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ASSESSING ASSOCIATIONS AMONG INTERPERSONAL CLOSENESS, FEAR OF  
INTIMACY, SECURE ATTACHMENT, AND A MATERNALLY WARM REARING STYLE

A Thesis  
presented in partial fulfillment of requirements  
for the degree of Master of Arts  
in the Department of Psychology  
The University of Mississippi

by

FERNANDO T. ALESSANDRI

May 2013

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## ABSTRACT

Decades of evidence suggest that maternal warmth contributes to prosocial outcomes later in life. This survey study examined specific social outcomes in 241 college students and found that, while their perceived maternal warmth was correlated with a number of social outcomes, the relationships were not as strong as hypothesized. In addition, applying a behavioral and social learning framework, it was hypothesized that the variance explained by maternal warmth would be reduced when regressions included the practices of making self-disclosures and eliciting conversation and self-disclosures from others; this hypothesis was supported, but not as strongly as anticipated.

## DEDICATION

This thesis is dedicated to my wife and catalyst, Julia L. Carrano, without whom I'd probably still be talking instead of doing. Also to my parents, who have never doubted my ability to achieve.

## LIST OF ABBREVIATIONS AND SYMBOLS

AAI	Adult Attachment Interview
EMBU-C	[Swedish acronym for] “Memories of My Upbringing”–Child version
FIS	Fear of Intimacy Scale
GPA	Grade Point Average
H[1, 2...]	Hypotheses
IRB	Institutional Review Board
IWM	Internal Working Model
MSIS	Miller Social Intimacy Scale
MVA	Missing Values Analysis
PCS	Parental Caregiving Style
PSPM	Psychology Study Participant Manager
RQ	Relationship Questionnaire
SES	Socioeconomic status
UCLA	Revised UCLA Loneliness Scale

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Lastly, I wish to thank the authors of the various scales I used, as well as prior researchers on whose shoulders my contributions stand, too many to mention individually.

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## I. INTRODUCTION

Interpersonal closeness, defined below, is believed to be an important aspect of human wellbeing. Studies show that isolation, loneliness, and relationship dissolution are associated with physical health problems, worse sleep, lower immunology (Masi, Chen, Hawkey, & Cacioppo, 2011), and psychopathologies such as depression (Lasgaard, Goossens, Bramsen, Trillingsgaard, & Elklit, 2011) and suicidality (May & Klonsky, 2011; Vajda & Steinbeck, 2000) as compared to people who report less loneliness or relationship difficulty. By contrast, greater social support, which is generally measured as having family, friends, and significant others with whom one shares private knowledge and to whom one can turn in time of need, have been associated with better physical and psychological well-being, higher life satisfaction, and more resilience to adverse life events (Bruwer, Emsley, Kidd, Lochner, & Seedat, 2008; Miller & Lefcourt, 1983; Zimet, Dahlem, Zimet, & Farley, 1988). Given the benefits of supportive social relationships, questions arise about factors that contribute to or detract from achieving and maintaining them, and also about how relationships may impact each other.

Maternal warmth is a factor that has emerged in the past 50 years as important in social development. Several strains of inquiry have emerged including, 1) attachment theory which looks at 'security' in relationships throughout the lifespan (Ainsworth & Bowlby, 1991); 2) parental discipline styles which influence child and adolescent social development (Baumrind, 1978); and 3) parental rearing styles which look at parental behaviors categorized as warm/caring/responsive, rejecting, overprotective, and anxious, as predictors of clinical and

behavioral outcomes in children (Perris, Jacobsson, Lindström, Von Knorring, & Perris, 1980). Findings from these traditions will be reviewed briefly.

In addition, practices of self-disclosure, and skills associated with eliciting conversation and self-disclosures from others, have also been found to relate to social outcomes such as closeness to friends (Miller & Lefcourt, 1982); the fear of intimacy (Descutner & Thelen, 1991); and ratings of liking others (Miller, Berg, & Archer, 1983). The role of making and eliciting self-disclosures, and their interaction with maternal warmth, will also be discussed.

## II. MATERNAL WARMTH, EARLY ATTACHMENT, AND SOCIAL OUTCOMES

**Attachment Security and Social Outcomes.** Maternally warm behaviors have been associated with greater attachment security, while lack of maternal warmth has been associated with anxious-ambivalent attachment (Blehar, Lieberman, & Ainsworth, 1973) as well as anxious-avoidant and disorganized attachment (Ainsworth, Blehar, Waters, & Wall, 1978).

Examining early-life differences in maternal behaviors, children classified as ‘securely attached’ at 12 months were found to have had mothers who exhibited the following during their first 3 months of life (in contrast to mothers of insecure infants): responsiveness to crying was significantly more prompt; tender, careful holding occurred more often; pick-ups were significantly more affectionate; ineptness was displayed far less. In addition, these mothers showed much less aversion to physical contact and provided significantly fewer unpleasant experiences; interactions were contingently paced and without a routine manner; timing of initiations and terminations of feeding were much better received by the child; the mother was more responsive to food preferences; and feeding was paced according to the infant’s intake. Beyond those first quarter differences, during the entire first year secure infants also experienced significantly more maternal emotional expression and less rigidity (Ainsworth, Blehar, Waters, & Wall, 1978).

Perhaps most recently and definitively, Simpson, Collings, Tran, and Haydon (2007) found that secure attachment in infancy (which is predicted by warm mothering) predicts

significantly better 'peer competence' in early elementary school, which then predicted greater closeness to friends at age 16, and this was followed by romantic relationships at ages 20-23 characterized by more positive daily emotional experiences and less negative affect in both collaborative and conflict resolution tasks.

Regarding older adults, a meta-analysis by van IJzendoorn (1995) found that adults classified as secure by the Adult Attachment Interview (not a self-report) also demonstrated significantly more warmth/responsivity toward their own newborn infants, who were then often also classified as secure at 18 months. This suggests the predictive effects of secure attachment on a subsequent generation.

In addition, Hazan and Shaver (1987) found that adults who recall their maternal style during childhood as high in warmth also self-identify with a secure style in their adult relationships, providing additional evidence of the relationship between maternal warmth, secure attachment, and positive relational functioning. Studies also suggest that warmth may impact the development of communication; the current study argues that warmth reinforces efforts at communication, and in particular, the practice of making and receiving self-disclosures, which will be shown as relevant to achieving closeness to others.

**Warmth, Attachment Security, and Communication Development.** Responsive mothers during the first 12 months of life have been associated with infants who were not only secure, but who also transitioned from undifferentiated crying to the greatest subtlety, clarity, and variety of facial expressions, bodily gestures, and vocalizations, suggesting the role of warmth in developing effective communication at 12 months (Bell & Ainsworth, 1972). Similarly, Bretherton, Bates, Benigni, Camaioni, and Volterra (1979) showed that harmonious mother-infant interactions were predictive of later communicative competence. More recently,

Steelman, Assel, Swank, Smith, and Landry, (2002) found that responsive mothers at 12 months were associated with greater receptive and expressive language development at 24 months. These findings suggest that warmth and responsiveness promote communication. Others suggest more specifically that warmth promotes communication about internal states such as thoughts and emotions.

Cervantes and Callanan (1998) found that among toddlers ages 2-4 years, maternal talk increases from mere labeling of objects, events, and emotions to explaining causes. In addition, children's understanding and verbalization of emotions is related to the frequency of emotion conversations and of the causal descriptions of emotions (e.g., "he is angry" versus "he is angry because he has been punished"). In contrast, maltreated toddlers show significantly fewer utterances regarding their own activities or internal states than non-maltreated toddlers. When combined with their poorer syntax and higher likelihood of eliciting less complex communications from mother and others, lack of warmth appears to present an obstacle to verbal engagement with others (Coster, Gersten, Beeghly, & Cicchetti, 1989).

Brophy-Herb, Stansbury, Bocknek, and Horodynski (2012) found that maternal use of mental state language and emotional expressivity were inversely related to emotional dysregulation in toddlers, and were predictive of effective coping (defined as self-regulation, adaptive responses, self-initiated behaviors, and appropriate responding to the social and physical environment) in 28-month old toddlers. While mothers in this study were not coded specifically for warmth, the ability to communicate about emotions is associated with warm mothers in other studies. Cyr, Dubois-Comtois, and Moss (2008) found that 'secure' children at 3 and 4 years (and their mothers) make significantly more statements elaborating emotional content than insecure children and their mothers. In addition, the ability to engage in mutual

exploration of each other's thoughts and feelings; and to make verbal statements promote introspection, self-reflection, and sharing inner states with others were associated with maternal warmth and with fewer externalizing problems at ages 4, 6, and 9. By contrast, minimization and exaggeration of emotions are both associated with non-warm environments and are associated with externalizing problems (Cyr, Dubois-Comtois, & Moss, 2005).

Regarding the likelihood of children being reinforced for self-disclosures, Bretherton (1999) found that children need to perceive their parent as sensitive before they are willing to communicate about emotional experiences without defensiveness. With early adolescents, Salafia, Blodgett, Dawn, and Grundy (2009) found that 11-13-year-olds who rated their mothers as warm were more likely to disclose information about daily events and acquaintances, and that adolescent self-disclosure did not predict changes in maternal warmth, suggesting the experience of maternal warmth as primary. Applying an operant conditioning framework, the current study hypothesizes that maternal warmth will be predictive of social outcomes, and that it will also predict willingness to make intimate self-disclosures, and that the latter will account for some of the relationship between warmth and social outcomes. Before more formal discussion of self-disclosure, the next section reviews findings regarding parental discipline styles and social outcomes in their children.

**Parental Discipline Styles and Social Outcomes.** Baumrind (1978) found significant correlations between parent discipline "profiles" and child outcomes such as social competence, confidence, and creativity. Her studies suggest that prosocial development can be predicted by points along the two axes of parental demand and parental responsiveness. Child social competence, confidence, and creativity are associated with parents who expect much from their children but are also flexible as problems arise. These parents encourage exploration, rational

dialog, and problem-solving, and are said to be authoritative but not authoritarian. The latter parents also set high standards but are inflexible; they are associated with obedient, conforming, and non-inquisitive children. A third group, permissive parents, are characterized by low demand and high flexibility, correlating with children who have few accomplishments, low self-confidence, and high dependence on others. Lastly, when low demand is combined with inflexibility (non-responsiveness), passivity and dependence on others is also high. Thus she concluded that parental warmth and responsiveness were central to prosocial development, yet they had to be applied in the context of reasonable challenges and clear expectations (rather than direct or heavy-handed control) to achieve those prosocial outcomes.

Karavasilis, Doyle, and Markiewicz (2003) have shown strong correlations between parenting styles as described by Baumrind (1978) and attachment styles as described by Ainsworth and Bowlby (1991) and Bartholomew and Horowitz (1991). All converge on the factor of responsiveness or warmth on the part of the parents, as well as on a factor related to the development of independence and dependence and attitudes toward others.

Unfortunately, methods to assess parental disciplinary styles are focused on parental attitudes, demands, and responses to child compliance and noncompliance, rather than on simpler dynamics of the relationship. For example, Buri's Parental Authority Questionnaire (1991) is a widely used 30-item self-report that allows researchers to classify the style of discipline a person experienced. Many of the items concern the attitudes, rules, and speculations about what one's mother or father would think or do, and they tend to combine several ideas. Typical items are, "As I was growing up I knew what my father expected of me in the family and he insisted that I conform to those expectations simply out of respect for his authority" and, "My father had clear standards of behavior for the children in our home as I was growing up, but he



was willing to adjust those standards to the needs of each of the individual children in the family.” Such measures have been useful in studies related to the behavioral problems and prosocial outcomes of children (McKinney, Donnelly, & Renk, 2008) but they are less well suited to assessing specific behaviors that can be understood as reinforcing or punishing. For this reason, parental discipline style will not be assessed in the current study, despite its importance in the development of socially competent individuals. The final area dealing with maternal behavior explicitly labeled as ‘warmth’ is called parental rearing styles.

**Parental Rearing Styles and Social Outcomes.** In a longitudinal study beginning with toddlers, Landry, Smith, Swank, Assel, and Vellet (2001) found that children whose mothers responded with ‘warmth’ at 6, 12, 24, 42, and 54 months showed the best results in the development of social skills. As predicted by Baumrind’s work, this effect was found to be mediated by a non-punitive discipline style (Steelman et al., 2002).

Also with toddlers, Ipsa et al. (2004) found that ‘maternal warmth’ was inversely related to maternal intrusiveness (defined as interrupting and controlling play). Lack of warmth at 15 months predicted increased negativity toward mothers, decreased engagement with them, and loss of ‘dyadic mutuality’ (i.e., mutual comfort and enjoyment of each other) at 25 months of age. Among 6-8 year-olds, Davidov and Grusec (2006) found that maternal warmth was a significant predictor of peer acceptance in boys and regulation of positive affect in both sexes.

In children ages 7-15 years, Moore, Whaley, and Sigman (2004) found a significant relationship between anxiety in children and lack of warmth in mothers. Similarly, Suchman, Rounsaville, DeCoste, and Luthar (2007) found parental warmth was inversely related to 8-16-year-olds’ clinical maladjustment and depression. However, very high parental warmth was

associated with internalizing problems in children, which support Baumrind's (1978) finding that overly responsive parenting can be detrimental to children.

With adolescents, a recent observational study of mothers and 14-16 year-olds found that negative interactions with mothers correlated with poor communication skills with peers, as well as conflict behaviors during discussions with close friends (Shomaker & Furman, 2009). These findings further suggest that maternal warmth is predictive of social outcomes with peers, and in particular of communication and psychosocial adjustment.

**Assessment of Maternal Warmth: Modified EMBU-C.** The Swedish-originated EMBU (translated as "Memories of my upbringing," Perris et al., 1980) is a well-supported 81-item measure designed to assess adult perceptions of their parents' rearing styles. Rather than assume that a cold rearing style is the same as a rejecting one, it distinguishes between these two concepts, and in 1998 it was found to offer better discrimination between its subscales (Arrindell, Gerlsma, Vandereycken, Hageman, & Daeseleire) than measures that do not distinguish coldness from rejection.

A 41-item version was adapted for children in 1993 (Castro, Toro, Van der Ende, & Arrindell) and subsequent changes (Grüner, Muris, & Merckelbach, 1999) removed a subscale for assessing whether a person felt favored over their siblings and replaced it with a subscale to measure an anxious rearing style. This was modified again in 2003 to improve reliability (Muris, Meesters, & Van Brakel).

The resulting Modified EMBU-C has 40 items and yields four parental rearing styles per parent: emotionally warm (e.g., "When you were unhappy, your mother/father consoled you and cheered you up"); rejecting ("Your mother/father treated you unfairly"); overprotective (e.g., "Your mother/father watched you very carefully"); and anxious (e.g., "Your mother/father

worried about you making a mistake”). Only the 10-item maternal warmth subscale will be used for analysis in this study. Separate scales are filled out for mother/female caregiver and father/male caregiver, with 4-point Likert-type ratings from *No, never* (=1) to *Yes, most of the time* (=4).

The Modified EMBU-C has been used with adults as well as children (Muris, 2002; Muris et al., 2003). Internal consistencies have been reported as satisfactory, with Cronbach alphas ranging between .66 and .81. Test-retest correlations over a 2-month period have been reported from .78 to .84. Factor analysis has supported the 4-factor structure, and no items with less than a .37 loading were retained (Muris et al., 2003).

The EMBU-C is of particular interest because it suggests patterns of modeling and reinforcement as perceived by the subject. This occurs at both the item and subscale level. For example, “[Your mother] gave you compliments” and, “listened to you and considered your opinion” and, “When you did something stupid you could make it up with her” not only reveal the mother’s behaviors but also imply her role in modeling and reinforcing the subject’s operant behaviors (e.g., speaking, voicing opinions, disclosing plans and things that could go well or badly). Modeling and reinforcement are expected to promote similar behaviors in the subject, while absence of modeling and reinforcement is expected to preclude or extinguish those behaviors to some extent.

More specifically, behaviorism and learning theory would suggest that behaviors such as self-disclosure and eliciting conversation from others would have been modeled and reinforced by warm mothering but punished or extinguished by the experience of a cold, anxious, overprotective, or rejecting parent.

