.089286| -1.48                 | .1398 |   | 8.1651375             |
| USA vs World       | 231.000000| -8.73                 | .0001 |   | 26.4580696            |
| Korea vs World     | 64.250000| 2.43                  | .0158 |   | 26.4580696            |
| China vs World     | 90.875000| 3.43                  | .0007 |   | 26.4580696            |

On the Strong-Weak dimension (See Table 5), true statistical differences, using stringent alpha levels ($p < .001$), were found with the cultures of the United States versus Rest of World and the Americas region versus Europe. These observations also support arguments already stated in the above section.
Table 5. SAS Contrast Analysis for Strong-Weak Dimension

| Parameter             | Estimate  | T for H0: Parameter=0 | Pr > |T| Std Error of Estimate |
|-----------------------|-----------|------------------------|------|-------------------------|
| Americas vs Europe    | 29.660714 | 3.32                   | .0010| 8.9320922               |
| USA vs World          | 188.839286| 6.52                   | .0001| 28.9432866              |
| Korea vs World        | 7.410714  | 0.26                   | .7981| 28.9432866              |
| China vs World        | 44.660714 | 1.54                   | .12398| 28.9432866             |

On the Happy-Sad dimension (See Table 6), true statistical differences, using stringent alpha levels ($p < .001$), were found when the cultures of the United States and the Republic of Korea were individually and independently contrasted with Rest of World averages. These observations support arguments previously discussed.

Table 6. SAS Analysis for Happy-Sad Dimension

| Parameter             | Estimate  | T for H0: Parameter=0 | Pr > |T| Std Error of Estimate |
|-----------------------|-----------|------------------------|------|-------------------------|
| Americas vs Europe    | -7.839286 | 0.93                   | .3519| 8.4067436               |
| USA vs World          | 94.267857 | 3.46                   | .0006| 27.2409626              |
| Korea vs World        | 103.232143| 3.79                   | .0002| 27.2409626              |
| China vs World        | 50.142857 | 1.84                   | .0667| 27.2409626              |

REVISED MODELS

The final models for this analysis are simplified versions of the initial equation. This result is not surprising, as the terms that were dropped from the initial equation were hypothesized to be insignificant. The final equations, by dimension, are:
Male-Female Dimension

\[ Y_{ijkl}^{M} = \mu + \beta_{i(j)} + \tau_i \delta_{k(l)} + \varepsilon_{ijkl} \]

Strong-Weak Dimension

\[ Y_{ijkl}^{S} = \mu + \delta_{k(l)} + \varepsilon_{ijkl} \]

Happy-Sad Dimension

\[ Y_{ijkl}^{H} = \mu + \tau_i \beta_{j(l)} + \delta_{k(l)} + \tau_l \delta_{k(l)} + \beta_{l} \delta_{k(l)} + \varepsilon_{ijkl} \]

All revised models were run again using the original data set. For the most part, the results were inferior to the original model. R-squared values dropped in two of the three runs and some variables initially significant turned insignificant in the revised models. The decline in the R-square values can be partially expected, since the revised model uses fewer model terms than the original. This implies the interactions among the variables are complex. Table 7 below is a summary of the results.

### Table 7. Summary of Results of Revised Model Analysis

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Original R-Squared</th>
<th>Revised-R-Squared</th>
<th>Variables Turned Insignificant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male-Female</td>
<td>.6790</td>
<td>.4639</td>
<td>Subject (Country*Gender)</td>
</tr>
<tr>
<td>Strong-Weak</td>
<td>.5687</td>
<td>.3181</td>
<td>-none-</td>
</tr>
<tr>
<td>Happy-Sad</td>
<td>.7806</td>
<td>.7173</td>
<td>-none-</td>
</tr>
</tbody>
</table>

**Conclusion**

The primary results of this study imply that basic colors are interpreted the same in many cultures. Individual effects are common. Cultural effects were
found, but they were only discovered on the dimension relating color to an emotion, i.e., Happy-Sad dimension. It is possible that emotions are more sensitive to cultural variation and differentiation. These findings could be reflective of the data in this study. A second study, with a larger sample, both in terms of countries and subjects, might provide greater explanatory power than the current study.

Cultural effects also were discovered when the data were manipulated using contrasts. In these cases, however, the contrasts could be identifying differences of perception anchored when one society compares itself to the rest of the world or to another geographic region. It is the true that the questionnaire did not ask the subjects to think of themselves in an “us versus they” scenario, but the way the contrast is defined makes this interpretation possible.

In hindsight, the Strong-Weak dimension should probably have been dropped and replaced with another scale that is more universal. The universality of the concepts of Strong and Weak can be questioned, especially in regard to their application to the interpretation of colors. All cultures likely understand and can easily define and differentiate between males and females, and between happiness and sadness. This researcher is unsure whether the same can be said of strength and weakness. An Individualism scale or Independence-Interdependence dimension may prove to be more meaningful across more cultures. The rationale for this thinking is that an Individualism scale or Independence-Interdependence dimension may be more easily defined across cultures and languages. These concepts also may be easier for subjects to relate to color.
REFERENCES


African Americans generally have poorer health than other groups in America (Fillenbaum, Gerda, Hanlon, Corder, Ziqubu-Page, Wall, & Brock, 1993; Khandker & Simoni-Wastila, 1998), and many of their ailments can be prevented or controlled with medical treatment (Sylvester, 1998). In 1985, the Department of Health and Human Services released the Report on the Secretary’s Task Force on Black and Minority Health, which documents racial and ethnic disparities in particular health conditions at a time when national statistics were reporting an improvement in the health of Americans overall (U.S. Department of Health and Human Services, 1985). This report, along with governmental initiatives like Healthy People 2000 and 2010, helped to increase national awareness of disparities in health care (National Center for Health Statistics, 1990, 2001).

Early research on racial and ethnic disparities in health conditions focused on financial and geographical barriers to access as the primary driving force for the inequality (Andrulis, 1998). The focus of more recent research has dealt extensively with racial and gender disparities in diagnosis and overall treatment of specific health conditions. However, few studies have examined disparities in access to drug therapy (Graham, Jacobson, Kuo, Chmiel, Morgenstern, & Zucconi, 1994; Moore, Stanton, Gopalan, & Chaisson, 1994; Sirey, 1999). The current impact of pharmacological therapies on medical practice makes access to this
treatment modality central to any effort designed to maximize physical functioning in the presence of chronic disease. Pharmaceutical therapy can lead to cures, prevent complications, and reduce disease progression.

While researchers have identified potential variables (e.g., drug costs, social isolation, financial situation, insurance coverage) affecting drug use among African Americans, few have considered access to health information as a potential barrier. This is important given that the aforementioned economic variables that plague African Americans also plague poor Whites, yet poor Whites generally do not suffer from poor health to the same extent as African Americans (Sylvester, 1998). Sylvester argues that using Black media (i.e., magazines, newspapers, radio) to disseminate healthcare messages “will increase the odds that African-Americans will be exposed to” them (p. 257). This chapter seeks to explore the degree to which healthcare messages are prevalent in Black media compared to mainstream media. Specifically, the authors explore the disparity in “direct-to-consumer” magazine advertising as a potential barrier to access to drug therapy. This is accomplished by comparing the level and variety of direct-to-consumer prescription drug advertising (hereafter, DTC advertising) in Black magazines and mainstream magazines.

**DTC Advertising**

Drug companies have historically marketed their products to healthcare professionals but have recently changed their strategy by marketing directly to consumers. The increase in spending on DTC advertising serves as evidence of the pharmaceutical industry’s commitment to this strategy. For example, within the span of ten years, the industry went from spending $40 million on this type of advertising in 1989 to spending between $1.1 billion in 1999 (DTC market is becoming..., 2000).

Groups outside of the pharmaceutical industry are supportive of this type of advertising. They argue that these ads educate and empower consumers, providing them with information about helpful drug treatments (Hollon, 1999). Supportive of this argument, research has found that consumers who are exposed
to DTC advertising either request the advertised drug or more information about the drug (e.g., CBS, 1984; Everett, 1991; Perri, & Dickson, 1988; Peyrot, Alperstein, Van Doren, & Poli, 1998; Wilkes, Bell, & Kravitz, 2000). For example, Perri and Dickson (1988) found a significant, positive relationship between direct-mail ad campaigns and patient behavior. Participants in their study were actually sent the same DTC ad through the mail twice prior to their scheduled office visit with their doctor (10 days and 3 days prior). Doctors noted whether the patient inquired about the advertised drug. The positive relationship between the inquiry behavior and ad exposure is especially significant because of the weak manipulation of advertising exposure and the unfamiliarity of DTC advertising to most consumers at that time (Perri & Dickson, 1988).

Other evidence also supports this argument. For example, in 1992, doctors reported that 88% of their patients asked for a specific drug, which is an increase from the 45% who asked for a drug by name in 1989 (Hollon, 1999). Prevention Magazine’s National Survey of Consumer Reactions to Direct-to-Consumer Advertising (1999) uncovered that 31% of consumers who saw a DTC advertisement also discussed the drug with their doctor, and 28% of the consumers who talked to their doctor about the drug also requested a prescription for it. The report estimates that 54.8 million consumers are seeing DTC ads and are discussing them with their doctors (Prevention, 1999). More recently, a study from The Henry J. Kaiser Family Foundation reports that 30% of consumers discuss a drug they have seen advertised with their doctor and 44% of them receive a prescription for the drug from their doctor (Studies of DTC advertising..., 2001).

This level of evidence for the effectiveness of DTC advertising motivates these authors to consider lack of DTC advertising as a potential barrier to drug therapy. Therefore, a disparity in the level of DTC advertising found in magazines targeted toward African Americans and those targeted to mainstream America can give policymakers reason for concern. Specifically, lower levels of DTC advertising in African American print media could be a contributing factor to the low-level utilization of prescription drugs.
OTHER CONTENT ANALYSES

Other authors have conducted content analysis of DTC advertising for different reasons. Roth (1996) examined the type of drugs that were being advertised and information content included in the ads (i.e., fair balance, drug misuse information, directions for use). He studied 39 unique ads used in print between 1993 to mid-1995. He found DTC advertising for "drugs with less frequent and less severe side effects than for drugs with more frequent and more severe side effects" (p. 71). The less complicated the ailment/disease, the more frequently it was advertised. He found that a little over one third of ads did not meet the fair balance of information requirement of the pharmacists who provided the coding/judging in his study. Also, only 12% of the ads contained misuse information, and 42% included directions for use.

Parker and Delene (1998) identified the frequency with which DTC ads appeared in consumer magazines. They also examined the extent to which "fair balance" disclosures were used in the ads. Lastly, they identified which medical conditions actually were being advertised by pharmaceutical companies. They collected 110 unique ads from issues spanning a four-year period (1992-1995) of eight popular consumer magazines. They found that the number of DTC ads appearing in magazines has increased over the years. Also, they discovered that the number of ads containing the "fair-balance" disclosures had increased. Most of the ads they found were not for life-threatening illnesses with the exception of depression. Hair loss, menopause symptoms and nasal/seasonal allergy accounted for 45.8% of all the ads over the four-year period.

Bell, Kravitz and Wilkes (2000) examined the trends in DTC advertising over a ten-year period. In doing so they focused on the medical conditions, inducements, target group of the ad, and the type of advertising appeal used. They collected 320 unique DTC ads collected from the issues of 18 consumer magazines appearing in 1989 and 1998. These ads represented 101 brands and 14 medical conditions. They found that the number of DTC ads appearing in magazines had increased substantially over the years.
Pinto (2000) investigated the type of appeals used in DTC advertising in a sampling of issues of 24 magazines, spanning 1996-1998. She collected 58 unique ads that were evaluated for the type of appeal that was used (i.e., fear, humor, guilt, sex, relational, information). She found that there is "no discernable pattern in use of appeals by each drug category, suggesting that pharmaceutical manufacturers themselves may still be unsure as to the most effective message appeals for promoting differing classes of drugs" (Pinto, 2000, p. 604).

The content analysis conducted in this current study differs from previous research in that we are not exploring the type of appeal used or the completeness of the fair-balance disclosure information. Instead, our goal was to establish the degree to which pharmaceutical marketers are using African American magazines to promote their products compared to the use of mainstream magazines. If a disparity exists, DTC advertising could be considered a potential barrier to drug therapy for African Americans.

**METHODOLOGY**

The authors conducted a content analysis of DTC ads collected from monthly issues of two women's magazines that target African Americans, *Ebony* and *Essence*, and one that targets non-African Americans, *Ladies Home Journal*. The ads were selected from each month's issue, spanning two years. One of the authors, a licensed pharmacist, coded the advertisements according to specific categories and their definitions.

The next step was to identify the frequency DTC advertising occurred in all three magazines. The drugs promoted in the ads were classified according to medical condition categories. Sixteen categories were used (See Table 1).

**RESULTS**

The examination of the three magazines yielded 111 unique ads covering 52 different drug brands. Our research question was to examine the extent to which pharmaceutical marketers are using African American magazines to promote their products compared to mainstream magazines. To address this question, the
The authors first looked at the frequency of DTC ad appearance for each year. In 1998, a total of 100 DTC ads appeared in the three magazines and a total of 117 ads appeared in 2000. In 1998, 70% of the total ads appeared in *Ladies Home Journal*, compared to 16% in *Ebony* and 14% in *Essence*. In 2000, a similar pattern existed. *Ladies Home Journal* again accounted for a majority of the ads (approximately 60%) compared to 26% in *Ebony* and 15% in *Essence*. In *Ebony*, the ads represented 12 brands and covered the following medical categories: endocrine, allergies, AIDS/HIV, OB/Gyn, Psychiatric/Neurologic, Renal/Urological. In *Essence*, the following categories were covered: allergies, AIDS/HIV, OB/Gyn. These *Essence* ads represented eight brands. Finally, in *Ladies Home Journal*, all of the categories, covering 44 brands, were present except for HIV/AIDS.

Table 1. Medical Classifications of Conditions and Examples of Drugs Being Advertised

<table>
<thead>
<tr>
<th>Medical Condition*</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergies</td>
<td>Allegra</td>
</tr>
<tr>
<td>Cancer</td>
<td>Nolvadex</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>Zocor</td>
</tr>
<tr>
<td>Dermatologic</td>
<td>Lamisil</td>
</tr>
<tr>
<td>Endocrine</td>
<td>DDAVP</td>
</tr>
<tr>
<td>Gastrointestinal/Nutrition</td>
<td>Prilosec</td>
</tr>
<tr>
<td>Hematological</td>
<td>Procrit</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>Combivir</td>
</tr>
<tr>
<td>Infectious (non-HIV)</td>
<td>Zithromax</td>
</tr>
<tr>
<td>Musculoskeletal</td>
<td>Evista</td>
</tr>
<tr>
<td>OB/Gyn</td>
<td>Premarin</td>
</tr>
<tr>
<td>Psychiatric/Neurologic</td>
<td>Aricept</td>
</tr>
<tr>
<td>Respiratory</td>
<td>Flovent</td>
</tr>
<tr>
<td>Tobacco Addiction</td>
<td>Zyban</td>
</tr>
<tr>
<td>Renal/Urological</td>
<td>Detrol</td>
</tr>
</tbody>
</table>

* Note: Definitions of medical categories are available from the authors.
DISCUSSION

Other research efforts have indicated that African Americans have poor health compared to other groups and that most of these ailments can be treated effectively and/or mitigated through prescription drug use (e.g., Sylvester, 1998). African American females are disproportionately affected by many disease states or conditions. Cancers are the second leading cause of death for African American women. When examining breast cancer in particular, statistics reveal that death rates for African American women exceed that of all other subpopulations of women, according to the Women of Color Data Book (National Institutes of Health, NIH, 2001). Risk of and death from cervical cancer also are more likely to occur with African American women than with Caucasian women (NIH, 2001). Arthritis is also a condition that impacts African American women disproportionately. Among women 65 years of age and older with a reported diagnosis of arthritis, African American women report more severe activity limitations due to the condition than other women (Callahan, Rao, & Boutaugh, 1996). Cardiovascular disorders represent yet another category of health conditions where a racial disparity in health status is apparent. Death rates from diseases of the heart are higher for African American women than for Caucasian women (NIH, 2001). None of the DTC ads in this study address these disparities, which represent just a few of the racial disparities in health status that are documented. The DTC ads appearing in magazines with a large African American target audience are fewer in number than those appearing in other magazines, despite the apparent racial disparities in the prevalence of the health conditions the advertised drugs treat. The prevalence of diabetes in African American women older than 55 years of age is double the prevalence in Caucasian women of the same age (NIH, 1992). Unfortunately, few DTC ads address these and other major ailments that affect African American women.

African Americans today are more educated and prosperous than their parents (Cui, 1997). Yet, based on the findings of this study, female African Americans appear to be overlooked by pharmaceutical marketers. This lack of DTC ads addressing the health concerns of African American females could be
acting as a barrier to drug therapy. As mentioned previously in this chapter, researchers have found a relationship between DTC advertising exposure and health behaviors such as drug-request behavior.

**LIMITATIONS**

The current study only included ads from one mainstream magazine compared with two African American magazines. Some might argue that *Ladies Home Journal* targets an older audience than *Essence* and *Ebony*. Even though there may be some overlap in age demographics for the three magazines, perhaps adding another mainstream magazine such as *Cosmopolitan* or *Glamour* might make this analysis a more balanced comparison.

Another limitation of this study is the number pharmacists used for coding the ads. Perhaps the use of two or more would allow for a more reliable assessment of the appropriate categorization of the ads. Because of the number of ads included in the study, fatigue also could have affected the coding process (Weber, 1990). Therefore, using additional coders in the future may decrease the likelihood of coding mistakes, in which case, interrater reliability and agreement statistics would be employed as evidence of this aspect of the internal validity of the study.

**IMPLICATIONS**

Despite the surge in DTC advertising by pharmaceutical companies, a big issue for health professionals continues to be lower prescription drug use in the African American community. A disparity in level of DTC advertising in Black magazines may be a contributing factor to limited access to drug therapy. This content analysis serves as a first step in determining whether the type and level of DTC advertising differ between the magazines that target African American readerships and those that target non-African Americans. Comensurate with other concerns about improving the health care for minority populations (Agency for Healthcare Research and Quality, 2000), increasing DTC ads that address the major health problems of African American women may have potential to increase access of this minority group to beneficial drug therapy.
REFERENCES


PART 3: COLLEGE OF PHARMACY
MEDICATION COMPLIANCE

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College of Pharmacy

Noncompliance is a serious problem that pervades the current healthcare sector. It is costly and preventable. Noncompliance affects not only the noncompliant patient, but society and the healthcare industry as well, resulting in millions of preventable hospital and nursing home admissions the United States each year. These admissions are attributed to patients' inability to manage or follow prescribed drug therapy. If compliance with prescription drug therapy could be improved, billions of dollars could potentially be saved. This chapter discusses the causes of noncompliance and the behaviors manifested in noncompliant patients. It also deals with the economic consequences of deviating from prescribed medication regimens and offers recommendations for clinicians and patients to improve compliance.

DEFINING COMPLIANCE AND NONCOMPLIANCE

Compliance has been defined as "the extent to which a person's behavior coincides with medical or health advice." The more compliant patients are, the more they adhere to medical advice such as taking their medications as scheduled, following prescribed diets, or executing necessary lifestyle changes. If most patients were compliant, the wealth of literature discussing patient noncompliance would not exist. Noncompliance is the opposite of compliance, which can simply be deduced by the addition of the prefix "non-." Although deducing its meaning may be easy, noncompliance is difficult to define. Noncompliance encompasses many different actions, behaviors, and interpretations. It often is seen as a patient's delinquent resistance to following the physician's orders. It also can be viewed as a sign of poor customer service or a lack of patient care. Oftentimes, physicians and pharmacists construct therapy regimens for patients without estab-
lishing how well the patients will be willing to follow them. Ultimately when the patients return home, they must deliver their own treatment or therapy. 

Noncompliance can include: 

- Failing to initially fill a prescription 
- Failing to refill a prescription as directed 
- Omitting a dose(s) 
- Prematurely discontinuing a medication 
- Taking a dose at the wrong time 
- Taking medications prescribed for someone else 
- Taking medications with prohibited foods, liquids, or other medications 
- Taking outdated medications 
- Taking damaged medications 
- Storing medications improperly 
- Improperly using medication administration devices (e.g., inhalers) 

Noncompliance includes all of these listed items, but it is not limited to the above items. Alas, here lies the difficulty in defining noncompliance.

