

THE RELATIONSHIP BETWEEN MULTIRACIAL IDENTITY VARIANCE, SOCIAL  
CONNECTEDNESS, FACILITATIVE SUPPORT, AND ADJUSTMENT IN  
MULTIRACIAL COLLEGE STUDENTS

by

JAMES L. LYDA

A DISSERTATION

Presented to the Department of Counseling Psychology  
and Human Services  
and the Graduate School of the University of Oregon  
in partial fulfillment of the requirements  
for the degree of  
Doctor of Philosophy

June 2008

**University of Oregon Graduate School**

**Confirmation of Approval and Acceptance of Dissertation prepared by:**

James Lyda

Title:

"The Relationship Between Multiracial Identity Variance, Social Connectedness, Facilitative Support, and Adjustment in Multiracial College Students. "

This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Department of Counseling Psychology and Human Services by:

Benedict McWhirter, Chairperson, Counseling Psychology and Human Services

Krista Chronister, Member, Counseling Psychology and Human Services

Karyn Angell, Member, Counseling Psychology and Human Services

Naomi Zack, Outside Member, Philosophy

and Richard Linton, Vice President for Research and Graduate Studies/Dean of the Graduate School for the University of Oregon.

June 14, 2008

Original approval signatures are on file with the Graduate School and the University of Oregon Libraries.

© 2008 JAMES L. LYDA

Research has suggested that multiracial individuals may vary in how they racially identify depending on the context in which they operate (Renn, 2004; Root, 1998, 2003). To examine this assertion, multiracial identity and variance in multiracial identity were examined in this exploratory study of a nationally representative sample of 199 multiracial college students. Additionally, the relationship of multiracial identity variance with factors common to adult transitional development and to the college student experience, including social connectedness, various forms of facilitative support, college

adjustment, and depression, were also examined in this study. Sex differences among these study variables were also explored.

The results of descriptive analyses revealed that this generally connected, adjusted, and non-depressed sample consistently varied their racial identity depending on their context. Results of Pearson product-moment correlations among study variables for the whole sample demonstrated that this multiracial identity variance was not related to adjustment, social connectedness, facilitative supports, or depression. But results differed when breaking down the sample by sex. For males, increased variance in multiracial identity across contexts was related to lower perceived availability of, support from, and connectedness to student support groups. For females, increased multiracial identity variance was related to lower participation in ethnic and cultural student support groups. A series of subsequent simultaneous multiple regression analyses revealed that increased involvement in one form of facilitative support in the college environment- ethnic/cultural student support groups- actually predicted lower multiracial identity variance for the sample.

Regarding connectedness, for the entire sample, higher social connectedness was related to higher college adjustment but lower participation in ethnic and cultural student support groups. Sex differences also emerged for connectedness. For males, social connectedness was directly related to availability of student groups, adjustment, and institutional attachment, and for females social connectedness was directly related to college adjustment, but inversely related to participation in ethnic/cultural groups.

Findings of this study are consistent with multiracial identity theory, social connectedness theory, and with research related to college student and adult transitional development, and confirm that multiracial individuals vary their identity based on social context. Implications for future research and intervention are discussed.

## CURRICULUM VITAE

NAME OF AUTHOR: James L. Lyda

PLACE OF BIRTH: Iowa City, Iowa

DATE OF BIRTH: June 9, 1979

### GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene, OR  
Northwestern University, Evanston, IL

### DEGREES AWARDED:

Doctor of Philosophy in Counseling Psychology, 2008, University of Oregon  
Master of Science in Counseling Psychology Family and Human Services, 2004  
University of Oregon  
Bachelor of Arts in Psychology, 2001, Northwestern University

### AREAS OF SPECIAL INTEREST:

Multiracial identity; multicultural counseling competence; late adolescent/ young  
adult development and mental health; college student development;  
college counseling

### PROFESSIONAL EXPERIENCE:

Post-Doctoral Fellow, Counseling and Psychological Services, University of  
California- Berkeley, Berkeley, CA 2007-08

Pre-doctoral Intern, University Counseling and Consulting Services, University of  
Minnesota, Minneapolis, MN 2006-07

Graduate Teaching Fellow, Counselor/ Outreach Specialist, University  
Counseling & Testing Center University of Oregon, Eugene, OR 2004-06

Therapist, Volunteers in Medicine Clinic, Eugene, OR 2004-06

Individual Therapist, Oregon Social Learning Center, Eugene, OR, 2002-04

Practicum Intern, University of Oregon Counseling and Testing Center, Eugene, OR 2003-04

Practicum Intern, University of Oregon Child and Family Center, Eugene, OR 2002-03

Crisis Line Counselor University of Oregon Crisis Line, Eugene, OR 2002-03

Intern, Youth Resource Foundation, Inc. Warming House Youth Center, Willamette, IL, 2000- 01

#### GRANTS, AWARDS AND HONORS:

American Psychological Association Minority Fellowship Program, Mental Health and Substance Abuse Services Fellowship 2003-06

University of Oregon Center on Diversity and Community (CoDaC), Graduate Summer Research Award, Summer 2005



## ACKNOWLEDGMENTS

This dissertation could not have been completed without the love, support, patience and sacrifice of my partner, Angela Keller. I love you and thank you for everything.

To my mother, Debra Lyda, thank you for nurturing my education, for being a Supermom throughout my upbringing, and for all of your words of wisdom throughout the years. To my father, Dr. Jack Lyda Sr., thank you for blazing the trail and setting the bar high for me to strive for in my education. To my sister Elizabeth, thank you for being the only person in the world with whom I share my unique biracial heritage and for being my first friend. And to my brother Jack, Jr., thanks for being like a second father to me as a child and a role model as a father to my nieces, Haley and Taylor.

To my grandparents, Leonard and Leona House, thank you for your love and support throughout the years. Your value for my education has been a driving force, and I would not have made it this far without you. To Naomi Lyda, may you continue to rest in peace and may your grace live on in me.

I would like to thank my dissertation Chair, Dr. Benedict McWhirter, for his guidance, patience, and example. In addition I am thankful for the commitment, dedication, and feedback of my dissertation committee members, Dr. Krista Chronister,

Dr. Karyn Angell, and Dr. Naomi Zack. Also, thank you to John Petrocelli for your helpful consultation.

Thank you to my grad school friends and colleagues who made graduate school bearable: Shari Lum, May Lim, Allison Lau, Keith Miller, Heather Marshall, Sarah Wilson, Dave Miller, Amit Shahane, Gerald Gonzalez, Michelle Burt, Stephanie Shepard, and Colleen Comeau.

Special and heartfelt thank you to Karen Paez, for being the big sister I never had. Your support was invaluable, and your friendship and kindness (literally) nourished my soul. And, George Hanawahine, thank you for your mentorship, brotherhood, and thank you to you family for showing me the meaning of 'ohana.

Finally to my dear friends from internship, Denise Wytenbach and Monica Bigler, two strong women who are the embodiment of perseverance and grace.

This investigation was supported in part by APA Minority Fellowship Program Mental Health Substance Abuse Fellowship (Grant # 3T06SM56564), as well as a grant from the University of Oregon Center on Diversity and Community (CoDAC).

Finally, thank you to my participants and all those who assisted me in their recruitment.

Dedicated to Leonard and Leona House,  
who made my education possible.

## TABLE OF CONTENTS

Chapter	Page
I. RATIONALE .....	1
Historical, Political, and Social Implications of Mixed Race Identity .....	2
Racial and Ethnic Identity .....	3
Multiracial Identity Models .....	5
Monoracial Identity Development Models .....	5
Biracial and Multiethnic Identity Development Models .....	6
Ecological Models of Multiracial Identity Development .....	7
Wardel and Cruz-Jansen's Model .....	8
Root's Model .....	11
Multiracial Identity Variance .....	13
Social Connectedness .....	17
Social Connectedness and Multiracial Identity: Influence of Sex .....	19
Facilitative Support .....	20
College Adjustment .....	21
Depression .....	22
Purpose of This Study .....	23
Research Questions.....	24
II. METHODOLOGY .....	27
Participants .....	27
Measures .....	32
Demographics .....	33
Multiracial Identity Variance .....	33
Social Connectedness .....	35
Facilitative Supports .....	37
College Adjustment .....	38

Chapter	Page
Depression .....	40
Procedures .....	41
Participant Recruitment .....	41
Data Collection .....	43
Sample Size .....	44
III. RESULTS .....	45
Overview .....	45
Preliminary Analyses .....	45
Descriptive Analyses .....	48
Multiracial Identity Variance .....	48
Sex Differences .....	49
Social Connectedness .....	49
Sex Differences .....	49
Perceptions of Facilitative Student Supports .....	49
Sex Differences .....	50
College Adjustment .....	51
Sex Differences .....	51
Depression .....	51
Sex Differences .....	51
Correlation Analyses .....	55
Multiracial Identity Variance .....	56
Social Connectedness .....	56
Facilitative Supports .....	57
College Adjustment .....	57
Depression .....	57
Regression Analyses .....	61
Explaining Multiracial Identity Variance .....	61
Explaining Social Connectedness .....	62
Explaining Depression .....	62
Summary of Results .....	65

Chapter	Page
IV. DISCUSSION .....	68
Main Findings: Relationship Among Variables .....	68
Demographics .....	68
Multiracial Identity Variance .....	71
Social Connectedness .....	75
Facilitative Supports .....	77
College Adjustment .....	78
Depression .....	79
Sex Differences .....	80
Implications of the Findings .....	82
Study Limitations .....	87
Future Research and Intervention .....	89
Conclusion .....	90
APPENDICES .....	91
A. REVIEW OF THE LITERATURE .....	91
B. INFORMED CONSENT STATEMENT .....	109
C. MEASUREMENT INSTRUMENTS .....	112
REFERENCES .....	127

## LIST OF FIGURES

Figure	Page
1. Ecological Framework for Understanding Racial Identity .....	12
2. Multiracial Identity Options Frequencies .....	53

## LIST OF TABLES

Table	Page
1. Participant Demographics .....	28
2. Multiracial Demographics .....	29
3. Combined Multiracial Demographics .....	31
4. Constructs and their Corresponding Measures .....	32
5. Alpha Reliability and Number of Items for Instrument Scales .....	46
6. Percentages of Multiracial Identification by Context .....	52
7. Descriptive Statistics of all Study Variables by Sex and One-Way ANOVA Results .....	54
8. SACQ Mean Scale Scores and <i>T</i> -Scores .....	55
9. Sample Means, Standard Deviations and Intercorrelations of all Measured Variables .....	59
10. Intercorrelations of all Measured Variables by Sex .....	60
11. Simultaneous Regression Results Summary of Multiracial Identity Variance onto Sex and Four Components of Facilitative Support Variables .....	63
12. Simultaneous Regression Results Summary of Social Connectedness Regressed onto Sex, Facilitative Support Variables and Student Adaptation to College Variables .....	64
13. Simultaneous Regression Results Summary of Depression Regressed onto Sex, Support and Connectedness from Student Groups, and Student adaptation to College Variables .....	65



## CHAPTER I

### RATIONALE

The “biracial<sup>1</sup> baby boom” is upon us (Root, 1992). Changes in immigration laws in 1965 that allowed for an increase in immigration particularly from Asia, and the abolition of the last anti-miscegenation laws in 1967 (Loving vs. State of Virginia) have yielded the emergence of a new generation of multiracial individuals with increased possibilities, range, and flexibility to identify their racial and ethnic identity (Root, 1998, 2003a). The 2000 U.S. Census marked the first time in history that respondents were given the option to check off multiple categories of the race question, resulting in approximately 6.8 million individuals in the U.S. identifying as two or more races (U.S. Census Bureau, 2000). The number of mixed-race births is increasing at a faster rate than the number of

---

<sup>1</sup> In this proposal I use the terms biracial, multiracial and mixed to represent people whose acknowledged identity includes two or more of the U.S. government Census racial and ethnic categories. These categories are White (non-Latino), Latino/Spanish/Hispanic, Black/African American (not Hispanic), American Indian or Alaska Native, and Asian Indian, Chinese, Filipino, Japanese, Korean, , Vietnamese, Native Hawaiian, Guamanian or Chomorro, Samoan, Other Asian, Other Pacific Islander, and some other race (US Bureau of the Census, 2000). While the terms multiracial and multiethnic are not synonymous, they are often used (or misused) interchangeably in the literature. Race is a socially constructed way of grouping people, which differs from society to society and over time. It has no biological basis, yet has been historically borrowed from the systematic classification of plants and animals to give this concept scientific validity (Root, 1996). Therefore, multiracial (biracial) refers to an individual of two or more racial heritages; the offspring of parents with two or more racial designations. Ethnicity refers to self-identified membership in a group because of shared emotions, attitudes, and identification with values and history (Root & Kelley, 2003). It represents a shared cultural worldview and/or geographic origin. Ethnicity is a social identity that is not passed on by genetic lines, but rather the teachings of a family or community. Consequently, multiethnic means relating to or including several ethnic groups.

single-race births (U.S. Census Bureau of the Census, 1992). The impact is being felt all over the U.S. where in cities like Seattle, Sacramento, and San Antonio one in every six newborns is multiracial (Kelley & Root, 2003). The multiracial population is young, diverse and rapidly growing (Jones & Smith, 2003). According to Jones and Smith (2003), nearly 42 percent of the population is under the age of 18, and 68 percent are under 35. Undoubtedly the college and university campuses of the United States are already reflecting the upsurge in this population. In 2000, the US Census reported approximately 500,000 multiracial students enrolled in colleges or universities.

#### Historical, Political, and Social Implications of Mixed Race Identity

Zack (2006) describes mixed-race American's as instances of microdiversity, in that their racial diversity exists on the individual level, unlike the diversity that is acknowledged to exist between or among the four major racial groups (Asian, Black, White, Native American/Indian). According to Zack (2001):

The right to distinctive race-based group cultural identities has come to be generally accepted as a necessary component of democratic pluralism, and it is usually referred to as "multiculturalism." In ordinary usage, except when the term "ethnicity" is used as a synonym for "race," the cultural aspect of group identity is called "ethnic" if the group in question is racially white (e.g. Italian, German, Jewish ethnic identities as developed in the United States). And "racial" if the group is African American, Asian American, or American Indian (e.g. black, Asian, and Indian *racial* identities). ( p. 39)

Accordingly, we have developed a labeling system for racial and ethnic identification that

differentiates race and ethnicity based on majority/minority lines.

There is a difference between mixed race people who are aware of their mixed race heritage from grandparents and great-grandparents who were not of the same race, and mixed race people who are only aware of their parents differing racially. The latter, first-generation mixed race individuals are more likely to more acutely experience the tribulations of being mixed in a monoracial system. This is embodied in the differences between the experience of mixed race individuals in the continental U.S. versus those in Hawaii, where there is an historical and cultural tradition of public recognition of mixed race/ethnicity, as well as more social acceptance of mixed race individuals.

For African Americans in particular, the significance of the “one-drop rule” has had significant implications on the historical, political and social implications of mixed race identity. The “one drop rule,” otherwise known as racial assignment by hypodescent, is an historical colloquial term in the U.S. that states to be considered Black, one only needs to have one drop of Black blood in one’s ancestry (M. Harris, 1964; Omi & Winant, 1986; as cited in Shih & Sanchez, 2005).

### Racial and Ethnic Identity

Race and ethnicity are both primary sources of identity and significant bases for polarization and stratification of groups. According to Erikson (1963), establishing a stable sense of personal identity in U.S. society is an integral aspect of the developmental process. Accordingly, for the traditional aged college student, the college years represent a critical and formative transition from adolescence to adulthood (Chickering, 1969). Racial identity is a psychological construct reflecting aspects of our membership in, and identification

with, a specific racial group (Cuellar, Nyberg, Maldonado, & Roberts, 1997 as cited in Nishimura, 1998). According to Phinney (1992), racial identity development peaks during late adolescence and early adulthood making the traditional college years a critical period. Internal conflict associated with mixed racial identity and the ways in which it contextualizes experiences in college settings are often overlooked or ignored (Nishimura, 1998; Wallace, 2003).

As multicultural awareness on campuses increases, mixed race identity is being acknowledged more freely now than ever before (Hart-Web, 1999). Consequently, college campuses will be confronted with serving this newly emerging population. Yet, despite proliferation in the numbers of multiethnic students, not much is understood about their development and interactions in the college context (Renn, 2000).

In the ongoing battle over access, equity, and affirmative action policy in higher education, ethnic and racial demographics matter. As the numbers of multiracial births increase, the need for addressing the psychosocial development of multiracial individuals is critical (Root, 1996). Yet little is done to address the unique needs of this population (Benedetto & Olisky, 2001; Herring, 1992). Specific concerns regarding ecological factors contributing to the psychosocial and identity development of multiracial individuals have demonstrated the need to better understand this rapidly increasing population (Herring, 1992; McRoy & Freeman, 1986; Sebring, 1985). Literature on the psychosocial experience of multiracial individuals expounds a number of psychosocial stressors. Examples include: marginalization (Root, 1990); difficulty finding others who will accept them as one of “their own” (Herring, 1992); ethnic identity conflicts (Gibbs & Moskowitz-Sweet, 1991;

Overmier, 1990); oppression from multiple ethnicities/races of heritage (Root, 1990); exclusion (Paez & Lyda, 2002); pressure to choose one aspect of their heritage over another (Paez & Lyda, 2002); and dating/relational difficulties (Root & Kelley, 2003). Experienced separately or in combination, these stressors are a threat to the healthy psychological development and adjustment of multiracial young people. Certainly, being born multiracial in the United States does not summarily predestine an individual to a life of hardship. A multiracial background does not only possess challenges, but may also provide resources that contribute to resilience in meeting these challenges. For example, researchers have suggested multiracial individuals (a) may have an increased ability to move between racial groups (Basu, 2007), (b) may experience acceptance by monoracial peers who respect multiracial backgrounds (Renn, 2000), and (c) have the potential for access and support from a variety of cultural communities (Shih, & Sanchez, 2005). Even so, it is important to consider that certain contextual influences shape the developmental experience of this population.

### Multiracial Identity Models

#### *Monoracial Identity Development Models*

During the past three decades, several models of monoracial identity formation have been established and applied to college students in the U.S. (e.g. Atkinson & Sue, 1993; Cross, 1991, 1995; Helms, 1990, 1995). These models generally rely on a progression from conformity with majority (white) culture through stages (or “statuses”) of dissonance and resistance to an immersion in a monoracial/monoethnic culture, ending by integrating racial/ethnic identity with other aspects of the person’s self-definition. Each of

these models attempts to uncover the psychosocial processes that different racial/ethnic groups experience as they interface with other racial/ethnic groups and cultures, and each has served as an important stepping-stone to the current literature on the development of multiracial identity. Nonetheless, according to Root (2003a):

Contemporary thinking on racial identity development is derived from the intersection of psychology and the racial pride movements of the 1960s and 1970s. The racial pride movements catalyzed solidarity within race and further reinforced notions that one must identify with a single race... The history of race in the United States and specifically the “one drop rule” ... provides the key to understanding how psychological models evolved in a way that has excluded the reality of many mixed race persons. (p. 34)

Monoracial identity models are unable to accommodate the full complexity, non-linearity, and heterogeneity of the multiracial identity processes (Root, 2003a). In light of the historical foundations behind racial and ethnic identity models, a paradigm shift in the way that we construct racial identity is necessary to account for the unique experience of multiracial individuals, as well as the contextual factors that influence their experience.

#### *Biracial and Multiethnic Identity Development Models*

The majority of research on the multiracial population in the United States has focused on children with mixed black and white heritage. Poston (1990), Jacobs (1992), and Kerwin and Ponterotto (1995) have each developed models of biracial identity development in children of black and white parentage (see Appendix A for detailed review of these articles). This presents some difficulties with generalizability to all multiracial

individuals. According to Wardle and Cruz-Janzen (2004), there are two reasons for this lack of external validity: (a) there is simply not enough research on other multiracial groups to form any body of knowledge, and (b) research on the identity development of single race children suggests different patterns for children whose physical features are more ambiguous with regard to racial and ethnic background (see Aboud, 1987 in Appendix A). These models provided a valuable foundation for modeling multiracial identity, but in and of themselves are not adequate for understanding the diverse multiracial population.

Phinney's multiethnic identity model (1993) applies to single-race minority, multiracial, or multiethnic adolescents and has three distinct stages through which the adolescent progresses (See Appendix A for more detailed review). While this model attempts to capture the common experience in identity development of all people of color, it does not fully account for the contextual influences that contribute to identity formation, and adheres to a more linear stage model. For multiethnic individuals, confidently choosing and accepting all aspect of an ethnic identity is more complex if for no other reason than they must choose from a broader selection of racial and ethnic possibilities. As mentioned above, these choices may also vary depending on the individual's context.

### *Ecological Models of Multiracial Identity Development*

Because racial identity is constructed in the context of social relationships (Renn, 2004), and in the ongoing interactions between individuals and their environments, a theoretical model that encompasses those interactions is useful in exploring racial identities and multiracial identification. The ecological model, first introduced by Bronfenbrenner

(1977, 1979, 1989, 1993), represents such an alternative to stage-based models of identity development. The ecological model accounts for interactions among and between the various subenvironments an individual encounters while providing a means to examine the dynamic, fluid nature of college life. A life where students move from one setting to another constructing and reconstructing identities both in interpersonal relationships, and in reaction to the messages they receive from interacting environments.

The Ecological Model of Human Development articulated by Bronfenbrenner (1977, 1979, 1989, 1993) accounts for both individual factors and the individual's interactions within his or her dynamic environment as accounting for development. In this model, human development does not occur in isolation, but within multiple, embedded ecological systems (Bronfenbrenner, 1979, 1989). There are three assumptions of the ecological model: (a) the individual and his or her environment are continually interacting and exerting mutual influence—and as a result constantly changing, (b) the individual is an active participant in his or her development, and (c) changes in one ecological system may influence changes in systems that are more proximal and distal to the individual (i. e. bidirectionality).

Over the past two decades two multiracial identity development models have emerged that reflect constructs of Bronfenbrenner's ecological model (e.g Root, 2003; Wardle & Cruz-Janzen, 2004). As such, I describe both models in the sections that follow.

*Wardle and Cruz-Jansen's model.* In Wardle's developmental model (Wardle 1992; Wardle & Cruz-Janzen, 2003), the central task of identity development for the



multiracial child is the achievement of healthy multiracial identity. This is marked by successful completion of the three developmental stages incorporated into the model, as well as the child's interaction with the components that make up the ecological model: family, group antagonism, minority/lower status context, majority/ higher status context, and community.

The three developmental stages described by Wardle and Cruz-Jansen's model (Wardle 1992; Wardle & Cruz-Janzen, 2004) are *Early childhood (3 to 7 years)*, *Transition Period (6 to 12 years)*, and *Adolescence*. Each of these stages incorporates the developmental theories of both Piaget, and Erickson. According to this model in the *Early Childhood* stage, the child becomes aware of physical features, and the similarities and differences between themselves and their parents and peers. At this stage they are often asked to explain their physical and racial ambiguity and they need a label to proactively do so. The *Transition Period* is marked by the multiracial child's increased awareness of sexuality. At this age group belonging is important, and parallels an interest in competencies and the concept of race. The *Adolescent* stage incorporates Erikson's (1963) identity crisis. At this stage multiracial youth learn to separate out race, ethnicity, abilities, likes, dislikes and career choices. Their family and school may increasingly support non-race specific groups, and they become more comfortable with multiracial identity.

The interactional components of the ecological model described by Wardle and Cruz-Jansen's model (Wardle 1992; Wardle & Cruz-Janzen, 2004) determine the success or failure of the healthy multiracial or multiethnic identity process. Family includes

biological, adoptive, foster, teen, extended, and blended families on all sides. The family's impact on the child's multiracial identity depends on the attitude of the family towards such an identity, discussion of the topics such as the child's identity and racism, as well as the means by which the family supports the child's overall identity development.