**Assessment of Maternal Warmth: Parental Caregiving Style (PCS).** A second method of assessing maternal warmth found in attachment literature will also be used. Published in Collins and Read (1990), and credited to Hazan and Shaver, this brief item describes three 'Parental Caregiving Styles' (PCS) and asks respondents to rate each on a 9-point scale according to how well it describes their experience with each parent. The first describes a 'warm/responsive' parent, the second a 'cold/rejecting' parent, and the third an, 'ambivalent/inconsistent' parent. Collins and Read (1990) found a moderate correlation between maternal warmth and security in adult relationships ( $r=.20, p<.05$ ); a negative moderate relationship with adult anxiety in relationships ( $r=-.23, p<.01$ ); and a strong relationship with being dependent in adult relationships ( $r=.41, p<.001$ ). Maternal warmth also correlated moderately with a measure of confidence in the dependability of other people ( $r=.32, p<.001$ ), which supports the attachment concept that security and maternal warmth are associated with confidence in relationships. These findings suggest that the PCS may be useful in classifying and rating parents on the warmth dimension, particularly as a second method to the EMBU-C. These measures of maternal warmth are expected to predict levels of closeness to others in the present study.

### III. DEFINING AND MEASURING CLOSENESS

In 1998, Kory Floyd reviewed how social scientists were defining intimacy because of criticism that too many experts equated it with self-disclosure. While not a weighted method of choosing studies, he conducted a meta-analysis of 100 randomly chosen studies from the previous two decades with the word “intimacy” or “intimate” in the title. As expected, he found that the most common definition of “intimacy” explicitly used the term “self-disclosure” (66% of the studies reviewed), and that many researchers used the two terms synonymously. The next most common definition was “closeness” (38%). The third most common definition, “emotional expression,” (34%; e.g., “I feel sad” and, “you mean a great deal to me”) could have been absorbed into the first except that a few of the emotional expressions named did not involve self-disclosure. Additional definitions were mutual liking and loving (33%), commitment to a relationship (25%), trust and loyalty (21%), shared interests and activities (17%), physical interaction (16%), and comfort of interaction (6%). Thus he concluded that intimacy is not a single discrete construct but includes a variety of behaviors, feelings, and expectations.

In a prior study on intimacy and closeness, Parks and Floyd (1996) used open-ended questions to ask 270 undergraduates to define what being “close” meant when considering a good platonic friend. Thirteen “facets” (sic) of closeness were independently cited by the students, with additional facets excluded if fewer than 10% of the students mentioned it. Most prevalent was ‘self-disclosure,’ which consisted of responses that mentioned talking, disclosing,

sharing, and “telling each other everything;” this facet was cited by 71% of the subjects. The next most prevalent facet involved the provision of help and support (37%), followed by having shared interests and activities (31%). A similar number (30%) said that being close would be explicitly known by both people whether by verbal or nonverbal means. Other facets were comfort and ease of interaction, trust, acceptance, frequency of interaction, overall feelings (e.g., warmth, caring, liking or loving), mutual understanding, length of the relationship, giving advice and sharing perspectives, and mutual respect or admiration. Students disagreed about whether intimacy implies romantic activity, but overall disagreement about important features of closeness appears to be minimal.

The above studies by Parks and Floyd added further construct validity to the work of Rickey Miller and Herbert Lefcourt. In 1982, these two researchers developed an instrument (Miller Social Intimacy Scale; MSIS) to assess the maximum level of closeness experienced toward another person. To develop the scale they first interviewed 50 undergraduates (22 male, 28 female) regarding their relationships with family, acquaintances, and friends. This produced a list of defining characteristics of relationships that were said to be intimate. Loneliness was also discussed to determine aspects believed to be missing from relationships which made them lacking in closeness. Thirty items were developed based on the sample’s responses. Some of the items referred to frequency and others to depth or intensity, with each item rated on a 10-point scale.

The original 30-item instrument was administered to unmarried Canadian students (72 male, 116 female, age  $M=21.3$  year), 17 married couples (age  $M=24.3$ ) and a clinical sample of 15 couples seeking marital therapy (age  $M=36.3$ ). Instructions were to answer the items regarding their closest friend. Of the 30 items, 17 (including two that are reverse scored) were

retained that demonstrated inter-item and item-total correlations of .50 or higher. The first six items assess *frequency* of spending time alone with the other person, holding back information, showing affection, confiding personal information, understanding their feelings, and feeling close to them. The other 11 assess *degree* of enjoying spending time alone with the other person, encouraging them when they are unhappy, feeling close to them, listening to their disclosures, satisfaction with the relationship, affection towards them, the level of damage caused by disagreements, overall importance of the relationship; and the importance of feeling understood, encouraged, supported, and treated affectionately. Internal consistency was demonstrated ranging from Cronbach alpha coefficients of .86 to .91. Test-retest reliability was assessed at one month with one group ( $n=20$ ,  $r=.84$ ,  $p<.001$ ) and at two months with another ( $n=25$ ,  $r=.96$ ,  $p<.001$ ); both results suggest the stability of the instrument.

Convergent validity was assessed by concurrent administrations of instruments designed to assess trust, intimacy, and loneliness. Correlations with related measures, the Interpersonal Relationship Scale and the UCLA Loneliness Scale, were reported as  $r=.71$  ( $p<.001$ ,  $n=45$ ) and  $r=-.65$  ( $p<.001$ ,  $n=59$ ), respectively. This suggests strong convergence with another measure of trust and intimacy, and strong divergence with a reliable measure of loneliness.

In addition to the above, the validity of the intimacy construct itself was assessed by several comparisons. First, when comparing MSIS ratings of subjects' closest friend with those of a casual friend, the former scored significantly higher ( $t=9.18$ ,  $p<.001$ ,  $n=25$ ) indicating significantly different levels of closeness. Second, as expected, married subjects rated their partner significantly higher (closer) than unmarried persons rated their closest friend ( $t=8.17$ ,  $p<.001$ ), and married but distressed couples rated their closeness to their spouse significantly lower than nondistressed couples ( $t=6.14$ ,  $p<.001$ ). In addition, distressed couples even showed

significantly lower closeness scores than unmarried subjects ( $t=2.56, p<.02$ ), suggesting the MSIS successfully taps degrees of closeness to others.

A subsequent study (Downs & Hillje, 1991) found similar internal consistency with Cronbach alpha coefficients ranging from .87 to .95 using samples from three Midwestern U.S. universities (149 male, 210 female, mean age 28.7, range = 19 to 50, 93.6% unmarried, 83.8% described as Anglo-American). While Miller and Hefcourt had assumed a single factor, principal components factor extractions in this study yielded different factors (eigenvalues >1.00) depending upon which sex did the rating and whether they rated a same-sex or opposite-sex non-spousal intimate. When men rated men, the first factor included how often the man spent time with his friend (.82 loading), understood his feelings (.74), felt close (.88), encouraged him when unhappy (.67), and how close he felt to him (.76), which researchers grouped as other-directed support. The second factor was grouped as affective support, including showing affection (.62), liking to spend time with him (.82), listening to his personal disclosures (.71), and the importance of understanding his feelings (.81) and receiving affection (.88). The third factor was self-disclosure or verbal confidence-sharing (.79) which included the sharing and holding back of personal information (.90).

When women rated women, the first factor was mutual affection, characterized by how often she spent time with her friend (.77), showed affection (.76), understood her feelings (.48), felt close (.78), and the degree of encouragement she provided (.64) and received (.61). The second factor was mutual disclosure which included not withholding personal information (.77), listening to the friend's personal disclosures (.66), and satisfaction with the relationship (.87). The third factor included the importance placed on having her feelings understood by her friend (.80), the damage caused by a disagreement (-.62), and the encouragement received when



unhappy (.84), grouped as self-directed support. A fourth factor had a single item; it assessed how often she confided personal information to her friend (other-directed disclosure).

The other two combinations will not be described in detail since this study will not have participants rate opposite sex friends who are not romantic partners. Nevertheless, a table summary (Table 1) is provided. One observation that can be made from a brief glance at the table is that relationships involving women prioritize mutuality but when men relate to other men they prioritize supportiveness of the other.

Table 1. Factor Structure of the MSIS

Unique factor structures depending on sex of the rater and rated friend.	Male non-spousal intimate	Female non-spousal intimate
Men rating a...	<ol style="list-style-type: none"> <li>1. Other-directed support.</li> <li>2. Affective support.</li> <li>3. Self-disclosure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Mutual affection.</li> <li>2. Unidirectional (self) disclosure.</li> <li>3. Mutual disclosure.</li> <li>4. Resilience against disagreement.</li> </ol>
Women rating a...	<ol style="list-style-type: none"> <li>1. Mutual affection.</li> <li>2. Other-directed support.</li> <li>3. Mutual communication and support.</li> </ol>	<ol style="list-style-type: none"> <li>1. Mutual affection.</li> <li>2. Mutual disclosure.</li> <li>3. Self-directed support.</li> <li>4. Other-directed disclosure.</li> </ol>

Adapted from Downs & Hillje, 1991. Based on eigenvalues >1.00.

The above lines of research (i.e., interviews by Miller and Lefcourt, the open-ended surveys by and Parks & Floyd about the meaning of closeness and intimacy, and the definitions used by researchers as demonstrated by Floyd) show definitions that converge in a number of areas. Table 2 summarizes the findings of each and allows for easy comparison.

Table 2. Definitions of Closeness and Intimacy

Study	Floyd, 1998	Parks & Floyd, 1996	Miller & Lefcourt, 1982
Method	Meta-analysis of 100 studies on intimacy.	Survey of 270 undergraduates with open-ended questions about what it means to be close to someone.	Interviews with 50 undergraduates about what it means to be close to family, friends, and acquaintances. Resulting scale tested on $n=252$ as well as in subsequent study of $n=359$ .
Definitions	<p>Self-disclosure.<sup>a</sup>            Closeness.<sup>b</sup>            Emotional expression.<sup>c</sup>            Mutual liking/loving.<sup>d</sup></p> <p>Commitment to a relationship.<sup>j</sup>            Trust.<sup>g</sup>            Loyalty.<sup>m</sup>            Shared interests/activities.<sup>e</sup>            Physical interaction.<sup>l</sup>            (d?)            Comfort of interaction.<sup>f</sup></p>	<p>Mutual self-disclosure.<sup>a</sup>            Provision of help and support.<sup>i</sup>            Shared interests and activities.<sup>e</sup>            Both aware of being close.<sup>b</sup>            Comfort and ease of interaction.<sup>f</sup>            Trust.<sup>g</sup>            Acceptance.<sup>c</sup>            Frequency of interaction.<sup>h</sup>            Feelings of warmth, caring, liking, loving.<sup>d</sup>            Mutual understanding.<sup>a, c</sup>            Length of relationship.<sup>j</sup>            Giving advice and sharing perspectives.<sup>i</sup>            Mutual respect/admiration.<sup>k</sup></p>	<p><i>Frequency of:</i>            Spending time alone with the other person.<sup>h</sup>            Holding back information.<sup>a</sup>            Showing affection.<sup>d</sup>            Confiding personal information.<sup>a</sup>            Understanding their feelings.<sup>c</sup>            Feeling close to them.<sup>b</sup></p> <p><i>Degree of:</i>            Enjoying spending time alone with them.<sup>h</sup>            Encouraging them when they are unhappy.<sup>i</sup>            Feeling close to them.<sup>b</sup>            Listening to their disclosures.<sup>a, c</sup>            Satisfaction with the relationship.<sup>j, k</sup>            Affection towards them.<sup>d</sup>            Level of damage caused by disagreements.<sup>j</sup>            Overall importance of the relationship.<sup>j</sup>            Importance of feeling:            Encouraged/supported.<sup>i</sup>            Feelings understood.<sup>c</sup>            Treated affectionately.<sup>d</sup></p>

<sup>a, b, c, d</sup> Definitions cited by all three studies. They capture mutuality in self-disclosure, feeling close, expressing and understanding feelings, and liking/loving/showing affection.

<sup>e, f, g</sup> Shared interests, comfort/ease of interaction, and trust are not explicitly mentioned in the MSIS.

<sup>h, i, m</sup> Frequency of interaction and provision of encouragement and support are not mentioned in Floyd, 1998, and loyalty only appears on this list.

<sup>j</sup> Each list includes some aspect of length, satisfaction, or commitment to the relationship.

<sup>k</sup> The concept of respect/admiration is only explicitly found in Parks & Floyd.

<sup>l</sup> Physical interaction is only mentioned in Floyd though may be part of showing affection (<sup>d</sup>) which is found on both other lists.

For the purpose of the current study, closeness in a relationship will be defined as a relationship reported to have a high degree of mutual self-disclosure, feelings of being close, expression and understanding of feelings, liking/loving and showing affection, provision of encouragement and support, frequency of interaction, and importance of the relationship and satisfaction with it. These facets (*a, b, c, d, h, i, and part of j*) are all assessed by the MSIS. In addition, length of relationships (another part of *j*) and level of perceived mutual respect (*k*) will be assessed by single items beyond the MSIS, as will number of current friendships believed to be “close” (“or to whom I would turn for support”). This study will not explicitly assess shared interests, comfort/ease of interaction, trust, or physical interaction (*e, f, g, l*).

**Self-Disclosure.** Assessing the practice of self-disclosure has been problematic in research. Established instruments such as the Jourard Self-Disclosure Questionnaire and the Chelune Self-Disclosure Situations Survey (the reliability and validity of which will not be discussed here) have been found to achieve conflicting results, sometimes positive and at other times negative relationships with observed levels of self-disclosure (Miller, Berg, & Archer, 1983). Thus, Miller, Berg, and Archer (1983) introduced the component of whether individuals are skilled at getting others to “open up,” and tested whether this interacts with self-disclosure. They first developed two scales to classify people as high/low self-disclosers and high/low openers.

The Self-Disclosure Index (Miller, Berg, & Archer, 1983) is a 10-item scale listing personal topics the subject might or might not discuss with others. Each is rated from 0 (discuss not at all) to 4 (discuss fully and completely). Sample items are, “My personal habits” and, “My worst fears.” It was tested on a sample of 487 women and 253 men enrolled in a psychology course in a Texas university. Each individual completed the scale in reference to how much they had disclosed to a same-sex friend and how much they would disclose to a same-sex stranger.

Results were analyzed separately by sex but all loaded on a single factor. Loadings were not provided in the published article; however, internal consistency showed Cronbach alphas of .87 regarding male disclosures to a male friend and .86 for women disclosing to a female friend. For both sexes regarding a stranger, Cronbach alphas were .93. Mean differences were not significant by gender for the stranger condition, but women ( $M=27.85$ ,  $SD=6.99$ ) indicated greater self-disclosure toward a same-sex friend ( $t(738)=8.54$ ,  $p<.001$ ) than men ( $M=23.01$ ,  $SD=8.00$ ). Comparison with the 40-item Jourard Self-Disclosure Questionnaire with a reduced sample of 72 men and 84 women showed high correlations (male  $r=.74$ , female  $r=.66$ ). A comparison was also tested to assess whether wording as past or future self-disclosures to a same-sex friend would differ; correlations between the versions were  $r=.63$  for men and  $r=.65$  for women, suggesting no significant difference.

**Eliciting Conversation and Self-Disclosures.** The Opener Scale (Miller, Berg, & Archer, 1983) also consists of 10 items assessed on a 5-point Likert-type scale ranging from 0 (strongly disagree) to 4 (strongly agree). Sample items are, “People frequently tell me about themselves,” “I enjoy listening to people,” and “I can keep people talking about themselves.” They were devised to assess three domains: perceived reactions of others, interest in others, and interpersonal skills. The same sample completed the items (253 male, 487 female). Factor

analysis yielded a single factor but with no loadings published. Internal consistency for each sex was Cronbach's alpha = .79, and test-retest reliability ( $n=65$  men and women) was .69. The mean score for women ( $M=30.68$ ,  $SD=4.63$ ) was significantly higher ( $t(739) = 7.2$ ,  $p < .001$ ) than for men ( $M=28.01$ ,  $SD=4.87$ ), suggesting women rate themselves as higher in 'opening up' others.