WHY STUDY NONCOMPLIANCE? 

Many may argue that if you cannot universally define noncompliance, why bother devoting so many hours studying something that can be interpreted various ways by various people. Noncompliance is studied because it pervades today's healthcare sector. It is costly, yet it is preventable. The extent of noncompliance affects not only the noncompliant patient, but also society and the healthcare industry as well. Irrespective of how the healthcare system changes, increased compliance will save billions of dollars and also will save lives. 

The U.S. Chamber of Commerce reported in 1993 that over half of the 1.8 billion prescriptions written annually are taken incorrectly by patients. Because these prescriptions are used improperly, an estimated 30-50% of all prescriptions fail to produce desired results. The rate of compliance varies with disease state, according to the National Pharmaceutical Council (NPC), as shown in Table 1.
Table 1. Rates of Noncompliance by Disease State

<table>
<thead>
<tr>
<th>Condition</th>
<th>Rate of Noncompliance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>20</td>
</tr>
<tr>
<td>Arthritis</td>
<td>55-71</td>
</tr>
<tr>
<td>Contraception</td>
<td>8</td>
</tr>
<tr>
<td>Diabetes</td>
<td>40-50</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>30-50</td>
</tr>
<tr>
<td>Hypertension</td>
<td>40</td>
</tr>
</tbody>
</table>

**History of Compliance Studies**

Variable patient compliance first began to gain recognition as an important factor in drug research in the early 1960s through the work of Joyce and Wood et al. They provided vivid examples of weak or absent drug action associated with poor compliance. Joyce showed that dose-dependent safety problems were underestimated when compliance was not taken into account. Wood et al. studied the prevention of recurrent rheumatic fever in patients who received monthly nurse-administered depot injections of penicillin versus those who received self-administered oral therapy. They showed that half the patients assigned to oral treatment were poorly compliant and that their erratic drug exposure was associated with weak or absent prevention of recurrent infections and acute rheumatic fever.

Further impetus came in 1976 from the books of Lasagna and Sackett and Haynes. Progress of compliance studies was hampered by the lack of reliable methods for assessing drug intake in ambulatory patients. All of the existing methods for assessing drug intake at the time relied on patient self report – medical histories, patient diaries, and counts of returned, unused dosage forms ('pill counts'). Each of these methods allowed patients to mask the truth sustaining the illusion of compliance. Further studies also have confirmed that patients under study commonly overestimate compliance and underestimate noncompliance.
Research on patient compliance languished for almost a decade until catalyzed by the methodological advancement provided by electronic monitoring of medication-taking histories of ambulatory patients. This method, variously called medication event monitoring or electronic monitoring, relies on time-stamping microcircuitry integrated into pharmaceutical packages so that time and date are recorded when a dose is taken.

Electronic monitoring is an indirect method of measuring drug utilization and, in turn, compliance. The consequences of being able to increase the reliability of measuring compliance have gradually attracted the attention of statisticians, clinical epidemiologists, as well as clinical pharmacists and clinical pharmacologists. Statisticians are interested in devising additional ways to measure compliance and using the data as covariate information in clinical-trials analysis. Epidemiologists, pharmacists, and pharmacologists are attracted by the challenges of creating new medication-taking patterns that rely heavily on pharmacological and therapeutic interpretation.6

The Costs of Noncompliance

It is estimated that at least 10% of all hospitalizations and 23% of all nursing-home admissions are attributed to a patient's inability to manage or follow drug therapy.3-11 Increased hospital and nursing-home admissions, lost productivity, premature deaths, and excessive treatment associated with noncompliance cost the United States more than $100 billion every year.3-12 Estimates in 1983 suggested that more than 225 million unnecessary hazardous situations are created annually as a result of some sort of noncompliance (based on an estimated 30-40% noncompliance rate and a yearly volume of 1.5 billion prescriptions).13,14 Levine, in 1984, estimated that noncompliance with treatment for cardiovascular disease alone results in an excess of 12,500 deaths and several thousand hospitalizations per year. This represents a loss of 25 million workdays, exceeding $1.5 billion in lost earnings.13,15

Noncompliance increases patients' utilization of expensive health resources. A study tracking 59 drug-related hospital admissions at the Medical College of
Virginia found 23 (39%) to result from noncompliance. In most of these cases, an existing condition was exacerbated by the patient's failure to take needed medication. Although this study only lasted for two months, noncompliance resulted in 590 days and $60,000 spent for unnecessary hospital care.\textsuperscript{13, 16}

Some dramatic data on costs of noncompliance among the elderly come from the state of Oregon. In the Oregon system Development Project for Long Term Care, functional assessment profiles were developed on large numbers of older people in various living conditions. They found that the single characteristic that best distinguished individuals who were in a nursing home from those who were not was "managing medications." It was more important than the actual health condition. Sixty percent of those placed at extreme risk of nursing home placement had no other equally serious impairment other than their ability to manage their own medications. Even when the researchers removed other impairments, which were lower on the risk scale, still nearly 23% remained who had no high risk problem other than medication management.\textsuperscript{13, 17}

Noncompliant patients also exhibit higher utilization of clinic services or office visits. Cowen et al. found that noncompliant patients had a larger mean number of clinic visits, hospital admissions, and dose changes of medications per patient.\textsuperscript{19} These studies clearly indicate that noncompliance has direct economic consequences resulting from increased use of health care facilities.\textsuperscript{13, 18} If noncompliance with prescription-drug regimens could be improved, these costs for compliance-related expenditures would fall; therefore, third-party payers and health-care providers have a vested interest in improving compliance.

Besides increased costs to patients and society in general, noncompliance also adversely affects pharmacies. Noncompliance causes underutilization of cost-effective pharmaceutical products. Underutilization of pharmaceutical products and services also undermines the economic viability of the pharmacy profession, perhaps more than most pharmacists realize.\textsuperscript{13, 19} Schulz and Gagnon analyzed more than 1,000 refillable prescriptions in an effort to determine the degree to which authorized refills were obtained by patients. They found that just over half of the authorized refills were ever dispensed.\textsuperscript{15, 20}
In a similar study, Sarnoff and Roath used five units of the California-based Longs Drug Stores chain to assess gross margin losses resulting from noncompliance.\(^{13,21}\) Focusing on the top 200 prescription drugs, these researchers used methods similar to Schulz and Gangon, but they included an analysis of the economic effect on the pharmacies. The five units of Longs were found to have lost (i.e., failed to receive) an average of $3.54 on each refillable prescription during the six-month study. This constituted nearly $7,000 of potential earnings lost by patient noncompliance.\(^{13,21}\) If extrapolated nationally, the cost would run into the millions of dollars in lost revenue, but more importantly, prematurely-abbreviated therapy results in poor patient outcomes.

**Causes of Noncompliance**

Many different variables have been examined in studying compliance. The majority of demographic variables studied include those such as age, sex, and socioeconomic factors, or disease experience variables.\(^1\)

Demographics have not been shown to be good predictors of compliance. Hulka reported that the demographic factors of age, sex, marital status, education, number of people in household, and social class are not statistically associated with compliance.\(^{1,22}\) Widmer et al. found no significant differences between mean compliance rates for male and female hypertensive patients.\(^{1,23}\) Dodrill and coauthors found that sex and age of epileptic patients studied did not adequately predict compliance. However, under certain specific conditions, such as a particular disease, demographic variables can predict compliance behavior. These findings for these specific conditions do not transcend to other situations. Such inconsistencies have made it impossible to develop a prototype of the noncompliant individual.\(^{1,24}\)

Features of the disease in relation to compliance also have been investigated. Haynes found three disease factors to be determinants of compliance. First, psychiatric patients are generally low compliers. Secondly, when more symptoms are reported, the patients' compliance rate is lower. This finding opposes the assumption that increasing severity of symptoms should encourage compliance, suggesting that as people notice more symptoms, they begin to give up on treat-
ment, viewing it as an exercise in futility. Haynes' third finding is that the degree of disability produced by the disease positively influences compliance. Increased compliance may result from increased severity, which is disabling (versus merely symptomatic), or increased supervision is required because of disability. 1, 2

Features of the treatment regimen also have been evaluated as possible predictors of compliance. Haynes reported that the duration of treatment, number of oral medications, and their costs negatively affected compliance. 1, 2 Sbarbaro suggested that shortening the duration of treatment and reducing the number of administration times will help to improve patient compliance. When patients were asked to give reasons for noncompliance, adverse effects were mentioned by only 5-10% of them. 1, 10

BARRIERS TO COMPLIANCE

Patients' Unresolved Concerns

Patients inquire about their diagnoses, their diseases, and their prescribed therapies. Svarstad et al. observed that on average, physicians interrupted patients after 12 seconds of talking. Only one out of every four physicians evaluated discussed a patient's medication with the patient. 3, 26 As a result, patients may leave a physician's office with unresolved concerns that may become barriers to compliance.

Patients' perceptions of their own health influence their compliance. If they view their health as low priority, they will do little to improve their condition. Some patients fully understand the risks associated with their disease state and intend to be compliant later in their lives. Many patients care about their immediate convenience but not about long-term health. 3, 27

If patients care about their health but do not accept, disagree with or deny their physician's diagnosis, it is unlikely that they will follow the physician's prescribed therapy. Lack of symptoms may serve as a disincentive for patients to remain compliant with their medication regimens as prescribed. If patients believe that the prescribed therapy will not work (e.g., this may also be related to their
denial of their diagnoses), particularly if the patients begin taking medications and do not feel better immediately, they will be less compliant. This is very common with antidepressant medications that take an average of three to four weeks to become effective. If patients gauge medications’ effectiveness by how they feel, they may discontinue therapy before the medications have a chance to work.

Fear or misunderstanding of adverse effects is another barrier to compliance. Patients may be noncompliant if counseled inappropriately. The potential for adverse effects should be placed into proper perspective relative to the actual incidence and severity of a given adverse event and should be weighed against the benefits of therapy for each individual patient. In other words, if a particular patient does not have certain risk factors present for certain adverse events, it may go against the goals of therapy to inform the patient of potentially unpleasant experiences which have very little to no chance of occurring.

**Poor Communication**

Poor communication between the practitioner and patient contributes to noncompliance. According to a Schering report on patient compliance, 82% of interviewed patients recalled being told by their physicians how long to take their medications, and only 66% recalled their physicians giving them instructions on whether to refill their medications. Other studies indicate that the percentage of patients who received detailed instructions by their physicians was as low as 50%. Eighteen percent of patients in this survey were told by their pharmacist whether they should obtain refills, and 32% of patients instructed by their physicians to refill their medications neglected to comply. It is also important to note that research indicates that patients of all ages forget approximately 50% of what their physicians tell them before they leave the office.

**Regimen Complexity**

Complex drug regimens have also been positively associated with noncompliance. This type of noncompliance is manifest especially in elderly patients with
failing memory or memory disorders. Hartmann also cites that one aspect of the drug-compliance is polypharmacy. Patients 65 and older take an average of four or more medications daily.3,30

New formulations that decrease the number of doses per day may increase compliance. However, this is only a solution if drug regimen is the primary barrier to compliance. If miscommunication between the practitioner and patient or patients’ unresolved concerns are still present, changing the dosing schedule will not improve compliance.

**IMPROVING PATIENT COMPLIANCE**

A number of strategies for enhancing compliance are proposed in existing literature. There has been increasing documentation for the effectiveness of some of these methods. Pharmacists have a valuable opportunity to encourage compliance since their patient counseling accompanies the actual dispensing of the medication to the patient, and they are the last clinicians usually seen in the chain of healthcare services.3,31

All patients should be viewed by healthcare providers as potential noncompliers.31 This is not meant in a negative light. Since the rates of actual compliance are low and the economic consequences are high, special attention should be given to patients who are getting new prescriptions filled for potentially serious conditions such as infection or chronic health problems (e.g., rheumatoid arthritis, hypertension, diabetes). It is important that the barriers to health care be lessened to greater ensure a more positive outcome.

Starting in the office, practitioners need to improve their listening skills and exercise more patience. If practitioners listened fully to patients’ concerns instead of interrupting them after 12 seconds, some of those issues may be resolved before leaving the office. Also, some of the skepticism about diagnoses would be lessened. An Upjohn survey conducted in 1985 showed that 51% of respondents refused to initially fill a prescription because they felt that they did not need it. Another 21.7% simply did not want to take it.3,32
Morris and Halperin concluded that written information may be effective for short-term medication therapy. Approximately half of all patients forget what is told to them before they leave the office. Receiving written information with samples upon leaving the office or with a prescription filled at the pharmacy increases patients’ knowledge about the drug and decreases errors in medication use.

Pharmacists and physicians should work in collaboration with the patient, when possible, to decrease the complexity of patients’ drug regimens. The more complex the regimen, the greater is noncompliance. A patient should not be denied needed medication; however, there should be a valid indication for each medication included and nonessential medications should be eliminated. If once daily medications can be substituted for medications taken multiple times per day, they should be considered when possible. This approach has some disadvantages. Larger one-time doses increase the risk of adverse effects and missed doses compromise therapy more. The benefits of a less frequent administered regimen should be evaluated on an individual basis. Treatment plans should be tailored to the specific needs of the patient based on a professional evaluation by the clinicians involved.

The greatest factor for improving patient compliance appears to be one-on-one counseling by physicians and pharmacists. Effective counseling by physicians and pharmacists may be the single best intervention for patients with compliance problems. Public education groups and behavioral strategies work as long as they are tailored to the individual patient’s needs, but greater compliance results are seen using the personal touch provided by one-on-one counseling.

When discussing a patient’s illness or drug therapy, Hussar states that a distinction should be made between “information” and “education.” Patients may receive information but not understand it; thus, they may use it incorrectly, whereas education implies patients’ understanding and actual behavioral changes. Education leads to patient empowerment, exerting control over their therapy, health, and way of life. Patients should be encouraged to participate in counseling sessions and asked if they have questions before leaving (i.e., resolve the issues).
Obtaining refills after the initial prescription has been filled is extremely important for the sustenance of therapeutic effect for chronic disease states. Telephone reminders have been used by some companies to inform their patients a few days to a week in advance that they will be out of medications soon and should get refills. Some chain drug stores provide automatic refill programs as a courtesy to patients when requested. Medication calendars and drug reminder charts aid patients in self-administration of drugs and may prompt patients to refill medications on time. These compliance aids also serve as a means of visual enforcement of verbal instructions.

The Schering-Plough Company examined patient compliance in 1987 and again in 1992. Patients, physicians, and pharmacists were surveyed, examining physicians' prescribing patterns, patients' perceptions about their treatment, and pharmacists' counseling. The Schering Report XIV of 1992 suggests that compliance has not significantly improved since 1987. The 1992 Schering Report XIV proposed the following recommendations to pharmacists to help improve compliance. They focus on enhancing face-to-face counseling, education (i.e., implies understanding), written information, and pharmaceutical package labeling. They are:

1. Respect the patient as an individual who should be an active participant in his or her own health care.
2. Identify the risk factors.
3. Design a treatment regimen that is as simple as possible.
4. Tailor the dosage regimen to the patient's regular activities.
5. Provide clear verbal and written instructions for using the medication(s).
6. Counsel the patient and provide supplementary written materials.
7. Request questions from the patient.
8. Monitor therapy.

All aspects of improving medication compliance focus on the patient whom all clinicians have vowed to aid when they took their respective oaths. Pharmacists' and other clinicians' obligations to increase patient compliance do
not end after refills are obtained, but it is an ongoing process continued through patient monitoring and open communication between all of the patients' health-care providers and the patients themselves.

REFERENCES


PART 4: COLLEGE OF EDUCATION
AFRICAN AMERICAN STUDENTS AT TRADITIONALLY WHITE INSTITUTIONS: STUDENT DEVELOPMENT, CAMPUS CLIMATE AND RETENTION

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Not quite fifty years ago, the decisions of the *Brown vs. Board of Education* segregation cases served as a catalyst for social and political change for African Americans both in and outside of the classroom (Urban & Wagoner, 1996). The *Brown* decision ruled that racial segregation in public schools was against the law, and the landscape of educational opportunity for African Americans was changed forever.

In the dawn of the 21st century, more than three million African Americans hold four-year college degrees. During the academic year 1999-2000, more than 100,000 African Americans earned bachelors degrees (Brotherton, 2001). Until 1991, historically Black colleges and universities (HBCUs) produced approximately 70% of all Black college graduates (Roebuck & Murty, 1993). In 1999-2000, 8 of the top 10, and 12 of the top 20 producers of Black bachelor's degrees were HBCUs. While HBCUs continue to produce a large percentage of Black bachelor's degrees, many African American students are choosing to attend and graduate from traditionally White institutions (TWIs). This decision is in part due to the increased opportunities and financial aid available for students in this generation to attend TWIs, compared to generations past.

In 1996, approximately 85% of African American baccalaureate students attended traditionally White colleges and universities. However, TWIs only graduate a little over 30% of all African American baccalaureate degrees each year (Carter & Wilson, 1996). These discrepant rates of enrollment and graduation pose a question as to why so many African American students are choosing to
attend TWIs, but then so few are graduating. A few important areas to examine while focusing on graduation rates of African Americans at TWIs are African American student development, campus climate at traditionally white institutions, and strategies for retention. This chapter will review the important developmental needs of African American students, present some of the issues African Americans face in a predominantly White campus environment, and review some formal and informal factors contributing to the persistence of African American students at TWIs.

**STUDENT DEVELOPMENT**

As institutions become more multicultural and minority enrollments increase, it is important to recognize and address the needs of different student subgroups. African American students have specific developmental needs. An early introduction of African American student development begins with William Cross' (1991) theory of nigrescence. This theory of nigrescence is defined as a resocializing experience in which one's identity is transformed from one of non-Afrocentrism to Afrocentrism to multiculturalism. The stages of nigrescence are:

1. Preencounter—students see race as unimportant and prefer to be accepted as “human beings.” Thoughts and actions are pro-White and anti-Black. The revised model (1991) shows Blacks as seeing race as a problem or stigma and seeing Whites as the preferred racial status.

2. Encounter—the second stage involves an encounter that shatters a person's world view or identity. Once you encounter an experience, you then interpret the world through a new lens. The encounter experience could be positive or negative.

3. Immersion-Emersion—discarding old identity and making a commitment to personal change. This may be associated with new clothes, new hairstyles, attending Black cultural events, etc. Students may have anger or bitterness toward Whites or other cultures.

4. Internalization—the fourth stage marks a resolution between the old identity and the new Black-world view. This stage is associated with
learning other world views and other cultures. Students have less
anger at non-Black entities.

5. Internalization-Commitment—translates the new identity into meaningful
activities that address concerns and problems shared by African
Americans and other oppressed people.

Cross' (1991) theory of nigrescence is a resocializing experience and can be
applied to the example of Black students attending college. When Black students
come to college, they may be in the pre-encounter stage for a variety of reasons.
They may see their race as a stigma or not want to be seen and identified as
"Black," but as a human being; or they may see Whites as the preferred racial sta-
tus, or they may simply be miseducated about their own race. The encounter
stage happens when they experience something good or bad that makes them
rethink their identity or world view. Encounters can be negative, as in being
called a derogatory name; or positive, like taking a Black history course for the
first time and being enlightened about one’s history. After the encounter stage is
the immersion-emersion stage where students totally neglect other cultures and
immerse themselves into Black culture. That could mean changing one’s name,
style of clothes or hair, or having a bitter, angry attitude toward non-Blacks. The
fourth stage is internalization where they resolve the old identity and the new
Black-world view, and a healthy Afrocentric identity is developed. The fifth stage
internalization-commitment represents a commitment to Black issues and ideas
while being more open to and aware of other cultures.