Wardle and Cruz-Jansen's (Wardle 1992; Wardle & Cruz-Janzen, 2004) explains that multiracial children must deal with two kinds of group antagonism: the traditional and institutionalized racism experienced by all people of color in the United States, and the antagonism of all single-race and ethnic groups toward people of mixed heritage. The level of racism multiracial children experience largely depends on phenotype, community context, and school environment.

Wardle and Cruz-Jansen's model (Wardle 1992; Wardle & Cruz-Janzen, 2004) breaks down cultural contexts into two separate categories, minority/ lower status context, and majority/ higher status context. Wardle and Cruz-Janzen (2004) explain:

Multi[racial] children with some mainstream White heritage have a distinctive cultural context that includes a minority and majority status; children whose parents are from two minority groups also have a lower status and higher status context based on the position of their parents' race and ethnicity within the strict racial hierarchy. (p.123)

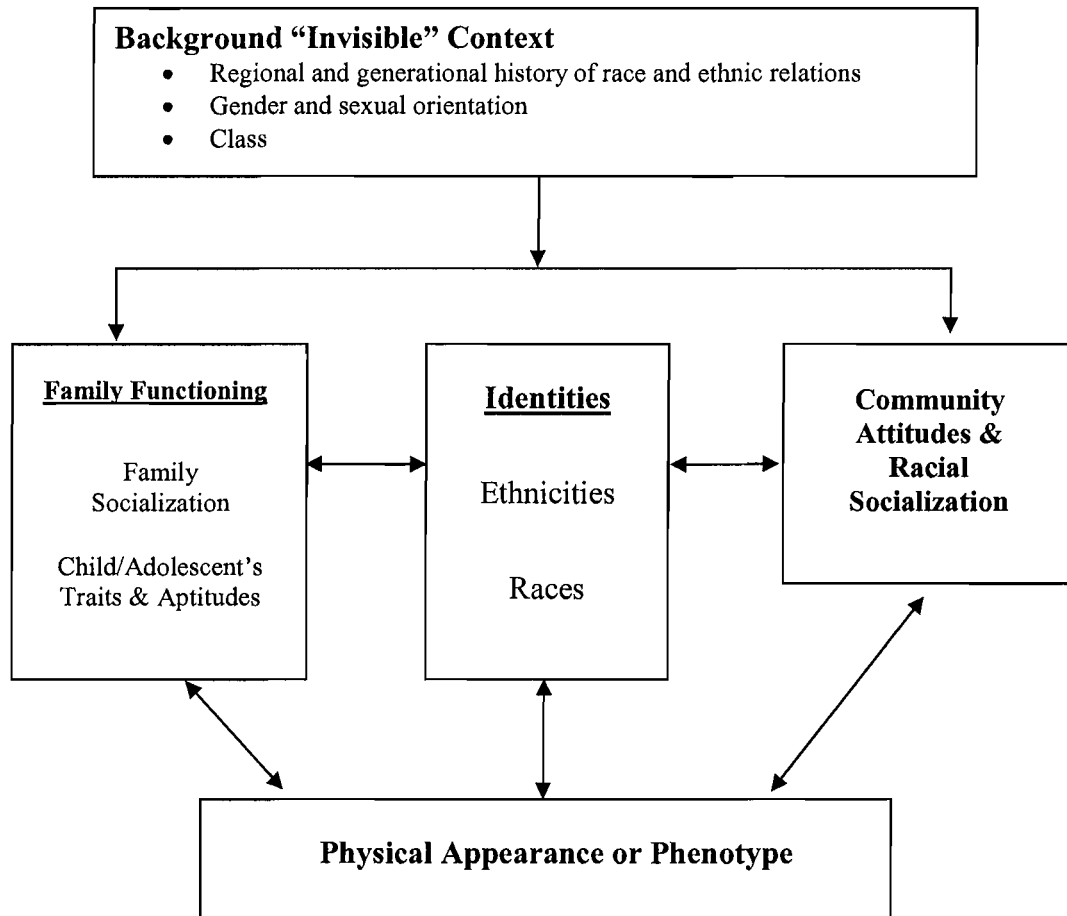
The community represents the most important ecological impact on a child after the family (Bronfenbrenner, 1989), and according to Wardle and Cruz-Jansen's model (Wardle 1992; Wardle & Cruz-Janzen, 2004) includes school, church groups, immediate

peers, and neighborhood groups. According to this model there are three factors that play heavily on the impact of the community on healthy multiracial identity: (a) Families' feeling of belongingness; (b) Community's acceptance of a range of diversity; and (c) Presence of minority representation and multiracial/multiethnic children in the community groups the child attends (2004).

As each child integrates all of his or her experiences within his or her own unique context, they will move toward or away from healthy multiracial identity. Wardle's model attempts to convey the developmental and ecological complexity of this process, yet, still incorporates a stage model that implies a linear racial identity progression.

*Root's Model.* Informed by Bronfenbrenner, Root's (2000, 2003a) *Ecological Framework for Understanding Racial Identity* provides a model for understanding the complexity of racial identity development, that is both inclusive of multiracial identity, and non-linear. Based on nearly a decade of research, Root's framework illustrates the bidirectional effects of common ecological influences (e.g. Family functioning, racial/ethnic identities, community attitudes, racial socialization, and physical appearance) and invisible factors (e.g. regional and generational history of race and ethnic relations, gender, sexual orientation, and class; see figure 1) on multiracial individuals. Root's (1990, 1997, 2000, 2003) model is grounded in the understanding that a multiracial person's identity can and will change, depending on their ecological context. Further Root posits the central task for the multiracial child is to achieve a positive resolution between a sense of identity and his or her environment (1990, 1997, 2003a).

Figure 1. Ecological Framework for Understanding Racial Identity (adapted from Root, 2003a).



Root (2003a) identifies five types of identities that emerge from research on mixed race persons: assignment by hypodescent, monoracial fit/self assignment, blended identity, bi-or multiracial, and White with symbolic identity. Generational norms often influence the identity adopted by these individuals. For example, for older generations single-race identity is often the result of either assuming an assignment according to a “one-drop rule” and hypodescent. Younger generations now have the option of publicly assuming a blended or multiracial identity. “Symbolic Whiteness” appears to reflect identification with a class lifestyle and values or a lack of exposure to an ethnic background with which one identifies (p. 34).

Root (1990, 1997, 2003a) postulates four possible healthy identity resolutions: (a) the individual accepts society’s definition of his or her race or ethnicity, (b) the individual identifies with both ethnic or racial groups, (c) the individual identifies with a single racial/ethnic group, (d) the individual identifies with the mixed-race or multiethnic/multiracial group that his or her background represents. Each of these resolutions are positive if the individual is accepted in their chosen group, does not feel pressure to change, does not deny or put down any aspect of their heritage, and is supported in their identity by their immediate environment. In the case of the last resolution, the identity is positive if the new identity embraces all aspects of the person’s identity.

#### Multiracial Identity Variance

The ecological nature of multiracial identity elucidates that there is more than one way to for mixed-race individuals to identify (hereafter referred to as multiracial identity variance). The potential mixed race categories enabled by the numerous possible racial

combinations under current census standards do not yet exist as recognized groups. Accordingly, Zack (2006) has identified the following mixed race identity options: fractional, inclusive, traditional nonwhite, white, generic, and aracial. *Fractional* identification occurs when a multiracial person chooses to identify his or herself in rough fractional terms. To illustrate, take the hypothetical case of Angela who has a White mother and a father who is Black and Asian and chooses to label herself as one third White, one-third Black, and one-third Asian (Or she may choose to apply fractions more literally and identify as one-half white, one-quarter black, and one-quarter Asian). *Inclusive* identification occurs when an individual identifies as all or most of his/her racial identities without choosing to “divide” them into parts. Angela may see herself as Asian *and* Black *and* White. *Traditional nonwhite* identification takes place when an individual chooses to identify with a singular, nonwhite aspect of their racial heritage. Angela may choose to identify as Black, because she grew up in an urban neighborhood in the southeastern U.S. surrounded by friends and family who all identified as black and accepted her as Black. Nonwhite identification may be due to family and/or geographical context, generational factors, pressure from others to chose one racial identification, as well as the extent to which an individual subscribes to societal norms about racial categorization (one drop rule, blood quantum, phenotypic characteristics, etc.). *White* identification is self-explanatory, but is conceptually complex because of the challenges put forth by societal norms based in the one-drop rule of racial classification. Suppose Angela’s parents divorce when she is young and she grows up with her mother and her stepfather, who is also White, in a predominantly White neighborhood. She has no contact with her father and therefore no

experience of Black or Asian ancestry from him. Angela is fair skinned, with long straight hair and can pass as white. Despite Angela's mixed heritage, she chooses to identify as White. If race has no base in biology, this should be as acceptable as Angela (or anyone with similar racial heritage) identifying as singularly Black.

Suppose Angela decided that she will identify simply as "mixed" and finds no need to specify, insisting that it is distinctly American to have the racial heritage that she does. In this case Angela would be choosing a *generic* identity option. Suppose Angela decided to raise her kids believing that they are simply human beings and citizens of the world. Her children readily adopt this identity, thereby adopting an *aracial* identity.

Zack's mixed race identity options parallel the identity patterns Renn (2004) identified in a qualitative study of 54 multiracial college students from a diverse selection of universities across the U.S. The identity patterns include: Monoracial identity, multiple monoracial identities, multiracial identity, extraracial identity, and situational identity. *Monoracial identity* occurred when students identified with one of their monoracial heritage groups either some or all of the time. *Multiple Monoracial Identities* occurred when students held two or more monoracial identities. *Multiracial Identity* occurred when students did not conform to the monoracial categories that exist in the U.S. Instead, they expressed a new construction of identity such as hapa, biracial, multiracial, mixed etc. *Extraracial Identity* occurred when students chose not to identify themselves by any racial classification and do not accept to the construction of racial identities. Finally *Situational Identity* was marked by students' identification with two or more of the four patterns described above. This was either a conscious, or an unconscious shift based on

the situation. For them, identity was fluid and contextual.

The idea of racial identity varying based on context represents an important shift in the evolution of racial identity models. Whereas previous models have accounted for the non-linearity of racial identity development (e.g. Cross, 1995; Helms, 1995; Poston, 1990), they have not acknowledged a paradigm that allows for an individual to carry multiple racial identities simultaneously in a manner that is adaptive and psychosocially healthy. Research by Renn (2000, 2004), and the conceptual work of Root (2000, 2003) and Zack (2006) have suggested that multiracial identity variance exists, is shaped by various ecological factors, and can substantiate healthy development in multiracial individuals. Root's ecological model (2000, 2003a) serves as the basis for understanding the overall development of multiethnic adolescents. In concert with Zack's (2006) racial identity options, and Renn's (2004) identity patterns, a language now exists whereby the many contextual choices that influence racial identification can be articulated and understood.

To date, there is little research exploring the relationships between multiracial identity development, multiracial identity variance and other important developmental factors that occur during the same period in young persons' lives. As traditional college age represents a significant period of development and transition into young adulthood (Chickering, 1974), constructs that have been shown in recent years to play a critical role in similar developmental events include: social connectedness (Lee & Robbins, 2000), sex differences in connectedness (Lee, Keough, & Sexton, 2002), environmental factors (Renn, 2000; Renn 2004; Nishimura, 1998, Wallace 2003), college adjustment factors, and affective states (depression being the most critical of these ; see Shih & Sanchez, 2005).



Because of the centrality of these constructs during the same developmental period in which racial identity evolves, research that focuses on multiracial identity development would be greatly informed by commensurately focusing on constructs that may contribute in one way or another to the multiracial identity development process. As such, I discuss the constructs of social connectedness, sex differences in connectedness, facilitative supports, college adjustment, and depression in the following sections. For a more detailed review of the literature, please refer to Appendix A.

### Social Connectedness

According to Townsend and McWhirter (2005), connectedness is gaining increased recognition as an important factor in human development and psychology. Connectedness has been described as a multidimensional construct reflecting “both the breadth (quantity) and depth (quality) of human relationships” (Townsend & McWhirter, 2005, p. 193). The multidimensionality of connectedness stems from the evolving definition(s) of the construct, and from inter- and intrapersonal dimensions. Townsend and McWhirter (2005) give a comprehensive description of the types and forms of connectedness, that include interpersonal (Newcomb, 1990), social (Timpone, 1998), family (Troll, 1994), school (Karcher, 2001; Neumark-Szainer, Story, French, & Resnick, 1997), and cultural (Daneshpour, 1998) connectedness, and well as community (Marton, Hrabowski, & Greif, 1998), affective (Rosen, 1999), emotional (Phares, 1993), and empowered (Kearney, 1998) connectedness. Among these, the type of connectedness that has been empirically studied most among college students is social connectedness.

Psychosocial distress often occurs when people feel lonely, isolated, excluded, marginalized or alienated (McWhirter, 1990). These experiences are also related to low levels of social connectedness. Lee and Robins (2000) define social connectedness as “an aspect of the self that reflects subjective awareness of interpersonal closeness with the social world in toto” (p. 78). This construct has significant implications for adolescent development, particularly within the multiracial population. In their review of the literature, Karcher and Lee (2002) indicate that greater connectedness is related to psychological happiness, increased physical health, and better coping skills among adolescents. And that lower connectedness is related to more psychological difficulties and poorer physical health outcomes. Incorporating the social connectedness theory of Lee and Robbins (2000), Karcher’s ecological theory of connectedness (Karcher, 2001 as cited in Karcher & Lee, 2002) states that adolescents seek to strengthen peer-mediated connectedness to friends, while simultaneously maintain their adult-mediated connectedness to school, teachers, and family. Consequently, as adolescents individuate over time, their experience shifts towards connectedness that is mediated by peer-influenced norms. The college context may catalyze this process, as traditional-age college students begin to spend less time with their family of origin and more time surrounded by peers. For multiracial adolescents specifically, the various ecological factors that contribute to connectedness may be uniquely influenced by existence with multiple heritages.

According to Wallace (2003), in the college context, interethnic/interracial group relations take on a heightened salience and intensity. There is a higher emphasis on group solidarity and mixed heritage students may encounter biases within their heritage

communities due to minority, majority, or multiple ancestries. Identity politics based on perceived racial authenticity may direct their opportunities for identification/ participation in a community (Wallace, 2003). This provides a logical bridge to the potential relationship of social connectedness to multiracial identity, in that both inter- and intra-personal relationships are influenced by racial and ethnic identity. As explained by Root (2004):

When [multiracial students] leave high school and move to a new community for college...they must negotiate their identity on a daily basis... they live in an environment in which race may matter very much and for which they may be unprepared (Root, 1999)... Stress may precipitate acute homesickness, anxiety, or depression. (p. 28)

This speaks to the importance of understanding the impact of multiple ecological factors, such as connectedness, on the development of multiracial college students, especially given the transitional nature of this time period.

#### Social Connectedness and Multiracial Identity: Influence of Sex

With regard to social connectedness, a number of researchers have suggested that men and women differ in their interpersonal experiences (Lee & Robbins, 2000; Caffarella & Olson, 1993; Miller & Stiver, 1993; Nelson, 1996). Lee and Robbins (2000, 2002) have shown sex differences in the construction of social connectedness. Other researchers have suggested that women in western culture tend to define themselves in more socially connected terms, while men's self definitions emphasize the quality of separateness (Caffarella & Olson, 1993; Miller & Stiver, 1993). Meanwhile, although some authors have

found clear sex differences in the nature of connectedness-implying that women tend to value connectedness more than men, the work of Lee and colleagues (e.g. Lee, Keough, & Sexton, 2002; Lee & Robbins, 2000) has suggested that social connectedness is equally salient in both women's and men's lives. The findings of these researchers suggest that college women and men differ in the types of relationships that constitute their experiences of social connectedness and also differ in terms of the kinds of social provisions that contribute to interpersonal closeness.

Research on multiracial identity suggested sex differences in identification. Root (2003) has posited gender differences in the experience of affirming ethnic or racial minority heritage. For example, research by Twine (1996) suggests that affirmation of minority status appears more difficult for multiracial women in relationships with white men, than multiracial men with white women. This suggests that multiracial males and females may experience differences in legitimizing, reinforcing, or demonstrating their racial heritage or authenticity. In essence, multiracial men and women may be faced with different means to "prove" their racial make up. Additionally, Root (1994) categorized six developmental challenges faced by multiracial individuals. Two of these, physical appearance and sexuality, emerged as significantly impacted by sex differences, with women experiencing more challenges than their male counterparts in both areas.

#### Facilitative Support

An additional factor specifically related to the experiences of college men and women has to do with the potential support they do or do not experience in the college environment. In a qualitative study, Renn (2000) explored how multiracial students'

interactions with peers, involvement in activities, and academic work influenced the kinds of identity-based spaces (e.g. student groups, student support services, and campus activities) they chose to occupy. The influence of identity-based space was found to be important to students' private construction of multiracial identity. Factors such as common cultural knowledge, similar physical appearance, and group involvements shaped the peer culture on the college campuses studied and ultimately defined who would occupy which identity-based space. Many multiracial students struggled to find a sense of belongingness based on these factors because they were based on monoracial norms. Many multiracial individuals experience pressure to make a single choice regarding racial self-labeling (Nishimura & Bol, 1997; Paez & Lyda, 2002), and this pressure may be reinforced in identity based space. According to Nishimura (1998), the existence of established student groups, particularly minority student groups, does not automatically meet the needs of a diverse student population. Therefore the relationship between various campus supports and multiracial racial identity, social connectedness, and college adjustment remains to be understood and examined in the literature. The relationship of level of involvement and level of supportiveness of facilitative supports on the psychological adjustment of multiracial college students also merits further study.

### College Adjustment

Shih and Sanchez (2005) recently conducted the first comprehensive review of both the theoretical and empirical work on the psychological adjustment of multiracial individuals. This review addressed two questions posed by theories of multiracial identity development: (a) do multiracial individuals experience difficulties in the process of

forming a racial identity, and, (b) does this impact psychological adjustment? The authors could only find support for the presence of difficult identity-related experiences (e.g. rejections by others, identity confusion) in qualitative studies using clinical samples. As a result, they concluded that, generally, multiracial individuals do not devalue their multiracial identity. The authors found evidence in the literature of positive and negative trends for psychological adjustment of multiracial individuals. These trends were based on the type of sample being investigated (i.e. clinical or nonclinical), the outcome being considered, and the specific monoracial population to which the multiracial population was being compared. In sum, though scholars have proposed a number of theories to explain multiracial identity development and its consequences (e.g. Gordon, 1964; Park, 1928, 1931; Root, 1996; Stonequist, 1937; Wardle, 1987, 1999), researchers have conducted few empirical studies to test these theories. Shih and Sanchez (2005) suggest that because this area of research is still in the beginning stages, expansion of the research should explore the factors that impact the psychological adjustment of multiracial individuals.

### Depression

Literature on the relationship between multiracial identity and depression has yielded inconsistent and in some cases discrepant conclusions (see Shih & Sanchez, 2005 for detailed review). In their review of the qualitative literature on multiracial identity and depression for example, Shih and Sanchez (2005), were only able to identify patterns in which the prevalence of depression is related to the type of sample (clinical vs. non-clinical). They observed low depression, and happiness, in nonclinical samples but not in clinical samples, and observed depression more often in studies with clinical samples

than in nonclinical samples. Shih and Sanchez's (2005) survey of the quantitative literature, suggested a preliminary trend for multiracial individuals to show higher levels of depression when compared with their monoracial majority peers but not when compared with their monoracial minority peers. However, these results were based on examination of only four quantitative studies, and the samples of many of the qualitative and quantitative studies were often limited in the multiracial combinations represented. Therefore, corroborating the reliability of this trend calls for further investigation.

### Purpose of This Study

A comprehensive review of the literature revealed no quantitative studies examining specific elements of Root's ecological model (2000, 2003). Models of multiracial identity development extant in the literature are conceptual and were almost exclusively based on qualitative research methods (see Phinney, 1993; Root, 2003; Wardle & Cruz-Janzen, 2004). The role of multiracial identity variance in the experience of multiracial individual has not been examined in quantitative studies, and few qualitative studies have been conducted (see Renn, 2000, 2004; Root, 1996) to observe this phenomenon. Moreover, there were no studies exploring the relationship between multiracial identity variance, college adjustment, social connectedness, and facilitative supports on campus, and depression in multiracial college students.

Given the status of the empirical literature just described, in this study I sought to enhance existing knowledge of the experiences of multiracial college students in a manner that was theoretically related to models of racial identity development that are inclusive of, and relevant to multiracial individuals. This research will help college student personnel

(i.e. Counseling center staff, advisors, student life staff, etc.) and researchers better understand the contextual influences that may impact multiracial/multiethnic college students' development. This research will provide data that will assist colleges and universities to be better equipped to address the unique needs of this population.

Using Root's ecological framework for understanding racial identity as a theoretical guide (Root, 2000, 2003), I examined a number contextual, interpersonal, and intrapersonal factors that are potentially related to the racial identity development of college of multiracial college students. In particular, I focused on the following factors present in Root's model: racial identity, sex, and connection to community (as measured by social connectedness and one's experience of campus support). I investigated the relationship of, racial identity variance, social connectedness, facilitative supports, depression, and college adjustment supports in multiracial college students, with consideration given to sex differences.

### Research Questions

In this investigation I asked the following exploratory research questions:

- 1) When presented with Zack's (2006) multiracial identity options how do multiracial college students choose to identify?
  - a. What are the participants' frequencies of identification with each option?
  - b. Does participants' multiracial identity vary across the following contexts: family, friends, classroom, new settings, with authority?
  - c. Does participants' reflection of others' perceptions of themselves vary?
  - d. Does participants' multiracial identity vary by sex?



- e. If sex variations in multiracial identity are present, how do they vary by context (e.g. family, friends, classroom, new settings, with authority figures)?
- 2) What is sample's overall level of social connectedness?
    - a. Are there sex differences in social connectedness?
  - 3) What is the level of involvement in and subsequent level of support provided by campus facultative supports?
    - a. Are there sex differences in involvement in and support from facilitative supports?
  - 4) What is the sample's overall level of college adjustment?
    - a. Are there sex differences in college adjustment?
  - 5) What is the sample's overall level of depression?
    - a. Are there sex differences in depression?
  - 6) Is there a correlation among multiracial identity variance, social connectedness, facilitative supports, college adjustment, and depression in multiracial college students?
    - a. What is the nature of these relationships?
    - b. Are there sex differences in these relationships?
    - c. Is there a relationship between involvement in campus facilitative supports and multiracial identity variance, social connectedness, college adjustment, or depression?

- d. Is there a relationship between involvement in campus supports and social connectedness?
  - e. Is there a relationship between adjustment and mood?
  - b. Is multiracial identity variance related to adjustment, mood?
  - c. Is social connectedness related to adjustment, or mood?
  - d. Is involvement in facilitative supports related to adjustment, or mood?
  - e. Is level of support experienced by facilitative supports related to adjustment, or mood?
- 7) How much is the variance in multiracial identity variance, social connectedness, and depression explained by sex, support from student groups and connectedness to student groups?

To examine the questions above, I used a passive observational survey design, initializing a web-delivered questionnaire to assess the relationships among racial identity variance, facilitative supports, social connectedness, college adjustment, and depression for multiracial college students. Simple relationships among constructs were assessed by correlation analyses to address above research questions. Simple differences were assessed by analysis of variance to address the above research questions. Simultaneous regression models were used to assess the amount of variance shared by identified gender, support and connectedness to student groups on the following criterion variables: multiracial identity variance, social connectedness, and depression.