Both scales were compared to measures of related constructs with a sample of 611 women. The validity of those measures will not be discussed here but all relationships were found significant at the  $p < .05$  level. First was a measure of the cognitive ability to take another's perspective, and the Opener Scale showed a significant moderate correlation ( $r = .30$ ) as expected. Two others were the Cheek and Buss Shyness and Sociability scales, which showed significant albeit modest relationships in the expected directions ( $r = -.21$  with shyness (e.g., "I am socially somewhat awkward");  $r = .17$  with sociability (e.g., "I like to be with people"). Another was a measure of private self-consciousness, which showed a .17 Pearson correlation.

When compared to the Self-Disclosure Index, private self-consciousness (i.e., awareness of one's thoughts and feelings) was correlated higher ( $r = .25$ ) in reference to a stranger and modestly ( $r = .16$ ) toward a friend. Perspective-taking and self-disclosure showed a modest correlation toward a stranger ( $r = .11$ ) and toward a friend ( $r = .12$ ). Shyness was only significantly and modestly correlated with self-disclosure toward a friend ( $r = -.16$ ) but not at all toward a stranger, and sociability was related to self-disclosure toward a stranger ( $r = .10$ ) and a friend ( $r = .19$ ). Lastly, the Opener Scale was only modestly correlated with the Marlowe-Crowne Scale of Social Desirability ( $r = .13$ ); some correlation is not surprising since the concepts involved in getting others to talk and wanting to appear socially appropriate are related. A recent study on friendship satisfaction reported similar internal consistency for both scales. The Self-Disclosure

Index achieved a Cronbach's alpha of .82, and the Opener Scale achieved .81 (Sanderson, Rahm, & Beigbeder, 2005).

A study with 45 women (upperclassmen; Miller, Berg, & Archer, 1983) living in the same sorority had them complete the above two scales in reference to past interactions with a same-sex friend as well as a future interaction with a same-sex stranger. In addition, each participant rated every other woman in the sorority on how much the participant had disclosed to the other, how much the other had disclosed to the participant, and how much the participant liked the other.

As expected, high openers (as classified by the Opener Scale) were disclosed to much more than low openers ( $F(1, 43) = 4.50, p < .05$ ), and high disclosers (as classified by the Self-Disclosure Index) reported more disclosure than low disclosers ( $F(1, 43) = 4.50, p < .05$ ). However, high disclosers were not significantly more self-disclosing toward high openers than to low openers ( $F(1, 43) = 3.77, p = .059$ ), suggesting that they do not discriminate the level of interest in the other party.

In addition, high openers were more liked than low openers ( $F(1, 43) = 28.60, p < .001$ ), suggesting that being a good opener and listener is related to achieving closeness to others. High openers were also liked equally by high and low disclosers, suggesting that being a high opener need not involve excessiveness or manipulation. This differed from the study with participants who were not sorority sisters, which found that levels of self-disclosure and opening were not associated with degree of liking the other person.

These findings suggest that the Self-Disclosure Index and the Opener Scale are reliable for assessing degrees of perceived willingness to self-disclose as well as tendency to elicit conversation and disclosures from others. Another related concept is the fear of intimacy.

**Fear of Intimacy.** While the MSIS can be used to quantify degrees of closeness experienced with friends and romantic partners, and the Self-Disclosure Index and Opener Scales can quantify behavior patterns in eliciting and making self-disclosures, they do not assess attitudes toward those constructs. Thus, if a person does not value or avoids close relationships, or keeps from engaging in or eliciting self-disclosures, these must be assessed in another manner. Based upon prior theory regarding fear of intimacy, and improving upon a time-consuming structured interview regarding intimacy, Descutner and Thelen developed the Fear of Intimacy Scale (FIS; 1991). This scale assesses the degree to which an individual would fear or avoid aspects of closeness in a hypothetical romantic relationship without confounding it by the limitations of any actual relationship.

In the first phase of development of the FIS, 49 items were collected regarding anxiety about exchanging thoughts and feelings of personal significance with a highly valued person. For inclusion on the list of items, three features were considered essential to intimate communication: the content being communicated had to be personal; it had to be strongly emotionally valenced; and there had to be a sense of vulnerability due to high regard for the other. These requirements were theorized to differentiate communication in intimate relationships from those intimacies revealed to strangers such as a bartender or seat neighbor on a flight. The initial items had to include the first two aspects (personal and emotionally valenced content) while the referenced “other” provided the sense of vulnerability. Ten items were taken from other related scales and 39 were written by the researchers. Each item was rated on a 5-point scale ranging from not at all characteristic of me (1) to extremely characteristic of me (5). A high score indicated a high fear of intimacy.

The initial 49 items were administered to introductory psychology students (116 male, 115 female). Forty-one of the items showed an item-total correlation of .39 or higher. Eight items were dropped and seven were reworded to improve clarity. Another sample ( $n=129$ ) resulted in discarding six more items resulting in 35 items with item-total correlations of .40 or higher that comprise the final FIS. Independent t-test analysis showed no sex differences,  $t(128) = 1.51, p > .10$  and internal consistency (Cronbach alpha coefficient) was .93. Test-retest reliability was assessed one month later with 83 participants from the second sample and showed a correlation of .89 ( $p < .001$ ) with their initial scores.

Principal components analysis showed that a single factor accounted for 33.4% of the variance (eigenvalue = 11.68, factor loadings ranged from .39 to .77). Two other factors accounted for 7.4% (eigenvalue = 2.60) and 5.2% (eigenvalue = 1.83) of the variance. Construct validity was further demonstrated by correlations with measures believed to be related to the fear of intimacy, the validity of which will not be discussed here. A significant negative Pearson product-moment correlation was found with the MSIS ( $r = -.60$ ), the Jourard Self-Disclosure Questionnaire (JSDQ;  $r = -.55$ ), the Need for Cognition Scale ( $r = -.24$ ), and the Marlowe-Crowne Social Desirability Scale ( $r = -.39$ ). A significant positive correlation with the Revised UCLA Loneliness Scale ( $r = .48$ ) was also found. These results held even when controlling for social desirability in calculating partial correlations (MSIS  $r = -.58$ ; UCLA  $r = .41$ ; JSDQ  $r = -.52$ ). Correlations were also strong between the FIS and self-reports of being easy to get to know ( $r = -.62$ ), with being less satisfied in a dating relationship ( $r = -.39$ ), with expectations about long-term relationships ( $r = -.38$ ), with comfort getting close to people ( $r = -.61$ ), and with shorter duration of one's longest closest relationship ( $r = -.34$ ).



Similar results were found in a replication study with a sample of 93 students and in a clinical sample consisting of six males and 24 females in therapy (mean age = 31.5 years). Therapist ratings of client fear of intimacy on a 7-point scale showed a significant correlation ( $r = .37, p < .05$ ; Descutner & Thelen, 1991). Another replication study (Doi & Thelen, 1993) examined the FIS with a non-student sample (83 male, 88 female, ages 35 to 55). It also found similar internal consistency (Cronbach alpha = .92) and no significant gender differences. Once again, FIS scores showed significant correlations with loneliness ( $r = .53, p < .001$ ) and self-disclosure ( $r = -.27, p < .001$ ), although only men's FIS scores were correlated with social intimacy ( $r = -.33, p < .01$ ). In addition, significant correlations ( $p < .001$ ) were found with measures of social anxiety ( $r = .40$ ), comfort with closeness ( $r = -.59$ ), confidence in others' dependability ( $r = -.40$ ), and fear of abandonment ( $r = .30$ ).

The final FIS scale consists of 35 items of which 15 are reverse-scored. The first 30 items are asked with respect to an imaginary person ("O") in a "close, dating relationship." Sample items include, "I would feel uncomfortable telling O about things in the past that I have felt ashamed of" and, "I would feel comfortable expressing my true feelings to O." The final five items ask about past relationships including feedback they may have gotten such as, "I have shied away from opportunities to be close to someone" and, "There are people who think that I am not an easy person to get to know." In sum, the FIS has been demonstrated to be reliable in the assessment of the construct of fear or avoidance of intimacy and closeness with romantic others, and its convergence and divergence with related measures suggests it offers support for valid inferences about the fear of intimacy construct.

## IV. ADULT ATTACHMENT STYLES

### **Adult Attachment in Relationships**

Since most people are not assessed for attachment style in their first year of life, post-hoc methods have been devised to classify adult levels of security to a primary caregiver early in life. This has been done because researchers (George, Kaplan, & Main, 1985) have theorized that the style developed by that first year of life influences other attachment relationships. The hypothesis is that attachment style contributes to an “internal working model” (IWM), understood as a set of rules for obtaining, limiting, and organizing information related to attachment relationships (Bakermans-Kranenburg & van IJzendoorn, 1993). To assess these hypothesized IWMs in adults, George, Kaplan, and Main (1985) developed the Adult Attachment Interview (AAI). The goal of this semi-structured interview is not to assess the individual’s own early attachment security, nor their views about peer relationships, but rather their current state of mind with respect to attachment relationships (e.g., secure, dismissive, preoccupied).

In the AAI, the interviewer asks the adult to describe their relationship with their parents from as early as they can remember. Subsequent questions ask for five adjectives (e.g., loving) that describe their relationship with their mother from as early as they can remember and including ages 5-12. After the adjectives are generated, each is probed for specific memories that demonstrate that quality. The same is asked regarding their father, followed by a nomination of the parent they felt closest to and an explanation for that closeness and for the less closeness with

the other. These are followed by asking what the person did when they were upset, with probing of brief answers such as “I withdrew.” The same question is asked regarding actions taken when ill, hurt emotionally, and hurt physically, attempting to establish if they turned to a particular parent. They are also probed to determine whether they were physically held at such times by either parent. Other questions concern events and reactions related to separation from parents, instances of feeling rejected and threatened, parental divorce, and experiences that could be considered abusive. The person is also invited to consider why their parents behaved as they did, and whether the participant thinks they were hurt developmentally. Final questions concern the death of loved ones and traumatic events then as well as in adulthood, and changes in their relationship with their parents from childhood to now (George, Kaplan, & Main, 1985).

If the person is able to describe childhood experiences coherently regardless of whether positive or negative, and considers adult attachment relationships as important, they are classified as secure or autonomous. Thus, an early history of insecure attachment is not believed to have a necessary, deterministic effect on the rest of one’s life. Instead, insecure attachment styles are believed to persist into adulthood for other reasons, presumably due to reinforcers that maintain them, yet little work has been done to make those reinforcers explicit.

According to the AAI, dismissing adults are those who lack specific memories of childhood experiences and either idealize their parents without being able to name specific examples of secure interactions or else they devalue attachment relationships altogether. A third category is that of adults who are unable to describe past attachment experiences *coherently* and who are still concerned and sometimes angry about them; they are classified as preoccupied in their attachment style. Lastly, some adults are additionally classified by the AAI as *unresolved* if there is evidence of a trauma related to an attachment figure that continues to cause extreme

reactions or they lack the ability to reason cogently regarding the loss (Bakermans-Kranenburg & van IJzendoorn, 1993).

A study on the reliability and validity of the AAI showed coding agreement of 81% (Cohen's kappa coefficient = .72;  $n = 83$  mothers and 5 interviewers) when the unresolved category was omitted and 75% (kappa = .66) when all four categories were included (Bakermans-Kranenburg & van IJzendoorn, 1993). Kappas above .61 are considered to show substantial inter-rater agreement (Cohen & Cohen, 1983). When examining coder agreement regarding inclusion and exclusion for each classification kappas were substantial again, ranging from .60 to .75. Test-retest reliability was demonstrated at two months with 78% classified in the same main categories (kappa = .63). Thus, the AAI has been demonstrated to reliably classify adult attachment attitudes or IWMs, suggesting the existence of identifiable attachment patterns. To examine whether these attitudes predict attachment security in another generation, this study and others administered the AAI to the parents of infants classified by the strange situation test.

IJzendoorn (1995) conducted a meta-analysis of such studies ( $n=854$  dyads across 18 samples). The combined effect size that being classified as an autonomous adult predicted having a secure infant was Cohen's  $d=1.06$  (Pearson's  $r=.47$ , explaining 22% of the variance). When only compared as secure versus insecure, the combined point biserial correlation was even larger ( $r_{pb}=.59$ , explaining 35% of the variance). The combined effect size for dismissing adults predicting avoidant infants was  $d=1.02$  ( $r=.45$ ); and preoccupied adults predicting anxious infants was  $d=.93$  ( $r=.42$ ). Among nine studies that differentiated the unresolved and disorganized categories, results were similar except for a reduction in the preoccupied category; this may be explained by lower base rate in that category due to overlap with the unresolved category. The adult/infant effect sizes were: autonomous/secure,  $d=1.09$  ( $r=.48$ ); dismissing/

avoidant,  $d=.92$  ( $r=.42$ ); unresolved/disorganized,  $d=.65$  ( $r=.31$ ); and preoccupied/anxious,  $d=.39$  ( $r=.19$ ).

Overall, the large effect sizes (cfr. Cohen & Cohen, 1983) suggest strong correspondence and predictive validity between adult and infant classifications, particularly when simply predicting secure vs. insecure styles in infants. Thus, secure parents tend to have secure infants. There was no significant difference between prospective and retrospective assessments; prospective studies classified adults before the birth of their child and assessed the child at 1.5 years. Also, while attachment style of both sexes of parent were strongly related to infant attachment, mothers' attachment style ( $d = 1.14$ ,  $r = .50$ , explaining 25% of the variance in child attachment style) was more strongly related to infant styles than were fathers' ( $d = 0.80$ ,  $r = .37$ , explaining 14%). This suggests a greater importance of mother-infant dynamics in establishing attachment security in infants. However, with adults, it can be impractical to administer the AAI to classify attachment style. Shorter means have been developed which have shown correspondence with the AAI, developed from research on adult attachment styles in romantic relationships.

### **Adult Attachment in Romantic Relationships**

Moving beyond infant attachment styles and adult attitudes toward family relationships, researchers have extended attachment concepts to adolescent and adult romantic relationships. Cindy Hazan and Philip Shaver (1987) were interested in loneliness and examined whether adults could meaningfully classify themselves as secure, avoidant, or anxious/ambivalent in their most important romantic relationship if they were given a simple description of each; and whether these nominations would parallel those of infant classifications in frequency.

Using a survey method by newspaper, they published a 95-item “love quiz” and analyzed the first 620 that were mailed in ( $n=205$  males, 415 females; ages 14-82; 42% married, 28% divorced, 31% dating, 9% living with a lover—overlaps were possible). To test their first hypothesis, they adapted descriptions of the three infant styles (Ainsworth et al., 1978) to adult relationships and a single-item asked them to choose the one that best described their feelings about closeness to others. Table 3 provides the wording of the item and results. This item yielded frequencies similar to those summarized from studies on infant attachment classification. While these results suggest that the choices were not random, they are not conclusive regarding specific phenomena.

Table 3. Adult Self-Classification into Attachment Styles

	Which of the following best describes your feelings?	1987 sample	Proportions per classification found in infant studies
Secure	“I find it relatively easy to get close to others and am comfortable depending on them and having them depend on me. I don’t often worry about being abandoned or about someone getting too close to me”	56% ( $n=319$ )	62%
Avoidant	“I am somewhat uncomfortable being close to others; I find it difficult to trust them completely, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, love partners want me to be more intimate than I feel comfortable being”	25% ( $n=145$ )	23%
Anxious/ Ambivalent	“I find that others are reluctant to get as close as I would like. I often worry that my partner doesn’t really love me or won’t want to stay with me. I want to merge completely with another person, and this desire sometimes scares people away”	19% ( $n=110$ )	15%

Reproduced from Shaver & Hazan, 1987.

Their second hypothesis predicted that groups based on self-nominated attachment style would differ in how they described their most important romantic relationship. A 56-item questionnaire with 14 subscales (4 items each) was created based on related questionnaires and items suggested by attachment literature. A principal-components analysis suggested the retention of 12 subscales (eigenvalues >1.0) comprised of 41 items (loadings >.40 and Cronbach alphas per subscale ranging from .63 to .84). Items on the 12 subscales were rated from strongly disagree to strongly agree on a 5-point scale. They assessed feelings of happiness, friendship, trust, acceptance, jealousy, obsessive preoccupation, and sexual attraction in the relationship; fear of closeness; experience of emotional extremes; desires for reciprocation and union; and whether it was love at first sight. Demographic questions asked if the relationship was current or past, length of the relationship, number of times the respondent had been in love, and whether they had experienced “crushes” before age 10.