In Cross’ final two stages, students’ level of awareness can move from
Afrocentrism to one that is more multiculturally focused. Pederson’s (1988)
Three Stages of Multicultural Awareness can impact this development through
awareness, knowledge, and skills. Pederson recommends helping students
become more aware by providing cultural activities, role plays, and field trips to
broaden their thinking. This awareness may then lead to increased knowledge,
which can be enhanced by lectures, discussions, interviews and observations.
This new awareness and knowledge can be converted to skills which students can
use by practicing behaviors or modeling for others in a mentor role.
Student development theory suggests the importance of having opportunities available for African American students to grow and develop in the immersion-emersion stage; thus, culturally-centered programs and opportunities for leadership development are important (Gross, 1991). Many African American students fail to assume leadership positions in campus-wide organizations because they perceive the organizations as unwelcoming. Alienation, unsatisfactory interpersonal experiences, and isolation contribute to psycho-social difficulties of African American students (Allen, 1988). African American students can combat some of these difficulties by building mentor and other adult-student relationships, and identifying images on campus or in the local community that are reflective of their culture (Astin, 1977; Fleming, 1984; Pounds, 1989; Sedlacek, 1987). Sutton and Terrell (1997) recommend programs that involve students as mentors as providing a great opportunity for African Americans to participate on campus as leaders, which has a positive impact on psycho-social development. The mentoring role allows African American students, especially men, to feel that their contributions on campus are valued. Organizations like Black Student Unions, choirs, sororities, fraternities, and other cultural organizations help with the social learning development by enhancing self-worth, independence, and autonomy (Bandura, 1986; Sutton & Terrell, 1997). For African American men, Black fraternities are the most popular avenue to exercise leadership on predominately White campuses (Sutton & Terrell, 1997). Here leadership skills like assertiveness, task completion, community service, and campus planning are enhanced. Kimbrough (1995) found in his studies of Black fraternities and sororities that students did perceive their participation as campus leaders as important. Therefore, it is important that student-affairs professionals develop strategies to increase membership and leadership in campus-wide activities. These leadership opportunities often have a direct link to students' involvement in the community-at-large through service or other collaborative activities. Involvement in the overall community enhances students' development at the internalization-commitment level.
CAMPUS ENVIRONMENT

Theorists use person-environment congruence to understand the relationship between students and the colleges or universities they attend. In the higher education setting, congruence theorists suggest that a good fit between students' needs, attitudes, goals and expectations, and the characteristics of their environment has a positive impact on and promotes satisfaction in their professional growth. A poor fit between the student and the environment creates stress and results in a more negative impact (Huebner, 1987; Kimbrough, Molock, & Walton, 1996; Thompson & Fretz, 1991).

African American students who attend predominantly White colleges and universities often experience greater difficulty in achieving levels of congruence than their White counterparts because they perceive TWIs as hostile, unsupportive, and unwelcoming (Pounds, 1989; Saddlemire, 1996). African American students also face ignorance about Black culture from other students, express lower levels of satisfaction, and greater levels of isolation in their collegiate experience than do White students at TWIs (Allen, 1992; Fleming, 1990).

Social supports and quality of life in the academic environment significantly influence the persistence of African American students on predominantly White campuses (Allen, 1992; Fleming, 1990; Terenzini, Pascarella, & Lorang, 1982). Strategies to increase social support and quality of life are important areas of focus in the retention plan for African American students. In a study of 171 African American undergraduate students enrolled at a TWI, Thompson and Fretz (1991) found that socially adjusted African American students were more communally oriented and had more positive attitudes about competitive and cooperative learning situations. These students also seemed to have access to a larger pool of support resources. These findings supported the hypothesis that students with higher levels of communalism may be more resourceful in coping with predominantly White environments and more likely to draw from support of other African Americans on campus or in the surrounding community.

Students' perceptions of the campus environment and perceptions of their cultural fit within the environment help define the quality of life at an institution.
In a survey designed to measure the general well-being of 146 undergraduate African American students, racial discrimination, isolation, and lack of resources were the discernable differences explaining their more negative overall life satisfaction compared to their White counterparts (D'Augelli & Hershberger, 1993). For African American students, quality of life is often less than favorable at TWIs because they often perceive the campus more negatively than their White counterparts, experience greater levels of racism, and feel more personal isolation and stress (D'Augelli & Hershberger, 1993; Feagin, Vera, & Imani, 1996.) Part of this isolation and stress is due to false expectations imposed on African American students during recruitment. Often students are recruited to believe that TWIs have larger populations of Black students or offer substantial services for students of color. However, when students arrive on campus, these expectations are shattered. Therefore, it is important that TWIs implement or maintain appropriate support resources for students of color.

Cultural diversity at TWIs, including increased numbers of African American students and faculty, has a positive impact on students' perceptions of TWIs. Relationships with faculty as mentors and in the classroom play a significant role in minority-student retention, and faculty support and mentoring often are related to race (Pounds, 1989; Loo & Rolinson, 1986). In addition, students of color often feel more comfortable making class contributions in classes that are led by faculty of color.

RETENTION

While research shows that African American students have specific developmental needs and the campus environment plays a critical role in student development, we can use knowledge about these two factors to focus on retention of African American students. Allen (1992) predicts that while the trend of enrollment increases for African American students at TWIs, over half of these students will fail to persist and graduate. Several cognitive and non-cognitive variables are important for African American student success at TWIs. Cognitive variables may
include high school grade-point average and scores on standardized tests, while non-cognitive variables may include environmental, social, and interpersonal factors (Allen, 1992; Tracey & Sedlacek, 1985).

Tinto's (1993) Theory of Institutional Departure generally is noted when examining student attrition or retention in higher education. This model proposes that student persistence is primarily an outcome of the student's interactions with the social and academic systems of the college, or simply, the student's interactions with his or her college environment. Tinto's longitudinal model sees the institution, and the social and academic communities that comprise the institution, as being nested within an external environment. The external environment is comprised of communities with their own set of values and behavioral requirements. Tinto indicates that when the value orientations of external communities support the goals of students pursuing college education, these communities may aid in their persistence to graduate (Tinto, 1993).

Research shows that social supports and quality of life in the academic environment also have a significant influence on the persistence of African American students (Allen, 1992; Fleming, 1990; Terenzini, et al., 1982). Strategies to increase social support and quality of life are important areas of focus in the retention plan for African American students. Fleming (1984) noted that regardless of race, students must be provided with "intentional interpersonal support systems" to attain academic success in colleges and universities. Institutional support systems are divided into two groups—formal and informal. Colleges and universities often focus on implementing and maintaining formal support systems. Formal support systems include student organizations, mentor programs, peer-counseling programs, and other programs to increase student, peer, and faculty relationships.

Informal support systems play an important role in student adjustment, persistence, and retention as well. Informal support systems may lie in the larger society and may be attributed to the off-campus community (Fleming, 1984). These informal support systems may come from places of religious worship, professional organizations, or minority businesses. Beauty and barber salons that
cater to African American clients, restaurants that serve ethnic dishes that appeal to African Americans, and ethnic clothing and art stores all serve as cultural support systems for African American students.

The idea that environmental influences off campus play a role in student development and retention at predominantly White colleges and universities is substantiated in Tomlinson’s Community Outreach Concept. Through qualitative studies of cultural centers, defined as on-campus minority student-support mechanisms, Tomlinson (1992) found that outreach efforts not only strengthened students’ perceptions of culture, but they also established more cohesive networks between individuals in the local community with students, faculty, and staff on campus. As students develop and become more focused on their roles in society, gain more career experience outside of the campus environment, and look to local college communities as an environmental-support mechanism, faculty, staff, and student-affairs administrators should examine the relationship between local communities and student retention.

The location of an institution has a direct relationship with such off-campus support systems (Richardson, Simmons, & de los Santos, 1987). In addition, the availability of personal hygiene items such as makeup, shaving, skin care, and hair care products impact a student’s level of comfort and quality of life in a campus environment. While campuses may not offer these lifestyle support systems to African American students, the community can offer such resources.

When examining factors that influence school selection of beginning college minority students, researchers have found that location, as well as reputation of the school, and other social and academic factors are all contributors to student decisions for enrollment. For African American students, an institution’s proximity to home, as well as environmental factors of an institution’s on- or off-campus minority community are important contributors to school choice (Richardson et al., 1987). While location, community, and social and academic factors play a significant role in students’ selection of a college or university to attend, we must recognize that these factors also have a direct impact on persistence and graduation once students enroll. Research shows that campuses with 30% or more
minority enrollment are more conducive to the overall success of minority students, and where enrollment is less than 20%, institutions should make special efforts to help minority students feel comfortable with the campus climate (Green, 1989; Richardson et al., 1987).

While history and demographics of TWIs tell us that achieving a minority student population of 20-30% is unrealistic, there is a need to focus on other areas where campuses can create a critical mass of minorities. A critical mass occurs when students find or create their own social and cultural networks. Where the minority student population is small, the critical mass can be created by networking and strengthening student relationships with minority faculty, staff, and administrators (Asheton & Nunez-Wormack, 1990). On campuses where there are small numbers of minority faculty, staff, and administrators, efforts to build connections with the off-campus community may help to build a critical mass, alleviate feelings of isolation on campus, and create a safe haven for minority students.

SUMMARY

The number of African American students choosing to attend TWIs continues to rise. Because African American students have specific developmental needs and often find the TWI campus environment as somewhat unreceptive, it is important for institutions to address the needs of African American students and to provide support programs for their retention.

Developmental stages in which students grow in college encourage them to get involved and to build mentor-type relationships that can impact career choice, persistence, and overall success of the students. Campus programs that offer avenues for student involvement have a positive impact on students' overall levels of satisfaction. Mentor-type relationships can be built on campus or in the off-campus community where students live, work, or interact personally.

Faculty, staff, and student-affairs administrators play an important role in minority-student retention at TWIs. As these institutions struggle with minority-student retention, they also face challenges of retaining Black faculty who are a
significant part of the Black-student retention strategy (Brown, 1992; Pounds, 1989; Schexnider, 1992). Faculty retention research shows that minority faculty often look at the cultural and social environment of the local community as a factor of professional choice. With this in mind, it is important to recognize the role of and understand the relationship between students and the college, the programs it offers, the support resources it provides, and the local community in which it is located.

REFERENCES


Cultural Diversity in Testing and Test Validity: Research and Practice in Student Motivation

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Concerns have been raised in the last few decades on issues such as test bias and test validity and their impact on students from minority populations such as the African American community. These issues, along with cultural biases of IQ tests and their implications for education, were prevalent in the 1970s (Barnes, 1973; Ebel, 1975; Kagan, 1973). African American educators, politicians, and civic leaders have raised testing concerns for decades. In the 1980s, the issue of cultural biases in instruments continued to be a concern (Hilliard, 1980). In a landmark paper published in 1980, Sylvia Johnson of Howard University reviewed several major issues facing African American students. These include: (a) application of item-response theory (IRT), (b) motivation in the test-taking setting, (c) construct validity, (d) criterion identification in occupational tests, (d) Bayesian models for selection and evaluation, and (e) test score interpretation.

The purpose of this chapter is to examine cultural diversity in testing and test validity in relation to student motivation in educational assessment. The chapter also examines current practices in some local-school districts in enhancing student motivation in their standardized testing programs.

Cultural Dynamics of Motivation

It is important that the concept of motivation be defined. For this chapter, the concept of motivation addresses the question of why humans behave as they do in a learning situation. Reasons for their behavior exist as a result of preference, energy level, and persistence in relation to learning (Covington & Teel, 1996).
For years, many researchers have focused on ethnicity of students as a basis for academic performance on standardized tests. Motivational factors have rarely been considered from a diverse cultural perspective. Test results have traditionally been interpreted for all students based on the readily accepted cultural perspective of the middle-class Caucasian population (Alderman, 1999). However, it is important to understand that what motivates a population of students requires more than comparing differences found among cultural groups. The importance lies in acknowledging the motivational qualities that exist across cultures (i.e., valued by those cultures) and acknowledging individual differences (Alderman, 1999).

Three motivational factors have been observed across cultures. These factors, which include motivation for accomplishment, reward, and recognition, have received relatively consistent support from parents and the community across cultures (Alderman, 1999). Although all parents desire for their children to aspire to do well and to receive recognition, it is essential that society recognize the diverse cultural perspective of what accomplishment, reward, and recognition mean for each cultural group.

For example, in many African American communities, one’s ability is measured from a practical perspective instead of from an academic perspective. Covington (1992) cited that in the contemporary African American community, being considered bright is more than getting good grades. Ability is measured in a broader, more practical, everyday context. African Americans possessing hands-on skills such as being a good mechanic, a carpenter, or a plumber are regarded as demonstrating a true sign of ability. These skills are valued and highly recognized by the community. Furthermore, these skills usually are learned through practical experiences taught by parents, relatives, or friends, instead of in a traditional classroom.

When students are evaluated and judged from another’s cultural perspective, their motivational reasons for academic performance changes. Covington and Teel (1996) cited avoidance of failure by not participating at all, defying a system they believe to be irrelevant to their lives, and trying to escape being evaluated on a narrow set of abilities and skills as reasons for low motivation for some students...
not testing well. Although all of these motivational reasons may not appear to be positive in accordance with the adopted society's views of positive motivation, these reasons are valued in the context of the student's cultural perspective; thus, the question of test validity is raised.

**TEST VALIDITY**

According to *Standards for Educational and Psychological Testing*, "validity refers to the degree to which evidence and theory support the interpretations of test scores entailed by proposed uses of tests" (AERA/APA/NCME, 1999, p. 9). Hence, one can interpret this definition to imply that test validity exists when a test measures what it is designed to measure. When teachers or students disagree with the content or purpose of tests, ownership, responsibility, and commitment to the tests, positive testing behavior may not develop (Paris, Lawton, Turner, & Roth, 1991). Students may choose to randomly bubble answers on the answer sheet, sleep during the test administration, or cheat. Teachers may elect to teach only those skills and concepts that they feel are relevant and pertinent to the students that they teach. As a result of lacking ownership, responsibility, and commitment to the tests, test results may not be valid.

Paris et al. (1991) cite three criticisms of standardized tests. These include: (a) tests that are aligned with outdated educational theories; (b) lack of instructional and curricular validity for current achievement tests; and (c) the validity of inferences that can be made from test results.

The first perspective, tests that are aligned with outdated educational theories, asserts that standardized tests do not take into consideration the changing views and skills of the current society (Paris et al., 1991). For example, most African American students are tactile learners, with a need to authentically perform some task. Most standardized tests that are adopted by school districts are composed of multiple-choice questions in which students are required to select an answer from among several choices.

The second perspective, lack of instructional and curricular validity for current achievement tests, asserts that standardized tests do not reflect the instruc-
tional or curricular design of the districts in which the tests are administered (Paris et al., 1991). Instructionally, standardized tests typically do not reflect teaching pedagogy. The methods by which teachers convey instruction to students vary among the teachers and normally accommodate the instructional needs of individual students within the learning situation. Standardized tests are developed specifically for the general population.

The curriculum reflected on standardized tests may not reflect the complete school district's curriculum. Some districts require specific skills that standardized tests cannot assess. As a result, most standardized tests only reflect a fraction of the material and skills that students are expected to know (Paris et al., 1991).

The third perspective, the validity of inferences that can be made from test results, indicates that because of variability of testing procedures, the validity of inferences from test results is questionable (Paris et al., 1991). Although test security is the top priority for many districts, there is always the possibility of students and teachers alike who may violate test-security procedures. These violations may exist in cases where teachers inadvertently assist a student during testing or when other students assist each other during testing. There is also the possibility that teachers may improperly prepare students for standardized tests.

**METHOD**

Five on-site interviews (one on-site pilot interview and four on-site informal interviews) were conducted with five different South Carolina school districts' directors of assessment. The school districts were conveniently selected for the interviews. Since the focus of the research is on cultural diversity in testing, the cultural perspective was reflected through the selection of school districts dominated by a certain ethnic group (i.e., two non-white and two white). Thus, the selection of the school districts was based on student demographics and assessment directors' willingness to participate.

Each of the interviewees was contacted via telephone to set up an interview. The interview questions were piloted with one school district. This provided insight into ambiguously worded questions and gave additional insight into other
possible interview questions. After the interview with the piloted school district, the interview questions were refined. The final set of interview questions were as follows:

- Describe how the district addresses student motivation in test-taking settings.
- What are some of the current practices in your district that are geared towards enhancing student motivation for standardized testing?

**RESULTS**

For confidentiality purposes, neither the actual names of the school districts nor the actual names of the district assessment directors will be used in this chapter. The districts will be referred to as Districts #1, #2, #3, and #4, with no reference being given to the actual name of the districts. Districts 1 and 4 are districts in which the majority of the students are non-white (between 57% and 77%). Districts 2 and 3 are districts in which the majority of the students are white (between 70% and 77%).

Upon completion of the interviews, commonalities emerged within the districts that were similar in their cultural demographics. For example, Districts 1 and 4, which are predominantly non-white, expressed parental involvement and the use of extrinsic rewards to motivate students to do well during testing. Districts 2 and 3, which are predominantly white, expressed intrinsic motivation for doing well on standardized tests. All four of the districts cited the availability of the Benchmark test as a means to identify areas in which the students may need additional assistance.

In District 1 some of the district and school-sponsored activities include providing students breakfast each morning of testing, sponsoring a test-focused pep rally, fundraisers to provide incentives for students, posting motivational posters in schools, making parents aware of the testing process, and encouraging parents to make sure that their children get ample sleep the night before the test. In District 4 some of the district and school-sponsored activities include providing testing workshops for students in which they have guest and local facilita-
tors, hosting parent curriculum nights, educating parents and the community about various tests, using educational television and radio as a media to inform parents and the community about testing, and providing individual-assistance programs for students. The individual-assistance programs include assigning targeted students mentors and providing extended days for students who need extra assistance. The district also sponsors an annual academic competition, academic fairs, recognition nights for academics, and provides special certificates for academic excellence.

In District 2, which held an intrinsic-reward perspective on student motivation, the director of assessment suggested that confidence is a major motivational factor in testing. When students are confident in their knowledge of the material, they perform better. The director also noted that although test preparation has its respective place in the testing process, it is not enough. The real focus is on learning.

The director indicated that there should be a balance between the importance of the test and the importance of what students are learning. Although test-specific type questions are stressed, the district is not obsessed with testing. The focus of the district is on enhancing the total student (e.g., arts, foreign language). The importance of learning is conveyed to the students.

In District 3, which also held an intrinsic-reward testing perspective, the director of assessment noted that expectations are set for both the district and the schools. The curriculum is in line with the specific standardized test being used. Additionally, the district has as its priority the need to address staff-development needs of its teachers. The district also is looking at ways to assist students in providing needed additional assistance in areas of weaknesses. One such approach is computer-adaptive testing.
DISCUSSION

For decades, research has been conducted on the academic performance of African American students as compared to their Caucasian counterparts. However, the research rarely considered the academic performance of African American students from a cultural perspective. Understanding the cultural perspective on motivation lends itself to better understanding what test scores reflect in the African American community. It has been suggested that what may appear for some students to be learned helplessness may be best explained in terms of the student's rejection of the culture of schooling and the student's subversion of the goals associated with that culture (Galloway, Rogers, Armstrong, Leo, & Jackson, 1998). As a result, the issue of test validity is a major factor for consideration.

From the interviews, it became apparent that based on the predominant ethnicity of the school district, the means for motivating students was either extrinsic or intrinsic, and the level of soliciting parental support was vocalized based on the majority population which the district was servicing. Means of providing extrinsic, tangible rewards were cited in the districts that were predominantly non-white; whereas, intrinsic rewards were cited in the districts that were predominantly white. One must be cautious in the findings of these interviews. The interviews were not reflective of all South Carolina school districts. The sampling of the districts was limited to four school districts chosen as a convenience sample.

Further research should include increasing the number of school districts and the expansion of data collected. For example, researchers should develop and administer a survey to district directors of assessment throughout the state. The research also should be extended to include both students' and parents' perspectives on student motivation in the school districts participating in future research.
REFERENCES


PART 5: COLLEGE OF ENGINEERING
AND INFORMATION TECHNOLOGY
Chemical Engineering is a discipline that can be daunting to those with or without a scientific background. It is the branch of engineering that deals with chemical and physical processes and the materials used to develop and produce a myriad of products. Appropriately, chemical engineers are workers and researchers who perform and coordinate very specific tasks in manufacturing and production. This definition may seem very general, however the breadth of this discipline is enormous.