## CHAPTER II

### METHODOLOGY

#### Participants

A total of 231 students completed the online survey. Based on criteria for inclusion ([a] identified as having two or more racial heritages based U.S. government Census racial and ethnic categories, [b] were age 18 to 23, and [c] were enrolled in a college or university) data from 199 participants was used for data analysis. The majority of participants whose responses were completely eliminated from inclusion had endorsed only one race on the demographic questionnaire ( $n = 29$ , 12.6%). The remaining participants ( $n = 3$ , 9.4%) whose responses were eliminated did not meet age criteria (all were over age 23). This resulted in a final total  $N$  of 199 participants who were included in subsequent study analyses. Tables 1 - 2 provide demographic information about the participant groups. As presented in Table 1, 154 (77.4%) of the participants were female and 45 were male. None of the participants identified as Transsexual or Transgender. All students were in the spring semester or winter/spring quarter (January through May) of the academic year when they completed the survey. There were 39 freshmen (19.6%), 41 sophomores (20.6%), 49 juniors (24.6%), 50 seniors (25.1%), and 19 graduate students (9.5%). Participants were on average 20.36 years old ( $SD = 1.51$ ), and carried an average

Table 1

*Participant Demographics (N=199)*

	Frequency	Percentage		Frequency	Percentage
Sex			Region of Upbringing		
Female	155	77.9	Northeast	51	25.6
Male	44	22.1	Mid-Atlantic	10	5.0
			Southeast	19	9.5
Year in College			Midwest	36	18.1
Freshman	39	19.6	Southwest	13	6.5
Sophomore	41	20.6	Pacific Northwest	24	12.1
Junior	49	24.6	West	38	19.1
Senior	50	25.1	Alaska	2	1.0
Grad. Student	19	9.5	Hawaii	2	1.0
			US Territory	2	1.0
Age			College Region		
18	25	12.6	Northeast	60	30.2
19	44	22.1	Mid-Atlantic	12	6.0
20	34	17.1	Southeast	18	9.0
21	49	24.6	Midwest	44	22.1
22	29	14.6	Southwest	8	4.0
23	19	9.5	Pacific Northwest	21	10.6
Major			West	31	15.6
AfAm Stud	3	1.5	Alaska	1	0.5
Anthropology	6	3.0	Hawaii	2	1.0
Psychology	8	4.0	US Territory	-	-
Sociology	10	5.0			
Ed. Studies	7	3.5			
Political Sci.	7	3.5	Education Level	Father	Mother
Biology	8	4.0	Did not graduate	Freq	%
			H.S.	8	4.0
Finance	4	2.0	High School/ G.E.D.	22	11.1
Neuroscience	6	3.0	Some College	29	14.6
Engineering	8	4.0	Associates Degree	10	5.0
English	9	4.5	Bachelors Degree	36	18.1
Other majors	123	61.8	Some Grad. School	5	2.5
			Graduate Degree	80	40.2
			Don't Know	9	4.5

*Note.* AfAm = African American; Ed.= Education; Sci. = Science; Freq = Frequency; H.S. = High School; Grad = Graduate.

Table 2

*Multiracial Demographics (N = 199)*

	Frequency	%		Frequency	%
Black, White	34	17.0	NA, Black, White, SOR	1	.5
Japanese, White	21	10.5	Filipino, Chinese, White	1	.5
Chinese, White	20	10.0	Black, Japanese, White	1	.5
Filipino, White	13	6.5	Mexican, NA	1	.5
AI, White	9	4.5	AI, OL	1	.5
NA, Black, White	8	4.0	Filipino, White, Mexican	1	.5
PR, White	8	4.0	Chinese, OA, White	1	.5
OL, White	7	3.5	NA, Black, Chinese, White	1	.5
Korean, White	6	3.0	OL, NA, Black, AI, Chinese, White	1	.5
OL, Latino	4	2.0	PR, NA, Filipino	1	.5
OA, White	4	2.0	Chinese, Filipino	1	.5
White, SOR	4	2.0	Vietnamese, SOR	1	.5
Cuban, White	4	2.0	Chinese, OA, White, SOR	1	.5
Mexican, White	3	1.5	OL, Chinese, Filipino, White	1	.5
Black, Chinese	3	1.5	Korean, Vietnamese	1	.5
PR, Black	3	1.5	Filipino, Japanese	1	.5
Two OL	2	1.0	Black, Japanese	1	.5
OL, Chinese, White	2	1.0	Black, Filipino	1	.5
Mexican, NA, White	2	1.0	Chinese, Filipino, Hawaiian, White	1	.5
Black, White, PR	2	1.0	Mexican, SOR	1	.5
Mexican, Japanese	2	1.0	Chinese, SOR	1	.5
Black, Filipino, White	2	1.0	PR, NA, Black, White	1	.5
Filipino, OA, White	2	1.0	Vietnamese, White	1	.5
Black, SOR	2	1.0	NA, White	1	.5
Black, Asian, OL	1	.5	Black, Japanese, Korean	1	.5
Chinese, Vietnamese	1	.5	Mexican, Filipino	1	.5
Chinese, Korean, White	1	.5	AI, Chinese, Vietnamese, White	1	.5
Latino, Japanese	1	.5	Filipino, White, SOR	1	.5
Black, AI, Samoan, SOR	1	.5			

*Note.* AI = Asian Indian; NA = Native American; PR = Puerto Rican; OL = Other Latino; OA = Other Asian; SOR = Some other race.

GPA of 3.40 ( $SD = 0.38$ ). Participants reported their region of upbringing as follows: 25.6% Northeast, 5.0% Mid-Atlantic, 9.5% Southeast, 18.1% Midwest, 19.1% West, 6.5% Southwest, 12.1% Pacific Northwest, and 1.0% each for Alaska, Hawaii, and US Territory. Participants also reported the region of their college or university, yielding 30.2%, 22.1%, 15.6% attending in the Northeast, Midwest, and West respectively. Participants provided educational information for their parents, with over 60% of mothers and fathers having earned a bachelors degree or higher (graduate or professional degree). All participants had declared a major.

The 199 participants represented 57 different unique racial combinations (see Table 2) indicating a racially diverse sample of multiracial college students. Of the 57 racial combinations, 53 (93%) appeared 9 or fewer times in the data, and 33 (57.9%) appeared only once. Accordingly, racial combinations were combined into larger categories for the following reasons: (a) for the sake of reporting the data, and (b) because of the lack of statistical power in the number of less represented combinations, it did not make logical sense to analyze multiracial group differences, but identifying the frequencies of identification was of interest. For this reason, categories “Asian/ Pacific Islander” and “Latino/a” were created based on combined data (see Table 3). Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, Guamanian or Chomorro, Samoan, and Other Pacific Islander were combined into the category “Asian/ Pacific Islander.” Mexican, Mexican American, Chicano, Puerto Rican, Cuban, and other Latino were combined into the category “Latino/a.” Asian Indian, which represents participants with

heritage from the country of India, was kept as a unique category because of the high number of participants (13; 6.5%) identifying with this racial group.

Table 3

*Combined Multiracial Demographics (N = 199)*

	Frequency	Percentage
White and Asian/Pacific Islander	65	32.5
Black and White	34	17
3 or More Races (including White)	32	16
White and Latino/a	22	11
All Other Racial Pairs	12	4.5
White and Asian Indian	9	3
2 different Latino/a	6	2.5
Black and Asian/Pacific Islander	5	2
3 or More Races (Non-White)	4	2
2 different Asian/Pacific Islander	4	2
Asian/ Pacific Islander and Latino/a	4	2
Black and Latino/a	3	1.5

*Note.* Latino/a includes Mexican, Mexican American, Chicano, Puerto Rican, Cuban, and other Latino; Asian/ Pacific Islander includes Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, Guamanian or Chomorro, Samoan, and Other Pacific Islander.

### Measures

A list of all measures used in this study is provided in Table 4 (For complete measures see Appendix C).

Table 4

#### *Constructs and their Corresponding Measures*

<b>CONSTRUCT</b>	<b>MEASURE</b>
Demographic Variables	<input type="checkbox"/> Demographic Questionnaire (Lyda, 2007)
Racial Identity	<input type="checkbox"/> Demographic Questionnaire (Lyda, 2007) <input type="checkbox"/> Multiracial Identity Options Survey (MIOS; Lyda, 2007)
Connectedness	<input type="checkbox"/> Social Connectedness Scale-Revised (SCS-R; Lee et al., 2001)
Facilitative support	<input type="checkbox"/> College Supports Questionnaire (Lyda, 2007)
College Adjustment	<input type="checkbox"/> Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1984)
Mood	<input type="checkbox"/> Patient Health Questionnaire (PHQ-9; Spitzer, Williams, Kroenke, et al., 1999)



### *Demographics*

Background information was collected via a demographic questionnaire created specifically for this study (see Appendix C). This questionnaire included questions about age, sex, race/ethnicity, national citizenship, region of residence, parents' level of education, and G.P.A.

### *Multiracial Identity Variance*

Multiracial identity variance was measured by the Multiracial Identity Options Survey (MIOS; Lyda, 2005). The Multiracial Identity Options Survey was developed for the purpose of this research to assess each participant's self-reported identification with one of Zack's (2006) six theorized identity options for mixed race people (fractional, inclusive, traditional nonwhite, white, generic, and aracial) as well as to determine variance in identification based on interpersonal or situational context. The survey sought to answer the following questions: (a) When a multiracial college student is presented with theoretically defined multiracial identity options and a context, what identity option does he or she choose? And, (b) how does his or her chosen identity option vary across contexts? The measure consisted of 11 items, each requiring the participants to choose from six or seven statements, each corresponding to a specific multiracial identity option. For example, the statement "I identify myself by describing fractions/percentages of my racial breakdown (e.g. I'm ½ white, ¼ black, and ¼ Native American)" corresponded with the *fractional* identity option. Participants were first asked which multiracial identity option statement best fit their answer to the following question: "How do you identify yourself in terms of race generally?"

The next ten items were formulated based on the influence of context in racial identity development emphasized by Root's (2003) ecological model of racial identity development, and Renn's (2000, 2004) work on both the significance of public and private space for identity, and the phenomena of situational identity. These ten questions were divided into two parts: participants' self identity (first five questions), and participants' reflection on other's perception of them (second five questions). The first five questions asked participants to endorse how they identified in the following contexts: new or unfamiliar settings, with close friends, with immediate family, in class, and with authority figures (e.g professors, advisors). Participants were then prompted to choose one of the six identity options described above as well as a seventh option "It depends." This option was included to accommodate for participants who may feel as if the question requires a more nuanced answer, thus preventing participants from leaving the question blank, or answering in a way that was not congruent with their experience. From a theoretical standpoint, the "It depends" response, accommodated for context based identity options described by Renn (2004), such as situational and multiple monoracial identity.

The second set of five questions asked "How do you think the following groups identify you?" The groups listed were: society as a whole, close friends, immediate family, classmates, and authority figures. The participant was then given the same set of multiracial identity options to choose from as above. The purpose of this question was to assess for the participants' reflection of others' racial perception of them. In other words,

how do they believe others perceive them racially? For the same reason as the previous questions in the survey, the close friends, immediate family, classmates, and authority figures prompts, include the seventh option “It depends.” “Society as a whole” did not include this option because the global (macrosystemic) nature of society as a construct at a given point in time (i.e. the time the participant took the survey) required a more specified answer. Thus, eliminating the “It depends” response option, forced participants to choose their best reflection of society’s views of them at that time.

Multiracial identity variance was calculated by first computing a standard deviation score for each participant across each of the eleven items of the identification scale. Greater scores indicated greater inconsistency, or variance, in identity across situations and contexts. Responses on the survey created categorical variables for self-identification, identification based on the various contexts, and participants’ reflection of others’ perception of multiracial identity. Responses were used in analysis for two purposes: (a) to assess frequency of multiracial identification per context, and (b) to obtain a standard deviation score across contexts for each participant, that would provide a measure of variance in identification across contexts. The latter analysis provided a quantitative means to measure multiracial identity variance, a central construct in the current study that has been observed in phenomenological, ethnographic, and case studies, but is to date unmeasured quantitatively.

### *Social Connectedness*

Social connectedness was measured by the Social Connectedness Scale-Revised

(SCS-R; Lee et al., 2001), a 20-item, 6-point Likert-type scale (1 = strongly agree to 6 = strongly disagree) that measured the degree of interpersonal closeness that was experienced between a participant and his or her social world (i.e., friends, peers, society), as well as the degree of difficulty in maintaining a sense of closeness with others. Sample items included “I am able to connect with other people,” “I am able to relate to my peers,” and “I feel comfortable in the presence of strangers.” The negatively worded items were reverse scored, and the measure scores had a possible range of 20 to 120. An item mean score with a possible range from 1 to 6 was also calculated by dividing the total scale score by 20 (or number of scale items). Higher scores on the SCS-R reflected a stronger sense of social connectedness. A mean item score greater than 3.5 suggests greater tendency to be socially connected vs. disconnected (Lee, Draper & Lee, 2001).

Lee, Draper and Lee (2001) revised the original Social Connectedness Scale (Lee & Robbins, 1995) for use with a college age sample. A validation study yielded a mean scale score (89.84;  $SD = 15.44$ ) and mean item score of 4.49 ( $SD = .77$ ), with a reliability alpha of .92. In the validation study, Lee et al. found no significant sex or race differences on the SCS-R. However, a sub-study using the SCS-R to test a mediator model between social connectedness, dysfunctional interpersonal behaviors, and psychological distress, found differences by sex, but no differences by race (Lee et al., 2001). In tests of convergent validity, the SCS-R was positively correlated with a measure of independent self-construal ( $r = .37$ ), and collective self-esteem (membership  $r = -.57$ , private  $r = .42$ ,

public  $r = .39$ ). The SCS-R was negatively correlated with measures of loneliness ( $r = -.80$ ), social distress ( $r = -.55$ ), avoidance ( $r = -.57$ ), depression ( $r = -.45$ ), hostility ( $r = -.24$ ), and social discomfort ( $r = -.28$ ). Tests of discriminant validity failed to yield significant correlations with measures of interdependent self-construal, collective identity, somatization, obsessive-compulsiveness, phobic anxiety, and excessive interpersonal responsibility and controlling behaviors. SCS-R validation study findings were consistent with previous research by Lee and Robbins (1995, 1998, 2000) on the original SCS. As a measure of internal consistency, a Chronbach's alpha coefficient of .93 was found on the SCS-R for the current sample.

### *Facilitative Supports*

The College Supports Questionnaire (CSQ; Lyda, 2005) was created for the purposes of this study to measure participants' utilization of campus support services and groups/organizations (hereafter referred to as facilitative supports), as well as perceived connectedness to and support received from these facilitative supports. The CSQ consisted of 7 items assessing for the following: (a) the presence of facilitative supports available to participants' on their campus (e.g. Ethnic student groups/ Ethnic Student, Fraternities and Sororities with a traditionally racial minority membership, multicultural student group/ multicultural student unions, minority mentorship program, university initiated minority student programs, Biracial or Multiracial students group), (b) participants' level of participation in groups/ organizations at college or in the community (four point Likert-type scale,; 1=extremely active to 4 = not-active), (c) participation in

racially/ethnically based groups/organizations, (d) the level of activity in racially/ethnically based groups/organizations (four point Likert-type scale; 1=extremely active to 4 = not-active), (e) the level of support received from campus supports (four-point Likert-type scale; 1= Not supported at all to 4 = Very supported), (f) level of connectedness to others involved in campus supports (four point Likert-type scale, 1 = Not Connected to 4= Very Connected), and (g) the usefulness of a number of support services present on campus (e.g. advising, orientation activities, and career services; five-point Likert-type scale, from 1 = very useful to 2= am not aware of such a service being available). Items from the College Supports survey were used to establish the following variables used for analysis in the current study: activity in student Groups (nominal variable), student group availability (nominal variable), participation in student groups (nominal variable), participation in ethnic/cultural groups (nominal variable), support from groups (interval variable), connectedness to groups (interval variable), usefulness of student services (interval variable).

### *College Adjustment*

College adjustment was measured using scores from the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1984). Specific to the college context, Baker and Siryk (1984, 1999) defined college adjustment as including four dimensions: Academic Adjustment (acclimation to various educational demands characteristic of the college experience), Social Adjustment (students' reconciliation of interpersonal-societal demands inherent in adjustment to college), Personal-Emotional Adjustment (how the student is feeling psychologically and physically—experience of general psychological

distress and/or any associated somatic problems), and Goal Commitment/Institutional Attachment (students' feeling about being in college, in general, and the college he or she is attending, in particular). Their work led to the development of a measure of the SACQ. The SACQ is a self-report measure with 67 Likert-scale items, ranging from 1 = "Applies to me very closely") to 9 = "Doesn't apply to me at all." By summing the scores of the 67 items, the instrument yields a total raw score for adjustment to college. Raw scores are converted into *T*-scores, based on conversion tables appropriate for participants' sex and student standing listed in the SACQ manual (Baker & Siryk, 1999). Per the SACQ manual, all participants' raw scores were converted to *T*-scores using the "second semester norms," because all students were in at least their second semester in college. *T*-score conversion tables are based on the normative sample stratified by sex and semester, and have a mean of 50 and a standard deviation of 10.

There are also four subscales that assess various forms of adjustment. On the basis of two independent samples, Baker and Siryk (1986) reported alpha coefficients for the full scale (.91 and .92), and the following alphas for the four subscales: academic adjustment (SACQ AC; .82 and .87), social adjustment (SACQ SOC; .88 and .88), personal-emotional adjustment (SACQ PERS; .82 and .79), and attachment-goal commitment (SACQ AGC; .89 and .86), reflecting an adequate degree of internal consistency for each subscale. In this study I employed all subscales. Full scale and subscale alphas for this measure on the current sample were: Full Scale SACQ alpha = .94; personal-emotional adjustment alpha = .85; social adjustment alpha = .88, academic adjustment alpha = .89, attachment-goal commitment alpha = .83. Sample items from the

SACQ include: “I feel that I fit in well as part of the college environment” (social adjustment subscale); “I have been keeping up to date on my academic work.” (academic adjustment subscale); “I have been feeling tense or nervous lately.” (personal-emotional adjustment subscale) “I feel that I am very different from other students at college in ways that I don’t like.”; “I wish I were at another college or university.” (attachment-goal commitment subscale).

### *Depression*

A more specific assessment of mood will be employed as an adjunct to an overall assessment of college adjustment. The Patient Health Questionnaire (PHQ-9; Spitzer, Williams, Kroenke, et al., 1999, Kroenke, Spitzer, & Williams, 2001) is a brief, 10-question survey of depression, which scores each of the 9 DSM-IV criteria for Depression as “0” (not at all) to “3” (every day). The PHQ-9 was used to assess participants’ mood. The PHQ-9 was validated and normed on a sample of 6,000 patients in 8 primary care clinics and 7 OB-GYN clinics. Construct validity was assessed using the 20-item Short-Form General Health Survey, self reported sick days and clinic visits, and symptom related difficulty. Criterion validity was assessed against an independent structured mental health professional interview in a sample of 580 patients. PHQ-9 scores greater than or equal to 10 had a sensitivity of 88% and a specificity of 88 % for major depression as determined by the structured interview, indicating strong criterion validity. Scores of 5, 10, 15, and 20 represented mild, moderate, moderately severe, and severe depression respectively. In addition to making criteria based diagnoses of depressive disorders, the PHQ-9 is also a reliable and valid measure of depression severity, thus



making it useful for this research study as a means to assess participants' mood state on a continuum (no depression to severe depression). The internal reliability of the PHQ-9 is excellent with Chronbach's alpha of 0.89 in the primary care study, and 0.86 in the OB-GYN study. Test-retest reliability, as measured by 48 hour follow up administration yielded a correlation of 0.84 between the two administrations.

The reasons for incorporating a more specific assessment of mood, beyond that measure by the SACQ are threefold: (a) An assessment of depression provided important mental health related data that will increase the understanding of the relationship between the constructs and intrapersonal processes, (b) it was important to understand the relationship of the constructs of interest and high levels of depression as a means to assess for potential risk factors in multiracial college students' experience at college (c) it was important to understand the relationship between low depression and the constructs of interest as a means to assess potential protective factors in multiracial college students' experience at college. In the current study, PHQ-9 item responses were summed and averaged, resulting in scores ranging from zero to three to obtain a standard score by which results could be compared to a midpoint (1.5). The Chronbach's alpha for the current study was .89.

## Procedures

### *Participant Recruitment*

Participants were recruited via the Internet, which has several benefits (Gosling, Vazire, Srivastava, & John 2004). First, this method provided access to samples beyond

the reach of traditional methods of psychological research. Second, Internet methods allowed for relatively inexpensive and practical methods of data entry. Finally, the web allowed me to access a much greater number of individuals who identify as multiracial from across the nation as opposed to a limited geographical area, resulting in a larger and more diverse sample. This improved the external validity of the current study so that findings may better generalize to multiracial college students nationwide.

I worked with PsychData to create and maintain my questionnaires. PsychData is an online data collection service that was created specifically for the social science community to conduct secure Internet-based research. PsychData provided an online research manager that allowed me to control all aspects of my data collection including building and editing surveys, changing survey response options, tracking numbers of participants, and downloading data at any time during the data collection process. Each survey that I created through PsychData was hosted in a secure environment that was designed to protect participants' privacy. In addition, the service stored informed consent forms or any other identifying participant information on a separate, secure server. I also gathered contact information from participants who wanted to participate in an incentive raffle to win a \$200 gift certificate to Amazon.com, by creating two separate, linked surveys.

Participants in this study were recruited in three ways: (a) through local and national email listservs targeting ethnic minority students, specifically multiracial college students; (b) establishing contacts with ethnic student group members, academic departments and student support services, and requesting that these contacts distribute

information about the survey and/or allow permission to contact individuals with whom they are affiliated directly; (c) through a snowball sampling technique (Gall, Gall, & Borg, 2003). Snowball sampling is a non-probability sampling technique that relies on previously identified group members to identify other members of the population. In this study, I conducted a snowball sampling technique in which multiracial college students, faculty, staff, colleagues, and co-workers encouraged other multiracial college students to participate in this investigation via email and word of mouth. I provided monetary incentives to increase recruitment success by providing each participant with one opportunity to win a \$200 gift certificate to Amazon.com.

Participants consisted of multiracial individuals, age 18 to 23 ( $SD = 1.51$ ), who were enrolled in various colleges and universities. The sample included students attending numerous universities across the United States. In an effort to minimize a possible acculturation and ethnic identity bias associated with sampling exclusively from ethnic and cultural student organizations, recruitment efforts included sampling from numerous other types organizations and academic programs (i.e. non-culturally and non-ethnically focused student groups).

### *Data Collection*

Data collection took place between January and May 2007 (spring semester, or winter and spring quarters depending on participant's academic system). I initially established contact with potential participants through an informational email requesting their participation in this study. This email included: (a) a brief description of the study,

specifying that 18-23 multiracial students were sought; (b) the estimated time to complete the survey, (c) a statement of participants' chances to win a \$200 gift certificate to Amazon.com and, (d) a web address hyperlink to the survey web pages.

The web address included in this email first lead participants to the informed consent form (see Appendix B). After reading the informed consent statement, those who chose to participate were directed to instructions for completing the questionnaire battery. I provided participants with time prompts so that they knew how long it took to complete the questionnaire battery. While individuals who are not multiracial, as defined by the US Census criteria for racial categorization, were able complete the survey, only participants who endorsed multiple races on the demographic form (Appendix C) were included in analysis.

### *Sample Size*

The power of a statistical test is the probability that the test will find a statistically significant effect in a sample of size  $N$ , at a pre-specified level of alpha, given that an effect of a particular size exists in the population (Cohen, 1992). In this study, an alpha level of .05 and a medium population effect size ( $ES = .15$ ) were desired. A candidate set of 14 independent variables was obtained. Based on examination of Cohen's (1992) indexes for determining sample sizes necessary for .80 power to detect effects, the above criteria for a multiple regression/correlational analysis required a sample of 125 participants for this study.