Results showed that secure lovers had relationships that endured significantly longer than the others (10.02 years on average, versus 4.86 for anxious/ambivalent and 5.97 years for avoidant ( $F(2, 568) = 15.89, p < .001$ ). Only 6% of secure group had divorced, another significant difference from the anxious/ambivalent group (10%) and the avoidant (12%;  $F(2, 573) = 3.36, p < .05$ ).

All three groups reported a positive love experience but the avoidant group never had the highest mean of scores contributing to that dimension. Secure lovers described their most important romantic relationship as significantly ( $p < .05$ ) happier, more friendly, and more trusting, than the other two groups. Avoidant respondents manifested significantly ( $p < .05$ ) less acceptance of the others' faults than the other did the other two groups. The anxious/ambivalent group showed significantly ( $p < .05$ ) more emotional ups and downs, jealousy, obsessive

preoccupation, sexual attraction, desire for union and reciprocation, and feelings of love at first sight than the other two groups. The latter were comparable in obsessive preoccupation, sexual attraction, desire for union and reciprocation, and love at first sight. The two insecure groups showed significantly more ( $p < .05$ ) fear of closeness, emotional extremes, and jealousy than the secure group. What emerges from this is growing validity in the constructs of security and insecurity, and between avoidance and anxious/ambivalence in dealing with intimate others both in infancy and in adulthood.

The next question concerns whether these styles endure in the same person over time or whether infant and adult attachment are independent of each other. To assess early life attachment in this sample, Hazan and Shaver (1987) provided a checklist of 37 adjectives (e.g., caring, critical, responsive, intrusive) with instructions to select those that best described their childhood relationships with each parent. They were also asked to select adjectives that described their parents' relationship with each other (e.g., argumentative, unhappy, affectionate).

Using a hierarchical discriminant-function analysis, the following were found to predict the secure style (the first discriminant function) in adults: having: a) a mother who was respectful of the participant (.43 loading), confident (.35), accepting (.33), responsible (.31), not intrusive (-.42), and not demanding (-.40); b) a father who was caring (.41), loving (.40), humorous (.40), and affectionate (.30); and c) a relationship between the parents themselves that was affectionate ( $r = .44$ ), caring (.32), and not unhappy (-.34).

The second discriminant function distinguished between avoidant and anxious/ambivalent styles. The best predictor of the avoidant style was the perception of mother as rejecting (-.30 loading). The anxious/ambivalent style was predicted by perceiving fathers as unfair (.47) and mother as humorous (.43), likable (.38), and respectable (.37). Not surprisingly,



respecting their mother also loaded onto the secure factor (.30), an not having a rejecting mother (-.27) or an unfair father (-.20) were also associated with security. Likewise, having an unhappy parental relationship loaded onto the insecure factor (.24) despite its higher negative correlation with the secure factor (-.34).

Regarding gender differences, there were no significant differences in membership between the three styles. However, opposite-sex parents were judged more favorably. Significantly ( $p < .001$ ) more women (62%) rated their fathers as loving as compared to men (44%); and significantly ( $p < .05$ ) more men (78%) rated their mothers as loving as compared to women (69%). Similar results were found for the adjectives *affectionate* and *understanding*. Opposite-sex parents were also judged less severely on negative attributes. Only 27% of the men described their mothers as *critical* as compared to women (39%), and only 39% of women attributed criticalness to their fathers as compared to men (53%); these gender differences were both significant ( $p < .01$ ). Similar results were found for *demanding* (Hazan & Shaver, 1987).

The sample above was based on volunteer respondents with a median age of 34 years and a mean age of 36 who were readers of the *Lifestyle* section of the *Rocky Mountain News*. The study was replicated with an undergraduate sample of 38 men and 70 women. Self-assignment to attachment styles were similar to the newspaper sample (56% secure, 23% avoidant, 20% anxious/ambivalent), suggesting the results were not biased to that readership. Average romantic relationships had lasted about one year (as compared to 8 years for the newspaper sample).

In this sample, significant differences did not manifest between attachment groups on the happiness, acceptance, obsessive preoccupation, and sexual attraction subscales. However, secure relationships were still characterized by significantly ( $p < .05$ ) better friendship, less fear of closeness, and fewer emotional extremes than both insecure styles. The avoidant style was still

significantly lower ( $p < .05$ ) on trust than the other styles. And the anxious/ambivalent style was still significantly higher ( $p < .05$ ) on jealousy, desire for union and reciprocation, and claiming love at first sight. There were no significant differences based on gender for any variables although this finding requires caution since only 38 men were included.

This study also added 8 dichotomous items to assess their “mental model of relationships”. Secure individuals described themselves as significantly ( $p < .05$ ) different from both insecure groups on these items: being easier to get to know than most people, having fewer self-doubts, feeling liked by others, not often feeling misunderstood or unappreciated, and thinking most people are well-intentioned. Significantly more ( $p < .05$ ) anxious/ambivalent people rated themselves as more willing to commit to a long-term relationship than others than did the other two groups. Differences were not statistically significant between groups on ratings of self-sufficiency but avoidant subjects endorsed it the most (80%), followed by secure (68%), and lastly the anxious/ambivalent (59%) subjects. In addition, 32% of avoidant and anxious/ambivalent endorsed a need to “watch out” for “most people” since they “will hurt, ignore or reject you if it suits their purposes”; only 15% of secure subjects endorsed this. These findings are coherent with the constructs of security, avoidance, and anxious/ambivalent styles and thus add to the validity of inferences made about them.

In this younger group, a discriminant-function analysis yielded a different structure from the previous, and many of the loadings were weaker. The first function discriminated anxious/ambivalence from both secure and avoidant styles. Predictors of an anxious/avoidant style in romantic relationships were having a cold father (.25 loading) and not having (negative loads) a caring father (-.24); a confident father (-.23); an understanding mother (-.22); a humorous father (-.21); a warm father (-.18); a respectful father (-.17); nor a good-humored parental relationship

(-.16). Predictors of the secure style were having a confident mother (.31); a respectful mother (.21); a fair father (.19); and an accepting mother (.17). Predictors of the avoidant style (negative loadings in reference to the secure end of the discriminant-function) were having a rejecting mother (-.42); a critical mother (-.19); a disinterested mother (-.18); an insecure mother (-.17); and a cold mother (-.16).

To account for the unexpected pairing of the avoidant and the secure subjects on the same discriminant function in the college sample, Hazan and Shaver theorized that age was a factor. In addition, they noted that unlike the older sample, many of the discriminations in the college sample were based on negative rather than positive traits, meaning the positive traits do not distinguish the attachment groups as they do in the newspaper sample. In line with previous research, they theorized that younger people might tend to describe their parents more favorably (i.e., idealized) as compared to older subjects.

To test this whether age was a factor, they compared the college sample to the 100 youngest subjects from the newspaper sample, all under age 26, and found the same two discriminant-functions as found in the college sample. They then compared “avoidant” subjects under age 26 with those from the newspaper sample who were older than 26. Significantly more younger avoidant subjects ( $p < .05$ ) described their mothers as loving, responsive, and neither intrusive nor rejecting. Similarly, significantly more younger avoidant subjects ( $p < .05$ ) described their fathers as loving and good-humored. For Shaver and Hazan, this suggested that time and distance from parents may be a factor in how avoidant individuals recall parental behaviors. However, they did not report on whether the other two groups could also be discriminated in how they rate their parents based on age of the subject.

Nevertheless, the overall weak loadings on either factor in the college sample suggest that the strongest predictors (loading  $>.30$ ) of a secure adolescent romantic attachment styles are the attributions of mother as (not) rejecting (-.42) and mother as confident (.31); the positive trait of mother as caring failing to discriminate groups. However, (not) having an understanding mother (-.22), (not) having a caring father (-.24) and having a cold father (.25) did predict anxiety/ambivalence in relationships. Perhaps a more reliable method of assessing maternal warmth during childhood would show stronger relationships. In addition, the authors suggest that the AAI is a stronger method for assessing attachment styles since rather than probe conscious beliefs about self and relationships it explores the distortions and resolutions with respect to attachment issues.

Work by Kim Bartholomew and Leonard Horowitz (1991) revised adult attachment categorization into four styles instead of three: secure, dismissive, preoccupied, and fearful. Their work tested and showed support for a theoretical assumption that classification ought to capture not only a pattern (e.g., avoidance) but the entire dynamic of a prior need or desire plus expected outcomes about meeting that need and resulting in a dominant style. For example, a person may have a desire for close friendship but this need can be expected to go unmet and their response to this threat becomes habitually reduced by avoiding relationships.

### **Views of Self and Others**

More specifically, Bartholomew and Horowitz theorized that their four outcomes were the result of combinations of positive and negative models of Self and Others. The secure attachment style (open, trusting) was thus hypothesized to emerge from a positive view of self interacting with a positive expectation about others. Dismissive attachment was theorized to combine a negative view of others and a positive view of self (self-sufficient). The preoccupied

style would be expected to combine a negative view of self (i.e., dependent) with a positive model of others (i.e., as capable providers). Lastly, the fearful style would be associated with a negative view of oneself (e.g., dependent, unlovable) combined with a model of others (e.g., unloving, unreliable). Their initial findings supported this hypothesis, as did three subsequent studies by Dale Griffin working with Bartholomew (1993).

Most relevant to the current study, which will look at associations between maternal warmth and levels of closeness achieved with peers, Bartholomew and Horowitz (1991) found significant moderate and strong correlations between family attachment and peer attachment ratings (secure,  $r = .39, p < .001$ ; fearful,  $r = .29, p < .01$ ; preoccupied,  $r = .66, p < .001$ ; and dismissing,  $r = .41, p < .001$ ).

## V. THE PRESENT STUDY

The primary goal of the current study is to assess whether higher reports of maternal warmth are, in fact, associated with better social outcomes in young adulthood. In addition, this study will explore whether relationships between maternal warmth and social outcomes are better accounted for by the practice of making, and facility for eliciting, conversation and self-disclosures. Specifically, the following hypotheses will be tested: Maternal warmth will be associated with greater closeness to (H1) a close same-sex friend, (H2) a close romantic partner; a greater number of (H3) same-sex and (H4) opposite-sex friends; (H5) a younger age of making a first close friend; (H6) longer durations of close friendship and (H7) romantic relationship; (H8) lower fear of intimacy; (H9) greater self-disclosure and (H10) opening of others; and (H11) greater security in adult relationships.

However, as no studies have compared maternal warmth, self-disclosure, and the practice of opening others, we have no theory to guide expectations regarding which individual and combinations of these three variables will best explain the most variance in social outcomes. Nor is much known about the impact of age, academic success, sex, or socioeconomic status. For these reasons, all of these variables will be entered into stepwise regressions to explore their combined relationships with social outcomes.

## VI. METHODS

### Participants

Participants were 358 undergraduates at a large university in the southern United States. They were recruited through flyers on campus and announcements on the web-based Psychology Study Participant Manager (PSPM) during November of 2012, and January and March of 2013. Students taking psychology courses received credit to partially fulfill the research requirements of their courses. Only 241 participants showed indication of fully attentive responding by correct answers on instructed response items (e.g., “If you are paying attention select option five”; Meade & Craig, 2012). The remaining 117 (3 missed all five of them, 7 missed four of them, 13 missed three of them, 32 missed two of them, and 62 missed one of them) were dropped from the analysis.

Women represented 73% of the sample ( $n=175$  females, 66 males). The median age was 19, and mean age was 19.22 ( $SD=2.82$ ; range 18 to 50); one person declined to answer. The majority (79%) were Caucasian, 14% African-American, and 7% other ( $n=6$  Latino, 2 Native American, 4 Asian, and 5 multiracial or other). Self-reported GPA up to the semester prior to the survey ranged from 1.15 to 4.82 (13% were 4.0 or higher, 63% were 3.0-3.99, 19% were 2.0-2.99, and 4% were 1.15-1.99;  $M=3.36$ ,  $SD=.60$ ). Four declined to answer.

Socioeconomic status was assessed by number of bedrooms and bathrooms in their home of origin. Answers provided by 234 respondents ranged from 2-bed/1-bath, to 8-bed/10-bath

dwellings, which were combined as ranging from 3 to 18 ( $M= 7.56$ ,  $SD=2.28$ ). The median was 7, with 18.8% living in 3-5 rooms, 15.8% living in 6, 18.8% living in 7, and 46.6% living in 8 or more rooms. According to the U.S. Census Bureau (2000), the median for Mississippi is 5.3 rooms, suggesting this sample is above the median in socioeconomic status.

## Measures

**Closeness.** Highest levels of closeness experienced were assessed with the 17-item Miller Social Intimacy Scale (MSIS; Miller & Lefcourt, 1982). This scale was designed to assess the maximum level of interpersonal closeness subjectively experienced by a person with regards to a specific other person. As discussed above, it is consistent with theory and findings about facets that comprise interpersonal closeness. To maintain consistent verb tense regardless of when the relationship occurred, instructions will state that ratings should be based “up until yesterday” in the case of existing relationships. The first six items (e.g., “How often did you keep very personal information to yourself and do not share it with him/her?”) are rated on a 10-point Likert-type scale from *Very Rarely* (1) to *Almost Always* (10). The remaining 11 items (e.g., “How satisfying was your relationship with him/her?”) are also rated on a 10-point Likert-type scale from *Not Much* (1) to *A Great Deal* (10). Scores are summed with a minimum of 17 and maximum of 170. Participants were asked to rate the 17 items twice: first, with their closest same-sex platonic friend in mind, and then again with their closest romantic partner in mind (current or a previous one; if they have never been in a romantic relationship they were also asked to complete it with their best opposite-sex friend in mind). They were also asked to write the initials of the person to help them focus on a specific person for each. Internal consistency for the MSIS has been reported with Cronbach alphas ranging from .86 to .91. Test-retest reliability has ranged from .84 to .96 (Miller & Lefcourt, 1982, 1983). The present study achieved internal



reliability of  $\alpha=.915$  for same-sex friend,  $\alpha=.877$  for romantic partner, and  $\alpha=.857$  for platonic opposite-sex friend.

**Duration of close relationships.** A single question at the beginning of each MSIS asked, “What was (or has been) the duration of this relationship?”

**Number of close same-sex and opposite-sex friends, and age of first experiencing close friendships.** One item asked participants, “How many same-sex friends do you have that you would consider “close” or to whom you would turn to for support?” The same was asked regarding opposite-sex friends. Another item asked the age at which they first made a close same-sex friend.

**Fear of intimacy.** This construct was assessed using the Fear of Intimacy Scale (FIS; Descutner & Thelen, 1991; Doi & Thelen, 1993). As discussed above, this scale was designed to measure fear, discomfort with, and avoidance of emotional closeness to an imagined “close, dating relationship.” Sample items include, “I would feel comfortable trusting “O” with my deepest thoughts and feelings” and, “I would be afraid that “O” would be more invested in the relationship than I would be.” The 35 items are rated on a 5-point Likert-type scale from *Not at all characteristic of me* (1) to *Extremely characteristic of me* (5). The present study demonstrated internal consistency of  $\alpha=.906$ .

**Adult attachment style.** The Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) is a 5-item measure of adult attachment styles. The first item asks subjects to place themselves in the attachment category that best describes their approach to close relationships. The remaining four items ask the subject to rate the degree to which each of the four styles represent them on a Likert-type scale ranging from *Not at all like me* (1) to *Very much like me* (7) with the midpoint as *Somewhat like me* (4). This study will primarily analyze

continuous rating results for the secure attachment style, which is expressed in this way: “It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don’t worry about being alone or having others not accept me.” While internal consistency cannot be gauged on this instrument, it has been found to be highly consistent with other measures of attachment and to have good discriminant validity between attachment styles (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994; Karavasilis, Doyle, & Markiewicz, 2003; Schmitt et al., 2004).

**Maternal warmth.** As discussed extensively above, the maternal warmth subscale of the EMBU-C was used to assess maternal warmth. Internal consistency in the present study was  $\alpha=.901$ . Maternal warmth was also assessed using the Parental Caregiving Style (PCS), which was also discussed above. However, to be consistent with the RQ, respondents were first asked to select the most representative style, the PCS was adapted to a 7-point rating system rather than 9 points. The single-item styles do not allow for internal consistency estimations.