Chemical engineers aid in the production of goods such as pharmaceuticals, semiconductors, gasoline, jet fuel, home heating oil, tortilla chips, aspirin, Vitamin C, artificial kidneys, solar panels, refrigerators, carpets, water softeners, beer, household detergents, cookies, camera film, and ceramics to name a few. When one considers how these goods are produced and the range of industries that manufacture them, it is no wonder that people can be intimidated by what a chemical engineer needs to learn to complete his or her assigned task.

Science You Can Understand is a series of papers meant to demystify some aspects of chemical engineering and answer some basic questions about current products, systems, and processes that are at the forefront of our technological society. This chapter is one of the papers in the series currently in development.
PROTONS, ELECTRONS, ATOMS, AND MOLECULES

In order to understand chemical reactions, it is important to understand a few concepts of matter defined in chemical terms. An atom is the smallest unit of a chemical element having all the characteristics of that element. An atom consists of a dense, central, positively charged nucleus surrounded by a cloud of negative charge. For example, gold, represented by the symbol, Au, is an element. It has properties such as luster, reactivity, magnetic strength, etc. If a brick of pure gold was cleaved, shaved, and cut into the smallest pieces possible, the tiniest piece of gold that you could have would be an atom of gold.

An atom is composed of a positively charged central core called a nucleus and is surrounded by a negatively charged atmosphere. The positive charge in the nucleus is due to the presence of protons, while the negative “cloud” is composed of electrons that orbit the nucleus. There are an equal number of protons and electrons in every element in their normal state. In order to remain neutral, positive charges attract negative charges and vice versa, so the electrons stay in the negative cloud until there is a disturbance such as an atomic collision (the beginning of a reaction). An atom of gold has 79 protons and 79 electrons, while an atom of hydrogen has one proton and one electron. Oxygen has eight protons and eight electrons. The number of protons and electrons associated with a specific atom makes it unique; it will determine an atom’s physical and chemical properties.

A molecule is the smallest particle of a substance that retains the chemical and physical properties of a particular substance and is composed of two or more atoms bonded together by chemical forces. A diagram that may be helpful in understanding these concepts is shown below in Figure 1. The figure illustrates the structure of a water molecule in two-dimensional space; however, the molecule in its natural state is three-dimensional.
Figure 1. Illustration of some components of a water molecule

**THE CHEMICAL REACTION**

A *chemical reaction* occurs when, under proper conditions, a starting material called a *reactant* changes to a final compound of different chemical properties called a *product*. Many reactants can react to form one product, just as one reactant can react to form many products.

One reaction that has been studied extensively is the formation of water from hydrogen and oxygen molecules. This reaction takes place in the gas phase and is shown below.

\[ 	ext{H}_2 + 	ext{O}_2 \rightarrow 	ext{H}_2\text{O} \]  \((1)\)

Two atoms of hydrogen in molecular form react with two atoms of oxygen in molecular form to yield two atoms of hydrogen and one atom of oxygen in the molecular form of water. The first law of thermodynamics states that mass or energy cannot be created or destroyed, so our initial reaction (#1 above) will have to be modified since there are two oxygen atoms in the reactant side and only one atom on the product side. Thus, we write our reaction (#2 below) as:

\[ 2\text{H}_2 + \text{O}_2 \rightarrow 2(\text{H}_2\text{O}) \]  \((2)\)
For every two molecules of hydrogen, and one molecule of oxygen, two water molecules are formed. Now the reaction is balanced and mass has been conserved.

All chemical compounds have inherent energies associated with them, and like all things in nature, chemical compounds want to achieve a form that leaves them in the lowest energy state. For example, the potential energy of an object can be defined by its distance from the ground. When lifted into the air, a hammer has the potential energy to perform work by falling, and driving a nail into a plank of wood. In terms of this analogy: things want to fall. The same is true for chemical species. They want to structure themselves in such a way that it is easy to maintain that orientation.

Molecular hydrogen and molecular oxygen are molecules that have a fair amount of energy for their size. Given the proper conditions these molecules react to form water. However, in this reaction the starting materials have more energy than the final product. Again, the first law dictates that energy cannot be destroyed. So where is the extra energy on the products side of our reaction equation?

This question can be answered by history. The Hindenburg was a blimp whose carrier gas consisted mainly of hydrogen. The atmospheric air contains approximately 21% oxygen. When these two gases mixed and a spark was ignited, the Hindenburg exploded in a burst of flames. Thus, the other product in our equation is heat, shown below (#3).

\[ 2H_2 + O_2 \rightarrow 2(H_2O) + \text{HEAT} \] (3)

Chemical reactions that give off heat, such as the formation of water, are called \textit{exothermic}, while reactions that experience a net gain of heat are called \textit{endothermic}. In an \textit{endothermic} reaction, the product molecules are at a higher energy state than the reactants.

Going back to the example of the Hindenburg, the Hydrogen in the blimp and the oxygen was able to mix freely, however these chemicals could not react without some sort of spark. This spark or initial heat is called the \textit{activation energy}. In this case, while it is true that the total energy of the reactants are higher than the total energy of the product, the reaction will not proceed unless
the starting materials are “encouraged” or “given a boost” to start. After the activation energy has been applied, the reaction will proceed. A chart that is often helpful in understanding this concept is called a reaction coordinate diagram shown in Figure 2. The vertical axis is a measure of energy while the horizontal axis is the time throughout the reaction.

Figure 2. Energy Scheme Throughout the Course of an Exothermic Reaction

The reaction-coordinate diagram above is a model for the formation of water from hydrogen and oxygen. “A” represents the activation energy. When this energy is added to the reactants, the energy of the starting materials increases until it reaches the top of the curve. When the reactants reach this state, they are called an activated complex. This is the highest energy state (most unstable state) of the species involved. As stated previously, the activated complex, like all compounds, wants to reach the lowest energy state possible. Thus, the complex will configure itself in such a manner so that it releases the most energy possible and becomes stable. The atoms in this stable configuration form the product. “B” represents the difference in energy of the products and reactants. The above reaction is exothermic; when the energy of the reactants is subtracted from the energy of the products, the result is energy generated by the reaction released into the atmosphere.
In an endothermic reaction, the products are at a higher energy than the reactants, resulting in a negative value of “B”. In other words, the chemicals would not have released energy during the reaction; they would have absorbed energy from the environment. The reaction coordinate diagram is a useful tool in obtaining a qualitative understanding of a chemical reaction.

**The Role of Catalysts**

A *catalyst* is anything that will change the rate of a chemical reaction; however, most catalysts are physical materials. Catalysts do not appear in the reactants or the products of a reaction; they simply change the amount of time necessary for the reaction to be carried out. Most often, catalysts are used to shorten the time necessary to make a product. By speeding up a process, a manufacturer can produce more goods in a shorter period of time than if there was no catalyst present. A catalyst that is used to slow or stop a reaction is called an *inhibitor*.

Physical catalysts change the rate of production by affecting the activation energy needed to initiate the reaction. A reaction coordinate diagram is shown below in Figure 3.

![Reaction Coordinate Diagram](image)

*Figure 3. Energy Scheme Throughout the Course of a General Exothermic Reaction*
The reaction illustrated in the coordinate diagram (Figure 3) compares the non-catalyzed reaction with the catalyzed reaction. A catalyst's properties will be imposed on those of the reactants. The result of adding this catalyst is a decrease in the activation energy of the reaction. In the diagram below, the activation energy of the non-catalyzed reaction is labeled “A,” while that of the catalyzed reaction is labeled “C”. Note that the catalyzed reaction starts and finishes at the same energy as the reaction without the catalyst. This indicates that the reactants and products in both reactions are the same although the species in each reaction followed different paths. This also shows that the catalyst appears in neither the reactants nor the products.

Another way to vary the speed of a reaction is to change the amount of energy supplied to the reactants. If energy is added to the system, the reaction will be faster than if there were no energy added. Similarly, if energy is removed from the reaction (i.e., the reaction is performed at a lower temperature than normal), the reaction will proceed at a relatively slow rate. The following example illustrates this point.

When a lit match is held in place in air, the match (reactant) will burn to form black smoke, consisting mostly of water and carbon dioxide as well as heat and light (products). This reaction is shown below and is labeled #4.

\[
\text{Match (carbon \& hydrogen)} + \text{O}_2 \rightarrow \text{H}_2\text{O} + \text{CO}_2 + \text{HEAT} + \text{LIGHT} \quad (4)
\]

When a second match is lit and is put an inch above the flame of a lighter, the flame of the match will burn brighter, and the match itself will disappear faster than when the match was burning alone. Thus, we can write this reaction labeled as #5 below:

\[
\text{Match (carbon \& hydrogen)} + \text{O}_2 \rightarrow \quad (5) \\
\text{Heat Added During Reaction} \\
\rightarrow \text{H}_2\text{O} + \text{CO}_2 + \text{HEAT} + \text{LIGHT}
\]

There is no difference in the amount of products formed from a single burning match. Mass or energy cannot be created or destroyed. Each match is identical in the amount of fuel that it contains (carbon and hydrogen); thus, they are identical in how much product and energy they can produce. The only difference
is how fast the products are formed. The difference in the rate of chemical reaction is due to the presence of the catalyst, which in this case is heat. This experiment is easy to reproduce and is always convincing.

One unique type of reaction is called an autocatalytic (self-catalyzing) reaction. This occurs when a chemical product of a reaction acts as a catalyst and promotes more conversion of reactants to products. Autocatalytic reactions are special because the rate increases at the start of the reaction, then levels off, and finally falls back to no reaction. Other chemical reactions typically experience the most rapid reaction rate at the very start of the process instead of getting faster like the autocatalytic reactions.

Solar energy is a direct product of catalyzed reactions. A solar panel is composed of a myriad number of metal atoms with weakly bound electrons interspersed with catalyst particles of a different type of metal. Without the presence of solar energy units called photons, this metal will simply sit on the panel and do nothing. It is energetically favorable for this metal not to react when it is dark outside. However, when light energy in the form of photons strikes a catalyst on the panel, the catalyst becomes excited and releases a high-energy electron that supplies the required activation energy to start a chain reaction. It becomes favorable for the loosely bound electrons around the catalyst to become mobile and flow through the conductive metal. Thus, current is produced from solar energy striking a catalyst that is sensitive to light. This process is called photocatalysis, catalysis from light.

A final example of catalysts at work is in the human body. Although there are biological catalysts that facilitate transportation of nutrients to cells, there also are biological inhibitors that stop chemical reactions. When somebody becomes sick, there is a response to a foreign agent such as a bacteria. The bacteria may bring about inflammation or a fever. This is the product of a chemical reaction involving histamines trying to signal that there is something wrong with the everyday function of the body. These symptoms can become very harmful, even fatal, when not stopped. As a result, people take antihistamines or "histamine-blockers" such as Sudafed or NyQuil to reduce these biological symptoms. They are ingesting chemi-
cals that will stop the histamines from reacting and hurting the body. Catalysts that impede or terminate a reaction are called inhibitors. For this same reason, people should be wary when they take antihistamines. Although there may be no signal telling the person that he or she is infected, the body is still fighting the pathogen, and that person is still sick.

Catalysts and chemical reactions play a very important role in nature, in the production of goods, and in the human body. With a basic understanding of chemical reactions, one is able to take these concepts a step further and apply them to technology.

**FUEL CELLS**

The future of energy is one of the most prominent controversies in the United States and in the World today. There are those who believe that the current supply of fossil fuels, such as oil and natural gas, will sustain our country's comfortable way of life for many years to come. Others are motioning toward cleaner forms of energy that are less harmful to humans and to nature. These sources of energy include hydroelectric power, solar power, nuclear power, and wind power. A very promising technology involves using reacting chemicals to form electrical power. Such processes are called electrochemical reactions and are the basis of fuel cells.

As opposed to oil refining, power generation from fuel cells is not an age-old process. Fuel cells remain a “black box” to many who use, or will someday rely, on their power. Many people who are in no way connected with the petroleum industry know the general steps required to produce marketable goods from oil. This segment of *Science You Can Understand* explains the general principles behind energy generation from fuel cells.

There are many different types of fuel cells. Some models use methanol as the reacting fuel, others utilize phosphoric acid, zinc metal, or even liquid metals such as lithium and sodium carbonate. One type of fuel cell that has received a considerable amount of attention and praise is the Proton Exchange Membrane (PEM) fuel cell.
THE CHEMISTRY OF THE PEM FUEL CELL

The Proton Exchange Membrane (PEM) fuel cell is a type that is frequently studied and is most applicable to practical uses; however, it is not entirely accurate to compare oil products such as gasoline to fuel cells. One uses gasoline to power an engine, whereas a hydrogen-rich substance powers a PEM fuel cell. Just as the chemical energy of gasoline is ultimately converted to power in an engine, the chemical energy of a hydrogen-rich fuel is converted to power in a fuel cell. Although there are many complicated processes that occur in a PEM fuel cell, the fundamentals of the overall processes are fairly easy to grasp.

PEM fuel cells operate most efficiently when fueled by pure hydrogen. It is most energetically favorable for hydrogen to be in the molecular form as opposed to atomic form. Recall from the segment on atoms and molecules that a hydrogen atom is composed of one electron orbiting about a single proton. A hydrogen molecule is two hydrogen atoms bound together. This molecule contains two protons spaced at a certain distance from each other that share the two electrons. This is very different from a helium atom that also has two protons and two electrons; however, helium has both protons together in the same nucleus. Figure 4 below illustrates this idea.

Figure 4. Model Structures of a Hydrogen Atom, a Hydrogen Molecule, and a Helium Atom
The idea behind a fuel cell is to generate electric current from the chemical energy of the hydrogen molecule. The next question is "What is electric current?" Recalling the solar panel example from the previous section, electric current is simply the flow of electrons. In the previous case, the mobile electrons were produced from metals containing many loosely held electrons on a solar panel. In the case of a PEM fuel cell, the electrons from the hydrogen molecules will supply the current.

The separation of electrons from protons does not happen spontaneously (i.e., negative charges want to be with positive charges to create a net neutral charge). In a PEM fuel cell, hydrogen molecules flow from the fuel source and temporarily bind to a metal-coated plate called an anode. The anode of a PEM fuel cell typically is composed of carbon and is coated with a thin layer of platinum. At the anode, the hydrogen will undergo the following reaction:

\[
2(H_2) \rightarrow \text{platinum} \rightarrow 4e^- + 4H^+ \quad (6)
\]

In the above reaction (labeled #6), the symbol for electron is "e" and the symbol for proton is "H" (a "+" or "-" is used to designate charge on a certain species). Platinum is written as such in order to express it as being a catalyst that aids in the splitting of the electrons from the protons. Spoken aloud, the above reaction reads, "Two molecules of hydrogen will react to form four electrons and four protons in the presence of platinum."

After the electrons have been separated from the protons, each species travels a different path. The electrons travel through a conductive material (i.e., a metal wire) while the protons travel through a porous membrane that is selective only to protons. This process is the source from which the name, Proton Exchange Membrane Fuel Cell, is derived.

It is natural for the electrons and protons to try and regroup. A proton is most stable when coupled with an electron. After splitting the hydrogen, one way to view this system is that the "naked" protons are shuttled across a membrane and left to wait for their counterparts while the electrons are put to work, running a tortuous wire path around the membrane, trying to find their way back to their...
protons. As the electrons "run the wire" they are faced with resistances, or obstacles they must pass through before they rejoin with the protons. These resistances are devices that operate on electricity. The electric current created from the flow of electrons creates energy in a PEM fuel cell.

After the work has been completed, the electrons flow to the end terminal of the conductive material, another plate, called the cathode. Due to the build-up of electrons at the cathode, there is a large negative charge, whereas at the anode, there is a positive charge (a deficit of electrons). At the cathode, molecular oxygen (O₂) and the protons are waiting for the electrons. Thus, the chemical reaction at the cathode is written as #7 below:

\[ O_2 + 4e^- + 4H^+ \rightarrow \text{platinum}\rightarrow 2(H_2O) \]  

(7)

This reaction is also catalyzed by platinum. This entire process is illustrated below in Figure 5.

---

**Figure 5. Illustration of the PEM Fuel Cell Energy-Production Process**

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Although this process may produce electricity, the quantity of energy produced is not nearly enough to power an automobile, a generator, or even a household appliance. Engineers have been studying methods to transform a laboratory-scale fuel cell into a practical energy source. One of the most anticipated applications of the fuel cell is the fuel cell-powered automobile.

**THE FUEL CELL-POWERED AUTOMOBILE**

The simplified version of the PEM fuel cell previously illustrated is the fundamental unit of the fuel cell-powered automobile. However, like all integrated systems, it cannot function on its own. In order to increase the power output of the apparatus, engineers put many fuel cells together in series to create a *fuel cell stack*. The electricity generated from each fuel cell is additive. So the power generated from 100 fuel cells in series is one hundred times greater than just one cell. A diagram of a fuel cell stack is shown below in Figure 6.

*Figure 6. A PEM fuel cell (A) and a PEM fuel cell stack (B)*
The fuel-cell stack is where the electricity is generated, but there are many components that are involved in preparing the fuel and conditioning the air (the supplier of oxygen for the cathode reaction). Water also is added to the system in order to facilitate transportation of protons across the membrane, shown in Figure 7 below.

![Figure 7. Diagram of a PEM fuel cell stack in a simple system](image)

**FUEL FOR THE PEM FUEL CELL**

The scheme displayed above drastically oversimplifies a crucial aspect of why PEM fuel cells are experiencing problems entering consumer markets. It is very difficult to store hydrogen in a safe, practical, and economical manner. Hydrogen at normal atmospheric conditions is a gas. A fuel cell will be able to operate with pure hydrogen at room temperature and pressure, but it will not produce enough energy to be used for any practical purpose such as to power a remote control, let alone supply energy to an automobile. Similarly, a fuel cell-powered automobile can operate extremely well using high-pressure hydrogen at room temperature; however, history (i.e., the Hindenburg explosion) has dictated that this is not at all
safe for the average commuter. Also, automobiles can be equipped with cryogenic (ultra-low temperature and very high pressure) fuel tanks where liquid hydrogen can be stored. Although the fuel-cell stack would have access to enough safe hydrogen to power an automobile, the cost of manufacturing or purchasing such a vehicle, as well as maintaining or operating liquid hydrogen filling stations, would be outrageous.

Solutions to the fuel-supply problem are currently being researched by engineers such as Dr. Michael P. Ramage. One proposed method of hydrogen storage involves interspersing hydrogen in a carbonaceous material at room temperature so that it would be safe to store and quick to deliver to the PEM fuel-cell stack.

Other proposed ideas include extracting hydrogen from small, hydrogen-rich organic molecules such as methane (CH₄) or methanol (CH₃OH). The problem with these fuels is that, when improperly prepared, they contain carbon derivatives such as carbon monoxide (CO) that can irreversibly damage the delicate (and expensive) platinum catalyst in the fuel cell. This detrimental process is called catalyst poisoning. Keep in mind that the fuel stream is being sent directly to the platinum-coated anode in each fuel cell. If there are poisoning agents in the fuel stream, the fuel cell will not be able to separate hydrogen into protons and electrons, which results in no electric current and renders the entire stack as irreparable and useless. This is analogous to the permanent failure of an engine in a conventional automobile. Consequently, if organic fuels such as methane or methanol are used, a large and costly process must be included in the design of the automobile to prevent catalyst poisoning from occurring.

A BRIEF COMPARISON OF GASOLINE AND FUEL CELL-POWERED AUTOMOBILES

A fundamental difference between gasoline engines and PEM fuel cells is that the fuel cell does not have any moving parts; the chemical energy from the hydrogen in the fuel is directly converted to electricity. Engines burn gasoline to push a piston in order to create power. Moving parts in engines also require maintenance such as lubrication and tune-ups. In addition, mechanical activity inherently
means a great loss of energy from the system. Anyone who drives a car knows that
the engine gets extremely hot when being driven. This heat is energy lost by con-
version of gasoline to horsepower. If one were to attempt to quantify the efficiency
(work from fuel / energy from fuel) of each system, the result would be that cur-
rent coal-fired power plants have efficiencies around 45%, combustion in auto-
mobiles have efficiencies of approximately 20%, while those of preliminary fuel
cell systems in automobiles range from 50% to 70%.