## CHAPTER III

### RESULTS

#### Overview

In this chapter I discuss the results of this study using the following organizational framework: First, I present a summary of the preliminary analyses as they relate to missing data management, reliability, and preparation of data for statistical analyses. Next, I outline the results of descriptive analyses used to address exploratory research questions 1 - 5. Third, I discuss correlational analyses used to examine the relationships among constructs specified in the exploratory research questions 6a- e. Fourth, results of simultaneous regression analyses employed to answer exploratory research question 7 are presented and explained. Finally, I conclude this chapter by summarizing all results. .

#### Preliminary Analyses

Table 5 describes the alpha reliability coefficients for each of the variables used in the study. All scales had alpha reliability coefficients above .83. All variables had an *N* of 199, with one exception. Data from five participants on the Patient Health Questionnaire-9 were not included in reliability analysis because they met criteria for exclusion (missing more than 1 item response; see Table 5).

Table 5

*Alpha Reliability and Number of Items for Instrument Scales (N= 199)*

Scale	Alpha	Number of Items
Social Connectedness Scale Revised (SCS-R)	.93	20
SACQ (Full Scale)	.94	67
SACQ Personal-Emotional Adjustment	.85	15
SACQ Social Adjustment	.88	20
SACQ Academic Adjustment	.89	24
SACQ Attachment-Goal Commitment	.83	15
Patient Health Questionnaire – 9	.89*	9

*Note.* SACQ = Student Adaptation to College Questionnaire;

\* N= 195.

Data were first transformed and calculated for the purposes of data analysis (Field, 2005). It is important to note that the degrees of freedom vary across analyses. This variance is due to missing data resulting from participants missing a significant number of responses on entire measures. The SACQ, SCS-R, and PHQ-9 were eligible for missing data replacement if the number of missing items were equal to no more than 10% of the total number of items. This means that the number of missing items needed to be less than or equal to six (6) for the Student Adaptation to College Questionnaire (SACQ) Full Scale, one (1) for the SACQ Personal-Emotional Adjustment and Attachment-Goal Commitment Subscales, two (2) for the SACQ Social Adjustment Subscale, SACQ Academic Adjustment Subscale, and SCS-R, and one (1) for the PHQ-9

to meet criteria for data replacement. When there were sufficient data for a particular measure or subscale to maintain a participant's responses for analysis, a multiple imputation procedure for missing data replacement (see Schafer & Graham, 2002) was conducted for the missing points on the Student Supports Questionnaire, Multiracial Identity Options Scale, the Social Connectedness Scale- Revised, and the Patient Health Questionnaire- 9. This procedure was conducted using NORM software (Schafer, 1999), a process that uses the expectation maximization algorithm. Unlike mean substitution or other simple regression missing data replacement techniques, multiple imputation maintains similar means, standard deviations, normality estimates, and covariances with related variables. In a comprehensive exploration of missing data replacement techniques, Shafer and Graham (2002) found that multiple imputation data replacement was the most accurate method for every type of data they examined including actual and synthesized, normal to non-normal, highly correlated to uncorrelated, and varied to restricted ranges. In this study, I conducted missing data replacement on either the item or scale level for various measures, depending on the particular scale. Replacement is viable on either level, according to Schafer and Graham (2002). Thus, all surveys were usable because the multiple imputation procedure estimated and replaced the missing data. For the SACQ, missing data were replaced per the instructions provided in the SACQ manual (see Baker & Siryk, 1999). The Demographics, College Supports Questionnaire, and Multiracial Identity Options Scale were not eligible for missing data replacement because I was interested in responses on this measure on an item-by-item basis. Responses on each item of these surveys was independent of responses on the previous items.

## Descriptive Analyses

The following section outlines results of the analyses used to answer exploratory research questions one through five.

### *Multiracial Identity Variance*

The current study examined frequency of identification with Zack's (2006) multiracial identity options and the incidence of variance in personal and perceived identity options across different contexts. Frequency and variance in multiracial identification was examined by sex. The frequencies of multiracial identification on the MIOS are listed in Table 6. Sample size was 199 for each of contexts listed except for self-identification in the presence of family ( $N = 197$ ), and participant's reflections of classmates' perception of them racially ( $N = 198$ ). In the latter two cases, participants' did not give responses to these items, thus causing the  $N$  to drop below 199 for each item. According to Table 6, when asked to endorse how they chose to self-identify "in general," the majority of participants (78.4%) endorsed "Fractional" (44.7%) or "Inclusive" (33.7%) multiracial identity options. Only .5 percent of participants endorsed "White," this despite the large majority of participants (87.4%) indicated at least some white racial heritage. By contrast, when asked to endorse the multiracial identity option by which they believed "Society," in general perceived them, 47.5% endorsed "Traditional-Non White," while another 17.6 % endorsed "White." "Fractional" and "Inclusive" identity options remained the most endorsed multiracial identity options for participants self-identification in various contexts (see Table 6 and Figure 2). This was not the case for participants' reflections of others' perception of their identity, which saw



an increase in endorsement of “Traditional Non-White,” “White,” “Generic,” and “It Depends”(see Table 6 and Figure 2). This suggests a discrepancy between participants’ personal sense of multiracial identity and their reflections on others’ perception of their multiracial self-identity.

Figure 2 illustrates the frequency (in number) of multiracial identification by context (both by self and the participants’ reflections of others’ perceptions of them). Figure 2 is not a representation of interaction effects, but simply frequency and descriptive information graphed in such a way to illustrate differences and patterns.

*Sex differences.* As displayed in Table 7, males and females did not differ significantly in their multiracial identity variance.

#### *Social Connectedness*

On average, participants reported a greater tendency to be socially connected vs. disconnected (SCS-R mean item  $\geq 3.5$ ; Lee, Draper, & Lee, 2001). On average, social connectedness was significantly greater than the scale midpoint (3.50),  $t(198) = 12.64, p < .001$  (See Table 7).

*Sex differences.* As displayed in Table 7, males and females did not differ significantly in their report of social connectedness. Both males and females reported a greater tendency to be socially connected vs. disconnected (SCS-R mean item  $\geq 3.5$ ; Lee, Draper & Lee, 2001).

#### *Perceptions of Facilitative Student Supports*

Data from the second section of the questionnaire (i.e., College Supports Questionnaire) were analyzed using single-sample t-tests. That is, mean levels on each of

the seven items were tested against their respective scale midpoints (Field, 2005). The mean level of active participation in student support groups was statistically greater than the midpoint of 2.50 ( $M = 2.94$ ),  $t(198) = 6.01$ ,  $p < .001$ .

With regard to perceived availability of student support groups and affiliation or participation in student support groups, the data were calculated such that for each participant the total values were equal to the number of options they selected. As shown by the mean for perceived availability of student support groups ( $M = 4.17$ ), the sample reported a moderate level of support group availability; this value did not differ significantly from the midpoint (4.00),  $t(199) = 1.50$ , *ns*. However, few participants did appear to belong to or participate in student support groups, as evidenced by a significantly lower mean ( $M = 1.35$ ) than the midpoint (4.00),  $t(199) = -27.57$ ,  $p < .001$ .

Participation in ethnic and cultural student support groups appeared to be more encouraging, as participants reported a significantly greater participation mean ( $M = 2.82$ ) than the midpoint of the response scale,  $t(199) = 4.18$ ,  $p < .001$ . However, the degrees to which participants perceived support from student support groups and felt connectedness with student support groups was only moderate ( $t(187) = .98$ , *ns*;  $t(187) = .70$ , *ns* respectively). Participants did report that the usefulness of student support services was significantly greater than moderate,  $t(190) = 4.86$ ,  $p < .001$ .

*Sex differences.* With regard to sex, facilitative supports did differ in two respects. As displayed in Table 7, females reported significantly greater active participation in student support groups than males,  $F(1, 185) = 4.7$ ,  $p < .05$ . The same was true for perceived usefulness of student support services,  $F(1, 185) = 4.34$ ,  $p < .05$ .

### *College Adjustment*

Mean SACQ scores and standard deviations, and *T*-scores are reported in Table 8. Overall, scores for men, and women were within one standard deviation (10) of the mean *T* score (50), suggesting average adjustment to college compared to their respective sex specific normative sample (Baker & Siryk, 1999).

SACQ items responses were summed and averaged, resulting in full-scale and subscale scores ranging from one to nine. Similar to other study variables, means of the five SACQ were tested against the response scale midpoint (5.00) to interpret the levels of adaptation to college (Field, 2005). The SACQ-full scale mean reached a level significantly greater than the midpoint,  $t(198) = 13.63, p < .001$ . Likewise, each of the four subscales reached a level significantly greater than the midpoint: academic:  $t(198) = 10.38, p < .001$ ; social:  $t(198) = 11.73, p < .001$ ; personal-emotional:  $t(198) = 3.61, p < .001$ ; and institutional attachment:  $t(198) = 15.25, p < .001$ . Thus, on average, participants reported a considerably high level of adaptation to college.

*Sex differences.* As shown in Table 7, males reported significantly greater institutional attachment than did females,  $F(1, 185) = 6.00, p < .02$ . No other significant sex differences were found on the SACQ full scale or subscales.

### *Depression*

The sample mean for depression was significantly lower than the midpoint (1.5),  $t(198) = -9.50, p < .001$ , indicating low levels of depression across the sample.

*Sex differences.* As displayed in Table 7, males and females did not differ significantly in their reports of depression symptoms.

Table 6

*Percentages of Multiracial Identification by Context (N=199)*

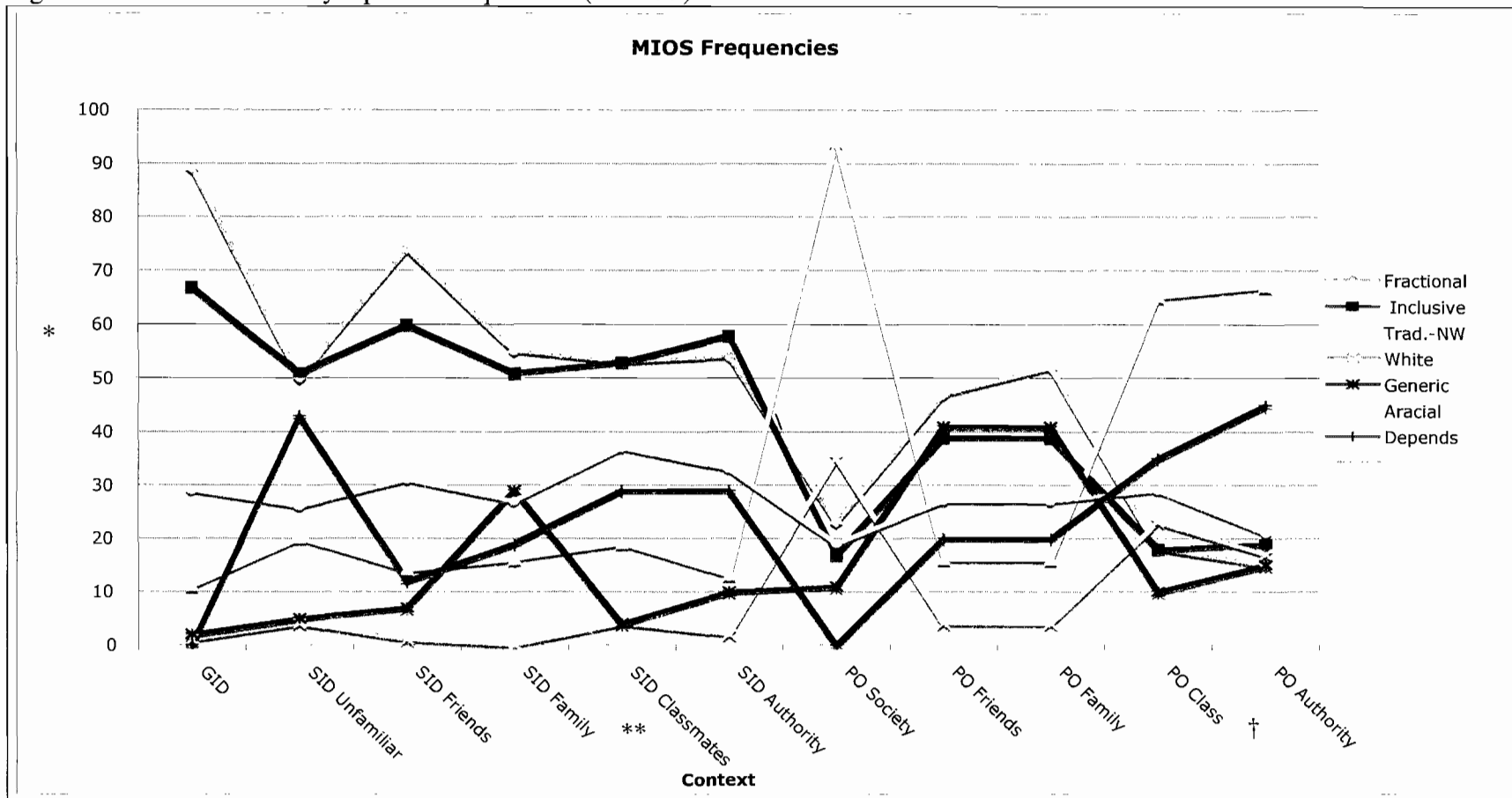
		Fractional	Inclusive	Traditional N.W.	White	Generic	Aracial	It Depends
	GID	<b>44.7</b> (89)	<b>33.7</b> (67)	<b>5.5</b> (11)	<b>0.5</b> (1)	<b>1.0</b> (2)	<b>14.6</b> (29)	<b>--</b> (--)
Self Identity In Presence of	Unfamiliar	<b>25.1</b> (50)	<b>25.6</b> (51)	<b>10.1</b> (20)	<b>2.0</b> (4)	<b>2.5</b> (5)	<b>13.1</b> (26)	<b>21.6</b> (43)
	Friends	<b>37.2</b> (74)	<b>30.2</b> (60)	<b>7.0</b> (14)	<b>0.5</b> (1)	<b>3.5</b> (7)	<b>15.6</b> (31)	<b>6.0</b> (12)
	Family*	<b>27.6</b> (55)	<b>25.6</b> (51)	<b>8.0</b> (16)	-- (--)	<b>14.6</b> (29)	<b>13.6</b> (27)	<b>9.5</b> (19)
	Classmates	<b>26.6</b> (53)	<b>26.6</b> (53)	<b>9.5</b> (19)	<b>2.0</b> (4)	<b>2.0</b> (4)	<b>18.6</b> (37)	<b>14.6</b> (29)
	Authority	<b>27.1</b> (54)	<b>29.1</b> (58)	<b>6.5</b> (13)	<b>1.0</b> (2)	<b>5.0</b> (10)	<b>16.6</b> (33)	<b>14.6</b> (29)
Reflection of Others' Perceptions of ID	Society	<b>11.6</b> (23)	<b>8.5</b> (17)	<b>47.2</b> (94)	<b>17.6</b> (35)	<b>5.5</b> (11)	<b>9.5</b> (19)	<b>--</b> (--)
	Friends	<b>23.6</b> (47)	<b>19.6</b> (39)	<b>8.0</b> (16)	<b>2.0</b> (4)	<b>20.6</b> (41)	<b>13.6</b> (27)	<b>10.1</b> (20)
	Family	<b>26.1</b> (52)	<b>19.6</b> (39)	<b>8.0</b> (16)	<b>2.0</b> (4)	<b>20.6</b> (41)	<b>13.6</b> (27)	<b>10.1</b> (20)
	Classmates**	<b>9.0</b> (18)	<b>9.0</b> (18)	<b>32.7</b> (65)	<b>11.6</b> (23)	<b>5.0</b> (10)	<b>14.6</b> (29)	<b>17.6</b> (35)
	Authority	<b>7.5</b> (15)	<b>9.5</b> (19)	<b>33.7</b> (66)	<b>8.5</b> (17)	<b>7.5</b> (15)	<b>10.6</b> (21)	<b>22.6</b> (45)

Note. GID = General Identity; Unfamiliar = Unfamiliar People; Frequencies in parentheses.

\* N=197

\*\* N = 198.

Figure 2. Multiracial Identity Options Frequencies ( $N = 199$ )



Note. GID = General Identity; SID = Self Identity; Unfamiliar = Unfamiliar Settings; PO = Reflected Perceptions of Others.

\* In number

\*\*  $N = 197$

†  $N = 198$

Table 7

*Descriptive Statistics of all Study Variables by Sex and One-Way ANOVA Results*

Variable	Male ( <i>n</i> = 42)		Female ( <i>n</i> = 145)		<i>F</i> (1, 185)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Multiracial identity variance	1.77	.82	1.80	.67	.07
Social connectedness item score	4.31	.90	4.23	.82	.29
Activity in student groups	2.64	1.07	3.02	1.01	4.67*
Student group availability	4.27	1.48	4.14	1.58	.24
Participation in student groups	1.09	1.22	1.42	1.40	2.09
Participation in E/C SG	3.00	1.02	2.76	1.08	1.77
Support from groups	2.36	1.01	2.62	.94	2.47
Connectedness to groups	2.36	1.01	2.57	.90	1.66
Usefulness of student services	3.04	.52	3.22	.53	4.34*
SACQ–full scale	6.32	1.01	5.97	1.11	3.52
SACQ–academic	6.15	1.11	5.82	1.24	2.59
SACQ–social	6.42	1.44	6.05	1.35	2.44
SACQ–personal/emotional	5.66	1.46	5.30	1.46	2.06
SACQ–institute. attachment	6.62	.98	6.14	1.18	6.00**
Depression	.83	.62	1.01	.80	2.01

*Note.* *N* = 187. E/C SG = Ethnic Cultural Student Groups

\**p* < .05. \*\**p* < .02.

Table 8

*SACQ Mean Scale Scores and T-Scores*

Variable	Male ( <i>n</i> = 43)			Female ( <i>n</i> = 154)		
	<i>M</i>	<i>SD</i>	<i>T</i> -Score	<i>M</i>	<i>SD</i>	<i>T</i> -Score
Full Scale	424.21	68.37	49	400.28	74.13	45
Acad. Adjust.	148.49	26.46	50	139.65	29.87	48
Social Adjust.	128.05	29.03	50	121.08	26.96	44
Pers-Em. Adjust.	85.02	22.11	45	79.55	21.93	43
Inst. Attach.	99.33	14.89	49	92.06	17.74	43

*Note.* SACQ normative sample *T*-Score *M* = 50, *SD* = 10.

## Correlation Analyses

In the current study I also explored the relationships among the primary constructs of interest: multiracial identity variance, social connectedness, facilitative supports (specifically involvement in campus facilitative supports), college adjustment, and depression. I employed correlational analyses to identify the nature of these relationships as specified in exploratory research question six. In this section I describe the results of these analyses for the entire sample, as well as with respect to sex. Correlation results are displayed in Tables 9 and 10.

It is important to note, none of these correlations differed significantly from their corresponding correlations according to Fisher's *z* transformation comparison of independent correlations tests. Thus, significant correlation coefficients are significant at the 95 percent confidence level or higher.

### *Multiracial Identity Variance*

When viewed in light of the entire sample, identity variance was not significantly correlated with any of the other study variables (see Table 9). However, when intercorrelations were examined by sex (see Table 10) different findings emerged. For males, multiracial identity variance was significantly and negatively correlated with perceived availability of student support groups, perceived support from student support groups, and connectedness to these groups. For females, however, multiracial identity variance was significantly and negatively correlated only with participation in ethnic and cultural student support groups. This suggests that for men the more their multiracial identity varied across contexts: (a) the less they were aware of student support groups as available to them, (b) the less they perceived student support groups as being supportive, and (c) the less connected they felt to student support groups. While for women, the more their multiracial identity varied across contexts, the less they participated in ethnic and cultural student support groups.

### *Social Connectedness*

From the view of the entire sample, social connectedness was significantly and negatively correlated with participation in ethnic and cultural student support groups, but positively with the SACQ-full scale, and the four SACQ subscales. Thus, increases in social connectedness were associated with less activity in ethnic and cultural student support groups, but greater adjustment and adaptation to the college setting according to the SACQ (see Table 9).



With regard to the correlation analysis by sex, social connectedness was significantly correlated with the perceived availability of student groups, overall adjustment, social adjustment, personal-emotional adjustment, and institutional attachment, for males. For females, social connectedness was significantly correlated with participation in ethnic/cultural groups, overall adjustment, social-emotional adjustment, academic adjustment, personal-emotional adjustment, and institutional attachment (see Table 10).

### *Facilitative Supports*

With the exception of perceived support from student support groups, the pattern of relationships with depression for females was similar to the overall sample's pattern of relationships. However, for males, the pattern was a bit more discrepant (see Table 9).

### *College Adjustment*

The four SACQ subscales were significantly and positively correlated with each other (see Table 9). These four subscales were significantly and positively correlated with social connectedness. It is also interesting to note that each of the four subscales was significantly and negatively correlated with depression. The pattern of relationships between the four SACQ subscales and other study variables for males was similar to that for females (see Table 10).

### *Depression*

With respect to the entire sample, PHQ-9 depression scores were significantly and negatively correlated with perceived support from student support groups, connectedness to student support groups, and each of the SACQ scales (as noted above; see Table 9).

Regarding sex, the pattern of relationships between PHQ-9 depression scores and other study variables were similar. Of note, for females depression was significantly negatively correlated with each of the full scale and four subscales of the SACQ, suggesting an inverse relationship between depression and overall college adjustment, academic adjustment, social adjustment, personal-emotional adjustment, and institutional attachment (see Table 9). For males, depression scores were only significantly and negatively correlated with the SACQ-Full Scale and SACQ- Institutional Attachment subscale (see Table 10), suggesting an inverse relationship between depression and both overall adjustment, and institutional attachment.

Table 9

*Sample Means, Standard Deviations and Intercorrelations of all Measured Variables*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Multiracial ID-VAR	1.79	.71	–													
2. Social connectedness	4.25	.84	-.11	–												
3. Activity in SG	2.94	1.03	-.04	.08	–											
4. SG availability	4.17	1.55	-.12	.13	.22**	–										
5. Participation in SG	1.35	1.36	.07	.06	.41**	.38**	–									
6. Participation in E/C SG	2.82	1.07	-.12	-.15*	-.53**	-.18*	-.62**	–								
7. Support from groups	2.57	.97	-.13	.11	.42**	.21**	.24**	-.42**	–							
8. Connectedness to groups	2.53	.93	-.12	.02	.47**	.17*	.35**	-.44**	.74**	–						
9. Usefulness student serv.	3.19	.53	-.12	.09	.39**	.19**	.29**	-.28**	.25**	.25**	–					
10. SACQ–full scale	6.05	1.09	-.03	.60**	.00	.00	.01	-.06	.07	.04	-.04	–				
11. SACQ–academic	5.90	1.22	-.04	.37**	-.10	-.11	-.02	.06	.04	.05	-.03	.85**	–			
12. SACQ–social	6.14	1.37	-.07	.71**	.14	.15*	.10	-.22**	.17*	.05	.09	.80**	.45**	–		
13. SACQ–personal/emot.	5.38	1.47	-.02	.43**	-.05	-.06	-.06	.02	.00	.02	-.13	.84**	.64**	.54**	–	
14. SACQ–institute. attach.	6.25	1.16	.04	.58**	.07	.11	.05	-.12	.07	.02	-.01	.84**	.57**	.83**	.61**	–
15. Depression	.98	.77	.07	-.13	-.12	-.07	-.02	.06	-.16*	-.20**	.02	-.35**	-.24**	-.25**	-.42**	-.27**

*Note.* *N* = 188. ID-VAR= Identity Variance; SG = Student Groups; E/C = Ethnic and Cultural; SACQ = Student Adaptation to College Questionnaire.