## **Procedure**

Following approval by the Institutional Review Board (IRB) of the University of Mississippi, the survey was adapted for the Qualtrics computer survey system. Computer lab rooms in Weir Hall were reserved for numerous 4-hour sessions and the PI trained two research assistants to supervise the subjects’ completion of the survey in the lab.

PSPM announcements were posted online. Flyers with the PI's e-mail address and phone were posted on walls in Peabody, the Student Union, and the Williams Library. Participants were offered 60 minutes of research credit for psychology classes that had a research requirement. Participants signed up by PSPM (or e-mail/phone call to the PI) for a 60-minute session during one of the reserved sessions at Weir Hall.

The PI or a trained research assistant oversaw the survey sessions. Upon participant arrival, the session supervisor verified that the participant was 18 years of age or older, and assigned them to a computer. Participants were seated in a manner that maximized their privacy and ability to concentrate. Informed consent was obtained at the first screen of the survey.

Participants filled out the surveys. Upon completion but prior to submission, participants had the option to delete their data, without loss of research credit. Before they left, the session supervisor thanked them and answered any questions they had. They were also provided with a list of local psychological and counseling resources, “in the event that the survey has brought up troubling thoughts or emotions”. Participants were also be offered the option of signing up as members of the community for e-mail announcements concerning findings from the survey. No identifying information linking participants to their data was kept.

## VII. RESULTS

### **Data preparation**

**Missing data.** Missing Values Analysis (MVA) on SPSS found that only mutually exclusive variables were missing more than 5% of responses, due to the fact that 12.4% reported not having experienced a romantic relationship. The variables were closeness to a romantic partner (12.4%) and closeness to an opposite sex friend (87.6%), and durations of those relationships. None of these were imputed.

However, other missing data were imputed with the mean in one complete set of analyses, and with SPSS multiple imputations in another, allowing comparison of correlational findings. One case was missing age; four were missing GPA; seven were missing bed-plus-bath scores (socioeconomic status); four cases were missing number of close same sex friends and age at which they first had a close friend; and five cases were missing the duration of their closest same sex friendship. Lastly, one case was missing all the adult relationship style items; it was omitted from the relationship style analyses.

**Univariate and multivariate outliers.** SPSS EXPLORE was used to identify variables with z-scores in excess of 3.29 ( $p < .001$ , two-tailed test). There were no outliers for GPA, fear of intimacy, age at which one's first close friend was made, closeness to a platonic opposite sex friend or duration of that friendship, or adult relationship styles.

There were three outliers in age (i.e., 50, 40, 32); one in our measure of socioeconomic status (8 bedrooms and 10 baths); maternal warmth as assessed by the EMBU-C (MOM\_Warmth) had three outliers (very low warmth); closeness to one's best friend (MSIS\_BF\_TOTAL) and to one's romantic partner (MSIS\_RR\_TOTAL) each had two very low scores; durations of closest friendship had one very high score (40 years); duration of closest romantic relationship had one outlier (38 years); number of close friends had four (ranging from 30-70 friends); number of opposite sex friends had two outliers (13 and 15); the Opener scale had two very low scores; and self-disclosure had one. The warm mothering style as assessed by a single-item (MOM\_WARM) had eight outliers but no pattern could be detected; there were six biological mothers, one aunt, and one stepmother reported.

In one analysis, outliers were altered to values one unit above or below the most extreme neighbor, with data transformations to approximate normality for non-normal data, and with mean substitution for missing values, as described by Tabachnick and Fidell (2007). In a second analysis using multiple imputation for missing values, univariate outliers were ignored and rank-order correlations were estimated as recommended by Bishara and Hittner (2012).

In regressions, multivariate outliers, defined by Mahalanobis distances from the centroid greater than critical chi-square values ( $p < .001$ ), were not included in analyses. With transformed data there was only one case excluded as an outlier (case 215). With untransformed data using multiple imputations and no correctives for univariate outliers, several cases were often dropped.

**Normality and transformations.** For bivariate correlations, prior to the decision to re-analyze the data using multiple imputations for missing data, no transformations, and rank-order correlations rather than data adjustments to lessen the impact of univariate outliers, all variables of interest (above) were analyzed for skew and kurtosis. The numbers reported here are ratios.

The skewness ratio for maternal warmth (MOM\_Warmth from the EMBU-C) was -8.34, with a kurtosis ratio of 5.24. A logarithmic transformation was applied; the new variable showed ratios of -1.50 for skew and -2.64 for kurtosis. Since this still violates norms, and since the present data is similar to that of other studies (see sample characteristics below), untransformed data were used for the final regression analyses.

The single-item measure of maternal warmth (MOM\_WARM from the PSC) showed high ratios on skew (-15.95) and kurtosis (32.11). These were transformed logarithmically to the best improvement possible (8.20 and 1.48, respectively) but since this result was also unsatisfactory, untransformed data were used for regression analyses.

Number of same sex close friends showed a large positive skew (9.40) and kurtosis (9.05) ratios. A log transformation improved them to -2.59 and 2.49, respectively, but this too was deemed unacceptable.

Duration of romantic relationships showed ratios of 15.19 for skew and 32.25 for kurtosis, which were logarithmically transformed to -1.78 and 1.77, respectively. This was acceptable; however, the decision remained to use non-transformed data in the final regression analyses.

Square root transformations were implemented for the following: earliest age of a first close friendship (from ratios of 6.22 skew and 1.40 kurtosis, improved to 2.75 and -0.50, respectively, but unacceptable); duration of closest friendship (ratios of 4.14 for skew and -0.97 for kurtosis, improved to 0.43 and -2.55, respectively, but unacceptable); number of opposite sex friends (6.77 skew ratio and 3.20 kurtosis ratio, improved to -1.56 and 1.06, respectively, acceptable); number of bed and baths (3.31 skew ratio and -0.44 kurtosis ratio, improved to 1.15 and -0.86, respectively, acceptable); and the measure of being preoccupied in adult relationships

(4.68 skew ratio and -2.19 kurtosis ratio, improved to 2.48 and -3.69, respectively, but unacceptable).

A negative square root transformation was considered for the following: closeness to best same sex friend (from skew and kurtosis ratios of -5.17 and 1.54, improved to -0.55 and -0.79, respectively, acceptable); closeness to best romantic partner (from -6.76 skew ratio and 3.14 kurtosis ratio, improved to 1.28 and -0.92, respectively, acceptable); ability to open others in dialog (from -3.41 skew ratio and -0.50 kurtosis ratio, improved to 1.28 and -0.92, respectively, acceptable); self-disclosure (from -4.11 skew ratio and 0.74 kurtosis ratio, improved to -1.25 and -2.01, respectively, acceptable); and the measure of being secure in adult relationships (from -5.05 skew ratio and -1.55 kurtosis ratio, improved to 2.62 and -3.20, respectively, unacceptable). However, none of these transformations were used in the final regressions because high estimations of closeness, self-disclosure, and opener are expected as normal for this population.

The remaining variables showed skew and kurtosis within normal limits: GPA, fear of intimacy; duration and closeness to best opposite sex friend; and the measures of being fearful and dismissing in adult relationships.

**Reliability of scales and response characteristics.** Reliability was assessed after removal of inattentive responders but prior to removal of outliers and imputations of missing data ( $n=241$ ). The maternal warmth subscale of the EMBU-C was calculated by the summation of 10 items, ranged 10 to 40. The mean score was 34.51 ( $SD = 5.36$ ) and median was 36.00, suggesting a high level of maternal warmth in this sample. Data from all 241 participants showed a reliability coefficient of  $\alpha=.901$ . A Netherlands study of 1681 children (age  $M=12.95$ , range 9-17 years) showed similar maternal warmth ratings ( $M=31.23$ ,  $SD=4.21$ ) as the present sample (Muris et al., 2003).

Closeness to one's best same-sex friend was assessed by the MSIS. This variable (MSIS\_BF\_TOTAL) was scored after items 2 and 14 were reverse-scored; reliability was  $\alpha=.915$ . Scores ranged from 41 to 170, with a mean of 134.61 ( $SD = 23.74$ ;  $n=241$ ) and a median of 139, suggesting a skew toward high scores prior to transformation for statistical analyses. Published norms for unmarried students with age  $M=21.3$  are  $M=134.9$  ( $SD=21.9$ ,  $n=86$ ) for men and  $M=139.3$  ( $SD=16.8$ ,  $n=130$ ) for women, or  $M=137.5$  ( $SD=19.1$ ,  $n=216$ ) combined (Miller & Lefcourt, 1982); these scores are similar to the present study. A study by Downs & Hillje (1991) of 149 men and 210 women (age  $M=28.7$ , 94% unmarried, 84% AngloAmerican) provides item means for the following non-romantic friendships, which have been summed here: men rating men ( $M=111.8$ ), men rating women ( $M=136.4$ ), women rating women ( $M=127.3$ ), and women rating men ( $M=143.6$ ). When combined as same-sex ratings,  $M=120.87$ , which is lower than the scores obtained in the present study.

Duration of this closest friendship was assessed with a single item; responses ranged from 1 to 40 years ( $M= 8.27$ ,  $SD=5.50$ , median of 7.00;  $n=236$ ). Number of close same-sex friends was assessed with a single item. Responses ranged from 0 to 70; mean of 6.64 ( $SD=6.38$ ), median of 5.00 ( $n=237$ ). Age when they made their first close friend was assessed with a single item; responses ranged from 0 to 19 ( $M=6.99$  ( $SD=3.77$ ), median of 6.00;  $n=235$ ). Number of opposite sex friends was assessed with a single item; responses ranged from 0 to 15 ( $M= 3.62$ ,  $SD=2.66$ , median of 3.00).

Regarding romantic relationships, 30 denied having experienced one. These answered MSIS items regarding a close opposite sex friend; internal consistency was  $\alpha=.857$ . Responses ranged from 90 to 161 ( $M= 122.23$ ,  $SD=21.78$ , median 118), suggesting less closeness than toward their best same-sex friend. This mean is lower than that reported by Downs and Hillje



(1991) for rating 'closest nonspousal opposite sex friend',  $M=140.61$ . The other 211 were assessed for closeness to their closest romantic partner; internal consistency was  $\alpha=.877$ . Responses ranged from 69 to 170 ( $M= 147.91$ ,  $SD=17.58$ , median of 152.00), suggesting greater closeness than toward their best same sex friend. This score is slightly higher than that reported by Downs and Hillje (1991), which did not specify whether the opposite sex friend was a romantic partner ( $M=140.61$ ).

Duration of closest romantic relationship was assessed with a single item; responses ranged from 1 month to 38 years, ( $M= 23.57$  months,  $SD=34.47$ , and median of 18.00 months), roughly 1.5 to 2.0 years. Duration of a close platonic opposite sex friendship ranged from 3 to 156 months ( $M= 55.22$ ,  $SD=40.37$ , median of 36 months).

Fear of intimacy showed internal consistency of  $\alpha=.906$ ; scores ranged from 39 to 134 ( $M= 76.73$ ,  $SD=19.88$ , median of 74.0,  $n=241$ ), suggesting no skew toward fearing intimacy. The Opener Scale showed reliability of  $\alpha=.882$ . Scores ranged from 11 to 50 ( $M= 42.07$ ,  $SD=6.40$ , median of 42), suggesting moderately high elicitation of conversations with others. The Self-Disclosure Index demonstrated reliability of  $\alpha=.889$ . Scores ranged from 13 to 50 ( $M= 39.25$ ,  $SD=7.90$ , median of 40.00), also fairly high in self-disclosing personal information to others.

Adult relationship style categories were self-nominated by selection from four summary statements. The description indicating 'security' in adult relationships was chosen by 124 participants (52%). 'Fearful' was chosen by 58 (24%); 'Preoccupied' was chosen by 24 subjects (10%); and 34 chose 'Dismissing' (14%). As a continuous measure, the unadjusted mean scores were:  $M=5.08$  for Secure ( $SD=1.86$ ; median of 6.00);  $M=3.61$  for Fearful ( $SD=2.13$ ; median of

4.00);  $M= 2.91$  for Preoccupied ( $SD=1.94$ ; median of 2.00); and  $M= 3.53$  for Dismissing ( $SD=2.04$ ; median of 4.00).

### **Group differences**

**Sex.** An independent samples t-test was run with sex as the grouping variable and the variables above as the outcome variable. On maternal warmth (measured by the EMBU-C), men ( $M=33.55$ ;  $SD=4.74$ ) reported less warmth than women ( $M=34.95$ ;  $SD=5.24$ ) but this was only marginally significant ( $t(239) = -1.90$ ,  $p=.058$ ); there was no violation of equal variance. There was no significant difference based on sex on the single-item measure of a maternally warm rearing style.

Men ( $M= 7.43$ ,  $SD=5.04$ ) reported having significantly more close same-sex friends than women ( $M=5.85$ ,  $SD=3.71$ ),  $t(93) = 2.33$ ,  $p=.022$ ; equality of variance was violated. There was no significant difference in number of opposite sex friends, age of making a first close friend, nor in duration of any type of relationship.

Closeness to same-sex friends and romantic partners differed by sex; women reported significantly more on both. With same-sex friends, women reported greater closeness ( $M= 139.53$ ;  $SD=21.05$ ) than men ( $M=122.03$ ;  $SD=24.40$ ),  $t(239) = -5.50$ ,  $p<.001$ . With romantic partners, women reported greater closeness ( $M=151.14$ ;  $SD=15.38$ ) than men ( $M=140.10$ ,  $SD=18.64$ ),  $t(209) = -4.40$ ,  $p<.001$ . However, with platonic opposite sex friends, men reported greater closeness ( $134.43$ ,  $SD=12.12$ ) than women ( $M=118.52$ ;  $SD=22.88$ ) but this not significant. There were no violations of the assumption of equal variances on closeness variables.

Women ( $M=40.02$ ,  $SD=7.61$ ) reported significantly greater self-disclosure than men ( $M=37.24$ ,  $SD=8.30$ );  $t(239) = -2.46$ ,  $p=.015$ . Women ( $M=42.90$ ,  $SD=6.01$ ) also reported greater opener scores than men ( $M=40.21$ ,  $SD=5.78$ ),  $t(239) = -3.126$ ,  $p=.002$ . There were no

violations of the assumption of equal variances on self-disclosure or opener. Lastly, there were no significant differences on fear of intimacy nor on adult relationship styles ( $p > .05$ ) based on sex.

**Race/ethnicity.** An analysis of variance (ANOVA) was performed to examine differences based on race/ethnicity on all the variables above. Significant differences based on race were found for socioeconomic status ( $F(2, 231) = 12.00, p < .001$ ). Post-hoc analysis showed that Caucasians ( $M=7.92, SD=2.22$ ) reported significantly higher SES than African-Americans ( $M=6.05, SD=1.66; p < .001$ ) and other race/ethnic groups ( $M=6.56, 2.52; p = .039$ ).

Groups also differed by race/ethnicity on number of close same-sex friends,  $F(2, 238) = 11.09, p < .001$ . Post-hoc analysis showed that Caucasians ( $M=6.86, SD=4.29$ ) reported significantly more same-sex friends than African-Americans ( $M=3.38, SD=2.20; p < .001$ ) but only reported slightly more friends than other race/ethnicities ( $M=5.65, SD=3.30$ ).

Caucasians ( $M=6.49, SD=3.36$ ) also reported a significantly lower age in making their first close friend than African-Americans ( $M=9.56, SD=4.57, p < .001$ ); other races reported mean age of 7.18 ( $SD=4.36$ ). Group differences were first found by  $F(2, 232)=10.24, p < .001$ .

African-Americans reported significantly fewer opposite sex friends ( $M=2.00, SD=1.74$ ) than Caucasians ( $M=3.88, SD=2.66; p < .001$ ); other races reported  $M=3.71 (SD=2.29)$ . Group differences were first established by  $F(2, 238)=2.22, p < .001$ .

Racial groups also differed on duration of romantic relationships ( $F(2, 208) = 3.92, p = .021$ ). Caucasians (20.2 months,  $SD=17.08$ ) reported significantly shorter romantic relationships than African-Americans ( $M=27.58, SD=17.95$ ) and other races ( $M=31.31, SD=33.13; p = .021$ ).