A second difference between these two modes of power production is that
combustion results in the emission of poisonous vapors, while a fuel cell ideally
emits water as its only exhaust. Some noxious gases produced from combustion
include carbon monoxide, light hydrocarbons, carbon dioxide, and various nitro-
gen-oxygen compounds. These compounds are all greenhouse gases. These chemi-
cals also have the potential to cause serious health disorders and have been the
cause of many fatalities. Practical applications of methane and methanol-powered
PEM fuel cells have resulted in very little of the aforementioned toxins.

Lastly, noble metals such as platinum, gold and ruthenium are used in fuel
cell-powered automobiles both in the fuel-cell stacks and in the hydrogen-genera-
tion processes. The reactions used to obtain pure H₂ from CH₄ or CH₃OH require
these metals as catalysts. Although these metals also are used in conventional
automobiles in catalytic converters, there is much more precious metal in fuel
cell-powered automobiles than in the gasoline-burning vehicle. Future fuel cell-
powered cars are estimated to have up to 150 grams of noble metal in their sys-
tems in order to produce 50 kilowatts of electricity. In comparison, the amount of
these catalysts used in the exhaust treatment of present day gasoline-burning auto-
mobiles is 5 grams per vehicle, with engines whose power greatly exceeds 50
kilowatts. Some of these views are those of fuel-cell engineer Dr. Robert Farrauto
of Engelhardt; however, many of these differences and problems have been
addressed by researchers in both industry and academia.
POSTSCRIPT: WHY SCIENCE YOU CAN UNDERSTAND?

The series of papers, from which this chapter is only one, is meant to educate people about the methods and systems of modern technology. Society relies on science and engineering every day, and the majority of people who use products like automobiles, computers, mobile phones, and airplanes are ignorant about the fundamental concepts that make these amenities work.

Neither Rome nor the fundamental theorem of calculus was constructed in a day. The great physicist Isaac Newton transformed the understanding of the forces that govern the universe; his laws of motion stand today. Late in his life he was asked how he was able to accomplish such great things. He replied: “I stood on the shoulders of giants.” If this statement is true, then we all rely on the discoveries made by thousands upon thousands of scientists. Science You Can Understand is a way for non-technical people to behold what has been given to them. It is truly a wonderful thing to understand, learn from, and build upon these innovations in order to make discoveries in our own time.

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Quiet Strength: An African American Women's Experiences in an Engineering Doctoral Program

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Did you know that the number of African American female professors of chemical engineering can be counted on one hand? Yes, as of the spring of 2001 there were only 26 African American chemical engineers in academia, 5 of whom were women. These figures are even more staggering when you consider that there were a total of 2,220 chemical engineering professors at that time. These numbers suggest that there are very few African American women in chemical-engineering doctoral programs. In fact, there are so few that most such women solely comprise the total African American representation in their graduate programs. This situation can present a unique set of challenges. I am an African American female who has lived this actual experience and will be the first African American woman to complete the chemical-engineering doctoral program at the University of South Carolina. I want to share the story of my experience in order to help those who follow in my footsteps and to raise the awareness of all others.

Beginning My Higher Education

One can only truly appreciate the significance of some of my experiences by knowing the path that I took in order to get to this point. I had the pleasure of receiving my undergraduate training at a historically Black university widely known for its engineering programs. The environment was one of scholarship and nurturing. One of the professors encouraged me to consider pursuing an academic career because he thought I possessed the qualities needed to be successful in the academy and that I could be a role model for other students. After very careful consideration, I decided to begin taking the steps necessary to pursue
that goal. I also found it disturbing that although it was a historically Black university, there were no African American professors in chemical engineering. It was inspiring to think that I might be able to make a difference in some student's life in an academic career.

I took teaching and research assistantship positions under that same professor in order to evaluate my ability to perform the two key roles of an academician. Both were enriching experiences, not only because of the obvious professional development, but also because my mentor professor took the time to make sure I understood that the road I was about to embark upon would be lonely and require me to work like never before. I decided that the rewards were well worth the effort and began considering schools where I could enter directly into a doctoral program. Resulting visits to various schools made it painfully obvious that my mentor professor was right and that I would likely be the only African American in my class no matter which school I chose.

Following the visits, I was even more motivated to pursue an academic career; however, I believed that I needed a little more preparation. I was feeling insecure because my advisor had warned me that graduate study was math intensive and that the undergraduate program may not have prepared me. Therefore, I decided to stay at the same school for a master's degree and to work on a research project with my mentor professor. The research was very rewarding and the experience solidified my decision. My class was quite diverse and included five other African American females; therefore, my experiences in the classroom were filled richly with interactions with many different cultures and people with whom I had a great deal in common. Upon graduating from the master's program, I believed that I had all of the proper tools to make my dream a reality and that I was ready to face the challenges of being "the only one."

ENTERING DOCTORAL STUDY

My first challenge came at the hands of an unexpected source within minutes of my first visit to school as an official student. I was so anxious and enthusiastic about starting my new program that I went to inquire about registering and getting
an e-mail account several days before the official new-student orientation.
Unfortunately, there were not many professors in their offices that day, but I did
find one who was willing to help. He seemed happy to have me joining the pro-
gram and gave some helpful suggestions for getting settled. I was feeling very
good about my choice of schools, and as the conversation turned to course
requirements, I felt ready to face the challenges of the new program. Then, he
looked me square in the face and flatly said, “You know there are some profes-
sors in this department who don’t expect you to make it.” My body went numb,
and I struggled to respond with a pitiful, “uh huh.” I quickly had to pull myself
together because I had a choice: I could either let my anger get the best of me
and live up to that expectation or harness that energy for proving them wrong.
Being a fighter, I naturally chose to work hard to prove them wrong. To this day I
do not know his motivations for telling me something like that, but I thank God
for allowing it to happen because it put the task at hand in a much better perspec-
tive. So, the first important lesson that I learned is to turn negatives into positives.
After all, blessings do come in all shapes, forms, and sizes.

The reality of my situation really hit home during the department orientation
for new students. I had arrived early and had the pleasure of watching the room
fill with people representing every corner of the world. I felt like a child on
Christmas morning eager to get to know my new classmates and learn more about
their cultures and lifestyles, as I had done in my master’s-degree program. Hopes
of those rich experiences quickly faded as my inviting smiles were met with nerv-
ous looks away and cold glares. I only found comfort in knowing that a fellow
alumnus of my graduate program also had decided to join the program and prob-
ably would be arriving soon. There was also a reprieve when a white male came
in and responded to my greeting. After introductions during the meeting, I real-
ized that he and I had spoken over the phone a few months prior.

I continued to receive the cold shoulder from the majority of my classmates
for the entire first week of class. I felt like the invisible woman. Then there was
the additional stress of feeling overwhelmed after my first few classes. The profes-
sors’ initial lectures were filled with comments like, “I’m sure you remember…”
and “To review…” and I was thinking, “No, I don’t remember that,” and “Review?!...I’ve never seen that before!” My first few nights were spent buried in undergraduate textbooks in an effort to get up to speed. After almost two weeks of extreme loneliness and struggling through notes and assignments alone, I had enough and reached out for help. Professors willingly answered my questions, but I needed some peer interaction. Naturally, I reached out to my former classmate and the guy who spoke to me in orientation.

As the semester progressed, my relationship with both of them blossomed, and we helped each other through many tough times. Today, as I reflect on those two relationships, I am reminded of the importance of putting forth an effort to nurture all relationships because how you treat people today may influence how they treat you in the future. Had I not chosen to be kind to my former classmate simply because we were from two different worlds, he probably would not have been responsive to my call for help. The other student and I had spoken on the telephone because a professor suggested that he call me for further insight about pursuing graduate school. I easily could have refused to talk with him and ruined the possibility of working with him as a fellow doctoral student. The fact that the professor suggested that he call is another example of an unexpected blessing.

As the first semester came to a close, the professors began to make plans for handling final grades. All professors announced that they would post the final grades outside of their offices. To my surprise, as I was walking down the hall on the day that the grades were posted some of my classmates acknowledged my presence by making eye contact and nodding. A couple even asked if I had been to see my grades. I went directly there and was quite relieved by what I saw; my grades were comparable with everyone else in the class. Then, it became perfectly clear why I had suddenly transformed from the invisible woman to a person worthy of acknowledgement. Apparently, that professor was not the only person who thought I would not make it. Nonetheless, I quietly celebrated the small victory.

The celebration was short-lived because I had to immediately begin preparing for the qualifying exam given the second week in January. The holidays are
typically a very special time for my family to come together and enjoy each other's company, but there was a bit of a somber mood that year because I had studying on my mind. I actually had to leave home early to study for the remainder of the holiday break. The first day of exams finally arrived—there were two three-hour exams given each day. When the exams were over on the first day, I had a feeling that my studying had been in vain. My performance on the next day was no better, but at least it was all over, and I left the exam room as quickly as possible. Many of my classmates were in the hallway discussing the exam, but the conversations hushed when I came out. I immediately knew that I once again would be invisible until the results were posted. I left town immediately in order to regroup. My advisor was kind enough to call long distance to give the final result—I had failed three of four exams, marginally passing the one. As a result, I had to retake some of my undergraduate courses. I was devastated because I felt that I had lived up to the expectations of those professors and all others who anticipated failure.

When the semester started, I made the mistake of dwelling on that failure and found myself on an emotional roller coaster spinning wildly out of control. I felt ashamed to be in classes with undergraduates, whom for many I had served as a teacher assistant. Seeing no other graduate students present in the first few classes, it was even more devastating to think that I was the only student to fail that portion of the exam, or even that I might have had the highest failure rate of all the graduate students that year. I immediately began to believe that those who doubted that I could do it were right after all. God stepped in once again to help me recover from the negative abyss that had engulfed me. First, to my surprise, one week after the start of the semester another graduate student enrolled in the undergraduate course as a result of his performance on the qualifying exam. I later discovered that he had failed every section of the exam, which meant I had not performed the worst. Shortly thereafter, I met another African American woman at a university function who graciously extended an offer to be a listening ear or help in any way. Little did I know she was a counselor at the university and recognized that I was in need within minutes of our meeting. However, I did not seek her assistance because I naively believed that counseling was for
people with extreme disorders or problems and that I could get through this slump on my own.

Things really did get better for a short time after that, probably because I had adopted a better attitude about the situation. It was only then that I was open to realizing that I really was learning a lot in the class, not only about the subject, but also about teaching because the instructor was excellent. I also came to realize that being with the undergraduates opened the door to a network of friends because there were some African Americans in the undergraduate program. In fact, there was an African American female in the first undergraduate class that I took with whom I became close friends, and our friendship continues to this day even though she has graduated. That series of events made it clear that I had to holdfast to my faith in order to persevere. It also became clear that an adjustment in attitude is the foundation of a revitalized focus and that having an open mind makes for boundless opportunities where there once seemed to be none.

Later that same semester I allowed myself to dwell on negativity, and my emotions spiraled out of control again. Research was the cause for this setback because the first two projects I chose were unsuccessful. Of course, having completed a master's degree, I was very familiar with the ups and downs of research. However, I saw the misfortunes as failure on my part and could not bear the thought of living up to that pessimistic expectation again. I even considered quitting, and that was when I knew that I needed to seek help. I turned to the objective ear of the counselor because I felt I had nowhere else to turn other than to my family, but I didn't want to worry them. The counselor helped me to realize that I was spending too much time and energy worrying about what others were thinking about me and trying to conform to others' standards. She clearly saw a need for me to restore balance to my life, to learn to enjoy being me in this new environment, and to redirect my energies. I followed her advice and began making serious changes in my life.

First, not to sound cliché, but I turned my frowns upside down and made sure I always greeted people with a smile whether I thought they would respond or not. I basically realized that no one wanted to be around a person breeding negativity
and began to make sure I was approachable and pleasant to be around. Second, I
realized that all of the things that made me different brought a breath of fresh air to
an environment where conforming was the norm. I started seeking out the things
that interested me and that I enjoyed in order to bring a healthy balance to my life.
Last, I put extra effort into making my work exemplary so that it could speak for
itself, no matter whether it was for an undergraduate course or a graduate course.
People started to notice and respond immediately. Restoring physical workouts to
my daily routine brought the most attention. Exercise is a universal language, so
people began talking to me about that. I welcomed their conversations and invited
them to join me. Before long I had developed friendships with a number of peo­
ple, and my department had quite a representation in the aerobics classes. My
work in the classroom also paid off with students and professors alike. Many of
my undergraduate classmates began coming to me with questions, and I developed
quite a reputation for being willing and able to explain difficult concepts in ways
that they could understand. One professor told me that my classroom perform­
ance had even earned the respect of many of his colleagues.

ESTABLISHING MY CAREER PATH

With my life finally in a comfortable balance, I found myself moving in more
positive directions in every aspect of my life. Academically, I successfully matricu­
lated through the required courses, both graduate and undergraduate, and I
passed the comprehensive exam. In terms of research, the proverbial third time
was indeed the charm, and the next research project was a much better fit. My
initial results were promising, and my advisor decided to move forward on the
project. Personally, I vowed to maintain involvement in at least one extracurricu­
lar activity completely removed from the university at all times. That provided a
reprieve from the academic environment and provided much needed social inter­
actions to keep my life balanced. My social interactions at the university also dra­
matically improved. I went from having little interaction with others to having so
much that it was difficult to get any work done for the number of people coming
by my office.
Things have continued to improve since then. That does not mean that there have not been challenges, for there have been plenty and there are probably plenty more to come, but I have learned to deal with them more effectively. I am still invisible in the eyes of some people, especially when it comes to scholarly and research-related issues. However, I am at peace with myself and my abilities, and I do not need others to validate me in that manner. So I simply meet people wherever they are and respond to them to the best of my ability. Yes, there are still some who shy away because I am different, but I have learned to put them at ease with a smile and by making them realize our many similarities. Undoubtedly, there are still some who do not think I will make it, but their negative energy fuels my desire to press on to march proudly across the stage on graduation day.

CONCLUSIONS

The journey has been long and littered with obstacles; however, in many ways I feel that it has allowed me to accomplish much of what I had initially hoped to achieve in my career. My very presence at the university and my perseverance has affected many people. Clearly, I have changed the minds of those professors who did not believe I would make it this far, and I shattered the preconceived notions of those who were once afraid to interact with me, but with whom I now freely converse. My journey has been inspirational and empowering for the minority undergraduates and summer research students that I have met along the way. It has even given some of the students at my beloved alma mater the courage to pursue graduate studies and to forge their own journey. Last, I believe that my presence has and will make it easier for those who follow in my footsteps. In fact, I have had the pleasure of seeing two African American males enroll and advance in the chemical-engineering doctoral program.

In closing, although the journey has been difficult, it truly has been worth every struggle because I have touched the lives of others and have evolved into a better person because of it. The lessons of turning negatives into positives, never being too proud to ask for help, keeping an open mind, learning from every experience, maintaining balance, being myself, and working hard were essential for
my survival to this point and are lessons for life in general that will stay with me forever. Overall, the experience has confirmed the words of motivational coach, Ralph Marston (2000): “The richness of life is found beyond the superficial concerns which so dominate your thinking.” May his words and my graduate experience serve as a reminder that the pursuit of high achievement, scholarship, and professionalism, should not be consuming to the point of one losing the very essence of himself or herself, as it was happening to me.

REFERENCE
PART 6: COLLEGE OF SCIENCE AND MATHEMATICS
Snails are fascinating creatures. Instead of walking, they glide. Instead of biting their food, they scrape away at it using their radula. Some of them are carnivorous, some vegetarians, and some eat anything plant or animal. Some snails, such as *Conus conus*, are extremely poisonous, and some, the garden *Helix* for example, are harmless. Snails were probably some of the first campers, and could have served as inspiration for RV's. Through rain or sleet, they have no need of extraneous paraphernalia because they have personal shells. When they are tired, they pull themselves into their attached “trailer” and call it a night. Going one better than tent or camper, if their shell cracks, some snails can even repair it from the inside out! However, when people get too hot in their tents, they can always sleep outside, directly under the stars. Snails do not have that option. If they are too hot, they still have to deal with being inside.

Snails are found in many different habitats, from the desert (Schmidt-Nielsen, Taylor, & Shkolnik, 1971) to ocean depths (Boetius & Felbeck, 1995). Some even live among trees (Moutinho & Alves-Costa, 2000). Each habitat carries with it special abiotic stresses, and the snails of that habitat have novel ways of escaping or mediating the effect of those stresses.

In intertidal habitats, some of the most prevalent abiotic stresses that affect organisms are desiccation, osmotic stresses, and intense and fluctuating thermal conditions. One snail that has been a popular target for intertidal mud-flat research is *Ilyanassa obsoleta*, commonly known as the mud snail. Via this chapter, the author endeavors to give the reader a panoramic and chronological view over more than a century of research on this snail while highlighting some work on abiotic factors. However, the reader may wonder what could possibly be
so interesting about an intertidal snail that scientists and naturalists would turn their attention mudward? One potential answer lies in the fact that these snails can be found in extremely high numbers on the intertidal mudflat. Although when one looks out onto a mud flat with only the unaided eye, it seems quite a barren place where food is concerned, thus leading to questions about food ecology and mud-flat primary and secondary production. Their abundances in areas of pollution also lead to questions of how they survive when other organisms don't. Even so, the author offers this ultimate answer: “Curiosity;” scientists are inherently curious about the world that surrounds them. Therefore, it is no wonder that eventually someone, while exploring the salt marsh, came upon the open mud flat and, noticing the small dark objects crawling about, asked, “Oh snail, what art thou?”

**EARLY EMPIRICAL RESEARCH**

At the turn of the 20th century, Dimon (1902) was one of the pioneers in delving into the life history of *Ilyanassa obsoleta*. She began by examining the biometric characteristics of this snail. For example, she studied how many whorls were customary in the shell as an age index and the comparative sizes and coloring of shells. She also determined the range of *I. obsoleta* to be from the Gulf of St. Lawrence to Florida and that its breeding season in Massachusetts was the latter part of April. As for abiotic factors impacting *I. obsoleta*, Dimon (1902) found that snails living in less saline water were smaller and more globose, with larger apertures and shallower sutures than those in more saline waters.

In 1905, Dimon continued her work on *I. obsoleta* by conducting experiments on its behavior. Reactions to changes in ambient light, gravity, salinity and currents were monitored, as was behavior during desiccation, shaking, and starvation events. From her work a basal knowledge of *I. obsoleta* was gained: (a) phototaxis takes place but is affected by the quality of light and type of substrate; (b) geotaxis is dependent similarly on external factors; (c) the snail is extremely resistant to desiccation; (d) it tends to orient its direction into the current but will bury if the current exceeds a threshold speed, has a startle reflex (withdrawal into
the shell) if bumped or shaken, and will eat just about anything. The experiments revolving around changes in salinity resulted in a lot of variation and therefore were inconclusive. After Dimon’s (1905) seminal work, *L. obsoleta* was no longer just a mollusc lurking in the shadows, it had emerged into the light of published, quantitative literature.

Batchelder (1915) observed *L. obsoleta* in New Hampshire and brought a particular aspect of its behavior to the forefront. The snails left their home on the mud flat in October of 1914 and returned in April of 1915. Batchelder did not observe where they relocated; however, he did note their movement *en masse*. Additionally, he recorded that the average water temperature was 13.5°C at the times of their migration (Batchelder, 1915) and hypothesized that the abiotic factor of temperature combined with the biotic factor of snail-snail interaction influenced their movement.