\**p* < .05.

\*\**p* < .01.

Table 10

*Intercorrelations of all Measured Variables by Sex*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Multiracial ID-VAR	—	-.12	.03	-.06	.13	-.16*	-.04	-.03	-.14	-.05	-.06	-.05	-.10	.08	.09
2. Social connectedness	-.06	—	.14	.07	.08	-.20*	.16	.11	.15	.62**	.40**	.72**	.48**	.58**	-.15
3. Activity in SG	-.21	-.08	—	.27**	.35**	-.51**	.36**	.45**	.31**	.08	-.04	.22**	.03	.14	-.13
4. SG availability	-.31*	.34*	.08	—	.43**	-.23**	.21*	.22**	.25**	-.05	-.12	.08	-.10	.06	-.06
5. Participation in SG	-.13	.04	.58**	.20	—	-.64**	.22**	.34**	.24**	.03	-.01	.13	-.07	.08	-.02
6. Participation in E/C SG	.03	.03	-.60**	.00	-.51**	—	-.41**	-.50**	-.24**	-.11	.00	-.25**	-.01	-.15	.08
7. Support from groups	-.34*	.00	.55**	.21	.31*	-.47**	—	.77**	.14	.10	.09	.17*	.05	.07	-.16
8. Connected. to groups	-.32*	-.24	.48**	.05	.37*	-.24	.62**	—	.21*	.11	.13	.13	.05	.06	-.19*
9. Usefulness student serv.	-.06	-.10	.57	-.02	.46**	-.39*	.58**	.31*	—	.00	.01	.15	-.12	.03	.03
10. SACQ—full scale	.06	.54**	-.20	.19	.01	.07	.02	-.14	-.11	—	.85**	.80**	.84**	.84**	-.35**
11. SACQ—academic	.10	.25	-.25	-.09	-.01	.27	-.12	-.20	-.08	.81**	—	.47**	.63**	.58**	-.24**
12. SACQ—social	-.10	.71**	-.06	.40**	.04	-.19	.22	-.16	-.03	.78**	.34*	—	.56**	.83**	-.25**
13. SACQ—personal/emot.	.18	.30*	-.20	.10	.02	.07	-.07	.02	-.12	.85**	.69**	.47**	—	.63**	-.44**
14. SACQ—institute. attach.	-.02	.63**	-.06	.36*	.06	-.09	.14	-.05	-.02	.81**	.44**	.87**	.56**	—	-.27**
15. Depression	.06	-.07	-.22	-.13	-.11	.01	-.28	-.43**	-.13	-.31*	-.23	-.24	-.28	-.31*	—

Note.  $N = 188$ . ID-VAR = Identity Variance; SG = Student Groups; E/C = Ethnic and Cultural; SACQ = Student Adaptation to College Questionnaire. serv. =

services; emot. = emotional; Correlations for males ( $n = 44$ ) are below the diagonal and correlations for females ( $n = 144$ ) are above the diagonal.

\* $p < .05$ .

\*\* $p < .01$ .

### Regression Analyses

Regression analysis should be based on theoretically supported hypotheses about the connection between variables (Field, 2005). Based on Root's ecological model (2003) there was theoretical basis to examine how sex, perceptions of facilitative supports, and college adjustment scores explain multiracial identity variance, social connectedness, and depression. Thus sex, student perception of student group availability, participation in ethnic and cultural student groups, perceived support from student groups, and connectedness to student groups were employed as predictors of multiracial identity variance, social connectedness, and depression, per exploratory research question seven (see p. 26). The following section enumerates the results of three simultaneous regression analyses used to examine the relative contribution and amount of variance explained by these variables (see Tables 11-13). Because the criterion variables (multiracial identity variance, social connectedness, and depression) were not significantly correlated with each other, they were not included as predictors in the regression.

#### *Explaining Multiracial Identity Variance*

To explain statistical variance in the construct "multiracial identity variance" a simultaneous multiple regression model was computed using sex, and four facilitative support variables (student group availability, participation in ethnic/cultural student groups, support from groups, connectedness to groups) as five different predictor variables (see Table 11). Participation in ethnic and cultural student support groups was the only variable to significantly contribute to explaining approximately 7% of the variance in the construct "multiracial identity variance,"  $R^2 = .07$ ,  $F(5, 180) = 2.56$ ,  $p <$

.05. The equation indicates increased participation in ethnic and cultural student support groups explains lower multiracial variance across contexts.

### *Explaining Social Connectedness*

To explain variance in social connectedness a simultaneous multiple regression analysis was computed using the seven different predictor variables: sex, support from groups, connectedness to groups, academic adjustment, social adjustment, personal/emotional adjustment, and institutional attachment (see Table 12). This test revealed that the model of predictors accounted for 52% of the variance in social connectedness,  $R^2 = .52$ ,  $F(7, 190) = 29.46$ ,  $p < .001$ . However, social adjustment appeared to be the only significant contributing variable in the model, thus indicating a direct relationship between the two, whereby higher social adjustment explains higher social connectedness.

### *Explaining Depression*

To explain variance in depression a simultaneous multiple regression model was computed using seven different predictor variables: sex, support group groups, connectedness to groups, academic adjustment, social adjustment, personal/emotional adjustment, and institutional attachment (see Table 13). This test revealed that the model of predictors accounted for 23% of the variance in depression,  $R^2 = .23$ ,  $F(7, 178) = 7.66$ ,  $p < .001$ . Connectedness to groups appeared to contribute to the significance of the model at a marginal level, whereas personal and emotional adjustment appeared to explain the model most significantly. This suggests both connectedness to student groups, and personal-emotional adjustment moderately explain level of depression.

Table 11

*Simultaneous Regression Results Summary of Multiracial Identity  
Variance Regressed onto Sex and Four Components of Facilitative Support  
Group Variables*

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>
Sex	.05	.12	.03	.41
Student group availability	-.04	.04	-.09	-1.18
Participation in E/C SG	-.16	.05	-.24	-2.90*
Support from groups	-.09	.08	-.12	-1.11
Connectedness to groups	-.08	.08	-.11	-1.01

*Note.* For gender, males were coded as zero and females were coded as one. E/C SG = Ethnic and Cultural Student Groups.

\* $p < .01$ .

Table 12

*Simultaneous Regression Results Summary of Social Connectedness  
Regressed onto Sex, Facilitative Support Variables and Student  
Adaptation to College Variables*

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>
Sex	.08	.10	.04	.81
Student group availability	.02	.03	.04	.84
Participation in E/C SG	.01	.04	.01	.22
SACQ–academic	.05	.05	.07	.96
SACQ–social	.45	.06	.74	7.84*
SACQ–personal/emotional	.04	.04	.06	.86
SACQ–institutional attachment	-.07	.07	-.10	-1.00

*Note.* For gender, males were coded as zero and females were coded as one. E/C = Ethnic and Cultural Student Groups. SACQ = Student Adaptation to College Questionnaire.

\* $p < .001$ .



Table 13

*Simultaneous Regression Results Summary of Depression Regressed onto Sex, Support and Connectedness from Student Groups, and Student Adaptation to College Variables*

Predictor	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>
Sex	.12	.12	.07	1.04
Support from groups	-.04	.08	-.05	-.49
Connectedness to groups	-.14	.08	-.18	-1.79†
SACQ–academic	-.01	.06	-.02	-.21
SACQ–social	.02	.07	.03	.27
SACQ–personal/emotional	-.22	.05	-.43	-4.50*
SACQ–institutional attachment	.01	.08	.02	.12

*Note.* For gender, males were coded as zero and females were coded as one. SACQ = Student Adaptation to College Questionnaire.

† $p < .08$ .

\* $p < .001$ .

### Summary of Results

The results demonstrate that, when presented with Zack's (2006) multiracial identity options, participants tended to self-identify with Fractional (44.7 %) and Inclusive (33.7) identity, while only one participant identified as White (see Table 6). When participants were asked how they would self-identify in different interpersonal contexts, they again tended to identify with Fractional and Inclusive identity, but

endorsement of these identities decreased in favor of other multiracial identity options. This suggests multiracial students choose different multiracial identity options depending on their context. There were differences in multiracial identity option endorsement based on whether the participants were asked to endorse multiracial self-identity vs. their reflections of others' perceptions of their multiracial self-identity. Within the multiracial college student sample, males and females demonstrated similar levels of multiracial identity variance across contexts, suggesting: (a) males and females both vary in their chosen multiracial identity across contexts, and (b) males and females do not differ in the way they vary their chosen multiracial identity across interpersonal contexts.

Overall, participants in this study demonstrated a greater tendency to feel socially connected vs. disconnected (Lee, Draper, & Lee, 2001) and a greater tendency to be involved in facilitative supports than not. Participants also demonstrated average levels of adjustment when compared to the normative sample stratified by sex (Baker & Siryk, 1999), and the sample expressed low levels of depression.

Females reported significantly greater active participation in student support groups and greater perceived usefulness of student support services than males. Males reported significantly higher levels of institutional attachment than females.

Overall, multiracial identity variance was not significantly correlated with any of the other study variables. Male multiracial identity variance was significantly and negatively correlated with perceived availability of student support groups, perceived support from student support groups, and connectedness to these groups. Female

multiracial identity variance was only significantly and negatively correlated with participation in ethnic and cultural student support groups.

Social connectedness was significantly and negatively correlated with participation in ethnic and cultural student support groups, but positively with college adjustment. Male social connectedness was significantly correlated with the perceived availability of student groups, adjustment, and institutional attachment. Female social connectedness was significantly negatively correlated with participation in ethnic/cultural groups, and positively correlated with all measure of college adjustment.

Depression was significantly and negatively correlated with perceived support from student support groups, connectedness to student support groups, and adjustment.

Increased participation in ethnic and cultural student support groups significantly explained decreased multiracial identity variance. Higher social adjustment explained greater social connectedness. And finally, higher personal-emotional adjustment explained lower depression.

## CHAPTER IV

### DISCUSSION

In this chapter I discuss the outcome of this study using the following organizational framework. First, I present a summary of the results as they relate to the proposed exploratory research questions, while discussing overall implications as they relate to theory, previous research, and interventions for traditional-age multiracial college populations. I then outline more specific suggestions for intervention, prevention, and college and university programming for the problems identified in this study. Finally, I present some of the limitations of this particular study, highlight ideas for improving research in this area, and articulate ways to enhance and extend this study's findings.

#### Main Findings: Relationship Among Variables

In the current study I was interested in exploring if relationships existed among multiracial identity variance, college adjustment, social connectedness, facilitative supports, and depression in multiracial college students. Overall, the sample tended to be socially connected, was in the average range of adjustment to college, and exhibited low levels of depression.

#### *Demographics*

Overall the sample was racially diverse, predominantly female, and came from highly educated parents. The sample was racially diverse in the sense that multiple combinations of multiracial heritage were represented. This is important in validating the

sample as a cross section of the multiracial population, which distinguishes the current study from previous multiracial identity research that has focused specifically on a limited representation of specific bi- or multiracial sub-groups, such as black/white biracial individuals (Shih & Sanchez, 2005; Wardle & Cruz-Jansen, 2004). The sample tended to consist of participants with highly educated parents and as a result were likely to be of higher socioeconomic status. It is unknown if the general socioeconomic status of the sample is representative of the multiracial college student population as a whole. Also, women outnumbered men three to one. These factors are important when considering the generalizability of these results.

One striking finding from this study was the noted difference between a participant's self-identity, and their perception of society's view of their self-identity. On the whole, *Fractional identity* and *Inclusive identity* were either alternatively the first or second most frequently endorsed self-identity options endorsed by study participants, depending on the context. Across the sample, general self-identity was 44.7% *Fractional* and 33.7% *Inclusive*, with only 5.5 and 0.5% of the sample choosing the monoracial options of *Traditional Non-white* and *White*, respectively. This finding suggests that there was a discrepancy between how participants were identifying themselves racially, and how they perceive others categorize them racially. Based on these findings, participants believed that "society" most often categorizes them in a monoracial category, with 47.2% of the sample endorsing *Traditional Non-white*, and 17.6% endorsing *White*. As such, there appears to be a gap between multiracial persons' awareness of their own identity options, and what they believe others recognize as their identity options. That is,

multiracial college students perceive that strangers, peers, classmates, professors, and society in general have a narrow concept of the spectrum of multiracial identity. Across all contexts, very few participants reported *White* self-identity with frequency ranging from 0.5% to 2%. When others' perceptions were considered, the range of *White* frequency increased from 2% to 17.6%.

These results may most likely be explained by examining the role of (a) phenotype, and (b) "language barrier" in multiracial nomenclature (e.g. Root, 2003a, Zack, 2001). First, taking into account the significance of phenotype in the multiracial self-identity, students who appear phenotypically more white (based on skin color, hair texture, eye shape, etc) may not identify as such, but others' may identify them that way. Root's (2003a) *Ecological Framework for Understanding Racial Identity* highlights the role of phenotype in multiracial identity development, noting that phenotype can be both a social facilitator and/or barrier to racial group acceptance and affiliation. Phenotype can influence a multiracial students' self-identity, as well as the identity others' (particularly monoracial others') project onto them, causing a racial socialization dialectic that can shape multiracial students' identity. Racial socialization, is also highlighted in Root's framework (2003a), and is defined as the process by which multiracial individuals develop a healthy multiracial identity.

Secondly, this discrepancy in self- and others' perceptions of multiracial identities may also be the result of a "language barrier" in the multiracial identity nomenclature, as the concept of multiracial identity "options" (Renn, 2004; Zack, 2006) challenges conventional wisdom of the "check one box" paradigm (Gaskins, 1999). The results of

this study suggest that multiracial college students believe others place them into monoracial categories, without consideration of the multiple aspects of their heritages. This supports and extends the writings of Wallace (2003), who posits that the imposition of group norms of identification (i.e. monoracial identity) and solidarity are often employed, reinforced, and challenged on college campuses. This discrepancy may influence developmental trajectories of students' racial identities, as well as adjustment and, therefore, warrants further study to enumerate the multidimensional nature of multiracial identity (Renn, 2004; Root, 2003a). The tension caused by discrepancy in self and others' perceptions of multiracial identity is summarized by a young multiracial woman quoted in Gaskins (1999) who states, "Being biracial isn't hard because we're confused about our racial identity. It's hard because everyone else is confused. The problem isn't us—it's everyone else" (p. 15). The language barrier issue along with other study findings made evident in the current study, and supported by previous research, may indicate that there is a need to expand overall awareness of what multiracial identity is, and that multiracial identity options exist for a variety of reasons and in different contexts.

### *Multiracial Identity Variance*

Examining the sample as a whole, multiracial identity variance was not significantly correlated with any of the other study variables. Hence, changes in multiracial identity across various contexts were not related to adjustment, social connectedness, depression, or the influence of facilitative supports. In and of itself, evidence of multiracial identity variance as a phenomenon allows for the possibility

fluidity in multiracial identification and lends support to Zack's (1998, 2006) notion of microdiversity, whereby multiracial individuals are understood to be "diverse within themselves and not merely diverse as members of groups that are believed, in often erroneous ways, to be racially different from other groups." (Zack, 1998, p.82). These findings suggest that variance in multiracial identification, and therefore microdiversity, does not have a significant relationship with the psychosocial adjustment and mental health of multiracial college students. While these results neither confirm nor deny whether multiracial identity variance protective in maintaining psychosocial health, previous research has demonstrated that multiracial youth generally exhibit positive adjustment and well-being (Field, 1996; Cauce, Hiraga, Mason, Aguilar, Ordonez, & Gonzales, 1992; R. C. Johnson, 1992; Johnson & Nagoshi, 1986; Stephan, 1992). In previous studies, multiracial youth have demonstrated (a) positive self-concepts, (b) no difference in life distress, general distress, behavior problems, or self-worth than monoracial peers; (c) no differences on aspects of personality when compared to monoracial peers, and (d) no difference in ability to experience positive peer relationship compared to monoracial peers. Shih and Sanchez's (2005) comprehensive review of the literature on multiracial identity and adjustment revealed that among studies sampling from non-clinical populations (as in the current study) there was little evidence that multiracial individuals in the general population were dissatisfied, unhappy, or uncomfortable with their racial identity. The current study's failure to refute these previous findings, as well as the lack of a demonstrated relationship between multiracial identity variance other study variables is important contribution to understanding the role



racial identity plays in the psychosocial health and development of multiracial college students.

Root (1990, 1997, 1998, 2003) has proposed that multiracial identity options are each considered healthy if the multiracial individual is: (a) accepted in their chosen group, (b) does not feel pressure to change, and (c) does not deny or put down one aspect of their heritage, and instead embraces all aspects of their identity, and (d) is supported in their identity by their immediate environment. Though this is beyond the scope of the current study, it is possible that these factors influenced the outcomes across all variables.

Strikingly, level of participation in ethnic and cultural student groups was the only predictor to significantly explain multiracial identity variance, with higher participation explaining lower multiracial identity variance. Thus, multiracial students who participate in ethnic and cultural student groups appear to less demonstrate less fluidity in their multiracial identity across contexts and vice versa.

This inverse relationship between multiracial variance and participation in ethnic and cultural student groups (a facilitative support variable), suggests that multiracial students who were more fluid in their identity were less likely to receive support from the types of student supports those in the higher education community traditionally expect to foster healthy identity and adjustment for students of color, such as ethnic and cultural student groups (Nishimura, 1998; Wallace, 2003). This reflects Wallace's (2003) view that in the college context, interethnic/interracial group relations often take on a heightened salience and intensity. In these groups there may be a higher emphasis on group solidarity, and mixed heritage students may encounter biases within their heritage

communities due to minority, majority, or multiple ancestries. Racial identity politics—coalition and organization around shared experiences of injustice of members of marginalized racial groups with the aim to assert or reclaim greater self-determination (Heyes, 2007)-- based on perceived racial authenticity may influence student opportunities for identification and participation in a community.

In Renn's (2000) qualitative study of situational identity (i.e. fluid or context based identity) among multiracial college students, participants spoke of finding space—both physical and psychological—to fit in. Space was both a public and a private concept. The former, were spaces where peer culture was present: residence halls, student organizations, classrooms, and social events. The latter, were spaces used to define students own identities where they, as individuals, sorted through the meanings of peer culture, family background, and personally to derive notions of culture, race, and self. Public spaces shaped students' sense-making in private spaces, but students also brought their privately held ideas about race, culture, and identity into the public spaces on campus.

This public-private dichotomy mirrors aspects of Root's (2003a) *Ecological Framework for Understanding Racial Identity*, which suggests that there are visible and invisible factors that contribute to multiracial identity development. According to Renn (2000), the three main elements of public space-making are shared culture, physical appearance, and participation in legitimizing activities. Therefore, common cultural knowledge, similar physical appearance, and group involvements, define who can occupy which public spaces. For example, in Renn's (2000) study a cultural knowledge deficit

was just as powerful in keeping a student out of a certain space, as cultural knowledge proficiency was at keeping them in. Physical appearance also emerged as a marker of racial/ethnic authenticity, and determined who could belong and who could not. This may provide some explanation for the inverse relationship between ethnic and cultural student group participation and multiracial identity variance found in the current study.

Accordingly, multiracial participants in the current study who evidenced fluid racial identity may have been less likely to participate in ethnic and cultural student groups which can ostensibly reinforce static, monoracial identity.

Wallace (2003) points out that college can be considered a critical learning period, as multiracial students leave their families to enter a social context in which the expectations and roles related to group membership are especially concentrated. In college contexts, cultural legitimacy and loyalty can become increasingly important in such spaces, where these students' physical appearance (as well as interactional style or ancestry) can stigmatize them as culturally suspect, ambiguous, or even invisible to other group members. Additional research is required to better understand the impact these sociocultural dynamics have on multiracial college students' development and is further discussed later in the chapter.

### *Social Connectedness*

The current study's incorporation of the construct of "social connectedness" represents an extension of both the multiracial identity and social connectedness literature. On average, study participants appeared to feel socially connected and males and females did not differ in their level of social connectedness. This study extends

current research on social connectedness, by identifying a relationship between social connectedness and college adjustment for multiracial college students. Social adjustment, which measured participants' success in coping with the interpersonal societal demands inherent in the college experience (Baker & Siryk, 1999), was directly associated with social connectedness. This makes sense, as social connectedness is defined as an aspect of the self that reflects subjective awareness of the interpersonal closeness with the social world as a whole (Lee & Robbins, 1995, 1998). This finding therefore supports the utility of the Social Connectedness Scale-Revised and the Social Adjustment subscale of the SACQ for cross validation of social connectedness and social adjustment as constructs. Accordingly, further confirmatory factor analysis, and concurrent validity studies are warranted in this respect.

The finding that higher tendency to feel socially connected was related to higher levels of college adjustment across all domains supports findings of previous research, by Karcher and Lee (2002), which suggested that greater connectedness is related to psychological happiness, increased physical health, and better coping skills among older adolescents and young adults.

On the other hand, an unusual finding of this study was that for the entire sample, higher levels of participation in ethnic and cultural student groups was related to lower social connectedness. Social connectedness theory would suggest that participation in groups would have a buffering effect on students who are not well connected with others, and so participation would seem to be related to greater social connectedness (Lee & Robbins, 2000). The current study's findings, may imply that perhaps the students

involved in groups were trying to enhance their interactions with, and supports from, similar others in order to increase their social connectedness, but had not yet achieved this. Alternatively, these findings may also indicate that those who were more socially connected, in fact, had less reliance on these groups for facilitative supports.

At face value this appears counterintuitive, and indeed for monoracial ethnic and racial minorities on college campuses it is often essential that they have a space in which to connect with others who look like them and/or share similar cultural experiences (Nishimura, 1998; Wallace, 2003). Considering the complex interface of ecological factors involved in multiracial identity development, as well as the dialectic between public and private expression of multiracial identity outlined by Renn (2000), future research should further explore the manner in which multiracial individuals achieve social connectedness and how it may compared to their monoracial minority and majority peers. Indeed, Townsend and McWhirter (2005) point out that there are cultural differences in the means by which people achieve connectedness. Greater interpretation of these findings would be beyond the scope of this study. I did not ask participants how long they had been involved in or the quality of their experience with student support groups. Further research is needed to identify any potential mediational pathways contributing to social connectedness in multiracial college students to better understand the experience of social connectedness among this population.

### *Facilitative Supports*

In the current study, I was interested in the role of perception of and participation in facilitative supports on college campuses (e.g. student groups, various campus support

services, etc.), and their relationship with other variables studied. The findings indicate that multiracial college students perceive a moderate level of facilitative support availability in their college campus environments. However, few participants appeared to participate significantly in general student support groups that were available to them. Participation specifically in ethnic and cultural student support groups was more encouraging, as the sample reported a significantly greater level participation in these groups than general student groups. However, participants only perceived moderate support from student support groups and only felt moderately connected within student support groups. Overall, the findings suggest that when participants *did* participate in student support groups, they were more actively involved in ethnic and cultural student groups than in other types of campus groups. This makes sense vis-à-vis a participants' likely status as a student of color, and the need to share identity based space with like-others. Interestingly however, increased involvement in ethnic and cultural student groups explained lower multiracial identity variance, implying a direct connection between multiracial student's participation in ethnic and cultural groups and a more static racial identity.

### *College Adjustment*

Each of the four subscales on the SACQ-- academic adjustment, social adjustment, personal-emotional adjustment, and institutional attachment-- were significantly positively correlated with social connectedness. As mentioned previously, these findings support research that has demonstrated a connection between social connectedness and psychosocial wellness (Karcher & Lee, 2002). Of additional interest is

Institutional Attachment, which measures students' feelings about being in college in general, their feelings about the particular college they are attending, as well as their goal commitment (Baker & Siryk, 1999). This is an important construct when considering issues of multiracial college student retention. Low retention and graduation rates among underrepresented minority students are reported to be the result of many factors, including academic unpreparedness (Lee, 1991; Priest & McPhee, 2000; Thomason & Thurber, 1999; Simon, 1993), and lack of adequate social and academic support (Lee, 1991). Understanding the relationship between factors such as social connectedness and institutional attachment will assist college support personnel with retention efforts and warrants further study.