Choice of relationship style was marginally significant ( $F(2, 237) = 2.65, p=.073$ ) between groups. On the continuous measures, Caucasians showed more security ( $M=5.24, SD=1.73$ ) than African-Americans ( $M=4.50, SD=2.22, p=.078$ ) and other races ( $M=4.38, SD=2.19$ ). However, group differences were only significantly different in the overall ANOVA ( $F(2, 237) = 3.62, p=.028$ ) but not in post-hoc analyses.

Other races ( $M=4.63, SD=2.06$ ) and African-Americans ( $M=4.21, SD=2.09$ ) showed more fearfulness in adult relationships than Caucasians ( $M=3.42, SD=2.11$ ). However, group differences were only significantly different in the overall ANOVA ( $F(2, 237) = 4.00, p=.020$ ) but not in post-hoc analyses.

Limited group sizes may have skewed these results. When harmonic means were implemented, there were no significant differences between groups based on race/ethnicity. Because of low frequency of other races, and difficulty combining other races with African-Americans or Caucasians, race was not included in regressions.

**Grade point average (GPA).** Since GPA was assessed as a continuous measure, correlations were explored between GPA and the above variables of interest. GPA was only significantly correlated with age ( $r=-.316, p<.001$ ), suggesting that older students have not maintained higher grades coming from high school or their early college career. The correlation between Opener and GPA as a continuous measure can be considered significant ( $r=-.115, p=.077$ ), suggesting that excessive socializing may be detrimental to academic performance.

As a categorical measure, GPA distinguished age of first friend ( $F(3, 227) = 2.964, p=.033$ ) and opener skills ( $F(3, 233) = 3.143, p=.026$ ). Students with a 'B' average ( $M=6.57$  years,  $SD=3.58$ ) were significantly younger when they made their first close friends than students with a 'D' average ( $M=10.0$  years,  $SD=5.36; p=.040$ ); 'A' ( $M=7.30, SD=4.04$ ) and 'B'

( $M=7.55$ ,  $SD=3.71$ ) students were similar to each other. Students with an 'A' average reported significantly less eliciting and prolonging conversations (Opener  $M=39.66$ ,  $SD=5.43$ ) than those with a 'D' average ( $M=45.89$ ,  $SD=4.01$ ;  $p=.032$ ); 'B' ( $M=42.45$ ,  $SD=5.97$ ) and 'C' ( $M=42.20$ ,  $SD=6.70$ ) students were similar in their levels. However, there were only eight 'D' students and no differences maintained significance when harmonic means were used.

**Age.** Age was found to correlate with numerous variables. Older students reported a worse GPA ( $r=-.147$ ;  $p=.023$ ); lower socioeconomic status ( $r=-.138$ ;  $p=.036$ ); lower number of same-sex friends ( $r=-.135$ ;  $p=.036$ ). Lower maternal warmth was also marginally significant ( $r=-.118$ ;  $p=.069$ ), which is consistent with the finding by Hazan and Shaver (1987) that older people tend to be less idealistic in how they portray their parents. Older people reported significantly higher age of first close friendship ( $r=.199$ ;  $p=.002$ ), and longer durations of their closest friendship ( $r=.277$ ;  $p<.001$ ) and romantic relationship ( $r=.448$ ;  $p<.001$ ).

**Socioeconomic status.** Correlations between bed-and-bath combinations and the variables above showed negative relationships with age ( $r=-.138$ ;  $p=.036$ ) and being fearful in adult relationships ( $r=-.154$ ;  $p=.018$ ). Higher status was positively associated with number of opposite sex friends ( $r=.167$ ;  $p=.010$ ) and being secure in adult relationships ( $r=.216$ ,  $p=.001$ ). These findings suggest that older students grew up with less wealth than younger students but are less fearful and more secure in adult relationships, and have more opposite sex friends than younger students.

**Order effects.** An ANOVA was performed to assess differences on the above variables based on the order of administration of the survey. Three orders were used. There were no significant differences based on order (lowest  $p$  value was .122).

**Correlations between variables.**

Correlations were run between several variables and can be seen in Table 4. In early analyses, many variables were transformed by log or square root as above and correlations were adjusted for proper positive or negative direction. In further analyses using multiple imputation and no data transformations nor adjustment of outliers, Spearman rank-order correlations were estimated, which improved on unadjusted Pearson correlations. All three can be seen in Table 4.

Table 4. Bivariate Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>1. Maternal Warmth (EMBU-C)</b>	1																
<b>2. Duration Closest Friendship</b>	.089 -.078 -.100**	1															
<b>3. Duration Romantic</b>	-.004 -.006 -.100**	.055	1														
<b>4. Duration Platonic</b>	-.152 -.051 -.121	.153	n/a	1													
<b>5. Number of same-sex friends</b>	.128 <sup>*</sup> .162 <sup>*</sup> .103***	.052	-.022	.268	1												
<b>6. Age made 1<sup>st</sup> close friend</b>	-.061 -.081 -.130***	-.300*** -.298*** -.280***	.007	-.265	-.276*** -.266*** -.211***	1											

Cont'd

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>7. Number opposite sex friends</b>	.065 .123† .040	.097	.043	.178	.439*** .471*** .480***	-.171** -.193** -.211***	1										
<b>8. Closeness to same sex friend</b>	.342*** .347*** .263***	.065	-.011	-.267	-.122	.071	-.133** -.176** -.170***	1									
<b>9. Closeness romantic</b>	.214** .217** .111***	.016	.246** .219** .142***	n/a	-.030	.057	-.053	.332*** .320*** .310***	1								
<b>10. Closeness platonic</b>	.142 .021 .048	-.030	n/a	.214	-.086	.125	.210	.365* .388* .375***	n/a	1							
<b>11. 'Secure'</b>	.174** .175** .162***	.064	-.025	-.016	-.207** .207** .162**	.001	.129* .147* .150***	.069	.089	-.164	1						
<b>12. 'Fearful'</b>	.014	.051	-.127	.158	-.143*	.063	-.103	.031	.081	.000	-.421**	1					
<b>13. 'Preoccupied'</b>	-.127* -.119† -.142***	.059	-.136* -.137* -.119***	-.226	.026	-.088	.022	.033	.081	-.175	.145* .153*	.082	1				
<b>Cont'd</b>																	



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>14. 'Dismissive'</b>	-.125 <sup>†</sup> -.143 <sup>*</sup> -.143 <sup>***</sup>	-.001	.092	-.227	-.120	-.005	-.020	.032	.008	-.143	-.283 <sup>***</sup> -.278 <sup>***</sup>	-.079	-.141 <sup>*</sup> -.133 <sup>*</sup>	1			
<b>15. Fear of Intimacy</b>	-.192 <sup>**</sup> -.177 <sup>**</sup> -.145 <sup>**</sup>	.096	-.119	.067	-.104	-.012	-.038	-.210 <sup>**</sup> -.221 <sup>**</sup> -.189 <sup>***</sup>	-.421 <sup>**</sup> -.473 <sup>**</sup> -.386 <sup>**</sup>	-.207 -.224 -.207 <sup>*</sup>	-.316 <sup>***</sup> -.289 <sup>***</sup> -.308 <sup>***</sup>	.279 <sup>**</sup> .269 <sup>**</sup> .278 <sup>***</sup>	.029	.187 <sup>**</sup> .165 <sup>*</sup> .181 <sup>*</sup>	1		
<b>16. Self-Disclosure</b>	.349 <sup>***</sup> .327 <sup>***</sup> .276 <sup>***</sup>	.089	-.012	.128	-.028	-.119	-.082 -.027 -.063 <sup>*</sup>	.388 <sup>***</sup> .373 <sup>***</sup> .336 <sup>***</sup>	.384 <sup>***</sup> .401 <sup>***</sup> .300 <sup>***</sup>	.074	.225 <sup>***</sup> .233 <sup>***</sup> .255 <sup>***</sup>	.208 <sup>**</sup>	.019	.087	-.539 <sup>***</sup> -.523 <sup>***</sup> -.541 <sup>***</sup>	1	
<b>17. Opener</b>	.278 <sup>***</sup> .264 <sup>***</sup> .169 <sup>***</sup>	.031	-.023	.215	-.059	-.112	.148 <sup>*</sup> .210 <sup>**</sup> .118 <sup>***</sup>	.459 <sup>***</sup> .456 <sup>***</sup> .420 <sup>***</sup>	.256 <sup>***</sup> .259 <sup>***</sup> .205 <sup>***</sup>	-.427 <sup>*</sup> -.408 <sup>*</sup> -.374 <sup>***</sup>	.248 <sup>**</sup> .265 <sup>***</sup> .237 <sup>***</sup>	.066	.042	.005	-.203 <sup>**</sup> -.218 <sup>**</sup> -.173 <sup>***</sup>	.353 <sup>***</sup> .352 <sup>***</sup> .293 <sup>***</sup>	1
<b>18. Maternal Warmth (PCS)</b>	.535 <sup>***</sup> .533 <sup>***</sup> .681 <sup>***</sup>	.041	.049	-.064	.148 <sup>*</sup>	.037	-.031	.089	.027	-.112	.129 <sup>*</sup>	.073	.196 <sup>**</sup>	-.040	-.103	.129 <sup>*</sup>	.141 <sup>*</sup>

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ , <sup>†</sup> $p < .07$ , 2-tailed. Top numbers are based on logs and square roots of data in which outliers were converted to one unit above or below the most extreme value. Middle numbers are Spearman's rank-order correlations of untransformed data. Bottom numbers are Pearson correlations of untransformed data and without adjustment for outliers. Correlations between romantic and platonic could not be run (n/a) since participants rated one or the other, not both.

The following bivariate analyses will incorporate the conservative Spearman rank-order correlations, the middle row from Table 4.

**Maternal warmth.** The two measures of maternal warmth (EMBU-C, PCS) were significantly strongly related to each other ( $\rho=.533, p<.001$ ); the EMBU-C will be used for the rest of the bivariate correlations. Maternal warmth was related to closeness to closest same-sex friend ( $\rho=.347, p<.001$ ) and romantic partner ( $\rho=.217, p<.001$ ); number of same-sex friends ( $\rho=.164, p<.001$ ). In addition, maternal warmth was related to a more secure adult relationship style ( $\rho=.177, p<.001$ ) as well as a more preoccupied adult relationship style ( $\rho=-.120, p<.001$ ), and negatively associated with a dismissing adult relationship style ( $\rho=-.145, p<.001$ ). It was also related to less fear of intimacy ( $\rho=-.177, p<.001$ ); and greater self-disclosure ( $\rho=.327, p<.001$ ) and opener skills ( $\rho=.264, p<.001$ ).

**Self-disclosure.** The practice of self-disclosure and opening others were found to have a Spearman's correlation coefficient of  $\rho=.352 (p<.001)$ . In addition, the MSIS scale includes numerous items that involve self-disclosure; the independent measure of self-disclosure was found to be associated with MSIS same-sex friendship closeness ( $\rho=.373, p<.001$ ), and romantic closeness ( $\rho=.401, p<.001$ ), but not with platonic opposite sex closeness ( $p=.363$ ). Self-disclosure was also related to a more secure adult relationship style ( $\rho=.234, p<.001$ ); a less fearful adult relationship style ( $\rho=-.221, p=.001$ ); a less dismissive adult relationship style ( $\rho=-.102, p<.001$ ); less fear of intimacy ( $\rho=-.523, p<.001$ ); and to more maternal warmth (EMBU-C  $\rho=.327, p<.001$ ).

**Opening others.** Opener was also strongly associated with same-sex friendship closeness ( $\rho=.456, p<.001$ ); romantic closeness ( $\rho=.259, p<.001$ ); and platonic opposite sex closeness ( $\rho=.408, p<.001$ ). Opening others was also related to later age of first close friendship

( $\rho=105, p<.001$ ); having more same sex friends ( $\rho=.069, p=.009$ ) and opposite-sex friends ( $\rho=.210, p<.001$ ); more security in adult relationships ( $\rho=.268, p<.001$ ); less fearfulness in adult relationships ( $\rho=-.088, p=.001$ ); less preoccupation in adult relationships ( $\rho=-.067, p=.011$ ); less fear of intimacy ( $\rho=-.218, p<.001$ ); and more maternal warmth (EMBU-C,  $\rho=.264, p<.001$ ).

**Fear of intimacy.** As discussed above, fear of intimacy was associated with less self-disclosure ( $\rho=-.523, p<.001$ ); less opening up of others ( $\rho=-.218, p<.001$ ); and less maternal warmth ( $\rho=-.177, p<.001$ ). It was also associated with less closeness to closest same-sex friend ( $\rho=-.221, p<.001$ ), platonic friend ( $\rho=-.224, p=.002$ ), and romantic partner ( $\rho=-.473, p<.001$ ); longer duration of same-sex friendship ( $\rho=.089, p=.001$ ) but less duration of romantic ( $\rho=-.100, p<.001$ ); and to less security ( $\rho=-.288, p<.001$ ) and more fearfulness ( $\rho=.268, p<.001$ ) and dismissiveness ( $\rho=.163, p<.001$ ) in adult relationships.

### **Predicting social outcomes**

A stepwise regression was run per criterion variable on SPSS to examine which predictors best explained the variance in social outcomes. For these analyses, results with the untransformed data with multiple imputations will be described.

For each outcome variable, predictors were maternal warmth, self-disclosure, opener, age, sex, GPA, and socioeconomic status. Race/ethnicity was not included due to inability to low frequency of other races and inability to justify collapsing other races with either African-Americans or Caucasians given that scores did not uniformly align with one or the other race. In all cases, multivariate outliers (using Mahalanobis distance from the centroid of  $\chi^2(7) > 24.322, p<.001$  as the outlier criterion) were excluded from the analysis. Pooled results are reported.

**Closeness to one's best same-sex friend.** Opener ( $\beta=.427$ ) was the strongest predictor of closeness to one's closest same-sex friend; alone it explained 18.2% of the variance  $F(1, 1426) = 317.76, p<.001$ . Sex in Step 2 ( $\beta = .265$ ) added  $\Delta R^2 = .067, F(1, 1425) = 127.42, p<.001$ . Self-disclosure ( $\beta =.201$ ) then added  $\Delta R^2 = .036, F(1, 1424) = 71.42, p<.001$  in Step 3. Lastly, maternal warmth ( $\beta =.134$ ) added  $\Delta R^2 = .016, F(1, 1424) = 33.02, p<.001$ . The total model explained nearly a third (30.2%) of the variance ( $R=.549$ ), but 28.5% was explained by Opener, Sex, and Self-Disclosure ( $R=.534$ ) suggesting that after these variables are considered, maternal warmth does not contribute much unique variance to closeness achieved with friends.

**Duration of non-romantic friendships.** Stepwise regression showed that self-disclosure was the strongest predictor of duration of closest same-sex friendship. However, it only explained 1% of the variance ( $F(1, 1416) = 14.73, p<.001$ ). Age added another .003 ( $F(1, 1415) = 4.94, p<.05$ ), resulting in very little total variance explained by this model (1.4%;  $R=.117$ ). Maternal warmth did not contribute significantly. The negative beta for self-disclosure ( $\beta = -.10$ ) suggests that self-disclosure is inversely related with duration; the beta for age ( $\beta =.06$ ) suggests longer durations occur with older age, but neither to a pragmatically relevant degree.

With a close opposite-sex friend, only opener explained variance ( $\beta = -.207, R^2 = .043, F(1, 158) = 7.04, p=.009$ ). This suggests that more eliciting conversation and listening is associated with shorter opposite-sex friendships.

**Number of close same-sex friends.** The strongest predictor of number of close same-sex friends was sex ( $\beta = -.178$ ), which explained 3.2% of the variance ( $F(1, 1418) = 46.30, p<.001$ ). The addition of SES ( $\beta = .132$ ), in step 2 added 1.7% ( $F(1, 1417) = 25.63, p<.001$ ). Step 3 added maternal warmth ( $\beta = .107$ ), which contributed 1.1% ( $F(1, 1416) = 17.07, p<.001$ ). Step 4 added age ( $\beta = -.094$ ), and .08% of the variance explained ( $F(1, 1415) = 12.44, p<.001$ ) for a total of

only 6.8% of the variance in number of close friends explained by these variables ( $R=.261$ ). This suggests that being male, younger, and higher in SES and maternal warmth are associated with reporting more close friends, but not to a clinically meaningful degree.