Farther north in Prince Edward Island, Morrison and Medcof (1943) directed research on *L. obsoleta* with a primary goal of determining how many size classes were present in the population and secondary goals of examining the snail’s ecology and its interactions with freshly settled oyster spat. After sampling snail lengths, Morrison and Medcof determined that there were only two size classes in the year 1943, but that was due to a poor recruitment year. They suggested that in a year with good recruitment, three size classes would be present: new recruits, 1 year, and 2 year olds. The new recruits are the young having metamorphosed that year and the size/age class missing from the 1943 data. This poor recruitment could possibly have been due to the effect of some abiotic factor. Currents can sweep larvae away from target settling spots, and environmental characteristics such as heat can prove detrimental to larval survival after metamorphosis (Wethey, 1984). The secondary goals were completed in part when Morrison and Medcof (1943) found that the lethal dosage of continuous exposure to air, leading to 50% death in *L. obsoleta* was 4 days. To avoid this stress in the field, *L. obsoleta* individuals were observed to bury in the substrate. This experiment on the desiccation resistance of *L. obsoleta* expanded the research done by Dimon (1905) on the effect of abiotic factors on the snail. Similarly to Batchelder
(1915), Morrison and Medcof (1943) also observed snails across the seasons and found that during the summer snails were present in the shallow intertidal, but between October and November, they moved as a group into deeper water (below mean low water). The presence of the snail in deeper water was determined by dredging. Morrison and Medcof (1943) did not advance any ideas as to why the migration occurred. When Morrison and Medcof (1943) placed fresh oyster spat in the presence of *I. obsoleta*, they found that there was no predation or destruction by the snail on the spat, contrary to previous claims. Whether this was a result of the *I. obsoleta* not liking the spat as food or not being able to ingest the spat due to some physical or chemical component was not determined.

In the 1950's, Jenner designed a series of studies on *I. obsoleta* at Barnstable Harbor and Great Pond, Massachusetts, and Beaufort, North Carolina to examine the snails' distribution and reproductive patterns and to get a closer look at their digestion. In his 1956 abstract, Jenner (1956a) noted that over the space of 13 days, during late July and early August, there was a change in the distribution of Barnstable Harbor's population of *I. obsoleta*. He determined this change by using quadrants to estimate population densities. Unlike Batchelder (1915), he did not hypothesize that temperature was a factor, preferring to support the snail-snail interaction hypothesis. That same year, Jenner (1956b) also published an abstract regarding the time that *I. obsoleta* stops being reproductive at two sites in Massachusetts and one site in North Carolina. He determined that snails were no longer in a reproductive state if males did not have the copulatory organ, and if females did not have egg cases in the reproductive tract. From this procedure, Jenner (1956b) found that at Barnstable Harbor, resident snails finished reproduction by the end of May, at Great Pond, snails finished in mid-July, and at Beaufort, N.C., snails were finished reproducing in the latter part of August. This suggests a latitudinal change in timing of reproduction; however, Jenner made no note of that pattern in his 1956b abstract. Jenner's next abstract, published yet again in 1956 had nothing to do directly with either reproduction or patterns of distribution. This time, Jenner (1956c) conducted a gut content study on *I. Obsoleta*, wherein he found that the snail was not primarily carnivorous. He concluded this fact by
the presence of a crystalline style in the gut; crystalline styles are used to digest plant material only and are not found when flesh is being digested (Robertson, 1979). Interestingly enough, Jenner (1956c) claimed that a common assumption about *I. obsoleta* was that it was primarily carnivorous; thus, he was bringing to light a new facet of the life history of this snail. However, as he had no references in any of his abstracts, from 1956 to 1958, it is hard to find evidence that the assumption was indeed commonly held in the scientific community.

The late 1950's found Jenner returning to study of the seasonal distribution change in *I. obsoleta* that he observed in the early 1950's at Barnstable Harbor. In 1957, he published an abstract wherein he decided that the mass movement of snails was a regular occurrence since it had happened twice. He also expanded his previous observations by noting that the snails were moving to deeper water where they overwintered in large aggregations. Jenner offered two more potential explanations for the snail movement other than snail-snail interactions: (a) the ending of their reproductive phase and (b) some undefined chemical stimuli. This distributional change in *I. obsoleta* really intrigued Jenner because he published a third abstract dealing with this behavior in 1958. Here he carefully observed their movement and recorded that not only was schooling usually parallel to the current direction, but once snails came into contact with each other, they moved in the same direction together. Four abiotic factors that he noted as having an effect on this behavior were temperature, substrate condition, tidal level, and current speed. When high temperatures and drying substrate were combined with low tide, the schooling behavior was retarded (Jenner, 1958). Furthermore, current speeds that crossed a critical threshold caused burying behavior of snails and thus also retarded movement (Jenner, 1958). These data agreed with Dimon's 1905 work where she also discerned a threshold current speed.

Sindermann (1960) picked up the relay from Jenner in terms of snail biology, but he did not deal with snail behavior. Instead he turned to the behavior of a schistosome, *Austrobilharis variglandis*, which uses *I. obsoleta* as an intermediate host. Sindermann asked the question of whether or not there was a sea-
sonal effect on the emergence of *A. variglandis* from *I. obsoleta* at Back Cove, Maine. This parasite uses the snail as an intermediate host, entering *I. obsoleta* at the miracidium stage and emerging during the cercariad stage of development. From laboratory manipulations, he found that the abiotic factors of salinity, temperature, and environmental oxygen tension could affect the emergence patterns of *A. variglandis*. Whether or not the snail was starving was also a factor as to when the schistosome would emerge. The intertidal is a place of frequent changes in salinity, temperature, and other environmental signals, where food is also a patchy resource (Vernberg & Vernberg, 1976; Richmond & Woodin, 1996). Therefore, the seasonality in those abiotic factors may be obscured by the fluctuating conditions inherent in intertidal areas. An indirect yet potentially clearer answer to Sindermann’s research question was deduced when he noted the changes in seasonal abundance of *I. obsoleta* and correlated that with seasonal patterns in abundance of its parasite companion.

Four years later, Scheltema (1964) published a paper on the life history of *I. obsoleta*. He expanded the basal knowledge of Dimon (1902, 1905) by examining the age/size classes of the snails in Barnstable Harbor, Massachusetts. From data on modal lengths and ages, Scheltema (1964) concluded that there were distinct age classes. The histogram in his paper is used today as a tool in gauging age classes of *I. obsoleta* according to shell length.

The seasonal behavior that Batchelder (1915) and Jenner (1956a, 1957, 1958) noted in New Hampshire and Massachusetts was corroborated by Scheltema (1964), but he did not offer a hypothesis as to why the behavior occurred. He also noted that at Sapelo Island, Georgia, similar movements and aggregations occurred. However, although he worked in Beaufort, North Carolina, no overwintering aggregations were observed. This potentially leads to the author’s hypotheses that: (a) seasonal migration of *I. obsoleta* is not always present, despite the snail’s abundance across the Atlantic coast; and (b) patterns in seasonal migration may differ from site to site.

Kasschau (1975) delved into the realm of abiotic factors affecting *I. obsoleta* when she examined the potential effects of temperature on cellular osmoregula-
tion in this snail. Experiments were run where snails acclimated to different temperatures were exposed to changing salinity. Pre- and post-manipulation amounts of water in the tissues were measured, as well as the ability of the snails to ionregulate, and the composition of amino acids in the free amino acid (FAA) pool of the snail was described. With these data, Kasschau (1975) was able to deduce that *I. obsoleta* may use amino acids obtained via the Kreb's cycle in order to cope with frequent changes in salinity and temperature. Kasschau (1975) also concluded that FAA pool composition can be used as an abiotic stress indicator.

Vernberg and Vernberg (1975) continued research into abiotic factors influencing the physiology of *I. obsoleta*, specifically the larval forms of this snail. After observing the behavior of larvae under reduced oxygen conditions paired with differing temperatures, and recording the oxygen consumptions of the larvae at differing temperatures, they came to two main conclusions. Firstly, veligers are more susceptible to oxygen deprivation than adults, and secondly, larvae grow more tolerant of different salinities as they age. This phenomenon allows them to exploit habitats that may be unsuitable for predators or competitors during this critical developmental stage.

Vernberg and Vernberg (1975) also added information to the reproduction information contributed to by Dimon (1902) and Jenner (1956b). They noted that in South Carolina the reproductive season of *I. obsoleta* is from late January/early February to late May.

1975 could have been called the year of Ilyanassa. A third paper was published on *I. obsoleta* that year, this time by Craig (1975). She expanded Sindermann’s (1960) work on emergence patterns of parasites from *I. obsoleta* by clarifying the temporal scheme of emergence of the two trematodes, *Himasthla quissetensis* and *Leppocreadium setiferoides*. These parasites use *I. obsoleta* as an intermediate host in a similar way as *A. variglandis* (Sindermann, 1960). From experiments where she placed infected snails into small jars and varied the day/night cycles, Craig found that cercariae exited the host when darkness falls. She hypothesized that this timing of emergence facilitated finding of final or pre-final hosts by the parasite.
The last paper of the 70's on *I. obsoleta* was by Robertson (1979). Continuing Jenner's (1956c) work, Robertson examined more than 100 snails to determine if a crystalline style was present. This was to address the issue of whether or not a feeding rhythm existed for this snail. After dissections and gut content analyses, it was found that the presence of styles varied over time. As a result, Robertson (1979) concluded that a cyclic feeding rhythm could in fact exist for *I. obsoleta* with the snail being an herbivore during high tide and being able to digest flesh during low tide. The strategy of changing parts of the gut to deal with different food allows the snail to adjust to the indirect abiotic factor of a patchy food distribution, which is common to intertidal habitats.

**BEHAVIORAL RESEARCH**

To start the year off right, Brenchley (1980) published an abstract that described *I. obsoleta*'s effect on the benthic community structure at Barnstable Harbor, Massachusetts. From observations taken at four sites over a time frame of six months, she found that there was a positive correlation between numbers of *I. obsoleta* and native infaunal numbers and distributions. Possibly this could be related to the bioturbating activities of this snail (Connor et al., 1982). Brenchley also noted the seasonal migration previously referred to by Batchelder (1915), Jenner (1958) and others. She did not make any hypotheses as to why this behavior occurred.

Connor, Teal, and Valiela (1982) continued work on the community ecology of *I. obsoleta* when they asked what the effect was of the snail’s presence on the benthic diatom community in the Great Sippewissett Salt Marsh, Massachusetts. To determine the effect, they incubated different amounts of benthic algae in the presence of *I. obsoleta*, and they found that low densities of snails stimulated algal growth. High densities caused problems in the community; increased bioturbation disturbed the communities, and overgrazing resulted in a decrease of algal populations.

Brenchley and Carlton entered a contribution to *I. obsoleta* community ecology by way of their 1983 paper, which dealt with the invasion of *I. obsoleta* terri-
tory by *Littorina littorea*. The primary question had to do with what controlled the distribution of *I. obsoleta* at Barnstable Harbor. To answer the question, Brenchley and Carlton (1983) conducted mark-recapture studies for 4 months in 1980 and 7 months in 1981 to examine patterns of distribution of both snails. Removal studies were employed to examine the effect of differing densities of *L. littorea* on *I. obsoleta*, and population densities of both snails were recorded monthly at established transects. When the results were available, they indicated that the presence of *L. littorea* was a hindrance for *I. obsoleta* populations (Brenchly & Carlton, 1983). *L. littorea* also influences the microhabitat selection of *I. Obsoleta*. In the absence of *L. littorea*, *I. obsoleta* exploited cobble beaches, wood pilings, areas that in the presence of *L. littorea*, it can no longer use.

A seasonal migration in *I. obsoleta* was observed by Brenchley and Carlton (1983) at Barnstable Harbor. However, contrary to evidence from Jenner (1958) and Scheltema (1964) in the same area, Brenchley and Carlton (1983) observed *I. obsoleta* aggregations all year round instead of only during the overwintering period.

In 1984, Feller published a paper that picked up the relay from Robertson (1979). Feller (1984) used gut-content analysis by visual and immunoassay methods in order to examine the feeding ecology of *I. obsoleta*. Snails from Oyster Landing (near North Inlet), South Carolina, were sampled 8 times between April, 1980 to June, 1981 with about 30 snails being taken each time. After the analyses, Feller (1984) concluded that *I. obsoleta* is more of a facultative carnivore than an obligate one; much of the gut contents were pennate diatoms and sediments, with a few oyster and copepod proteins in evidence. Again, this feeding strategy is a profitable adaptation of *I. obsoleta* to patchy food resources, both spatially and temporally, in the salt-marsh intertidal system.

Levinton, Stewart, and Dewitt (1985) examined *I. obsoleta*'s community ecology in an area further east than where Brenchley's previous work took place. They investigated interactions between *I. obsoleta*, and another mud snail, *Hydrobia totteni*, at Flax Pond and its adjoining salt marsh in New York. Population densities were determined by sieve sampling, and seasonal transects
were sampled from September, 1982 to July, 1983. To determine if any interference occurred between the snails, two sets of experiments were run. In the lab, both snails were placed into tanks divided by a mesh that was too small to allow *I. obsoleta* passage; *H. totteni*, being smaller, could pass through the mesh. Caging experiments were designed in the field where *I. obsoleta* was excluded to different degrees from areas that were inhabited by both snails. Results from the lab research showed that there was interference between the snails, since when given the opportunity to escape to an area free of *I. obsoleta*, *H. totteni* did so. Field manipulations agreed with the lab results. *H. totteni* abundance was inversely related to snail density. Lab results also elucidated the type of interference. Rather than a biological interference (i.e., competition for food) this interference is more abiotic in nature (i.e., competition for space). *I. obsoleta* is so much bigger than *H. totteni* that at certain densities, there is no space left for *H. totteni*. Levinton et al. (1985) noted that effects of interference became more visible during the seasonal migration of *I. obsoleta*; *H. totteni* could and did exploit areas that were unusable when *I. obsoleta* was present.

Feller (1984) examined the gut contents of *I. obsoleta* and found that they were more vegetarian than eaters of flesh. Brenchley (1987) returned to that arena of feeding ecology, experimentally manipulating the food items of juvenile (post metamorphosis but not yet adult) *I. obsoleta* to investigate growth rates. She fed juvenile *I. obsoleta* monocultures of the benthic diatoms *Acanthes brevipes* and *Nitzschia* sp., and recorded their subsequent growth. Results showed that *I. obsoleta* young grew quite well on a diet of just microalgae (Brenchley, 1987). This feeding strategy is positive in that it aids the young in surviving within the same areas exploited by the adults; thus, there is less competition for food than if the young also needed animal protein to thrive.

In 1988, Cranford published a paper that examined how *I. obsoleta* coped with its unstable environment in the salt marsh. This was part of a series of ecosystem ecology studies from the Bay of Fundy. To determine snail performance, Cranford used the proxy of flesh dry weight (FDW), a higher FDW indicating better health and performance, and sampled snails monthly at the Bay of Fundy,
Minas Basin, from April to November in 1984 to obtain biomass and production estimates. His results showed that FDW increased from April to November. A low FDW in April was explained by the fact that it marks the end of the reproductive season at the Bay of Fundy.

Cranford (1988) noted that *I. obsoleta* actively selects its microhabitat, but he did not quantitify the difference in snail performance between specific microhabitats within the salt marsh and mud flats sampled. As for what aspects of microhabitat influence *I. obsoleta*, Cranford (1988) mentioned substrate type, food availability, and predation/competition levels, along with temperature and desiccation. He also observed that *I. obsoleta* individuals were only in the intertidal zone during the sampling time (April to November), and that during the winter, they were found in the subtidal zone. Similarly to Jenner (1958) and Brenchley and Carlton (1983), Cranford (1988) also observed *I. obsoleta* aggregations. He hypothesized that this was a response to the drying of the mud during the falling tide. Agreeing with Batchelder (1915), Cranford (1988) suggested that the seasonal migration was motivated by the abiotic factor of temperature. Furthermore, he suggested that desiccation stresses also play a role as motivating seasonal movement of *I. obsoleta* and that, in seasonal movement or movements on a shorter time frame, the overriding concern of the snail is to keep its environment constant.

Levinton, Martinez, McCartney, and Judge (1995) investigated the relationship between water-flow strengths and population density, distribution, and behavior of *I. obsoleta* individuals collected from Stony Brook, New York. Field surveys took place in July of 1986 to determine densities of snails on the surface of the sediments and at burrowing depths (<20 cm). Chlorophyll a was recorded from sediments and also from *I. obsoleta* guts. In the lab, different water speeds in a racetrack flume were applied to *I. obsoleta* individuals, and their responses were recorded. Effects of current speeds combined with different substrates were not examined.

When the field results were sifted through, it was evident that *I. obsoleta* had higher densities at the creek peripheries than at the creek bottoms (Levinton et
al., 1995). No correlation was found between *I. obsoleta* density and “chlorophyll a” density. The lab results showed that greater water speed induced greater burial by individual snails, and corroborated the claim of Dimon (1905) that *I. obsoleta* prefer to travel against the current (Levinton et al., 1995). In spite of their work on abiotic factors, Levinton et al. (1995) did not offer an abiotic reason to explain the seasonal migration of *I. obsoleta*, instead they suggested that the migration was a density-dependent behavior.

Abiotic factors do not always affect only the behavior of organisms, they can affect the development as well. Curtis and Kinley (1998) examined populations of *I. obsoleta* from the Lewes and Rehoboth Canal, and Rehoboth Bay, Delaware for imposex. Imposex is a condition where the females develop a nonfunctional pseudopenis, and can prevent normal reproduction by occluding the gonadopore. Imposex has been related to the presence of tributyltin (TBT), a component of some antifouling paints applied to boats and docks. From their sampling in the summer of 1995, Curtis and Kinley found that imposex was found in 52% of female snails from the southern part of the canal and 94% of female snails in the southern part of the canal. In the Rehoboth Bay populations, 23% of females exhibited imposex. Comparing their results with previous work, Curtis and Kinley concluded that although boating activity is confined to the northern section of the Lews and Rehoboth Canal, TBT pollution has spread south over time, affecting snails further away.

Returning to the feeding habits of *I. obsoleta*, it has been previously discussed that *I. obsoleta* is more of a vegetarian than a meat eater (Sheltema, 1964; Feller, 1984), although it will exploit flesh when it is available (Dimon, 1905; personal observation). Zimmer, Commins, and Browne (1999) chose to explore the feeding ecology of *I. obsoleta* from the flesh-eating perspective and attempted to answer the question of whether *I. obsoleta* were attracted to the chemicals being released from injured prey items as opposed to intact prey items. Preliminary work with fluorescein dye was performed at Oyster Landing, South Carolina to describe the boundary layers, and temperature and salinity data were taken from the nearby NERR (National Estuarine Research Reserve) weather station. In the
lab, dissolved free amino acid (DFAA) components from injured prey items were characterized using HPLC analysis, and fluxes of DFAA release from injured prey were quantified. Zimmer et al. (1999) then conducted experiments at Oyster Landing from August to November, 1994, where *I. obsoleta* were exposed to intact prey, damaged prey, and different cocktails of DFAA in the creek, and their responses were recorded.

The results demonstrated that *I. obsoleta* were more attracted to injured prey than to un-injured prey, and that when chemical signals from the prey (or just the DFAA alone) were released, rates of flux were more important than the chemical properties of specific amino acids. This suggests that the snail is less concerned with the type of potential prey item and more concerned with the abundance; more or larger prey would have increased flux rates as compared to smaller (amounts of size) prey.

Kasschau (1975) suggested using free amino acid pool components as indicators of stress in *I. obsoleta*, yet Vernberg & Vernberg (1975) used oxygen consumption rates as their measure of stress, and Cranford (1988) used a third method of flesh-dry weight as his stress indicator. Downs, Dillon, Fauth, and Woodley (2001) examined the possibility of using a molecular biomarker system (MBS), similar to that of Kasschau (1975) as stress indicators. However, instead of using amino acids, Downs et al. (2001) used the cellular parameters of lipid peroxide, glutathione, large and small heat-shock proteins, and Mn superoxide dismutases, among others. They examined these cellular parameter levels in *I. obsoleta* after exposing the snails to heat, cadmium, atrazine, endosulfan, and bunker-fuel stresses, and they found that the MBS was indeed capable of indicating when *I. obsoleta* was under abiotic stresses.

Gianotti and McGlathery (2001) asked the question of how the grazing activity of *I. obsoleta* affects the biomass of *Ulva*, a macroalga. To answer the question, Gianotti and McGlathery (2001) collected *I. obsoleta* in August and September of 1998, from two locations from Hog Island Bay, Virginia. They also determined average microalgal amount of nitrogen in *Ulva*. Experiments were run where rates of mass loss of *Ulva* due to herbivory were determined for
macroalgae that were fertilized with nitrogen and for those macroalgae that were not fertilized. Results showed that the grazing activity of *I. obsoleta* increases the tissue nitrogen content of *Ulva*, and it is probably good for the nutrient cycling of the creek. Gianotti and McGlathery (2001) suggest that at high densities, *I. obsoleta* influence macroalgal biomass.