### *Depression*

In the current study I explored depression because I wanted to understand the relationship of this risk factor with the other primary study constructs in multiracial college students. Overall, the findings indicated that the multiracial college student participants in this study experienced low levels of depression. Previous literature on the relationship between multiracial identity and depression, has yielded inconsistent, and in some cases, discrepant conclusions (e.g. Shih & Sanchez, 2005). In their review of the qualitative literature on multiracial identity and depression Shih and Sanchez (2005) surmised that similar to the population in general, non-clinical multiracial samples experienced lower levels of depression than multiracial clinical samples. In their survey of the quantitative literature, Shin and Sanchez (2005) suggested the following trend: Multiracial individuals tended to show higher levels of depression when compared with

their monoracial *majority* peers, but not when compared with their monoracial *minority* peers. As a cautionary note, their findings were based on the examination of only four quantitative studies, and the samples of many of the qualitative and quantitative studies were limited in the type and number of multiracial member combinations represented. While the current study did not compare multiracial college students to their monoracial majority and minority peers, the findings support Shin and Sanchez's observation that non-clinical multiracial populations exhibit low levels of depression in general, and lower levels of depression than their monoracial minority peers.

With regard to depression and college adjustment, each of the four SACQ subscales was significantly and negatively correlated with depression, meaning higher levels of adjustment in each of the four domains were related to lower levels of depression. The results of the current study indicated that only personal-emotional adjustment to college significantly explained depression. This result is congruent with the literature in that personal-emotional adjustment measures how a college student is feeling psychologically and physically, as well as their experience of general psychological distress and/or any associated somatic problems (Baker & Siryk, 1999), and is therefore tantamount to depression. It then makes logical sense that one might explain the other.

### *Sex Differences*

In the current study I was interested in exploring potential sex differences in the relationships between study variables among multiracial college students. Overall there appears to be few differences between the male and female participants across study variables. I found two significant sex differences: Women perceived higher usefulness of



student services, and men endorsed higher levels of activity in student groups and higher institutional attachment. While the current literature on the multiracial population has discussed sex differences influencing the multiracial experience, explanations for these differences are conceptual in nature. The following discussion of the influence of sex on the variables studied extends this literature, and generates hypotheses that can guide future research.

I found that the more a male participant varied in his multiracial identity choice across contexts, (a) the less he perceived student groups as available to him, (b) the less he felt supported by them, and (c) the less he felt connected to these groups. Also, when male multiracial college students perceive a lack of facilitative support on campus, they were more likely to express a range of multiracial identity options across contexts. There are number of possible explanations for this trend. It is possible that males with less facilitative support affiliations were freer to vary in their identification because their racial self-identity choices were not constricted by specific groups. Alternately, multiracial males with higher identity variance may not have been drawn to participate in student groups where they perceived a static identity (especially monoracial) is desired, or expected. Also, these findings may reflect a dearth of services available to male multiracial students and/or their underutilization of available services supporting research that students of color (particularly males) underutilize campus support services (Ross-Gordon, 1998). Though the current study does not demonstrate a causal relationship between these variables, it is possible that male students who participate in student groups either find less need to vary their multiracial identification, or are may influenced

by frequent contact with peers who are less apt to vary identification and with whom they identify. These peers may identify as monoracial, or multiracial with static identity.

For females, findings suggest that those who had a higher variation in their multiracial identity across contexts were less likely to participate in ethnic and cultural student support groups. With respect to females, the results suggest low participation with *ethnic and cultural* student groups were related to increased fluidity in multiracial identification. Similar to the findings of Renn (2000) and observations of Wallace (2003), it is possible that female students who do not conform to static, monoracial identity do not participate in groups where monoracial authenticity is perceived as desired or required for membership. Further research is warranted in this respect.

In sum, important trends emerge when taking sex differences into consideration: (a) an association between affiliation with student groups and a tendency to have a more consistent multiracial identity across contexts exists for multiracial students, and (b) the nature of this association differs by sex.

### Implications of the Findings

The current study has many implications regarding the psychosocial factors contributing to multiracial identity and its expression in different contexts. As a correlational study, causal relationships between variables cannot be inferred. The decision to include all of the participants into a general “multiracial” category was made so that analyses could be effectively and reliably conducted to answer the principal exploratory questions of this study. Looking at multiracial college students collectively, however, as opposed to examining specific racial combinations or smaller groups, is not

intended to imply universality in the experiences of multiracial people. In fact, there are certainly specific and important ecological influences that impact the who, what, where, when, why, and how of microdiversity and the effects of microdiversity on people in their daily lives. The current study, in fact, reinforces the notion that race, as a social construction, is not a viable construct for defining a single group of people, nor for using that group definition to then try to predict predisposition to psychosocial stressors, poor adjustment, and other experiences. Nevertheless, until larger samples of more specific groupings of students are assessed, the findings of this study shed a great deal of light on some aspects of the experiences of people of multiple racial and ethnic backgrounds.

The aforementioned ecological influences likely to contribute to multiracial identity development have to do with constructs such as sex, and environmental factors such a facilitative supports available to and used by multiracial students. The current study demonstrates that flexibility in racial identification is related to a decreased need for student facilitative supports services. Taking this into consideration, student support personnel in higher education (advisors, counselors, residence assistants, administrators, etc.) may want to reconsider referring multiracial students to support groups based on assumption that they will benefit from connection with other students of color who identify as monoracial. For example, referring a biracial black/white student to the campus black student union, may not address the unique influence multiracial identity has on a students sense of connectedness to peers along racial, ethnic, and cultural lines.

In Renn's (2000) qualitative research on identity-based space and multiracial college students, she observed that while appearances quickly marked someone as not

belonging in a particular monoracial group, most students also looked “ethnic” enough to be perceived as “not white.” This perception created space for them to belong to a general community of students of color. Through participation in certain activities, clubs or classes (e.g. social, education, or political events) on each campus, students negotiated the boundaries of various communities. Also, Renn found that joining a group specifically for multiracial students, marked students as not fitting in. Among the participants interviewed, belonging to a group was considered antithetical to fully belonging to the black student organization or to one of the nationality-specific Asian student groups (Korean Students Association, Japan Club, etc.), for example. The multiracial students felt that they could fit into monoracial groups only if they did not claim membership in a multiracial student group, or otherwise assert their multiple-heritage background. In light of Renn’s work, the current study’s findings regarding multiracial identity variance may be interpreted as assertion of mixed race heritage, therefore underpinning the current study’s finding that a significant inverse relationship exists between multiracial identity variance and participation in student groups-- and specifically for women, participation in ethnic and cultural student groups.

Renn (2000) posits that the creation of a public multiracial space requires a critical mass of students who are willing to identify as multiracial and who feel a need for a separate multiracial space. The combination of demographic factors (e.g. the number of multiracial students) and peer culture highly influence the experience of multiracial students. It is important for higher education support staff to consider that, (a) extant student groups/supports (particularly ethnic and cultural supports) may not be effective in

addressing the needs of multiracial college students, (b) multiracial college students may benefit from a group specifically for multiracial students, (c) joining such a group may have social and identity based consequences for multiracial students, and (d) a critical mass of students is required to sustain such a group. According to Renn (2000):

If it is true that students benefit from maximum freedom to experience and participate in different identity-based spaces, then information about how students move in and out of communities on campus can be used to consider whether an individual institution or higher education as a whole is meeting the needs of multiracial students and others. (p. 415)

Accordingly, both Renn's work and the findings of the current study highlight the importance of colleges' and universities' efforts to decide how best to support the needs of multiracial students by assessing their social, racial, cultural climates. This includes assessment for a critical mass of students (and subsequent recruitment and retention efforts if a deficit is identified), and providing appropriate identity-based space to foster the overall growth and development of these students.

It is important for college support personnel, and counselors in particular, to understand that expression of multiracial variance in multiracial youth can be misunderstood and misinterpreted as signs of poor adjustment (Daniel, 1992; Stephan, 1992). Situational racial identity is often thought to be confusion rather than flexibility or adaptability (Renn, 2004), thus diminishing the validity of microdiversity. The current study demonstrates that variance in multiracial identity does not equate to identity confusion, and is not related to the psychosocial well being of multiracial college

students. When studies have identified negative adjustment in multiracial youth, the cause is typically conflict arising from their family or environment, or lack of guidance in resolving developmental crises (Dimas, 1995; Field, 1996; Gibbs & Hines, 1992; Root, 1998; Root, 2001; Tomishima, 1999). Adolescents who had a white reference group but had negative feelings about black persons had poorer adjustment. Thus, psychological problems can arise when a mixed race adolescent internalizes stereotypes or negative attitudes expressed toward them. Adjustment difficulties have been correlated with lack of family conversation about, living in a single-parent family and having less contact with non-custodial parents and relatives, and family strife (e.g. divorces, addicted parents or siblings, absent parents, abuse, or adoptions). Therefore counselors and other support staff should be careful to accurately assess psychological problems associated with multiracial identity, in order to understand all of the ecological factors that may contribute to a student's hardship.

Multiracial youth may need to develop a multiracial vocabulary to fully explore their racial identity, such as Zack's (2006) multiracial identity options and Renn's (2004) multiracial identity patterns. Indeed, the current study suggests that multiracial youth can adopt a multiracial vocabulary to describe themselves, but a discrepancy exists between their knowledge of this lexicon and society's knowledge of it. Talking about race can give multiracial youth an outlet to discuss hurtful comments and recognize racial stereotypes. According to Renn (2004):

When racial identity is associated with poor adjustment, it is often because family dysfunction and traumas were color-coded at a young age. This color coding of

the dysfunction attaches to external negative stereotypes associated with being a person of color. (p. 114).

It is crucial that college campuses do not repeat this dynamic, by fostering open dialogue about race, and acknowledging multiracial identity as valid, healthy, and unique.

### Study Limitations

There were a number of limitations to the current study. First, the sample is based on the responses of traditional-age mixed-race college students, limiting the generalizability of results beyond this group. Second, Root (2003b) outlines a number of common flaws in research of mixed race people. These include: non-random distribution of population, self-selection limits, generational changes in the meaning of mixed race, heterogeneity versus homogeneity, the impact of nationality, immigration status, and acculturation on racial/ethnic identity. While I sought to remedy many of these flaws in the current study, self-selection bias, and heterogeneity versus homogeneity of the sample emerged as limitations.

First, Mixed race people are not randomly geographically distributed in the United States (U.S. Census Bureau, 2001). Despite my attempts to obtain a sample with a broad geographical scope, self-selection into the study may have been a factor in this sample (see Table 1). Second, the current study examined a heterogeneous mixed race sample and therefore differences between individuals who identify with specific combinations of mixed race were not explored. This sample is very representative of most samples of mixed race heritage individuals in the U.S. in that the combination of racial backgrounds was extremely diverse. It is unlikely that any valid between-group

comparisons could be made given the changing nature of the U.S. population without recruiting extremely large samples.

As noted in the results section, the data from 29 participants were eliminated from inclusion in data analysis because they did not select more than one racial category on the demographic survey. It is important to note that these participants endorsement of only one racial category does not preclude them from having mixed race heritage. The demographic survey used in this study, like others that ask participants to “choose all that apply,” did in fact establish a forced choice regarding racial identification. Students self-selecting a monoracial racial category may have been expressing their chosen multiracial identity option, as opposed to objectively delineating the full extent of their racial heritage. While the aim of the race question on the demographic survey was the latter, it is possible that this question may have served to recapitulate the very societal and psychosocial dynamics that create neglect the presence of options for racial identification for mixed race persons. The Multiracial Identity Options Scale (MIOS) which accommodates options in identification, required that participants be self-reflective, and results suggest that this has an impact on identification.

Finally, the MIOS was comprised of two categories: self and other perception in various contexts. Because Multiracial Identity Variance was measured by examining the variance in self-perception and other perception responses, it is possible that these results were skewed by the difference between participant responses to self-perception questions and other perceptions context. If multiracial identity variance results were separated into



self vs. other perception there might have been less variance in the data and therefore a more flat overall profile of multiracial identity variance might have emerged.

#### Future Research and Intervention

Future research should explore the causal relationships between multiracial identity variance and facilitative supports, social connectedness, and college adjustment. The influence of facilitative supports in the current study raises a number of important questions: (a) Are programs and services available for monoracial groups equally available [and approachable] to multiracial students? (b) Do multiracial students have equal access to resources, student organizations, and support? (c) How knowledgeable are administrative and student support personnel (e.g. advisors, counselors, residence life coordinators, etc) of the unique experiences of their multiracial college students? (d) Do university communities support, or invalidate variance in racial identity? and (e) In what ways do academic outcomes (e.g., retention, academic achievement, graduate rates, other measure of student learning and development) vary for multiracial students compared to the population as a whole, and to monoracial students?

To Improve the experiences and general well-being of multiracial college students, Renn (2004) has also suggested a number of steps be taken on college campuses. Colleges and universities: (a) can ask about racial heritage *and* racial identity, (b) sponsor speakers on mixed race topics, cultural performances/displays, including opportunities to participate, (c) challenge assumptions of monoraciality among faculty, staff, and students, (d) encourage the incorporation of the complexity of race into undergraduate learning which could aid in students' identity development, and (e)

increase awareness on campus of the national policies that impact mixed race students.

It is important to note, that the sheer number of possible combinations and permutations of mixed race heritage makes it impossible to detect differences between multiracial subgroups. The sample size required to obtain enough power to accommodate all possible racial mixtures is impossible to obtain. This point is significant, as it highlights the complexity of the mixed race, particularly as a subject of quantitative study. It is unlikely future research will be able to successfully explore the aspects and correlates of all mixed race identities.

### Conclusion

This research study provides descriptive evidence that multiracial individuals exercise variation in their chosen racial identity depending on different interpersonal and social contexts. The results of this study shed important light on the concept of a racial identity development process that is context based rather than stage based, and requires a unique nomenclature that reflects the microdiversity of this population. Multiracial identity variance does not appear to be related to psychosocial adjustment and wellbeing. Yet, important, sex specific relationships among multiracial identity variance, social connectedness, facilitative supports, college adjustment, and depression emerged, which will inform current practice in regard to multiracial student support, challenge conventional wisdom regarding healthy racial identity development, and guide future research with this ever-increasing U.S. population.

## APPENDIX A

### REVIEW OF THE LITERATURE

In this section I review the literature regarding historical and contemporary perspectives on human development and psychology, with specific attention to multiethnic/multiracial identity development, and social connectedness. Because literature reviews require clear parameters that are inclusive of the literature base of interest (Jackson, 1980), I outline the review's search parameters and procedures.

Manuscripts selected for this review's initial content pool met the following criteria: (a) published since 1967; (b) written in English; and (c) included the key words "multiracial," "multiethnic" "biracial" "Interracial offspring," "mixed race," "ethnic identity" "racial identity," "social connectedness" and "adolescence," "social connectedness" and "college students," and "psychological adjustment". My computerized literature search queried the PsychINFO and ERIC databases, yielding a total of 43, 757 manuscripts, both quantitative and qualitative in nature. I then cross-referenced these keyword searches to focus the search on the population and constructs of interest. Next I examined the abstracts and ultimately selected, 15 books, 21 chapter articles, and 32 journal articles for review, based on their relevance to the historic mission of counseling psychology with an emphasis on prevention, intervention, person and environment interactions, and multicultural competence, and (Brabeck, Walsh, Kenny, and Comilang, 1997; Heppner, Casas Carter, & Stone, 2000; Gelso & Fretz, 2001). Other

writings listed in the references section were referred to for theoretical, methodological, and statistical purposes, but were not included in the original review because they were not within the parameters of the electronic search.

In the next section I discuss historical and contemporary perspectives on multiracial/multiethnic identity development. I then discuss social connectedness as a construct grounded in theoretical and empirical study. Through this review I discuss the relationship between these relational/developmental factors and psychological health and adjustment.

### Multiracial Identity Development

On the whole, there is a dearth of research specific to the multiracial population. According to Root (2003):

Contemporary thinking on racial identity development is derived from the intersection of psychology and the racial pride movements of the 1960s and 1970s. The racial pride movements catalyzed solidarity within race and further reinforced notions that one must identify with a single race... The history of race in the United States, and specifically the “one drop rule” ...provides the key to understanding how psychological models evolved in a way that has excluded the reality of many mixed race persons. (p. 34)

While scholarship in this area is increasing, the focus of research on multiethnic and multiracial individuals has been focused on their racial and ethnic identity development (Wardle & Cruz-Janzen, 2004). Each of the multiracial/multiethnic identity

models is founded on the idea that these individuals face a unique challenge in developing their sense of racial and ethnic identity.

But before examining issues unique to multiracial/multiethnic identity development, it is important to examine the common processes involved in the early childhood racial and ethnic identity development of all children.

### *Early Childhood Development of Racial and Ethnic Identity*

Learning a sense of racial and ethnic identity is a complex developmental process. In order to understand the unique aspects of multiethnic identity development in the United states it is important to understand how all individuals develop a sense of racial and ethnic identity in early childhood. Aboud (1987) describes the following stage model for normative development from infancy to age ten.

*Infancy.* During this period children can discriminate between dark and light stimuli. Consequently, they can tell the difference between light and dark faces.

*Ages 3 to 4.* At this stage children can recognize (and are very interested in) the physical racial differences between Black and White children, but are unable to discern their own racial or ethnic identity.

*Ages 5 to 9.* During this stage of development, children learn to recognize their own racial identity label and develop an initial awareness of group affiliation. Awareness of group belonging occurs after the child learns about group similarities.

*Age 7.* At this stage, White and Black children are able to recognize each other by racial distinction.

*Age 8.* By this stage children of other ethnic groups (Native American, Asian, Hispanic, etc.) are able to recognize their peers who are from other ethnic groups. Apparently, the salient features of these groups are less clear to children of these groups than those of White and Black children.

*Age 8 to 10.* Children at this stage of development form a stronger sense of group belonging and develop a sense of racial or ethnic constancy.

This model provides a general sense of how all children in the US begin to incorporate the social construction of race, and the concept of ethnicity into a cognitive schema. This occurs through a developmental process that includes normative development and contextually influenced learning. While Aboud's (1987) model is a cogent description of the early development of ethnic identity, it is based on a monoracial paradigm. All children progress through various psychosocial, physical, and emotional stages. Unique to multiracial and multiethnic children, however, is their development toward a healthy *multiracial* and *multiethnic* identity (Wardle & Cruz-Janzen, 2004).

#### *Black/White Identity Models*

The majority of research on the multiracial population in the United States has focused on African American/European American children. Poston (1990), Jacobs (1992), and Kerwin and Ponterotto (1995) have each developed models of biracial identity development in children of Black and White parentage. This presents some difficulties with generalizability to all multiracial individuals. According to Wardle and Cruz-Janzen (2004), there are two reasons for this lack of external validity: (a) there is simply not enough research on other multiracial groups to form any body of knowledge,

and (b) research on the identity development of single race children suggests different patterns for children whose physical features are more ambiguous with regard to racial and ethnic background (see Aboud above). These models provided a valuable foundation for modeling multiracial/multiethnic identity, but in and of themselves are not adequate for understanding the diverse multiethnic population.

*Poston's model.* Poston's developmental model (1990) has five levels, or developmental stages. At the time this model was developed the terminology for children of mixed heritage was biracial and biethnic; today's terminology is multiracial and multiethnic. In Stage 1, the *Personal Identity* stage, the child's sense of self, or identity, does not include the concept of ethnic or racial belonging. In Stage 2, the *Choice of Group Categorization* stage, biracial children are pressured to choose one background for their identity. In this case, biracial identity will not be the choice due to limited cognitive development. Most often the race/ethnicity of choice is that of the parent of color.

In Stage 3, the *Enmeshment/Denial* stage, the individual experiences confusion, self-dislike, and guilt from choosing the identity of one parent and denying that of the other. Resolution of this sense of confusion and dislike must occur before the child can move on to Stage 4, *Appreciation*. In this stage the individual may still identify with the single group selected in Stage 2, but the child learns about and appreciates more of the background of his or her other parent. Finally, in Stage 5, *Integration*, the child fully integrates both sides of his or her heritage, viewing him- or herself with an identity that includes the ethnic/ racial, cultural and family heritages of both parents and their extended families.

*Jacobs' model.* Jacobs' model (1992) is based on data collected from studies using dolls with biracial children of Black and White parentage. There are three developmental stages in this model. At Stage 1, Pre-Color Constancy: Play and Experimentation with Color (0-4 ½ years old), children are developing the knowledge of the physical color of their skin, but are not concerned with it. In this stage they cannot match a doll's skin color to the skin color of another family member. At Stage 2, Post-Color Constancy: Biracial Label and Racial Awareness (4 ½ to 8 years old), biracial children learn that skin color is permanent. This results in ambivalence regarding their own skin color. In order for the child to positively progress to the final stage, he or she must resolve this ambivalence. At this stage, the child realizes his or her identity is different from their parents, and the child is becoming increasingly aware of racial discrimination.

At Stage 3, *Biracial Identity* (8-12 years old), a child has successfully developed three conclusions: a) the color of his or her skin is related to his or her mixed heritage—based on parent's genotypes; b) the color of his or her skin does not determine his or her race; and c) the child is biracial because of the different racial heritages of both parents.

*Kerwin-Ponterotto's model.* This model is a six-stage lifespan model starting at childhood and progressing to adulthood (Kerwin & Ponterotto, 1995). At Stage 1, *Preschool (up to age 5)*, biracial children become compare and contrast their appearance and the appearance of other children. At stage 2, *Entry to School*, biracial children are asked by their peers to explain their physical, and racial ambiguity ("what are you?").



Parents need to give them a term such as “mixed,” or “biracial” to help them respond proactively.

By stage 3, *Preadolescence*, biracial children are increasingly aware of physical differences, including skin color and hair texture, and are beginning to understand cultural determinants of group membership. These children reach the knowledge that their parents belong to different racial groups. Often, a precipitating event, such as experiencing racism, seems to force the child into full salience of his or her multiracial identity. In stage 4, *Adolescence*, multiracial youth are pressured to identify with only one ethnic or racial group. This stems from the natural identity crisis of this age and the need for adolescents to associate with similar people. By stage 5, *College/ Young Adulthood*, young people may associate with friends mainly from one of their racial/ethnic backgrounds, but feel less pressure to choose sides, feel comfortable in group of different racial-ethnic people, and can generally see things from more than one point of view. Finally, by stage 6, *Adulthood*, multiracial adults integrate aspects from every part of their heritage, thus functioning comfortably in a variety of contexts. This is a conceptual model with a basis in previous qualitative research by Kerwin, Ponterotto, Jackson, and Harris (1993).

#### *Inclusive Model –Phinney’s Model*

Phinney’s model (1993) applies to single-race minority, multiracial, or multiethnic adolescents and has three distinct stages through which the adolescent progresses. In stage 1, *Unexamined Ethnic Identity*, the child has not examined his or her ethnic identity and either a) has no interest in ethnic identity at all, or (b) automatically

accepts the view of the ethnic or racial identity that is assigned by others. At stage 2, *Ethnic Identity Search/ Moratorium*, individual children search for information about their ethnic or racial heritage and try to determine its relevance to them and their personal identity. At this point, however, they are not yet ready to select an ethnic or racial identity. By stage 3, *Achieved Ethnic Identity*, the individual chooses a racial or ethnic identity and is totally confident and accepting of all aspects of that identity.