**Age at which a first close friend was made.** By itself, GPA ( $\beta = -.133$ ), was the strongest predictor and explained 1.8% of the variance in age of first making a close friend ( $F(1, 1397) = 25.20, p<.001$ ). Step 2 added self-disclosure ( $\beta = .119$ ), and 1.4% of variance explained ( $F(1, 1396) = 20.26, p<.001$ ). Step 3 added maternal warmth ( $\beta = -.153$ ) and 2.2% of variance explained ( $F(1, 1395) = 32.05, p<.001$ ). Step 4 added SES ( $\beta = -.083$ ) and .7% of variance explained ( $F(1, 1394) = 10.03, p=.002$ ). Step 5 added opener ( $\beta = .058$ ) and .3% of variance explained ( $F(1, 1393) = 4.39, p=.036$ ). This suggests that higher GPA, SES, and maternal warmth; plus less self-disclosure and opener, predict a younger age of making one's first close same-sex friend. However, this model only explains 6.8% of the variance ( $R=.251$ ).

**Number of opposite-sex close friends.** The strongest predictor of reported number of opposite sex friends was SES ( $\beta = .183$ ), explaining 3.3% of the variance ( $F(1, 1426) = 49.31, p<.001$ ). Step 2 added opener ( $\beta = .174$ ) and explained an additional 3% of the variance ( $F(1, 1425) = 45.93, p<.001$ ). Step 3 added self-disclosure ( $\beta = -.139$ ) and explained an additional 1.8% of the variance ( $F(1, 1424) = 27.16, p<.001$ ). This suggests that greater SES and opener, and lower self-disclosure predict having more platonic opposite-sex friends, yet this final model only accounted for 8.1% of the total variance ( $R=.285$ ), which is not very clinically relevant.

**Closeness to a close platonic opposite-sex friend.** This analysis only had 30 participants, with 178 when data were imputed. Opener ( $\beta = .386$ ) was the strongest predictor and explained 14.9% of the variance ( $F(1, 176) = 30.88, p<.001$ ). Sex ( $\beta = -.284$ ) was the next strongest predictor and explained an additional 8% of the variance ( $F(1, 175) = 18.19, p<.001$ ).

Age ( $\beta = -.195$ ) was the third and last significant predictor and explained 3.1% of the variance ( $F(1, 174) = 7.27, p=.008$ ). The total model explained a fourth (26%) of the variance ( $R=.510$ ). This suggests that being male and of lower age, and having better opener skills, strongly predict greater closeness to platonic opposite-sex friends.

**Fear of intimacy.** The strongest predictor of reporting less fear of intimacy was self-disclosure ( $\beta = -.543$ ), which explained 29.5% of the variance ( $F(1, 1432) = 598.66, p<.001$ ). Step 2 added sex ( $\beta = .102$ ) and another 1% of the variance explained ( $F(1, 1431) = 21.04, p<.001$ ) for a total of 30.5% of the variance explained ( $R=.552$ ). Pragmatically, this suggests that greater willingness to self-disclose is strongly predictive of less fear of intimacy but that the other variables are not clinically relevant.

### **Romantic Relationships**

**Closeness to closest romantic partner.** The strongest predictor of reported closeness to one's closest romantic partner was self-disclosure ( $\beta = .299$ ), which accounted for 9% of the variance ( $F(1, 1254) = 123.40, p<.001$ ). Step 2 added sex ( $\beta = .238$ ) and another 5.5% of the variance explained ( $F(1, 1253) = 80.62, p<.001$ ). The final step added opener ( $\beta = .076$ ) and .5% of variance explained ( $F(1, 1252) = 7.29, p=.007$ ). The total model explained 15% of the variance ( $R=.387$ ), suggesting that greater self-disclosure, being female, and greater opener skills are moderately predictive of closeness in romantic relationships as measured by the MSIS.

**Duration of closest romantic relationship.** The strongest predictor of reported duration of closest romantic relationship was age ( $\beta = .395$ ), which accounted for 15.6% of the variance ( $F(1, 1242) = 230.05, p<.001$ ). Step 2 added GPA ( $\beta = .102$ ) and another 0.9% of the variance explained ( $F(1, 1241) = 13.94, p<.001$ ). The total model explained 16.6% of the variance

( $R=.407$ ), suggesting that greater age and academic success are fairly strong predictors of longer duration of romantic relationships but that maternal warmth, self-disclosure, and opener are not.

### **Predicting Adult Attachment Styles**

**Secure.** The strongest predictor of a secure adult relationship style was self-disclosure ( $\beta = .257$ ), which explained 6.6% of the variance ( $F(1, 1420) = 100.41, p<.001$ ). Step 2 added SES ( $\beta = .203$ ) and explained another 4.1% of the variance ( $F(1, 1419) = 65.62, p<.001$ ). Step 3 added opener ( $\beta = .169$ ) and 2.6% more variance explained ( $F(1, 1418) = 42.47, p<.001$ ). The final step added maternal warmth ( $\beta = .068$ ) and 0.4% of variance explained ( $F(1, 1417) = 6.87, p=.009$ ). The total model explained 13.7% of the variance ( $R=.371$ ). This suggests that higher SES, self-disclosure, opening, and maternal warmth moderately predict greater security in adult relationships.

**Fearful.** The strongest predictor of a fearful adult relationship style was self-disclosure ( $\beta = -.204$ ), which explained 4.2% of the variance ( $F(1, 1414) = 61.52, p<.001$ ). Step 2 added SES ( $\beta = -.135$ ) and explained another 1.8% of the variance ( $F(1, 1413) = 27.31, p<.001$ ). Step 3 added maternal warmth ( $\beta = .087$ ) and 0.7% more variance explained ( $F(1, 1412) = 10.54, p=.001$ ). The final step added sex ( $\beta = .057$ ) and 0.3% of variance explained ( $F(1, 1411) = 4.69, p=.030$ ). The total model explained 7% of the variance ( $R=.264$ ). This suggests that while relevant, lower self-disclosure and SES, and higher maternal warmth, and being female, moderately predict greater fearfulness in adult relationships.

**Preoccupied.** The strongest predictor of a preoccupied adult relationship style was maternal warmth ( $\beta = -.149$ ), which explained 2.2% of the variance ( $F(1, 1414) = 32.16, p<.001$ ). Step 2 added GPA ( $\beta = .119$ ) and explained another 1.4% of the variance ( $F(1, 1413) = 20.73, p<.001$ ). Step 3 added self-disclosure ( $\beta = .056$ ) and 0.3% more variance explained ( $F(1,$

1412) = 4.27,  $p=.039$ ). The total model explained 3.9% of the variance ( $R=.198$ ). This suggests that lower maternal warmth, higher academic success, and greater self-disclosure predict slightly more preoccupation with adult relationships.

**Dismissive.** The strongest predictor of a dismissive adult relationship style was maternal warmth ( $\beta = -.143$ ), which explained 2.0% of the variance ( $F(1, 1408) = 29.22, p<.001$ ). Step 2 added SES ( $\beta = -.105$ ) and explained another 1.1% of the variance ( $F(1, 1407) = 16.01, p<.001$ ). Step 3 added GPA ( $\beta = -.084$ ) and 0.7% more variance explained ( $F(1, 1406) = 10.18, p=.001$ ). The final step added self-disclosure ( $\beta = -.078$ ) and 0.6% more variance explained ( $F(1, 1405) = 8.27, p=.004$ ). The total model explained 4.4% of the variance. This suggests that lower scores on maternal warmth, SES, GPA, and self-disclosure, predict slightly more dismissiveness ( $R=.210$ ) in adult relationships but are not very clinically meaningful.

### **Predicting Social Skills**

**Self-disclosure.** The strongest predictor of self-disclosure was maternal warmth ( $\beta = .273$ ), which explained 7.4% of the variance ( $F(1, 1426) = 114.55, p<.001$ ). Step 2 added sex ( $\beta = .126$ ) and explained another 1.6% of the variance ( $F(1, 1425) = 24.61, p<.001$ ). Age, GPA, and SES were not significant. The total model explained 9% of the variance ( $R=.300$ ). This suggests that greater maternal warmth and being female moderately predict level of self-disclosure.

**Opener.** The strongest predictor of self-disclosure was maternal warmth ( $\beta = .183$ ), which explained 3.4% of the variance ( $F(1, 1402) = 48.77, p<.001$ ). Step 2 added sex ( $\beta = .155$ ) and explained another 2.4% of the variance ( $F(1, 1401) = 35.00, p<.001$ ). Step 3 added GPA ( $\beta = -.155$ ) and explained another 2.3% of the variance ( $F(1, 1400) = 35.35, p<.001$ ). Step 4 added age ( $\beta = .098$ ) and explained another 0.8% of the variance ( $F(1, 1399) = 12.27, p<.001$ ). Step 5



added SES ( $\beta = .080$ ) and explained another 0.6% of the variance ( $F(1, 1398) = 9.79, p = .002$ ). The total model explained 9.5% of the variance ( $R = .308$ ). This suggests that greater maternal warmth; being female, older, and of higher SES; and with less academic success, moderately predict level of opening up others.

**Sex differences in social skills. Opener.** For men, only age was retained in the stepwise regression, explaining 2.8% of the variance in opener ( $R = .167, F(1, 387) = 11.09, p = .001$ ). However, maternal warmth showed an original beta of  $.088, p = .084$ , suggesting some mild influence in predicting male opener skills. For women, GPA became the strongest predictor ( $\beta = -.193$ ) and explained 3.7% of the variance ( $F(1, 1025) = 39.81, p < .001$ ). Step 2 added maternal warmth ( $\beta = .189$ ) and explained another 3.6% of the variance ( $F(1, 1024) = 39.50, p < .001$ ). Step 3 added SES ( $\beta = .093$ ) and explained another 0.9% of the variance ( $F(1, 1023) = 9.50, p = .002$ ). Step 4 added age ( $\beta = .095$ ) and explained another 0.8% of the variance ( $F(1, 1022) = 8.49, p = .004$ ). The total model explained 8.9% of the variance ( $R = .299$ ). This suggests that less academic success; greater maternal warmth; being older and of higher SES moderately predict female level of opening up others.

**Self-disclosure.** In women, self-disclosure is best predicted by maternal warmth ( $\beta = .308$ ) and explained 9.5% of the variance ( $F(1, 1031) = 108.12, p < .001$ ). Adding SES ( $\beta = .095$ ) improved the model by 0.9% ( $F(1, 1030) = 10.20, p = .001$ ) for a total of 10.4% of the variance explained ( $R = .322$ ). This suggests that for women, maternal warmth is a moderate predictor of self-disclosure, and higher SES increases the probability of being more self-disclosing. For men, self-disclosure is also best predicted by maternal warmth ( $\beta = .128$ ) but only explained 1.6% of the variance ( $F(1, 393) = 6.57, p = .011$ ). Adding SES ( $\beta = -.133$ ) improved the model by 1.8% ( $F(1, 392) = 7.14, p = .008$ ) for a total of 3.4% of the variance explained ( $R = .184$ ). This suggests

that for men, higher maternal warmth is a very modest predictor of higher self-disclosure, and, unlike women, lower SES increases the probability of men being more self-disclosing.

## VIII. DISCUSSION

### **Maternal Warmth**

Measures of maternal warmth were found to significantly strongly correlate with each other. In terms of bivariate correlations, maternal warmth was moderately associated with closeness to same-sex friends and romantic partners but not with opposite-sex platonic friends. It was also moderately associated with self-disclosure and opener skills. Weaker but significant correlations were found with number of same-sex friends, fear of intimacy, and the secure, preoccupied, and dismissive adult relationship styles. However, regressions found that the impacts of maternal warmth were often superceded by other variables.

**Closeness to Others.** Correlations and stepwise regression found mixed results depending on the relationship. With closeness to one's best same-sex friend, the correlation with maternal warmth was moderate. However, warmth was preceded by, and added very little to opener, sex, and self-disclosure in a stepwise regression . In romantic relationships, warmth was modestly correlated with closeness, but in a stepwise regression it was found that greater self-disclosure, being female, and greater opener skills were moderately predictive of closeness while maternal warmth was not. Maternal warmth was not significantly correlated with closeness to a platonic opposite-sex friend. Stepwise regression showed that the best predictors of platonic closeness were being male, of lower age, and having better opener skills. Thus, the ability to achieve closeness to others appears to be better explained by the practices of self-disclosure and

opening others rather than by maternal warmth.

**Number of Friends.** While maternal warmth was significantly but weakly correlated with having more close same-sex friends, it added very little to other variables as a predictor. Better predictors of reporting more close friends were being male, younger, and higher in SES, but the entire model was not clinically meaningful. As univariate correlations, opener was correlated with number of close same-sex friends but self-disclosure was not.

Regarding number of opposite-sex friends, opener was modestly correlated and maternal warmth was only marginally significant, with no effect seen for self-disclosure. In stepwise regression, however, greater SES and opener, and lower self-disclosure predicted having more platonic opposite-sex friends. This suggests that listening to others draws more friends of the opposite sex, while too much self-disclosure may hinder counting those friendships as close. However, this model accounted for very little variance in number of opposite sex friends.

**Age at which a first close friend was made.** Maternal warmth, self-disclosure, and opener were not independently correlated with the age at which subjects made their first close same-sex friend. However, stepwise regression found that higher GPA, SES, and maternal warmth; plus less self-disclosure and opener, predict a younger age of making one's first close same-sex friend. Thus maternal warmth does appear to offer some modest advantage in making a close friend sooner than those reared with less warmth. The finding that greater self-disclosure and opener skills predict a later age of making a first close friend is difficult to interpret. Perhaps poor listeners and self-disclosers are more willing to nominate pre-verbal friendships as close while good listeners and self-disclosers reserve the concept of a first close friend as someone with whom they shared intimate knowledge.

**Duration of Relationships.** Maternal warmth, self-disclosure, and opener did not

individually correlate with duration of any close relationship. However, results were mixed with stepwise regressions. With same-sex close friendship, being older and less self-disclosing predicted longer duration, yet not to a clinically relevant degree. With a close opposite-sex friend, less eliciting conversation or listening was associated with longer opposite-sex friendships. With romantic relationships, greater age and academic success were fairly strong predictors of longer relationship duration. These results suggest that in non-romantic relationships, listening more and self-disclosing more are more likely to reduce the duration of the friendship, perhaps because communication itself is noxious or because communication facilitates decisiveness and/or reduces passivity in friendships.

### **Making and Eliciting Self-Disclosures**

**Self-Disclosure.** Maternal warmth was found to be significantly albeit moderately related to self-disclosure. In stepwise regressions, maternal warmth remained moderately predictive of self-disclosure, and being female increased the likelihood of being more self-disclosing. When examined by sex, maternal warmth remained a moderate predictor of self-disclosure for women, and higher SES was also predictive. For men, self-disclosure was also best predicted by maternal warmth, but the relationship with SES was negative, suggesting that men who grow up in lower SES environments are more self-disclosing.

**Opener.** By itself, maternal warmth was modestly correlated with opener. In stepwise regression, the strongest predictor of self-disclosure was also maternal warmth. Being female, older, of higher SES, and with lower GPA, also predicted more opening up others. The correlation between opener and GPA was small but significant, suggesting that excessive socializing can be detrimental to academic success. When examined by sex, for men, only age was retained in the stepwise regression. However, with a more flexible alpha criterion, maternal

warmth showed modest influence in predicting male opener skills. For women, worse GPA remained the strongest predictor, and higher maternal warmth, age, and SES also moderately contributed to predicting female level of opening up others.

### **Fear of Intimacy**

At the univariate level, fear of intimacy showed a weak negative correlation with maternal warmth and opener, and a strong negative relationship with self-disclosure. Stepwise regression, however, only retained self-disclosure and sex. By itself, self-disclosure accounted for a third of the variance in fear of intimacy. This suggests that greater willingness to self-disclose is strongly predictive of less fear of intimacy but that maternal warmth and opener are not very relevant when self-disclosure is accounted for. However, given that maternal warmth predicts self-disclosure, it may be that maternal warmth models and reinforces the practices of self-disclosure and opening others, and lack of warmth may be involved in preventing or extinguishing those practices.