Since 1902, research has been marching onward with *I. obsoleta* as the target organism. Areas of its ecology such as how it feeds and reproduces, and how it interacts with other organisms and non-animal members of the community have been examined to varying depths. The effects of abiotic factors such as temperature, current speed, and marine pollutants also have been examined. A century of research has answered many questions and has caused new ones to surface. Is there a similar pattern of seasonal migration across latitudinal lines? What aspects of microhabitats are attractive to *I. obsoleta*? What is the most efficient way of measuring its stress level? Can *I. obsoleta* be used to determine the health of a benthic community? Does this snail affect reproductive patterns of other benthic inhabitants? Such questions stimulate continuing research on *I. obsoleta*. The ecology of *I. obsoleta* is still far from obsolete.

**REFERENCES**


PART 7: COLLEGE OF SOCIAL WORK
The purpose of this chapter is to present a comparative, critical analysis of solution-focused brief therapy and cognitive-behavioral therapy. The chapter begins with definitions of theory, and is followed by a discussion of how theory informs practice. The next section will address the following aspects of solution-focused brief and cognitive-behavioral therapy: Historical context, major assumptions regarding human behavior, major practice phases, summary of extant research, strengths and limitations. Finally, a comparison and contrast of the two models will be presented.

DEFINITION OF THEORY

Theories are necessary tools for social work practice. Most practice models and therapies originate from a theory base. The two quotations below are attempts to define theory. According to Shertzer and Stone (1974) theory is defined as “statements of general principles, verified by data, that explain certain phenomena” (cited in Baruth & Huber, 1985, p. 4). Similarly, Davison and Neal (1982) define theory as: “A set of propositions that are intended to explain a class of phenomena” (p. 790). Both definitions point to the notion that theory is a conceptual means for explaining a particular phenomenon and must not be confused with practice.

Although theory is not removed from practice, it appears to be an essential underpinning of effective practice (Baruth & Huber, 1985). Consequently, practices are likely to be more effective if they explain “phenomena” (i.e., reasons for behavior, change, and how new change occurs). The following quotation explains it best:
"Practicing counseling without an explicit theoretical rationale is somewhat like flying a plane without a map and without instruments" (Corey, Corey, & Callanan, 1984 as cited in Baruth & Huber, 1985, p. 102).

All therapeutic models have at least two elements in common. First, they all are learning models that are designed to help people change in some way or another. Second, all involve three modes of human functioning, at various degrees of concentration (Baruth & Huber, 1985).

- Cognitive mode focuses on thought processes and how thinking can affect one's actions and feelings.
- Behavioral mode is primarily concerned with behavior and how behavior affects one's thinking and emotions/feelings.
- Affective mode focuses on emotions and their affect on one's behavior and thinking.

In regard to these three modes, it is important for social-work practitioners to understand the primary mode of therapeutic models, which is crucial when determining the appropriateness of a model for not only the client but also for the therapist. When deciding on a practice model, practitioners must use self-examination in efforts to choose models that are not only beneficial to clients, but they also must choose models to which they are willing to subscribe.

Regardless of the given treatment population, it is important for practitioners to understand two things. First, they must understand what constitutes theory, and then they must know how theory is utilized within the treatment setting.

**HOW THEORY INFORMS PRACTICE**

Theory guides practice by predicting outcomes, which is important when setting treatment goals (Beutler, 1998); thus, treatment goals are based on an explanation given by a particular theory as to why a problem or issue occurs. Based on a given explanation, a therapist then outlines a treatment plan that can be monitored for behavioral patterns and expected outcomes (Baruth & Huber, 1985; Corey, 1996; Beutler, 1998; Chambless & Hollon, 1998; Robbins, Chattergee, & Canda, 1998). Theories also are useful in helping define therapists' roles within
the therapeutic relationship. For example, in solution-focused brief therapy (SFBT) therapists assume a “not knowing” stance, while in cognitive-behavioral therapy (CBT) therapists serve as “role models” and play an active role in the treatment process (Berg, 1994b; Berlin, 1983; Beck, J., 1995).

Theory also guides practice by helping therapists determine appropriate client populations and problem areas that are best suited for a particular intervention. The effectiveness of a therapeutic model depends heavily on the clients’ ability to understand, accept and incorporate the outlined treatment goals (Pincus & Minahan, 1973). For example, a client who is mentally challenged may not be an appropriate candidate for traditional cognitive therapy; instead, a more behavior-based therapy or a combination of the two may be more appropriate choices. Similarly, solution-focused therapy may be an inappropriate choice to use with an unmotivated client based on the structure of the model (e.g., clients are required to set their own appointments and to complete other tasks) (Berg & DeJong, 1996; de Shazer, 1985, 1988, 1997; de Shazer & Berg, 1997).

Theory guides practice by providing a strategic outline to follow and explanations of behavior. An outline not only saves time but also aids practitioners in the justification and explanation of a treatment method that may be unfamiliar to therapists, agencies, funding sources and, most importantly, the clients (Baruth & Huber, 1985). Theories inform practice by explaining human behavior and development (Robbins, et al., 1998). Therapists must understand theories and the important information they provide to create organized and effective practices (Baruth & Huber, 1985; Pincus & Minahan, 1973; Robbins, et al., 1998). Two social-work practice models are examined in this chapter.

SOLUTION-FOCUSED BRIEF THERAPY

Historical Origins

Solution-focused brief therapy (SFBT) was developed at the Brief Family Therapy Center in Milwaukee, Wisconsin, in the 1970's by Steven de Shazer, Insoo Kim Berg, James Derks, Marilyn LaCourt, Eve Lepchik, and Elam Nunnally (Peller
& Walter, 1998). These practitioners used the work of Milton Erickson to develop a year-long training program that used a strategic-therapy approach (Peller & Walter, 1998).

There are three major areas of thinking that influenced the development of SFBT. Its development was first influenced by the Brief Problem Model of the Mental Research Institute (MRI). The MRI model is based on brief strategic therapy emphasizing the importance of pinpointing “problem-patterns” in client systems. Therapists’ interventions are intended to “change the patterns” (Watzlawick, Weakland, & Fisch, 1974 as cited in Dorfman, 1998).

The second influence on the development of SFBT was the work of psychiatrist Milton Erickson, who was best known for his hypnotherapy (de Shazer, 1994b). Erickson’s use of non-verbal communication and techniques for empowering clients to define therapeutic goals are key features incorporated into SFBT (de Shazer, 1994b).

The third major influence area was a transition from a negative to a positive focus (Berg & De Jong, 1996). The focus of therapy changed from a deficit or negative approach to an empowering positive approach. This positive approach coincides with social work’s core belief to operate from a client-strengths perspective (Berg & De Jong, 1996; de Shazer & Berg, 1992). SFBT is aligned with traditional social-work values such as positive thinking and self ambition (Peller & Walter, 1998).

Therapists using this model assist clients in creating new and different ways of seeing life’s events. Solution-focused therapists believe that creating positive thoughts will result in the client moving towards the accomplishment of goals with a positive outlook, which then will improve the likelihood of success. SFBT practitioners also believe that the client begins to make progress even before the first session (Wiener-Davis, de Shazer, & Gingerich, 1987, as cited in Peller & Walter, 1998). This “pre session” change is considered as somewhat similar to the “Hawthorn effect;” clients begin to change due to the mere fact that a therapy appointment was scheduled.
Practitioners who use SFBT act as consultants to the client-change process and not as experts. Using this model, therapists play “hands off” roles, and therapy usually lasts less than six sessions, depending on the clients’ needs (de Shazer & Berg, 1997). In addition, “solution language” is used because a SFBT core belief is that language plays a key role in how life is perceived (de Shazer & Berg, 1992; de Shazer, 1997). Solution language is used during treatment to discover what the clients perceive as important and to discover their hidden abilities. Solution language is carefully designed questions whose purpose is to solicit certain answers from clients (de Shazer, 1988). For example, a therapist may ask a client how loved ones would know that a “miracle” has happened. This type of questioning encourages the client to think in terms of the future and the impact of a “miracle” (positive change) on their loved ones. The goal of SFBT is to help clients discover strength they already possess in order to combat personal problems (Berg, 1994b). The next section discusses the basic assumptions of the SFBT approach.

Assumptions Regarding Human Behavior

Developed from an inductive rather than a deductive process (Berg, 1994b), SFBT is a systems-based therapy model that emphasizes the strengths and resources of clients. This model is highly “client centered” and assumes that clients have undiscovered strengths and abilities. It requires helping clients discover and utilize those strengths to attain results. Solution-focused therapists believe that ingredients required for the desired end product (i.e., solution) often already are present in the client’s life (Berg, 1994b). The emphasis is on the solution rather than the problem (Berg, 1994b; de Shazer, & Berg, 1997). The assumption is that more can be accomplished when the focus is positive, which makes this goal-oriented therapy unique (Berg and De Jong, 1996; Corcoran, 1997, 1998; Corcoran & Franklin, 1998; de Shazer, 1997; de Shazer & Berg, 1997).

A key component of SFBT is the collaborative therapeutic relationship designed to aid in the discovery of new thinking and behavior patterns (de Shazer, 1994b). According to de Shazer and Berg (1997), there is not a logical relationship between the problem and the solution. In other words, this model is centered
on possibilities, so it gives little or no attention to the client's presenting problem or past mistakes.

In SFBT, clients are considered to be the experts, and therapists use their ideas and goals to help create solutions for resolving problems (Berg, 1994a). The assumption is that people have within their experience a wealth of skills, some that they recognize and some that they do not (Berg, 1994a/b; de Shazer, 1980). According to the founders of SFBT, one of the main issues in regard to the problems that clients face is the lack of insight for recognizing their strengths and capabilities or the solution-oriented behavior that already exists (de Shazer & Berg, 1992). Importantly, according to de Shazer (1997), problems are problems because they are described that way. Problems exist only in language; thus, the importance of “solution language” is a unique characteristic of SFBT.

According to Berg (1994b), another assumption is that change happens when clients experience themselves as smart and successful. Clients often think of themselves negatively; the solution-focused approach helps them see themselves differently. Within SFBT, clients have the opportunity to define the goals of therapy. The assumption is that when clients begin to see themselves differently, they will behave differently; therefore, they will experience life more positively. Clients benefit when they are motivated and are more likely to remain in treatment when they feel competent and experience themselves as having some control over their lives (Berg, 1994b), i.e., if people are viewed as competent, they are more likely to behave competently.

In addition to the above assumptions, Berg (1994b) and Berg and DeJong (1996) report that every problem behavior or issue includes some sort of exception; hence, the “exception question,” an example of solution language. SFBT practitioners believe that no problem is ever present; therefore, it is important that the therapist and client create exceptions to problem behavior. These exceptions are pivotal in finding differences that offer new possibilities. Based on the above assumptions regarding human behavior in the environment, the practice phases of SFBT serve to help clients’ access and organize their strengths and resources by using solution-language and other action-oriented tasks.
Practice Phases

Solution-focused brief therapy (SFBT) has been practiced in many settings and has been shown to be an effective approach to address a variety of treatment issues (De Jong & Hopwood, 1996; Peller & Walter, 1998). The practice phases in SFBT are unique because, unlike most therapeutic models, SFBT utilizes its own language (de Shazer, 1994a/b; de Shazer, 1997). Because language is thought to be a key component in the change process, this “new” language serves to engage the client early in the therapeutic process (Berg & DeJong, 1996; DeJong & Hopwood, 1996; de Shazer, 1994a, 1997; Peller & Walter, 1998; Schorr, 1995, 1997). By questioning the client; therapist and client engage in a mutual dialogue in which clients assume a leadership role by exploring solutions to problems that they deem as critical. This technique is successful because it empowers the client to create reachable realistic goals. SFBT progresses through three phases of practice (i.e., engagement, work, and transition) that are described below.

**Engagement.** This phase begins with the therapist asking the client how he/she can help and what the client’s expectations of therapy are. The interview is said to be treatment itself because it is designed to help the client verbalize his/her wants and needs (Berg, 1994b). This phase serves to establish goals and expectations of the therapeutic process, as well as to establish roles and boundaries. Berg indicates that in this phase, therapists help clients identify goals by asking questions that solicit answers that will help the client visualize his/her life and the lives of their loved ones minus the treatment issue. For example, therapists ask clients how they want their lives to be different.

**Work Phase.** This phase involves the client’s discovery of exceptions to the treatment issue, and to search for answers therapists ask clients to think of times when the problem didn’t occur (Berg, 1994b). This dialogue includes asking the client to recall when different strategies were used to cope with target behaviors or issues. The questioning serves to help clients realize that they have the power to conquer their treatment issues because they have done it before. This self-discovery is key to empowering clients by promoting self worth (Berg, 1994b),
and this phase helps clients find solutions that are buried within. Therapists begin to pull out solutions by inquiring about what the signs of client progress are and what is necessary in order to make the first step towards change (Berg, 1994b). This phase combines searching for exceptions to problems, finding exceptions, moving towards change, and gathering the necessary resources to actually attain the change goal (Berg, 1994b).

**Transition phase.** Once the client has identified the necessary resources, the therapist and client map out a plan to maintain goal attainment. This requires the therapeutic team to consider clients' outside obligations such as family members or governmental agencies. For example, it is inappropriate for a client who is on probation to create solutions that could violate the conditions of his or her probation. This phase not only focuses on maintaining change, but relapse preparedness also is incorporated to insure that clients are not given a false sense of hope that could lead to distrust in the therapeutic process. In addition, the therapist and client identify the warning signs of relapse and establish an action plan to use if it were to occur.

**Solution Practice Techniques**

SFBT practitioners use a variety of techniques with clients. Five examples are described below.

**Scaling.** Scaling techniques are used to help clients become cognizant of their own strengths and abilities. Typically, the therapist asks the client to, assess personal issues in terms of importance, such as rating how confident he/she about reaching a goal. The rating scale is from 0 (not confident) to 10 (extremely confident) (Berg, 1994b).

**Mind-mapping.** Mind-mapping techniques assist clients to create, in their minds, a path or map to a solution (Berg, 1994b; Peller & Walter, 1998). This technique is used to aid the client's remembrance of certain past behaviors that were successful. The technique helps clients tap into their emotions in order to bring light to what affects them significantly, enabling them to address an effective intervention.
**The miracle-question.** The purpose of the “miracle question” is to enable the client to imagine the positive affects that can occur after the achievement of their set goals. The technique helps clients have a clear sense of how they want their lives to be different (Berg, 1994b). By focusing on what is important to the client, therapy to the client is not burdensome, and change can occur quite quickly.

**Relationship Question.** To use this technique, therapists ask clients how loved ones or family members would notice that a “miracle” or “change” has occurred. This assists the client in understanding the impact of the problem on their loved ones and can reveal additional reasons to overcome problems (Berg, 1994b).

**Complimenting.** This technique involves therapists praising clients for exhibiting positive thoughts and behaviors. The technique rewards clients for their positive efforts, which helps maintain or boost client motivation (Berg, 1994b).

**Homework Assignments.** Written assignments are used in order to give clients an opportunity to record exceptions to the target behavior or issues. This visual aid will help the client recognize what triggers problem behavior (Berg, 1994b).

**Extant SFBT Research**

Research on the effectiveness of SFBT is limited. Although this approach has been used in various practice settings such as substance abuse and conflict resolution, the empirical evidence of its effectiveness is weak. Peller and Walter (1998) discuss the effectiveness of brief therapies as compared to long-term models but fail to specifically discuss the effectiveness of SFBT. These authors emphasize the brief time for therapy and focused less on client outcomes and firm empirical findings. Many of the studies on SFBT are case studies and non-empirical scientific methods, which, in some way, should be expected based on the non-theoretical origins of this model. Several authors (e.g., Corcoran et al.; De Jong & Hopwood, 1996; de Shazer, 1985, 1988; de Shazer & Berg, 1997;
Schorr, 1994, 1997) present numerous outcome studies that fall short due to a lack of qualitative evidence that is required to validate findings (Corey, 1996; Beutler, 1998).

Strengths and Limitations

**Strengths.** SFBT is a practice model that operates from a strengths perspective, and Berg (1994b) emphasizes that building upon clients’ strengths is one of the core values of the social-work profession. She asserts that this perspective serves to empower clients by having them become active members in their treatment process. She also states that the therapist “not knowing” position is because clients do indeed know what is best for them and that it is not her job to tell them what to do with their lives. Further, Berg reports that the active role of clients helps them accept responsibility for their behavior, which in turn lowers resistance because clients have the power to work on issues of their choice. The approach is consistent with the social-work core belief to empower clients and to work from a strengths perspective.

Another strength of SFBT is that practitioners using this model are less likely to “burn out” due to the model’s emphasis on positive outcomes instead of on problems (de Shazer, 1980). Also de Shazer reports that by assisting clients to concentrate on the present, they become empowered by learning coping skills and discovering previously unrecognized abilities. Further, clients are noted as uplifted when the therapeutic atmosphere is positive instead of negative. This focus away from past setbacks and experiences is attributed to the therapists’ belief that it is not necessary to know about a client’s past (Berg, 1994b). Thus, SFBT is a model that respects clients’ strengths, and practitioners using this model value client contributions to the therapeutic relationship.

**Limitations.** Although SFBT is an excellent treatment model, its limitations must be noted. Piercy (2000) and Peller and Walter (1998) report that solution language may be difficult to grasp by some clients and that use of such language can possibly leave clients feeling confused and misunderstood. Peller and Walter (1998) view solution-language as manipulative and generally very suggestive.
Although operating from a strengths perspective is a core value in social work, other core social work values revolve around justice, equality and fairness. Any practice approach that attempts to deceive or manipulate clients would fall short in meeting the practitioner's ethical obligations.

Piercy (2000) also criticizes SFBT for having unrealistic expectations in regard to a client's emotional state and for being rigid in its practice phases. Since clients of this model are expected to be active in the treatment process, it may not be appropriate for unmotivated clients. For example, an unmotivated client given the responsibility of scheduling personal appointments has the potential to cause scheduling problems (Peller & Walter, 1998). Piercy also views SFBT as too rigid, especially as it relates to use of solution-language. He reports that this rigid line of questioning runs the risk of setting the therapist and client up for disappointment when an alternative response is given to certain questions, resulting in unexpected difficulty to keep a positive focus.

An important limitation of SFBT is that it lacks the theoretical underpinnings that substantiate most therapies. Without a theoretical base, this model fails to provide an explanation about why events occur in the lives of humans and how to predict future occurrences. Even in its efforts to operate from a strengths perspective, without the theory base to explain and predict, this model seems quite limited. SFBT often is not compared to other therapeutic models because of lack of quantitative research supporting its effectiveness. This deficit may cause some practitioners to dismiss this approach without further investigation of its effectiveness. Finally, the lack of a theoretical foundation may result in some unskilled therapists doing serious harm to some clients.

According to Peller and Walter (1998), SFBT ignores important possible contributions to problems and could pose a threat to clients by giving them responsibility for choosing the therapy goals. For example, they suggest that if a child presented to therapy with behavior problems, but the behavior problems stemmed from an abusive home, the therapist may not probe deep enough to uncover such vital information. These researchers provide another example: "A client comes in complaining of depression. The current standard of care would
suggest that clients take antidepressant medication. The solution-focused consultant would probably inform the client that one approach is the use of medication and that there also are other approaches. Then the consultant would let the client choose” (p. 89).

Overall, SFBT seems to do well in its attempts to provide clients with solutions in a positive and progressive manner, and the core beliefs are quite closely related to those of social work, which should be considered strengths due to the fact that many models have opposing values and assumptions from those of the social-work profession. Since the research and theoretical underpinning are weak, a related therapeutic approach, cognitive-behavioral therapy, will be discussed along the same dimensions.

COGNITIVE-BEHAVIORAL THERAPY

Historical Origins

Cognitive-behavioral therapy is theoretically rooted in behaviorism, which is a theory of psychology. Encarta (“Behaviorism...”, 2001) defines behaviorism and highlights this movement in psychology as using strict experimental procedures to study observable behavior in relation to the environment, which is the stimulus-response view of psychology. Among others, it has connections with the American functionalist school of psychology and Darwinian evolutionary theory that are focused on ways in which organisms adapt to changes in their environments.