While this model attempts to capture the common experience in identity development of all people of color, it does not fully account for the contextual influences that contribute to identity formation. For multiethnic individuals, confidently choosing and accepting all aspect of an ethnic identity is more complex if for no other reason than they must choose from a broader selection of racial and ethnic possibilities. These choices may also vary depending on the individual's context.

#### *Multiracial/Multiethnic Identity Models*

The two multiracial/ multiethnic specific identity models extant in the literature are not singularly stage models. Root's Ecological framework for Understanding Racial Identity (2000, 2003) is concerned with the impact of ecological factors—family, social ability, school, sexual orientation, gender, class, community, peers, and physical appearance—on the identity of multiracial individuals. Wardle's Model (Wardle, 1992; Wardle & Cruz-Janzen, 2004) attempts to integrate all of the models previously mentioned and expand on them to apply to all multiracial children. This model has both an ecological and developmental component.

*Root's model.* Root (1990, 1997, 1998, 2003a) believes that a multiracial person's identity can, and will change, depending on the ecological context. Further she believes the central task for the multiracial child is to achieve a positive resolution between a sense of identity and his or her environment (1990, 1997, 2003).

Root (2003a) identifies five types of identities that emerge from research on mixed race persons: assignment to hypodescent, monoracial fit/self assignment, blended identity, bi-or multiracial, and White with symbolic identity. Generational norms often influence the identity adopted by these individuals. For example, for older generations single-race identity is often the result of either assuming an assignment according to a "one-drop rule" and hypodescent. Younger generations now have the option of publicly assuming a blended or multiracial identity. "Symbolic Whiteness" appears to reflect identification with a class lifestyle and values or a lack of exposure to an ethnic background with which one identifies (p. 34).

Root (1990, 1997, 2003a) believes there are four possible healthy identity resolutions: (a) the individual accepts society's definition of his or her race or ethnicity, (b) the individual identifies with both ethnic or racial groups, (c) the individual identifies with a single racial/ethnic group, (d) the individual identifies with the mixed-race or multiethnic/ multiracial group that his or her background represents. Each of these resolutions are positive if the individual is accepted in their chosen group, does not feel pressure to change, does not deny or put down one aspect of their heritage, and is supported in their identity by their immediate environment. In the case of the last

resolution, the identity is positive if the new identity embraces all aspects of the person's identity.

*Wardle's model.* In Wardle's model (Wardle 1992; Wardle & Cruz-Janzen, 2003), the central task of identity development for the child is the achievement of healthy multiethnic/ multiracial identity. This is marked by successful completion of the three developmental stages incorporated into the model, as well as the child's interaction with the components that make up the ecological model: family, group antagonism, minority/lower status context, majority/ higher status context, and community.

The three developmental stages described by Wardle's model (Wardle 1992; Wardle & Cruz-Janzen, 2004) are *Early childhood (3 to 7 years)*, *Transition Period (6 to 12 years)*, and *Adolescence*. Each of these stages incorporates the developmental theories of both Piaget, and Erickson. According to Wardle in the *Early Childhood* stage, the child becomes aware of physical features, and the similarities and differences between themselves and their parents and peers. At this stage they are often asked to explain their physical and racial ambiguity and they need a label to proactively do so. The *Transition Period* is marked by the multiracial child's increased awareness of sexuality. At this age group belonging is important, and parallels an interest in competencies and the concept of race. The *Adolescent* stage incorporates Erikson's (1963) identity crisis. At this stage multiracial youth learn to separate out race, ethnicity, abilities, likes, dislikes and career choices. Their family and school may increasingly support non-race specific groups, and they become more comfortable with multiracial identity.

The interactions of components of the ecological model described by Wardle (Wardle 1992; Wardle & Cruz-Janzen, 2004) determine the success or failure of the healthy multiracial or multiethnic identity process. Family includes biological adoptive, foster, teen, extended, and blended families on all sides. The family's impact of the child's multiracial identity depends on the attitude of the family towards a multiracial identity, discussion of the topics such as the child's identity and racism, as well as the means by which the family supports the child's overall identity development.

Wardle (Wardle 1992; Wardle & Cruz-Janzen, 2004) explains that multiethnic and multiracial children must deal with two kinds of group antagonism: the traditional and institutionalized racism experienced by all people of color in the United States, and the antagonism of all single-race and ethnic groups toward people of mixed heritage. The level of racism multiracial children experience largely depends on phenotype, community context, and school environment.

Wardle's model (Wardle 1992; Wardle & Cruz-Janzen, 2004) breaks down cultural contexts into two separate categories, minority/ lower status context, and majority/ higher status context. Wardle and Cruz-Janzen (2004) explain:

Multiethnic children with some mainstream White heritage have a distinctive cultural context that includes a minority and majority status; children whose parents are from two minority groups also have a lower status and higher status context based on the position of their parents' race and ethnicity within the strict racial hierarchy. (p.123)

The community represents the most important ecological impact on a child after the family (Bronfenbrenner, 1989). And, according to Wardle (Wardle 1992; Wardle & Cruz-Janzen, 2004) includes school, church groups, immediate peers, and neighborhood groups. According to this model there are three factors that play heavily on the impact of the community on healthy multiracial identity: (a) Does the family feel it belongs?; (b) Is the community accepting of a range of diversity?; and (c) Is there minority representation and multiracial/multiethnic children in the community groups the child attends? (2004) As each child integrates all of his or her experiences within his or her own unique context, they will move toward or away from healthy multiracial identity. Wardle's model attempts to convey the developmental and ecological complexity of this process.

#### Social Connectedness

Lee and Robbins (1995) developed two measures of belongingness—the Social Connectedness Scale and the Social Assurance Scale—based on Kohut's (1984) self-psychology theory. Kohut proposed that as a manner of avoiding feelings of loneliness and alienation people seek to confirm a subjective sense of belongingness or “being part of.” The authors proposed that belongingness is composed of companionship, affiliation and connectedness and sought out to develop self-report measures to evaluate these aspects of belongingness.

A random split-sample procedure was used with 626 participants from a large, metropolitan university. Researchers gathered data for 204 students for the first split sample, 198 students for the second split sample, and a separate sample of 18 students for test-retest reliability. Each participant was given two weeks to complete a questionnaire

packet composed of demographic information, the Marlowe-Crowne Social Desirability Index (Marlowe-Crown, 1998) and 45 randomized items measuring belongingness. Analysis revealed two main factors for the construct of belongingness. The top eight items from factor one were selected to compose the Social Connectedness Scale and eight of the nine items from factor two were selected to compose the Social Assurance Scale. The Social Connectedness Scale focuses on the emotional distance or connectedness between oneself and others while the Social Assurance Scale focuses on need for reassurance from others in social situations to sustain a sense of belonging. The authors stress need for additional research to address the multiple dimensions of belongingness.

Lee and Robbins (1998) presented (a) a detailed description of social connectedness as a theoretical construct and (b) findings from two studies examining effects of social connectedness. Study one explored the effects of connectedness on anxiety; study two explored the role of connectedness in social situations. Social connectedness was defined as “the subjective awareness of being in close relationship with the social world”. The authors hypothesized that individuals with strong connectedness are better able to (a) manage their emotions and needs via cognitive processes and (b) develop interpersonal trust with the ability to construct and maintain connectedness in social situations.

Study one: 185 undergraduate women were used to examine the following question: ‘Are individuals with higher connectedness better able to manage anxiety than individuals with lower connectedness’? The mean age of the group was 24.15 years and the ethnic breakdown was 37 African Americans, 13 Asian Americans, 129 European

Americans and 6 unidentified. Researchers measured connectedness using the Social Connectedness Scale (Lee & Robbins, 1995) and measured anxiety using the State-Trait Anxiety Inventory-Trait Form Y (Spielberger, 1983). The contributing effects of collective self-esteem and perceived social support on anxiety were also explored. Collective self-esteem was measured using the Collective Self-Esteem Scale (Luhtanen & Crocker, 1992) and perceived social support was measured using the Social Support Questionnaire-short form (Sarason, Sarason, Shearin, & Pierce, 1987). Social connectedness was uniquely related to lower scores of anxiety, more so than collective self-esteem and perceived social support. Researchers concluded that social connectedness is more relevant to lower anxiety than temporary sources of belonging.

Study two: qualified participants from study one were asked to participate in study two to explore whether (a) women with high connectedness would experience lower state anxiety and higher self-esteem across experimental conditions and (b) would report greater social identification than women with low connectedness. 44 undergraduate women agreed to participate. Mean age of the participants was 24.93 and ethnic breakdown was 4 African Americans, 2 Asian Americans, 37 European Americans, and 1 unidentified. Researchers asked participants to complete a minimal task for 30 minutes as members of either the 'high cohesion' condition or the 'low cohesion' condition. In the 'high cohesion' condition participants were allowed to communicate with one another every six minutes via written messages. In the 'low cohesion' condition participants were allowed to rest every six minutes with no communication. Women in the 'high cohesion' group reported a more positive group attitude and higher levels of



social identity than women in the 'low cohesion' group. Women with high connectedness reported higher levels of social identity and overall state self-esteem than women with low connectedness.

Lee & Robbins (2000) studied social connectedness in college women and men by examining the types of relationships that uniquely contribute to social connectedness. It was hypothesized that men would feel more connected when relationships were based on social comparison, and that women would feel more connected when relationships were based on forms of intimacy and physical proximity. 387 undergraduate students with a mean age of 20.96 were the participants of this study. Ethnic breakdown was 80 African Americans, 25 Asian Americans, 259 European Americans, 6 Latino/Hispanics, and 17 unidentified. The Social Connectedness Scale (Lee & Robbins, 1995) was used to measure social connectedness, the Social Provisions Scale (SPS) (Russell & Cutrona, 1984) was used to measure different forms of perceived social support. Subscales on the SPS include attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance. The UCLA Loneliness Scale—Revised was used to measure general feelings of loneliness.

One-way analyses of variance with listwise deletion were first performed on each measure with sex as the independent variable. Alpha level for analyses was adjusted to .006 using the Bonferonni procedure. Results found no significant difference between women and men on levels of social connectedness, while women reported significantly less loneliness than men. On measures of social provision, women reported more attachment, guidance, opportunity for nurturance, reassurance of worth and social

integration than men. Social connectedness was highly correlated with loneliness for women, but only moderately related for men. Correlations between social connectedness and social provision were also greater for women than men.

Hierarchical multiple regression analyses were used to measure the unique contribution of each social provision on social connectedness after controlling for loneliness. Analyses were performed separately on women and men. Results found that for women, reliable alliance positively related to social connectedness while guidance negatively related to social connectedness. For men, reassurance of worth positively related to social connectedness while reliable alliance and opportunity for nurturance negatively related to social connectedness. This study found social connectedness is equally salient in the lives of women and men. Authors' recommend future studies of social connectedness include factors of race and ethnicity, social class, gender, adjustment, prediction and intervention evaluation.

Lee, Keough, and Sexton (2002) applied self-verification theory to investigate how social appraisal mediated the effect of social connectedness on perceived stress in the college context. The authors expected gender differences in the proposed relationship with women presenting an interdependent self-construal based on intimacy and physical proximity of relationships and men presenting an independent self-construal based on issues of power and status. 214 students participated in this study with a mean age of 20.27 years. Ethnic breakdown was 65% White, 4% African American, 13% Asian American, 14% Latino American, 1% Arabic/Middle Eastern and 3% unidentified. Measures used were the Social Connectedness Scale (modified for college context; Lee &

Robbins, 1995), Appraised Status of Social Groups Scale (ASSGS) (Sexton, Lee, & Keough, 1999), and Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983). The ASSGS specifically measures students' perceptions about the degree to which university student community holds various groups in high versus low esteem. No statistically significant gender differences were found on social connectedness or perceived stress. Social connectedness was significantly correlated with social appraisal and perceived stress for both women and men. Racial status and year in school were not related to social connectedness or social appraisal.

Yeh, and Inose (2003) investigated the influence of reported English fluency, social support satisfaction, and social connectedness in predicting acculturative stress among international students from various regions. Authors discussed how international students, with an interdependent self-concept, may experience difficulty developing perceived social support and social connectedness in an American, individualistic culture. Surveys were distributed at international student organizations and clubs. Packets included a demographic questionnaire, Acculturative Stress Scale for International Students (ASSIS) (Sandhu and Asrabadi, 1994), Social Connectedness Scale (SCS) (Lee & Robbins, 1995) and Social Support Questionnaire-Short Form (SSQSR) (Sarason *et al.*, 1987). A stepwise regression model was performed using age, gender, region, English fluency, social connectedness, and social support network satisfaction as predictor variables and acculturative stress as the criterion variable. The overall regression model was significant, accounting for 34% of the variance for acculturative stress. English fluency, social connectedness and social support network satisfaction were significant

predictors of acculturative stress. Specifically, higher levels of English fluency, social connectedness and social support network satisfaction predicted lower levels of acculturative stress. Researchers believe feelings of social connectedness were strong predictors of acculturative stress due to the significance placed on relationships for individuals from interdependent societies. Quality of social connections is an essential aspect concerning self-identity, values and ways of 'being' with others.

APPENDIX B  
INFORMED CONSENT STATEMENT

### **Informed Consent Form**

(You may print a copy of this form for your records.)

#### **Research Study: Multiracial/ Multiethnic College Students' Identity and Mental Health**

**Invitation to Participate:** You are invited to participate in a dissertation research study conducted by James Lyda, M.S., a doctoral candidate in Counseling Psychology at the University of Oregon. The following information is provided to help you make an informed decision about whether or not you want to participate in this study. Please feel free to email me with questions (jlyda@uoregon.edu).

**Eligibility:** You are eligible to participate in this study if you identify as having two more more racial or ethnic groups in your heritage, are 18 to 23 years of age, currently enrolled in a college or university, and you are able to write and speak English.

**Purpose of the Study:** The purpose of this study is to examine how your racial and ethnic identity affects your emotional and psychological well being.

**Explanation of Procedures:** If you decide to participate, you will fill out a web-based group of questionnaires, which should take about 45 minutes to complete. Once you have completed the questionnaires, they will be electronically sent back to me over a secure server. The information that you provide (e.g., name, contact information, and survey answers) will remain completely confidential and will be stored in a secure, password-protected server on the Internet. Your identifying information will not be linked in any way with your survey answers.

**Potential Risks and Discomforts:** On occasion some people may experience some distress when completing psychological questionnaires. If you should feel distressed at any time during the study, you may email me and I will email you a list of community resources and referrals. You may also withdraw from the study at any time without any consequences.

**Potential Benefits to Participant:** The benefits you may personally receive from participating in this study include the opportunity to increase self-awareness about your racial/ethnic identity and your emotional and psychological well being. You will be given the chance to explore your thoughts and feelings about certain aspects of yourself and you will have the opportunity to receive community resources and referrals from the primary investigator. You will have the opportunity to participate in a confidential raffle in which you may enter to win a \$200 Amazon.com gift certificate. If you choose to participate in this raffle, you will be required to submit your contact information (phone number and email address) in addition to the answers on your survey battery. Your

identifying and contact information *will not be linked in any way* to your answers in the survey battery. Upon completion of my participant recruitment process, I will randomly select 5 participants who will win a \$200 Amazon.com gift certificate.

**Potential Benefits to Society:** Your participation in this study will add to the research on Multiracial individuals' emotional and psychological well being. Your participation will increase the knowledge of how to assist Multiracial persons in addressing mental health concerns . Results from this study may help counselors and other social service providers more effectively give Multiracial college students the culturally appropriate assistance, support, and encouragement they need.

**Voluntary Participation and Withdrawal:** Your participation is voluntary. You may withdraw your consent and discontinue participation at anytime without penalty.

**Assurance of Confidentiality:** Your identity will be kept confidential because your name or other identifying information will not be attached to the answers that you provide. I will store confidential survey data on a secure computer server, protected by a login ID and password available only to me. Signed informed consent forms or any other identifying participant information will be kept on a separate, secure server. Contact information will be used only for those who want to participate in the raffle to win a gift certificate. Participation in the raffle drawing is optional and answers on your questionnaires will not be connected to requested identifying contact information. All downloaded data will be stored on a password-protected computer and/or in a locked file cabinet to further ensure confidentiality. The information obtained in this study may be published in a scientific journal or presented at scientific meetings for which only aggregate data will be presented.

**Rights of Research Participants:** Your rights as a research participant have been explained to you. If you have any additional questions about this study, please contact the primary researcher or research advisor:

James Lyda, M.S.  
Doctoral Candidate  
(541) 515-2313  
jlyda@uoregon.edu

Benedict McWhirter, Ph.D.  
Associate Professor, Counseling Psychology  
(541) 346-2410  
benmcw@uoregon.edu

If you have any questions concerning your rights as a research participant, contact Human Subject Compliance, 5219 University of Oregon, Eugene, OR 97403, (541) 346-2510. You may print a copy of this Informed Consent Form for your records.

Click "I agree" to fill out the survey.

I Agree
Decline

APPENDIX C  
MEASUREMENT INSTRUMENTS



### Demographic Questionnaire

Thank you for your participation in this study. Please fill out this questionnaire as completely as possible. Provide additional comments as needed. It should take approximately 5 minutes to complete this survey.

1. Age: \_\_\_\_\_

2. What is your sex? (check one)

- ☐ Female
- ☐ Male
- ☐ Transgender
- ☐ Transsexual

3. Are you Spanish/Hispanic/Latino?

- ☐ No, not Spanish/Hispanic/Latino
  - ☐ Yes, Mexican, Mexican American, Chicano
  - ☐ Yes, Puerto Rican
  - ☐ Yes, Cuban
  - ☐ Yes, other Spanish/ Hispanic/Latino (please print group)
- \_\_\_\_\_

4. What is your race? (Mark one or more of the races you consider yourself to be)?

- ☐ American Indian or Alaska Native
- ☐ Black, African American
- ☐ Asian Indian
- ☐ Chinese
- ☐ Filipino
- ☐ Japanese
- ☐ Korean

- ☐ Vietnamese
- ☐ Other Asian (please type)\_\_\_\_\_
- ☐ Native Hawaiian
- ☐ Guamanian or Chomorro
- ☐ Samoan
- ☐ Other Pacific Islander (please type):\_\_\_\_\_
- ☐ Some other race (please type): \_\_\_\_\_

5. What comes closest to describing your year in college?

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Graduate Student (Masters)
- ☐ Graduate Student (Doctoral)

6. Have you declared a major?

- ☐ No
- ☐ Yes

If yes, please specify:\_\_\_\_\_

7. To date, which of the following courses have you taken? (Select all that apply):

- ☐ Ethnic studies courses
- ☐ Women's studies courses
- ☐ Race Relations courses
- ☐ Other multicultural content courses

(please type in):\_\_\_\_\_

9. What is your current G.P.A.? (please type in)\_\_\_\_\_

10. (a) Are you a U.S. Citizen? A. Yes B. No

(b) If not, please indicate your national citizenship

\_\_\_\_\_

11. How old were you when you began living in the U.S.?

- ☐ I was born in the U.S.
- ☐ Six years of age or younger
- ☐ Between age 7 and 17
- ☐ After age 18

12. In which of the following regions of the U.S. do you currently reside?

- ☐ Northeast
- ☐ Mid-Atlantic
- ☐ Southeast
- ☐ Midwest
- ☐ Southwest
- ☐ Pacific Northwest
- ☐ West
- ☐ Alaska
- ☐ Hawaii
- ☐ US Territory (please type):\_\_\_\_\_

13. In which of the following regions of the U.S. did you spent the majority of your upbringing?

- ☐ Northeast
- ☐ Mid-Atlantic
- ☐ Southeast
- ☐ Midwest
- ☐ Southwest

- ☐ Pacific Northwest
- ☐ West
- ☐ Alaska
- ☐ Hawaii
- ☐ US Territory (please list): \_\_\_\_\_

14. What is your father's highest level of education?

- ☐ Did not graduate High School
- ☐ High School/ G.E.D.
- ☐ Some college
- ☐ Completed 2-year college (Associates degree)
- ☐ Completed 4 year-college (Bachelors degree)
- ☐ Some graduate school
- ☐ Completed graduate degree (e.g. Masters, Ph.D., M.D., Law School)
- ☐ Don't know

15. What is your mother's highest level of education?

- ☐ Did not graduate High School
- ☐ High School/G.E.D.
- ☐ Some College
- ☐ Completed 2-year college (Associates degree)
- ☐ Completed 4-year college (Bachelors degree)
- ☐ Some graduate school
- ☐ Completed graduate degree (e.g. Masters, Ph.D., M.D., Law School)

☐ Don't know

16. How are you paying for your college education? (Select all that apply):

- ☐ Parents/Guardians are helping pay
- ☐ I am employed full time
- ☐ I am employed part time
- ☐ I receive a financial scholarship/grant
- ☐ I receive a financial loan

17. How are you paying for your Cost of Living (e.g., rent, bills)? (Select all that apply):

- ☐ Parents/Guardians are helping pay
- ☐ I am employed full time
- ☐ I am employed part time
- ☐ I receive a financial scholarship/grant
- ☐ I receive a financial loan

18. How did you hear about this research study (e.g. e-mail, listerv, class, friend told me, "word of mouth," etc.)

---

### College Supports Questionnaire

1. How actively do you participate in student groups or community organizations on campus or in the surrounding community?
  - A. Extremely active (e.g., attend weekly meetings; engage in social activism; organize activities; participate in social events)
  - B. Very active (e.g., attend weekly meetings but do not actively participate in events or social activism; or participate in events but do not attend weekly meetings)
  - C. Fairly active (e.g., attend meetings, events, socials once in a while)
  - D. Not active (no involvement)
  
2. Are any of the following types of groups available on your campus? (check all that apply)
  - ☐ Ethnic student groups/ Ethnic Student Unions (e.g Black Student Union, Asian Student Association, MEChA, etc.)
  - ☐ Fraternities and Sororities with a traditionally racial minority membership
  - ☐ Multicultural student group/ Multicultural student unions
  - ☐ Minority Mentorship Program
  - ☐ Minority Student Programs initiated by your College/ University (e.g. activities geared toward minority students during orientation)
  - ☐ A group specifically for Biracial or Multiracial Students
  - ☐ Other (please type): \_\_\_\_\_
  - ☐ None
  
3. Do you belong to or participate in any of the following types of groups? (check all that apply)
  - ☐ Ethnic student groups/ Ethnic Student Unions (e.g Black Student Union, Asian Student Association, MEChA, etc.)
  - ☐ Fraternities and Sororities with a traditionally racial minority membership
  - ☐ Multicultural student group/ Multicultural student unions
  - ☐ Minority Mentorship Program
  - ☐ Minority Student Programs initiated by your College/ University (e.g. activities geared toward minority students during orientation)
  - ☐ A group specifically for Biracial or Multiracial Students
  - ☐ Other (please type): \_\_\_\_\_

☐ None

4. How actively do you participate in specifically *ethnic or cultural* student groups and organizations on campus, or in the off campus community?

1. Not active (no involvement)
2. Fairly active (e.g., attend meetings, events, socials once in a while)
3. Active (e.g., attend weekly meetings but do not actively participate in events or social activism; or participate in events but do not attend weekly meetings)
4. Highly active (e.g., attend weekly meetings; engage in social activism; organize activities; participate in social events)

5. How supported do you feel in the groups you are involved with?

- 1) Not supported at all
- 2) Somewhat supported
- 3) Supported
- 4) Very supported

6. How connected to others do you feel in the groups you are involved with?

- 1) Not connected
- 2) Somewhat connected
- 3) Connected
- 4) Closely connected

7. Some colleges and universities have the following student support services. How useful have you found the following support services from your institution?