### **Adult Relationship Styles (Attachment)**

The strongest predictor of a secure adult relationship style was self-disclosure, followed by SES, opener, and maternal warmth; this model was a moderate predictor. By contrast, lower self-disclosure and SES, and higher maternal warmth, and being female, moderately predict greater fearfulness in adult relationships; it is unclear why maternal warmth would contribute to both. Lower maternal warmth, higher academic success, and greater self-disclosure also predicted slightly more preoccupation with adult relationships. The strongest predictor of a dismissive adult relationship style was lack of maternal warmth, followed by SES, GPA, and self-disclosure; however, the total effect was not very clinically meaningful.

## **Limitations**

This study was limited by several factors. First, the sample is mostly Caucasian and of higher SES than the population, reducing the ability to generalize to a more general population. Comparisons by race/ethnic groups in this study are also to be interpreted with caution given the low numbers of non-Caucasian participants. Comparison by sex is also limited due to only having 66 males. Relationship style comparisons must also be interpreted with caution since few participants nominated themselves into some of the styles.

Perhaps the largest limitation was failure to account for and control other sources of warmth. Modeling and reinforcement by a father, grandparents, or other close caregiver could explain the low relationships found between maternal warmth and the outcome variables. Another limitation is that scores were highly negatively skewed on both the predictor variable of maternal warmth and the outcome variables such as closeness to same-sex friends and security in adult relationships. These and many other variables were examined as transformed as well as untransformed, yet their interpretation requires caution before generalizing to other populations.

While the use of multiple measures for warmth and social outcomes was a strength, a longitudinal study that includes observation of behaviors would be much stronger. In addition, the survey used in this study was very long, requiring a high level of reading ability and 40-60 minutes to complete. This limits the generalizability of these findings to less educated populations and requires a significant incentive. In addition, while items tested attentiveness, participants could have answered negligently while searching for attention items.

## **Conclusions**

Maternal warmth, self-disclosure, and opening others were found to correlate with numerous social outcomes. In addition, this study found that the practices of making and eliciting

self-disclosures account for a significant part of those relationships. This suggests that parent training, and interventions with children who lack a maternally warm environment, could benefit from promoting the modeling and reinforcement of appropriate self-disclosure and conversation skills, and raising awareness that the absence of warmth may interfere with the development of those skills. However, more study is needed in this area.



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## LIST OF APPENDICES

APPENDIX A: CONSENT FORM

## CONSENT TO PARTICIPATE IN A UNIVERSITY OF MISSISSIPPI SURVEY STUDY

We are interested in learning about a wide range of relationships including those with parents, friends, and romantic partners. We are interested in differing levels of closeness sought, avoided, and experienced, and your related feelings.

Through a series of survey questions, you will be asked to choose or rate responses to:

1. Questions about your age, sex, race/ethnicity, education, religion, economic status, and sexual orientation.
2. Questions about a platonic (non-romantic) friendship.
3. For those who are currently or have been in a romantic relationship, questions about being in the relationship, including some questions about physical intimacy (i.e., sex, abstinence).
4. Questions about feeling connected or distant from others.
5. Questions about your interactions with your parents or caregivers while growing up.
6. Questions about listening and talking to people, and about trusting and respecting them, or feeling trusted and respected by them.
7. Questions about emotions.
8. Questions about recreational interests.

The total time commitment of this study will be 40-60 minutes.

### RISKS AND BENEFITS:

Some participants may experience displeasure recalling unfulfilled romantic desires or relationships with parents, friends, or romantic partners. A list of local resources will be made available if you wish to pursue services such as counseling that can help resolve some of those feelings. It may be gratifying to know that your experiences can help researchers understand elements that contribute to forming and maintaining various levels of connection with other people.

### COMPENSATION:

For students enrolled in a University of Mississippi psychology class that has a research requirement or accepts participation for extra credit, participants will receive 60 minutes of credit. If a participant chooses to withdraw their data prior to submitting it they will still receive 60 minutes of credit provided they spent that amount of time. *Prior to exiting, be sure to verify research credits earned with the session supervisor.*

### COST:

There is no cost to participate other than your time.

### CONFIDENTIALITY:

No information that identifies you personally will appear on the survey or be attached to your responses in any way.

### RIGHT TO WITHDRAW:

You have the right to withdraw from this study at any time before you submit your data. Please

tell the session supervisor BEFORE FINAL SUBMISSION if you want your responses to be deleted/destroyed. Withdrawal will not harm your standing in your course, department, or the university in any way. You will receive the credits earned as described in the Compensation section above.

**IRB APPROVAL:**

The University of Mississippi's Institutional Review Board (IRB) has reviewed this study and has determined that it meets the ethical obligations required by state and federal law and University policies. If you have any questions, concerns or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-7482/ [irb@olemiss.edu](mailto:irb@olemiss.edu) /100 Barr Hall.

**STATEMENT OF CONSENT:**

I have read the above information. I understand that a printed copy is available if I request it. I have had an opportunity to ask questions, and I have received answers. I consent to participate in this study.

Check one and sign:

Agree    

Disagree

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## APPENDIX B: DEBRIEFING SCRIPT

## DEBRIEFING SCRIPT

When students finish the survey they will be greeted at the front desk and debriefed in these two steps.

1. Thank you for participating in this survey. Do you have any questions? (answer questions, then:)

2. Our research team realizes that some of the questions may have brought up negative feelings about your relationships with others. If you are feeling troubled today or in the future, you might like to consider some of the counseling opportunities available on campus and in the community, listed on this sheet (hand them the sheet of resources). Some of them are free or at a very reasonable cost.

## APPENDIX C: CAMPUS & COMMUNITY RESOURCES



## CAMPUS & COMMUNITY RESOURCES

### **Psychological Testing and Assessment:**

Psychological Assessment Clinic, University of Mississippi (662) 915-7253  
Matthew Campbell, Ph.D., Licensed Psychologist, Oxford, MS (662) 513-9936  
Susan Lau, Ph.D., Optimum Behavioral Health, Olive Branch, MS (662) 895-1707  
Clyde Sheehan, Psychiatrist, (ADHD only) Tupelo, MS (662) 844-4364  
Vickie R. Brewer, Ph.D., (Neuropsych. testing) LeBonheur Children's Med. Ctr (901) 287-5220  
Sarah Richie, Ph.D. (Neuropsych.testing) Memphis Neuropsychology, LLC (901) 737-6677

### **Counseling/Psychotherapy:**

Psychological Services Center, University of Mississippi (662) 915-7385  
University Counseling Center, University of Mississippi (662) 915-3784  
Communicare (CMHC), Oxford, MS (662) 234-7521  
Emily Thomas Johnson, Ph.D., (children) Desoto County, MS (662) 609-4950  
Penny Haws, Ph.D., Licensed Psychologist, Oxford, MS (662) 234-0511  
Optimum Behavioral Health, Olive Branch, MS (662) 895-1707  
Save-A-Life of Lafayette County (Pregnancy Test Center / OptionLine.org) (662) 234-4414  
Victims of Sexual Assault & Violence, Julia Carrano, 208 Odom Hall (662) 915-1059

### **Psychiatric Services (Medication Management):**

John Black, M.D., University Health Services (662) 915-7275  
Dr. Erik Richardson/White Oak (662) 236-1927  
Timothy Kelly, M.D., Adult Psychiatry, Behavioral Health, Oxford Harrison Evans, M.D., Adult Psychiatry, Oxford, MS (662) 513-1660  
Tom Walden, M.D., General Psychiatry, Tupelo, MS (662) 236-5773  
Clyde Sheehan, Psychiatrist, (ADHD only) Sheehan Counseling Center, Tupelo, MS (662) 680-9002 (662) 844-4364  
Randall J. Moskovitz, M.D., General Psychiatry, Memphis, TN (901) 725-0882

### **Campus Academic Resources (available to all students): University Career Center, 303**

Martindale Center (662) 915-7174  
The Jones Language Laboratory, 113 Bishop (662) 915-7663  
University Writing Center (662) 915-7689  
Center for Excellence in Teaching and Learning (662) 915-1391

### **Campus Tutoring Services:**

Free Group Tutoring: each academic department at Ole Miss offers free group tutoring in certain courses. Contact the appropriate academic department for further information or visit <http://www.olemiss.edu/depts/cetl/>

Private Student-Paid Tutoring: students interested in hiring a private tutor for individual subjects should contact the appropriate department to ask about qualified graduate students available as tutors. In addition, you may want to check out the following website that often lists tutors or tutoring sessions for specific courses: [www.olemiss.edu/academics/tutors.html](http://www.olemiss.edu/academics/tutors.html)

Several of the Freshmen dorms offer free group tutoring. Contact your RA for more information.

APPENDIX D: PSPM ANNOUNCEMENT

## PSPM ANNOUNCEMENT

### Friends, Family, & Relationships with Others

We are looking for men and women ages 18 and older to rate statements that best describe their views and experiences concerning friends, family, and romantic relationships. These will include habits in talking and listening, views about trusting and respecting people, being comfortable, and your experience of feeling connected and disconnected. Questions will also ask about race/ethnicity, age, sex, religion, your economic background, and whether you are sexually active or abstain. These surveys are ANONYMOUS. If you are enrolled in a psychology class you can earn 60 minutes of research credit. This study has been approved by UM's Institutional Review Board (IRB).

APPENDIX E: FLYER

# FLYER

## Research Study

### Friends, Family, & Relationships

We are looking for men and women ages 18 and older to rate statements that best describe their views and experiences concerning friends, family, and romantic relationships. These will include habits in talking and listening, views about trusting and respecting people, being comfortable, and your experience of feeling connected and disconnected. Questions will also ask about race/ethnicity, age, sex, religion, your economic background, and whether you are sexually active or abstain.

These surveys are ANONYMOUS.

If you are enrolled in a psychology class you can earn 60 minutes of research credit.

This study has been approved by UM's Institutional Review Board (IRB).

## APPENDIX F: SCALES AND SURVEY ITEMS

## SCALES & SURVEY ITEMS

Available upon request (falessan at go.olemiss.edu).

## VITA

**FERNANDO T. ALESSANDRI**  
falessan@go.olemiss.edu

### EDUCATION

#### **University of Mississippi, Oxford, MS**

M.A. in Clinical Psychology, August 1, 2013 (Ph.D. anticipated 2016) GPA: 3.85  
Student Affiliate, American Psychological Association  
Member, Association for Contextual Behavior Science  
Edited three textbook chapters on assessment for Jerome Sattler.  
Blind reviews of several articles under consideration by journals.

#### **Institute for the Psychological Sciences, Arlington, VA**

M.S. in Clinical Psychology, May 2011 GPA: 3.94  
Add Health Users Conference at NIH, June 2010  
Newman Lectures on Neuroscience and Philosophy, 2009-10  
Member, Catholic Psychotherapy Association  
Member, APA Positive Psychology Section, Division 17

#### **University of Southern California, Los Angeles, CA**

M.F.A. in Film & Television Production, May 2002 GPA: 3.70  
Teaching Assistant  
Scholarships, Institute for the Humane Studies and National Hispanic Foundation for the Arts

#### **University of Notre Dame, South Bend, IN**

B.A. in Government (Politics, Philosophy & Economics concentration), May 1991 GPA: 3.48  
*Ideas & Issues*, Co-Chair (\$30K budget to bring speakers to campus)  
*Anthropos*, Founder (philosophical discussion group)

### RESEARCH EXPERIENCE

#### **Get Fit! Research Lab**

Researcher, 2011-Present  
Supervisor: Karen A. Christoff, Ph.D.  
Design and support research projects.



### **University of Mississippi Clinical Disaster Research Collaborative (UM-CDRC)**

Data Team Member, Gulf Oil Spill Grant Program, January – June, 2012

Supervisor: Stefan Schulenberg, Ph.D.

Performed data entry, checking, and statistical analysis for quarterly and final reports to sites funded by the grant as well as the Mississippi Department of Mental Health.

Led data analysis and subsequent development of research articles concerning trends among the clinical population served by mental health facilities along the Gulf Coast.

### **Community Assessment for Public Health Emergency Response (CASPER).**

Data Collector, October 2011

Surveyed residents in Gulf Coast neighborhoods as part of a project by the Centers for Disease Control and Prevention, National Center for Environmental Health, Division of Environmental Hazards and Health Effects.

## **PRESENTATIONS**

Alessandri, F. T., (2012, September). *Psychometric Review of the Social and Emotional Loneliness Scale for Adults (SELSA) and the Short Form (SELSA-S)*. Poster presentation at the annual conference of the Mississippi Psychological Association, Gulfport, MS.

## **CLINICAL-RELATED EXPERIENCE**

### **Region IV Crisis Stabilization Unit, Tupelo, MS**

Psychology Intern, August 1, 2012-July 31, 2013

Supervisors: John Baker, M.S. (on-site), Scott Gustafson, Ph.D. (overall)

Conduct intake interviews and provide group and individual therapy to individuals court-ordered to the center for drug and alcohol detoxification, stabilization on psychotropic medications, and/or for being potentially harmful to self or others and currently incapable of independent living.

### **Psychological Services Center, University of Mississippi**

Graduate Therapist, Summer 2012-Present

Supervisors: Scott Gustafson, Ph.D., Karen A. Christoff, Ph.D.

Conduct intake interviews and provide therapy to individuals and couples.

Prepare client process notes and attend weekly supervision meetings.

### **Tilden Study Center, Los Angeles, CA**

Assistant Director, April 1994-March 2008

Regularly advised eight married men, biweekly, on their personal challenges as husbands, fathers, employers/employees.

Ran retreats, workshops, and summer camps for males ranging from fifth grade through high school, college, young professionals, and older men.

Co-founded **The Ahead Leadership Program**; recruited and trained successful college students and young professional men to serve as mentors for high school boys from the Los Angeles and Ventura area; program met biweekly and integrated boys from all SES

levels, promoting ambition, achievement, and a spirit of service among all participants; graduates have gone on to college and vocational pursuits.  
Founded and ran the One-On-One Tutoring Program at McKinley Elementary School in Santa Monica, CA; recruited students from UCLA to provide weekly tutoring to disadvantaged youth, mostly Latino; developed similar program at Resurrection School in East Los Angeles.

**Riverside Center, New York, NY**

Youth Leader, August 1991-May 1993

Assisted with college prep programs for high school boys.  
Led camping and ski trips, and academic study weekends.  
Taught Sunday School classes at St. Charles Church in the Bronx.

**WORK EXPERIENCE**

**University of Mississippi, Oxford, MS**

Research & Graduate Assistant, Fall 2011, Spring 2012

Supervisor: Karen A. Christoff, Ph.D.

Oversaw a team of undergraduate tutors in the administration of a self-paced introductory psychology course.

Prepared and administered class and testing materials, managed a grades database, tutored students.

**Fortis College, New Carrollton, MD**

Psychology Instructor, Summer, 2011

Taught two introductory psychology courses.

**American University, Washington D.C.**

Adjunct Professor, 2009-2010

Taught Writing for Visual Media (Fall 2009, 2010)

Taught Scripting the Short Film (Summer 2009, 2010)

Taught a Screenwriting course for high school students (Summer 2009)

**Hero Pictures, Los Angeles, CA**

Vice President of Development, January 2007-December 2008

Oversaw the review, purchase, and improvement of literary properties (books, screenplays, articles) for development as motion pictures and television shows; consulted with producers, agents, lawyers, and reviewed/drafted contracts; produced and edited a TV reality show pilot and promotional materials.

Supervised 2 assistants and various interns.

**John Paul the Great Catholic University, San Diego, CA**

Adjunct Professor, Spring, 2007

Taught a Media Product Development class.

**Once Upon A Time Films, Los Angeles, CA**

Associate Producer, 2005-2006

Manager of Development, 2004-2005

Assistant to Stanley M. Brooks, 2003-2004

Initiated the writing and editing of the screenplay, then production and delivery of the film, *Fighting the Odds: The Marilyn Gambrell Story* for Lifetime Television.

Coordinated all external contacts; supported initiation, development and production of 16 made-for-TV movies and mini-series.

**Bernard Hodes Group, Los Angeles, CA**

Copywriter, October 1995-December 1998

Wrote copy for internet, radio, print advertising and collateral; helped win new business (Hewlett Packard, Honda, Disney).

**Weston Group, Los Angeles, CA**

Junior Copywriter, May 1994-October 1995

Wrote ad copy and press releases; won awards for a Honda advertisement and a housing community brochure.