Behavior Therapy. Davidson and Neal (1982) indicate that behavior therapy stems from theories of learning and involves the application of principles taken from research in experimental and social psychology. They describe the behaviorism-learning branch of psychology simply as: New (positive) behaviors can be learned and old (negative) behaviors can be unlearned. The techniques in this therapy are reported as promoting self-control. Behavior therapists believe that abnormal behavior is acquired according to the same learning principles as normal behavior (Davidson & Neale, 1982).
Behaviorism. The American psychologist, John B. Watson, first developed behaviorism in the early 20th century. The dominant view of that time was that psychology is the study of inner experiences or feelings by subjective methods (Davidson & Neale, 1982). Watson first believed that these inner experiences could not be studied because they were not observable, being influenced greatly by the research of Russian physiologist Ivan Pavlov on the classical conditioning of animals. Davidson and Neale espouse that Watson sought to make the field of psychology scientific by using only laboratory experimental research to establish empirical results and that led him to formulate a stimulus-response theory of psychology. They also report his conclusions that all forms of behavior, emotions, habits, etc. are elements that can be observed and measured. He hypothesized that emotional reactions are learned in much the same way as other skills, and his stimulus-response theory resulted in a great increase in research activity on learning in animals and humans (Davidson & Neale, 1982).

Behavioral Learning. Skinner created his theory of learning and behavior based on laboratory experiments instead of the Watson methodology (Davidson & Neale, 1982). Davidson and Neale report Skinner’s method, known as “basic behaviorism,” as similar to Watson’s view that psychology is the study of observable behavior of individuals living in their environment. They also indicate that Skinner, unlike Watson, believed that inner processes, such as feelings, should not be excluded from study. Furthermore, he believed that these inner workings should be studied by the usual scientific methods with particular emphasis on controlled experiments known as operant conditioning, which use individual animals and humans (Davidson & Neale, 1982).

Operant conditioning occurs as a result of stimulation, and Skinner provided evidence that language and reasoning could be studied scientifically. His work is extensive, but he is best known for the concept of “reinforcement” (Davidson & Neale, 1982).

Following the work of Watson and Skinner, the development of cognitive therapy began when researchers became curious about the thought process and its influence on behavior (Davidson & Neale, 1982). As a result, behaviorism
evolved into cognitive-behavioral therapy, which is a combination of cognitive and behavioral methods that are aimed at helping people change negative thoughts, beliefs and behaviors (Davidson & Neale, 1982). There are a variety of cognitive approaches, but for the purposes of this chapter, only cognitive-behavioral therapy will be described. In addition, the cognitive-therapy work of Dr. Aaron Beck is often referred to as cognitive-behavioral therapy. Henceforth, it will be referred to as cognitive-behavioral therapy.

**Cognitive-Behavioral Therapy Procedures**

Aaron Beck and Albert Ellis, both former psychoanalysts, pioneered cognitive-behavioral therapy (CBT) in the 1960's. Beck is best known for his work in the treatment of depression (Beck, A., 1972). CBT is an approach aimed at examining problem issues and then moving towards solutions by the development of certain skills (Berlin, 1983).

In CBT, the goal of therapy is to help clients become aware of how negative thinking leads to negative behavior, and then to help them replace negative thoughts with positive thoughts, which will lead to positive behavior (Beck, J., 1995). CBT combines the cognitive-restructuring approach of cognitive therapy with the behavioral-modification techniques of behavioral therapy (Berlin, 1982). Using this approach, the therapist and client work collaboratively to pinpoint problem issues and behaviors (Beck, Emery, & Greenburg, 1985; Beck & Freedman, 1990). After the identification of problem areas, the goal is then to readjust the behavior. CBT helps clients replace undesirable behaviors with healthier behavioral patterns (Beck, A., 1972).

This therapy is not concerned with the cause of the problem behavior but only with assisting clients in changing behaviors and their effect on the thought process. According to Beck (1972), some clients may have certain core beliefs, called schemas, which are flawed and require adjustment. CBT is an action-oriented treatment that helps clients to learn ways to recognize and change negative thinking, and to use new methods in order to solve their problems (Berlin, 1980a/b; Berlin, 1982, 1983; Kuelhlein, 1998). Based on the belief that therapy
works best if skills learned are applied to real situations, cognitive-behavioral therapists use repetitive methods in order to aid in the learning process (Beck, J. 1995). Skills such as self-help exercises and homework assignments are key components of the treatment process. As reported earlier, there are many variations of CBT. Two popular variations are Rational-emotive therapy and Cognitive-behavioral modification. Both will be discussed briefly.

**Rational-Emotive Behavior Therapy.** REBT is a variation of cognitive-behavioral therapy developed in 1955 by psychologist Albert Ellis. REBT is based on the belief that people's past experiences effect how they think and behave (Ellis & Blau, 1993; Ellis, 1993) and shape their belief system and thinking patterns. One of the core beliefs of REBT is that people form illogical, irrational thinking patterns that cascade into negative emotions, which perpetuates irrational ideas. The goal of REBT is to help clients recognize the irrational beliefs that contribute to unwanted behavior and then to replace them with rational beliefs in order to relieve emotional distress (Ellis, 1993). REBT is an action-oriented therapeutic approach in which practitioners utilize a variety of techniques to assist clients.

**Cognitive-Behavioral Modification.** This is a popular variation of cognitive-behavior therapy (CBT) created by Dr. Donald Meichenbaum. He pioneered the self-instructional, or “self-talk,” approach to CBT in the 1970s. The goal of this approach is to change unwanted behaviors and thoughts by using verbal methods. In this approach, the emphasis of therapy is teaching clients how to talk to themselves both internally and out loud (Meichenbaum, 1977). These verbal coping skills are aimed at changing client behavior especially when confronted with conflict. This technique has been used a great deal with children in school settings and with clients suffering from post-traumatic stress disorder (Meichenbaum, 1994). This therapeutic method usually involves a variety of techniques, including self-evaluation, positive self-talk, and other collaborative methods such as role-playing (Meichenbaum, 1977, 1994).
Assumptions Regarding Human Behavior

Some basic assumptions of CBT are that thoughts, beliefs, attitudes, and perception flaws influence what emotions will be experienced and the intensity of those emotions (Beck, A., 1972; Beck, J., 1995). The intense emotions will then lead to Maladaptive Behavior (i.e., behavior that is counter-productive and disrupts an individual's life). The therapeutic aim of CBT is first, to change an individual's thoughts (cognitive patterns), which will eventually change his or her emotional well-being and behavior (Beck, A., 1972; Beck, J., 1995). As stated earlier, the entire process begins by examining thought processes.

Negative thinking patterns that lead to problem behavior are described by many authors (e.g., Beck et al., 1979; Beck & Weishaar, 1995; Dattilio & Freeman, 1992 as cited in Corey, 1996 p.338). These patterns include the terms described here. "Arbitrary inferences" refer to making conclusions without supporting and relevant evidence. This includes "catastrophizing," or thinking of the absolute worst scenario and outcomes for most situations. "Selective abstraction" consists of forming conclusions based on an isolated detail of an event. In this process other information is ignored, and the significance of the total context is missed. The assumption is that the events that matter are those dealing with failure and deprivation. "Overgeneralization" is a process of holding extreme beliefs on the basis of a single incident and of applying them inappropriately to dissimilar events or settings (Beck et al.1979; Beck & Weishaar, 1995; Dattilio & Freeman, 1992 as cited in Corey, 1996, p.338).

Other types of thinking that contribute to human problems include "magnification" and "minimization" (Beck, A., 1972; Beck, J., 1995) among others. These two are defined as perceiving a case or situation in a greater or lesser light than it truly deserves. In addition, "personalization" is a tendency for individuals to relate external events to themselves when there is no basis for making this connection (Beck, J., 1995). Others include "labeling or mislabeling" that involves viewing one's self on the basis of errors made in the past and allowing them to continue to haunt and define one's identity (Beck, A., 1972; Beck, J., 1995).
Similarly, “polarized thinking” involves thinking and experiencing situations in “all or nothing terms” (Beck, J., 1995).

In CBT, it is assumed that maladaptive behaviors and disturbed mood or emotions are the result of inappropriate or irrational thinking patterns, called “automatic thoughts” (Beck, J., 1995). Instead of reacting realistically to a situation, clients tend to react to their personal distorted viewpoint of the situation. The main goal of CBT is to challenge these unrealistic thoughts by a process which will be discussed later called “cognitive restructuring” (Beck, J., 1995).

Practice Phases

Like behavior therapy, CBT tends to be short-term (often between 10 and 20 sessions), and it focuses on the “here and now” instead of on the past (Sacco & Beck, 1995). The therapeutic process begins with identification of distorted perceptions and thought patterns that are causing or contributing to the client’s problems. Therapists use three phases and many techniques to make this model a success in practice.

Phase I. Phase I of the treatment process is known as the relaxation phase. Initially, sessions are typically spent explaining the basics of CBT to clients. The first session helps to establish a positive therapeutic relationship since this therapy is a collaborative, action-oriented effort (Beck, J., 1995). Using this model, clients become empowered just by having an active role in the treatment process. In order to expedite healing, cognitive-behavioral therapists often request that their clients complete homework assignments between sessions. Clients begin receiving assignments early in the treatment process so that they can experiment with newly-learned behaviors and thoughts from therapy sessions. In addition, the behavior component of CBT endorses repetitive actions in the learning process.

Phase II. Within this phase, therapists seek to expose irrational thoughts (Beck, J., 1995) using various techniques such as journaling and modeling. Journaling is a technique that gives clients the responsibility of documenting their feelings and actions by writing in a journal. The journal serves as a visual aid that helps clients connect therapeutic concepts related to thoughts and behavior.
J. Beck also describes modeling as a technique where the therapist uses role-play to demonstrate appropriate behaviors. This is another technique that is used to help clients recognize how irrational thoughts lead to problem behaviors (Beck, J., 1995) and to help clients see and experience situations differently.

**Phase III.** The final phase of CBT is called the cognitive-restructuring phase, and it involves actions aimed at replacing maladaptive thoughts with constructive thoughts and beliefs (Beck, J., 1995). Cognitive therapists help their clients become aware of their distorted thinking patterns and then take steps towards changing them. The restructuring comes from rehearsing situations that may be troublesome for clients. The “cognitive-rehearsal” process is used to help the client imagine a difficult situation. The goal is to then guide the client through a process by which the issue is confronted and dealt with appropriately (Beck, J., 1995). The client then works on practicing or rehearsing these steps mentally. Ideally, when the situation arises in real life, the client will remember the rehearsals and act accordingly. In addition, techniques such as: relaxation, self-talk, validity-testing, conditioning and systematic desensitization (Beck, J., 1995) help complete the treatment process. Due to space limitations, they are not described here.

**Strengths and Limitations of Cognitive-Behavioral Therapy**

**Strengths.** CBT is widely practiced, and its many contributions include an emphasis on client's strengths, various cognitive, emotive and behavior techniques; and it has a sound theoretical base. In addition, most forms of CBT can be used in conjunction with other mainstream therapies. The collaborative approach of CBT offers clients opportunities to express their areas of concern. Currently, around 70% of the members of the Association for the Advancement of Behavior Therapy identify themselves as cognitive behaviorists (Beck, J., 1995); thus, it is a prevalent therapeutic approach to use when working with clients.

One of the most important strengths of CBT is that it has strong theoretical underpinnings. Based on psychological theories of learning and behaviorism, CBT
qualifies as a theory, which enables a practitioner to use it to explain and predict human behavior and development within the environment.

**Limitations.** Overall, CBT is strong in its theoretical base and effectiveness; however, it still has some limitations that are worth noting. CBT tends to be used to minimize emotions. This perceived disregard for feelings may be harmful to clients who are more expressive and may require more nurturing by a therapist. Another limitation of CBT is that it does not focus on exploring the unconscious or underlying conflicts, and sometimes it does not give enough weight to a client’s past (Corey, 1996). This may result in ineffective treatment when the presenting or focus issues result from deep psychological wounds. Similarly, CBT fails to address cultural, racial and spiritual issues that some clients may experience (Corey, 1996). Lastly, the cognitive aspect of CBT may not be appropriate for some clients such as those who are mentally challenged (Corey, 1996).

**CBT Extant Research**

Contrary to belief, CBT is the recommended treatment model for a number of conditions other than depression. These include: eating disorders (Agras, 2000), insomnia, (Edinger, Wohlgemuth, Radtke, Marsh, & Quillian, 2001), and anxiety disorders (Dia, 2001). CBT also has been used for children with conduct disorders, substance abuse, as well as emotional and physical abuse (Feindler, 1986). Utilizing a cognitive-behavioral approach, people learn new ways to handle issues and conflicts in a positive manner (Berlin, 1983). Using instruction, modeling, role-playing, and other techniques, they learn to react to life events in appropriate, non-violent ways.

Many studies have shown that CBT is highly effective in treating depression among adults (Beck, Hollon, Young, Bedrosian, & Budenz, 1985; Beck, J., 1995; Dobson, 1989; Hollon, Shelton, & Davis, 1993). CBT research establishes it as working alone, or in combination with medication, for the treatment of depression (Beck, et al., 1985; Hollon, Shelton, & Loosen, 1991; Hollon et al., 1993). Complex conditions such as eating disorders also are successfully treated using CBT. Agras (2000) reports CBT was successful with patients who suffered from
bulimia nervosa. In this recent study, CBT was compared to interpersonal psychotherapy (IPT), and, according to the findings, patients who underwent CBT also were significantly more likely to achieve appropriate eating attitudes and behaviors than were patients treated with IPT.

Beginning in the 1970s, children began being treated using CBT; since that time, studies indicate that depressed children and adolescents have benefited from this approach (Butler, Miezitis, Friedman, & Cole, 1980; Asarnow & Bates 1988; Corey, 1996). Adams and Adams (1991) reported that CBT was successful in the treatment of issues of acceptance, peer pressure and conflict resolution. Although these issues may not be specific to depression, they are important in that they typically can result in depression if left untreated.

Need for Comparison and Contrast of SFBT and CBT Practice Models

As evidenced in this chapter, both solution-focused brief therapy and cognitive-behavioral therapy are effective practice models. It is important when contemplating a therapeutic approach for the practitioner to understand the importance of how models vary. Although both models discussed in this chapter are effective approaches, it is important to note some specific differences and similarities between the two. The comparison and contrast section will follow the same format of the individual discussions.

COMPARISON AND CONTRAST OF SFBT AND CBT

Historical Origins

The most important historical difference between the SFBT and CBT models is their theoretical underpinnings. SFBT is a practice model, developed in the 1970's by social workers and family therapists formulated from their practice experience, and not from research-based theory; thus, it falls short in its explanation of human behavior.

Unlike SFBT, CBT has strong theoretical roots in Behaviorism and theories of
learning, which evolve from the roots of psychology. CBT is a combination of cognitive and behavioral methods that are aimed at helping people change negative thoughts, beliefs and behaviors (Davidson & Neale, 1982). In addition, CBT has a strong connection to the development of psychology and behavior-change research, while SFBT is less concerned with behavioral change.

Assumptions

In contrast to CBT, SFBT is a systems-based therapy model that emphasizes the strengths and resources of clients. In SFBT, it is assumed that clients have undiscovered strengths and abilities and that change is just a matter of helping clients discover and utilize those strengths. Solution-focused therapists believe that ingredients required for the desired end product (i.e., solution) often already are present in their clients' lives (Berg, 1994b). Conversely, in CBT it is assumed that irrational thoughts are the cause of distress among humans. In CBT the assumption is that these irrational thoughts eventually manifest themselves behaviorally. Both models include understanding how thoughts can control behavior. In SFBT it is assumed that change will occur when clients begin to think of themselves in a more positive light. Similarly, CBT assumes that mental schemas influence behavior, and so the focus is to restructure one's thinking to eliminate distorted thoughts, which will then change negative behavior. Within the SFBT approach, clients have the opportunity to define the goals of therapy. The assumption is that when clients begin to see themselves differently, they will behave differently and, therefore, will experience life more positively. On the other hand, with CBT, the assumption is that behaviors can be learned and unlearned, by changing thoughts, and that thoughts have a direct impact on behavior.

SFBT operates from a strengths perspective and emphasizes the solution rather than the problem as in CBT. Conversely, in CBT the focus is on eliminating erroneous thoughts, which generally is not as positive an approach as SFBT. Both models involve collaborative therapeutic relationships; however, CBT therapists are much more active in directing the therapy process; yet in SFBT, clients are considered to be the experts.
Practice Phases

SFBT and CBT both begin with engagement in which the therapist and client discuss expectations of therapy. Clients set the goals of therapy in the SFBT model, and the interview is designed to help the clients express themselves. Similarly, in CBT, in addition to establishing goals and expectations of the therapeutic process, roles and boundaries are established initially. Within the first phases of both approaches, the goals are to lay the ground work of the therapeutic relationship. However, the engagement phase (SFBT) involves clients verbalizing their expectations, and, within Phase I (CBT), homework assignments are given to begin the behavioral process of repetitive learning.

Within both therapeutic approaches, the second phases are somewhat similar. The SFBT work phase consists of the therapist making attempts to help the clients discover their inner strengths by having the clients recall times when they were successful in their efforts to refrain from the treatment issue. In Phase II of CBT, which is aimed at assisting the client in the discovery process, action techniques also are used; however, they differ regarding the specific techniques that are used.

An important difference between the models is that SFBT utilizes solution-language that is aimed at helping the client focus on the future by wording questions aimed at promoting certain thoughts and responses, while in CBT role-play and journaling often are used to help the client recognize the contributions of irrational thoughts to the client's actual behavior. In CBT, however, special techniques such as modeling and self-talk are used to accelerate the healing process, and such processes can be viewed as a "solution-oriented" language.

The final phases of both approaches also are somewhat similar. The SFBT transition phase consists of preparing the client to face anticipated challenges by coordinating resources and mapping out a relapse plan. The final phase of CBT (i.e., Phase III) consists of putting techniques learned throughout the therapeutic process into action by exposing the client to situations that were problems before therapy. Thus, this phase is to reinforce the techniques learned in therapy and finally to dispute irrational beliefs in their lives. Therefore, the goal of both approaches is preparation to leave therapy.
The models presented also are similar in that they are generally brief in length, and both depend upon the needs of their clients. The average number of visits in SFBT is six or less, while the number of visits using CBT is usually around 10 to 15.

**Extant Research**

The models are similar in some ways evident in relevant literature, yet they differ in the extent to which empirical support exists. First, they both are practiced in settings with children and adults. Also, the creators of both models are alive and continue to practice and provide specialized training in the application of their models. Certainly, the creators of both models have written extensively so that it is not difficult to locate and read their original materials. Regarding research effectiveness, SFBT is quite limited in supportive empirical data. Much is written in the form of case studies, and a few studies conducted in the area of substance abuse and marital issues still fail short of the strong empirical base and history of CBT. Empirical data regarding the effectiveness of CBT is extensive. This approach has been widely used to combat depression, phobias, eating disorders and numerous other psychological as well as behavioral problems.

Regardless of the effectiveness of the models, they may not be applicable in all settings. For example, due to the tasks and responsibilities of clients, these models may not be appropriate for those who are mentally challenged. Additionally, both models fall short in that they fail to address issues related to race, culture or religion. Neither model considers social justice, racism or other disparities that some clients may experience.

Both models focus on the present and the future, minimizing the past and operating from a strengths perspective; however, they are different in several ways as well. For example, SFBT therapists maintain a "not knowing" stance, allowing the client to take the lead role in the process. Examples are actions such as scheduling their own appointments and establishing their treatment goals. In CBT, therapists act more as mentors or guides throughout the treatment process, which is important in helping clients who may have not had the benefit of a positive role.
model in their lives. In most cases, therapists are viewed as models for their clients; thus, it is important for practitioners to practice self-evaluation before undertaking implementation any therapy. Failure of practitioners to engage in self-evaluation can be detrimental to clients, especially when using SFBT or CBT.

Finally, both SFBT and CBT are useful and effective social work-practice models. However, before attempting to practice these and any other models, it is important for practitioners to understand the fundamental differences between treatment models and undergo the required training and appropriate clinical supervision in order to serve the needs of their clients adequately.

REFERENCES