Very Useful	Useful	Not Useful	Have not used this service, although it is available	Am not aware of such a service being available.
5	4	3	2	1

- ☐ Introduction or Orientation
- ☐ Study Skills support class
- ☐ College/University advising services
- ☐ Students' Union advice services
- ☐ Social activities organized by college or university
- ☐ Student unions, clubs, societies, fraternities, sororities
- ☐ Religious or Spiritual centers/groups
- ☐ Health Center
- ☐ Career Services



### Multiracial Identity Options

Biracial or multiracial people chose to racially identify in different ways and this may depend on their environment or context. For example, how you define yourself with family may differ from when you are in a classroom at college with people who may not know you very well. Below are questions followed by a series of brief statements. Please read through each of them and choose which one you believe best fits for you.

**Which statement best fits with how you identify yourself in terms of race generally? (choose one)**

1. I choose to identify myself by describing fractions/percentages of my racial breakdown (e.g. I'm ½ White, ¼ Black, and ¼ Native American).
2. I choose to identify as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. I choose to identify as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. I choose to identify as White.
5. I choose not to identify with *any* race.
6. I identify simply as “mixed” (or “biracial”, “multiracial”) without feeling the need to explain how I’m mixed (unlike choices 1 & 2).

**Now, how do you identify yourself in the following contexts? (choose one)**

When in new or unfamiliar settings:

1. I choose to identify myself by describing fractions/percentages of my racial breakdown (e.g. I'm ½ White, ¼ Black, and ¼ Native American).
2. I choose to identify as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. I choose to identify as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. I choose to identify as White.
5. I choose not to identify with *any* race.
6. I identify simply as “mixed” (or “biracial”, “multiracial”) without feeling the need to explain how I’m mixed (unlike choices 1 & 2).
7. It depends.

When with close friends:

1. I choose to identify myself by describing fractions/percentages of my racial breakdown (e.g. I'm  $\frac{1}{2}$  White,  $\frac{1}{4}$  Black, and  $\frac{1}{4}$  Native American).
2. I choose to identify as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. I choose to identify as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. I choose to identify as White.
5. I choose not to identify with *any* race.
6. I identify simply as "mixed" (or "biracial", "multiracial") without feeling the need to explain how I'm mixed (unlike choices 1 & 2).
7. It depends.

#### When with immediate family:

1. I choose to identify myself by describing fractions/percentages of my racial breakdown (e.g. I'm  $\frac{1}{2}$  White,  $\frac{1}{4}$  Black, and  $\frac{1}{4}$  Native American).
2. I choose to identify as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. I choose to identify as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. I choose to identify as White.
5. I choose not to identify with *any* race.
6. I identify simply as "mixed" (or "biracial", "multiracial") without feeling the need to explain how I'm mixed (unlike choices 1 & 2).
7. It depends.

#### When in class:

1. I choose to identify myself by describing fractions/percentages of my racial breakdown (e.g. I'm  $\frac{1}{2}$  White,  $\frac{1}{4}$  Black, and  $\frac{1}{4}$  Native American).
2. I choose to identify as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. I choose to identify as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. I choose to identify as White.
5. I choose not to identify with *any* race.
6. I identify simply as "mixed" (or "biracial", "multiracial") without feeling the need to explain how I'm mixed (unlike choices 1 & 2).

7. It depends.

When with authority figures (i.e. Professors, advisors, bosses, supervisors, etc.)

1. I choose to identify myself by describing fractions/percentages of my racial breakdown (e.g. I'm  $\frac{1}{2}$  White,  $\frac{1}{4}$  Black, and  $\frac{1}{4}$  Native American).
2. I choose to identify as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. I choose to identify as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. I choose to identify as White.
5. I choose not to identify with *any* race.
6. I identify simply as “mixed” (or “biracial”, “multiracial”) without feeling the need to explain how I'm mixed (unlike choices 1 & 2).
7. It depends.

**Now, how do you think the following groups identify you? (choose one)**

Society as a whole:

1. Identifies me by describing fractions/percentages of my racial breakdown (e.g. I'm  $\frac{1}{2}$  White,  $\frac{1}{4}$  Black, and  $\frac{1}{4}$  Native American).
2. Identifies me as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. Identifies me as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. Identifies me as White.
5. Does not identify me with *any* race.
6. Identifies me simply as “mixed” (or “biracial”, “multiracial”) without feeling the need to explain how I'm mixed (unlike choices 1 & 2).

Close friends:

1. Identify me by describing fractions/percentages of my racial breakdown (e.g. I'm  $\frac{1}{2}$  White,  $\frac{1}{4}$  Black, and  $\frac{1}{4}$  Native American).
2. Identify me as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. Identify me as *one* Non-White race (e.g Black, Asian, Native American, etc.).

4. Identify me as White.
5. Do not identify me with *any* race.
6. Identify me simply as “mixed” (or “biracial”, “multiracial”) without feeling the need to explain how I’m mixed (unlike choices 1 & 2).
7. It depends.

#### Immediate family:

1. Identify me by describing fractions/percentages of my racial breakdown (e.g. I’m  $\frac{1}{2}$  White,  $\frac{1}{4}$  Black, and  $\frac{1}{4}$  Native American).
2. Identify me as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. Identify me as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. Identify me as White.
5. Do not identify with *any* race.
6. Identify me simply as “mixed” (or “biracial”, “multiracial”) without feeling the need to explain how I’m mixed (unlike choices 1 & 2).
7. It depends.

#### Fellow students in your classes:

1. Identify me by describing fractions/percentages of my racial breakdown (e.g. I’m  $\frac{1}{2}$  White,  $\frac{1}{4}$  Black, and  $\frac{1}{4}$  Native American).
2. Identify me as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. Identify me as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. Identify me as White.
5. Do not to identify with *any* race.
6. Identify me simply as “mixed” (or “biracial”, “multiracial”) without feeling the need to explain how I’m mixed (unlike choices 1 & 2).
7. It depends

#### Authority Figures (e.g. Professors, advisors, bosses, supervisors etc.):

1. Identify me by describing fractions/percentages of my racial breakdown (e.g. I'm  $\frac{1}{2}$  White,  $\frac{1}{4}$  Black, and  $\frac{1}{4}$  Native American).
2. Identify me as all/most of my racial identities without fractions (e.g. I am Black *and* White *and* Native American)
3. Identify me as *one* Non-White race (e.g Black, Asian, Native American, etc.).
4. Identify me as White.
5. Do not identify me with *any* race.
6. Identify me simply as "mixed" (or "biracial", "multiracial") without feeling the need to explain how I'm mixed (unlike choices 1 & 2).
7. It depends.

### Reference Information for Other Instruments

The additional instruments used in this study were used with permission by the instrument developers and/or purchased through the companies holding the copyrights.

#### Social Connectedness Scale-Revised (SCS-R)

The request approval to use this instrument, please contact Richard M. Lee, Ph.D. at [richless@umn.edu](mailto:richless@umn.edu). To access the items of this instrument please refer to Lee, Draper, and Lee's article "Social connectedness, dysfunctional interpersonal behaviors and psychological distress: Testing a mediator model" in the *Journal of Counseling Psychology*, 48 (3), July 2001, 310-318.

#### Student Adaptation to College Questionnaire (SACQ)

To review and/or purchase this copyrighted instrument, please contact Western Psychological Services, 12031 Wilshire Boulevard, Los Angeles, CA 90025-1251.

#### Patient Health Questionnaire (PHQ-9)

To review this copyrighted instrument, please contact Pfizer, Inc. 235 East 42nd Street New York, NY 10017.

## REFERENCES

- About, F. E. (1987). The development of ethnic self-determination and attitudes. In J.S. Phinney & M. J. Rotheram (Eds.), *Children's Ethnic Socialization: Pluralism and Development* (pp. 29-55). Newbury Park, CA: Sage.
- Atkinson, D. R., & Sue, D. W. (1993). *Counseling American minorities: A cross cultural perspective* (4th ed.). Madison, WI: W. C. Brown & Benchmark.
- Baker, R. W., & Siryk, B. (1984). Measuring adjustment to college. *Journal of Counseling Psychology*, 31, 179-189.
- Baker, R. W., & Siryk, B. (1986). Exploratory intervention with a scale measuring adjustment to college. *Journal of Counseling Psychology*, 33, 31-38.
- Baker, R. W., & Siryk, B. (1999). *SACQ: Student adaptation to college questionnaire, manual*. (2nd ed.). Los Angeles: Western Psychological Services.
- Barron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Basu, A. (2007). *Negotiating social contexts: identities of biracial college women*. Charlotte, NC: IAP.
- Benedetto, A. E., & Olisky, T. (2001). Biracial youth: The role of the school counselor in racial identity development. *Professional School Counseling*, 5, 66-69.
- Brabeck, M., Walsh, M. E., Kenny, M., & Comilang, K. (1997). Interprofessional collaboration for children and families: Opportunities for counseling psychology in the 21<sup>st</sup> century. *The Counseling Psychologist*, 25, 615-636.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32, 513-31.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge: Harvard University Press.

- Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), *Six theories of development* (pp. 187-249). Greenwich, CT: JAI press.
- Bronfenbrenner, U. (1993). The ecology of cognitive development: research models and fugitive findings. In R. H. Wozniak & K. W. Fischer, (Eds.), *Development in context: Acting and thinking in specific environments* (pp. 3-44). Hillsdale, NJ: Erlbaum.
- Caffarella, R. S., & Olson, S. K. (1993). Psychosocial development of women: A critical review of the literature. *Adult Education Quarterly*, 43, 125-151.
- Cauce, A. M., Hirango, Y. Mason, C., Aguilar, T., Ordonez, N., & Gonzales, N. (1992). Between a rock and a hard place: social adjustment of biracial youth. In M. P. P. Root (Ed.), *Racially mixed people in America* (pp. 207-22) Newbury Park, CA: Sage.
- Chickering, A. W., (1969). *Education and identity*. San Francisco: Jossey-Bass.
- Cohen, J. (1992.) A power primer. *Psychological Bulletin*, 112, 155-159.
- Cross, W. E., Jr. (1995). The psychology of nigrescence: Revising the Cross model. In J. G. Ponterotto, J. M. Casas, L. A. Suzuki, & C. M. Alexander (Eds.), *Handbook of Multicultural Counseling* (pp. 93 -122). Thousand Oaks, CA: Sage.
- Daneshpour, M. (1998). Muslim families and family therapy. *Journal of Marriage and Family Counseling*, 24, 355-368.
- Daniel, G. R. (1992). Beyond black and white: The new multiracial consciousness. In M. P. P. Root (Ed.), *Racially mixed people in America* (pp. 333-41). Newbury Park, CA: Sage.
- Erikson, E. (1963). *Childhood and society* (2<sup>nd</sup> ed.) New York: Norton.
- Field, L. D. (1996). Piecing together the puzzle: Self-concept and group identity in biracial black/white youth. IN M.P.P. Root (Ed.), *The multiracial experience: Racial borders as the new frontier* (pp. 211-26). Thousand Oaks, CA: Sage.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational Research: An Introduction* (7th ed.). Boston: Allyn & Bacon.
- Gaskins, P. (1999). *What are you? Voices of mixed-race young people*. New York: Holt.



- Gelso, C. J., & Fretz, B.R. (1992). *Counseling Psychology*. Forth Worth, TX: Harcourt Brace Jovanovich.
- Gibbs, J. T., & Hines, A. M. (1992). Negotiating ethnic identity: issues for black-white biracial adolescents. In M. P. P. Root (Ed.), *Racially mixed people in America* (pp. 223-38). Newbury Park, CA: Sage.
- Gibbs, J. T., & Moskowitz-Sweet, G. (1991). Clinical and cultural issues in the treatment of biracial and bicultural adolescents. *Families in Society*, 72, 579-592.
- Gosling, S. D., Vazire, S., Srivastava, S., & John, O. P. (2004). Should we trust Web-based studies? A comparative analysis of six preconceptions about Internet questionnaires. *American Psychologist*, 59, 93-104.
- Hart-Webb, D. (1999). The biracial bind. In Y. M. Jenkins (Ed.), *Diversity in college settings* (pp. 15-25). New York: Routledge.
- Helms, J. E. (1990). Black and white racial identity: Theory, research, and practice. New York: Greenwood Press.
- Helms, J. E. (1995). An update of Helms's white and people of color racial identity models. In J. G. Ponterotto, J. M. Casas, L. A. Suzuki, & C. M. Alexander (Eds.), *Handbook of Multicultural Counseling* (pp. 181-198). Thousand Oaks, CA: Sage.
- Heppner, P. P., Casas, J. M., Carter, J. & Stone, G. I. (2000). The maturation of counseling psychology: Multifaceted perspectives. In S. D. Brown, & R. W. Lent *Handbook of counseling psychology* (3<sup>rd</sup> ed) (pp. 3-49). New York: Wiley.
- Herring, R. D. (1992). Developing biracial identity: A review of the increasing dilemma. *Journal of Multicultural Counseling and Development*, 23, 29-38.
- Heyes, C. (2007). *Identity Politics*. Retrieved Jan 30, 2008, from Stanford Encyclopedia of Philosophy Web site: <http://plato.stanford.edu/entries/identity-politics/>
- Jacobs, J. H. (1992). Identity development in biracial children. In M. P. P. Root (Ed.), *Racially mixed people in America* (pp. 190-207). Newbury Park, CA: Sage.
- Jones, N. A., & Smith, A. S. (2003). A statistical portrait of children of two or more races in Census 2000. In M. P. P. Root & M. Kelley, (Eds.), *Multiracial Child Resource Book* (pp. xiv-xvi). Seattle, WA: Mavin Foundation.

- Karcher, M. J. (2001, August). Measuring adolescent connectedness: Four validation studies. Poster session presented at the annual convention of the American Psychological Association, San Francisco, CA.
- Karcher, M. J. & Lee, Y. (2002). Connectedness among Taiwanese middle school students: A validation study of the Hemingway measure of adolescent connectedness. *Asia Pacific Education Review*, 3, 92-114.
- Kearney, M.H. (1998). Truthful self-nurturing: A grounded formal theory of women's addiction. *Quantitative Health Research*, 8, 495-512.
- Kelley, M. & Root, M. P. P. (2003). Introduction. In M. P. P. Root & M. Kelley, (Eds.), *Multiracial Child Resource Book* (pp. xiv-xvi). Seattle, WA: Mavin Foundation.
- Kerwin, C. & Ponterotto, J. G. (1995). Biracial identity development: Theory and research. In J. G. Ponterotto, J. M. Casas, L. A. Suzuki, & C. M. Alexander (Eds.), *Handbook of multicultural counseling* (pp. 199-217). Thousand Oaks, CA: Sage.
- Kohut, H. (1984). *How does analysis cure?* New York: International Universities Press.
- Kroenke K., Spitzer R. L., Williams J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16, 606-613.
- Lee, R. M., Bowen, N. A., & Keough, K. A. (1999). *The moderating influence of social connectedness in the college adjustment of provisional students*. Unpublished manuscript, University of Texas at Austin.
- Lee, R. M., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. *Journal of Counseling Psychology*, 48, 310-318.
- Lee, R. M., Keough, K. A., & Sexton, J. D. (2002). Social connectedness, social appraisal, and perceived stress in college women and men. *Journal of Counseling and Development*, 80, (255-361).
- Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The Social Connectedness and the Social Assurance Scales. *Journal of Counseling Psychology*, 42, 232-241.

- Lee, R. M., & Robbins, S. B. (1998). The relationship between social connectedness and anxiety, self-esteem, and social identity. *Journal of Counseling Psychology, 45*, (338-345).
- Lee, R. M. & Robbins, S. B. (2000). Understanding social connectedness in college women and men. *Journal of Counseling and Development, 78*, 484-491.
- Maton, K. I., Hrabowski, F. A., III, & Greif, G. L. (1998). Preparing the way: A qualitative study of high-achieving African American males and the role of the family. *American Journal of Community Psychology, 26*, 639-668.
- McRoy, R., & Freeman, E. (1986). Racial identity issues among mixed race children. *Social Work in Education, 8*, 164-174.
- McWhirter, B. T. (1990). Loneliness: A current review of the literature with implications for counseling and research. *Journal of Counseling and Development, 68*, 417-422.
- Milan, S., Keiley, M. K. (2000). Biracial youth and families in therapy: Issues and interventions. *Journal of Marital and Family Therapy, 26*, 305-315.
- Miller, J. B., & Stiver, I. P. (1997). *The healing connection: How women form relationships in therapy and in life*. Boston: Beacon Press.
- Neumark-Sztainer, D., Story, M., French, S. A., & Resnick, M. D. (1997). Psychosocial correlates of health compromising behaviors among adolescents. *Health Education Research, 12*, 37-52.
- Newcomb, M. D. (1990). Social support by many other names: Toward a unified conceptualization. *Journal of Social & Personal Relationships, 7*, 479-494.
- Nishimura, N. J. (1998, Spring). Assessing the issues of multiracial students on college campuses. *Journal of College Counseling, 1*, 45-53.
- Nishimura, N., & Bol, L. (1997). School counselors' perceptions of biracial children's counseling needs in an urban educational setting. *Research in the Schools, 4*(3), 17-23.
- Overmier, K. (1990). Biracial adolescents: Areas of conflict in identity formation. *The Journal of Applied Social Sciences, 14*, 157-177.

- Pacz, K., & Lyda, J. (2002, August). Integrating Identities: Understanding common themes in biracial individuals. Poster session presented at the annual meeting of the American Psychological Association, Chicago, IL.
- Phares, V. (1993). Father absence, mother love, and other family issues that need to be questioned: Comment on Silverstein (1993). *Journal of Family Psychology*, 7, 293–300.
- Phinney, J. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with adolescents and young adults from diverse groups. *Journal of Adolescent Research*, 7, 156-176.
- Phinney, J. S. (1993). A three stage model of ethnic identity development in adolescence. In M.E. Bernal & G. P. Knight (Eds.). *Ethnic Identity: Formation and transmission, among Hispanic and other minorities* (pp. 61-79). Albany, NY: SUNY Press.
- Poston, W. S. C. (1990). The biracial identity development model: A needed addition. *Journal of Counseling and Development*, 69, 152-55.
- Renn, K. R. (2000). Patterns of situational identity among biracial and multiracial college students. *The Review of Higher Education*, 23, 399-420.
- Renn, K. (2004). *Mixed race students in college: The ecology of race, identity, and Community*. Albany: SUNY Press.
- Root, M. P. P. (1990). Resolving “other” status: Identity development of biracial individuals. In L. S. Brown & M.P.P. Root (Eds.), *Diversity and complexity in feminist therapy* (pp.185-205). New York: Haworth.
- Root, M. P. P. (1992). Within, between, and beyond race. In M. P. P. Root (Ed.), *Racially Mixed People in America* (pp. 3-11).
- Root, M. P. P. (1994). Mixed Race Women. In L. Comas Diaz and B. Green (Eds.), *Women of color and mental health: The healing tapestry*. New York: Guilford.
- Root, M. P. P. (Ed.) (1996). *The Multiracial Experience: Racial Borders as the New Frontier*. Thousand Oaks, CA: Sage.
- Root, M. P. P. (1997). Multiracial Asians: Models of ethnic identity. *Amerasian Journal*, 23 (1), 29-41.

- Root, M. P. P. (1998a). Preliminary findings from the biracial sibling project. *Cultural Diversity and Mental Health*, 4, 237-247.
- Root, M. P.P. (1998b). Multiracial Americans: Changing the face of Asian America. In L. C. Lee & N. W. Zane (Eds.), *Handbook of Asian American Psychology* (pp. 261-281). Thousand Oaks, CA: Sage.
- Root, M. P. P. (2000). Rethinking Racial Identity Development: An Ecological Framework. In P. Spickard and J. Burroughs (Eds.) *We are a people: Narrative in the construction and deconstruction of ethnic identity*. Philadelphia, PA: Temple University Press.
- Root, M. P. P. (2003a). Racial identity development and persons of mixed race heritage. In M. P. P. Root & M. Kelley, (Eds.), *Multiracial Child Resource Book* (pp. 34-41) Seattle, WA: Mavin Foundation.
- Root, M. P. P. (2003b). Multiracial families and children: Implications for educational research and practice. In J. A. Banks and C. A. McGee Banks (Eds.), *Handbook of research on multicultural education* (second edition), pp. 121-122. San Francisco: Jossey-Bass.
- Root, M. P. P. (2004). From exotic to a dime a dozen. In A. Gillem and C. Thompson (Eds.), *Biracial Women in Therapy: Between the Rock of Gender and the Hard Place of Race* (pp. 19-31). New York: The Haworth Press.
- Root, M. P. P. & Kelley, M. (2003). *Multiracial Child Resource Book*. Seattle, WA: Mavin Foundation.
- Rosen, W. B. (1999). Moments of truth: Notes from a lesbian therapist. *Smith College Studies in Social Work*, 69, 293-308.
- Sebring, D. L. (1985). Considerations in counseling interracial children. *Journal of Non-White Concerns in Personnel and Guidance*, 13, 3-9.
- Schafer, J. L. (1999). *NORM: Multiple imputation of incomplete multivariate data under a normal model* [Computer software]. University Park: Pennsylvania State University, Department of Statistics.
- Schafer, J. L. & Graham, J. W. (2002). Missing data : Our view of the state of the art. *Psychological Methods*, 7, 147-177.

- Shih, M., & Sanchez, D. T., (2005). Perspectives and research on the positive and negative implications of having multiple racial identities. *Psychological Bulletin*, 131, 569-591.
- Stephan, C. W. (1992). Mixed-heritage individuals: Ethnic identity and trait characteristics. In M. P. P. Root (Ed.) *Racially mixed people in America* (pp. 50-63). Newbury Park, CA: Sage.
- Timpone, R. J. (1998). Ties that bind: Measurement, demographics, and social connectedness. *Political Behavior*, 20, 53-77.
- Townsend, K.C., & McWhirter, B. T., (2005). Connectedness: A review of the literature with implications for counseling, assessment, and research. *Journal of Counseling and Development*, 83, 191-201.
- Troll, L. E. (1994). Family connectedness of old women: Attachment in later life. In B. F. Turner & L. E. Troll (Eds.), *Women growing older: Psychological perspectives* (pp. 169-201). Thousand Oaks, CA: Sage.
- Twine, F.W. (1996) Brown skinned white girls: Class, culture and the construction of white identity in suburban communities. *Gender, Place, and Culture* 3(2): 205-224.
- U.S. Bureau of the Census. (1992, March). Marital status and living arrangements. *Current Population Reports, Population Characteristics, Series P20-468*, December. Washington, DC: U.S. Government Printing Office.
- U.S. Census Bureau. (2000). *Racial and ethnic classifications used in Census 2000 and beyond*. Retrieved May 10, 2005 from the World Wide Web: <http://www.census.gov/population/www/socdemo/race/racefactcb.html>
- Wallace, K. R. (2003). Contextual factors affecting identity among mixed heritage college students. In M. P. P. Root & M. Kelley, (Eds.), *Multiracial Child Resource Book* (pp. 87-93). Seattle, WA: Mavin Foundation.
- Wardle, F. (1992). *Biracial Identity: An ecological and developmental model*. Denver, CO: Center for the Study of Biracial Children.
- Wardle, F., & Cruz-Janzen, M. I. (2004). *Meeting the needs of multiracial and multiethnic children in schools*. Boston: Pearson Education, Inc.
- Wolf, P. (1988). *Treating the self: Elements of clinical self psychology*. New York: Guilford Press.

- Zack, N. (1998). Mixed black and white race and public policy. In N. Zack, L. Shrage, & C. Sartwell (Eds.), *Race, class, gender, and sexuality: The big questions* (pp. 77-85). Boston: Blackwell.
- Zack, N. (2001). American mixed race: The U.S. 2000 Census and Related Issues. *Harvard BlackLetter Law Journal*, 17, pp. 33-46.
- Zack, N. (2006). *Thinking about race* (2nd ed.). Belmont, CA: Thomson-Wadsworth.