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Self-silencing as a mediator and moderator of adult attachment and disordered eating attitudes

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Self-silencing as a mediator and moderator of adult attachment
and disordered eating attitudes

by

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A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

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Program of Study Committee:

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ABSTRACT

The present study examined the mediating and moderating roles of self-silencing between adult attachment (anxiety and avoidance) and disordered eating attitudes. Participants were 221 female college students from a large Midwestern university. Survey data was analyzed using hierarchical multiple regression and the bootstrap procedure for testing the significance of indirect effects. For the mediation, the results indicated that self-silencing fully mediated the relation between attachment avoidance and disordered eating attitudes. Moreover, self-silencing partially mediated the relation between attachment anxiety and disordered eating attitudes. Specifically, the results showed significant positive relations between adult attachment (anxiety and avoidance) and self-silencing as well as self-silencing and disordered eating attitudes. The direct association between attachment anxiety and disordered eating attitudes was also positive over and beyond the indirect effect through self-silencing. Conversely, the findings did not support self-silencing as a moderator between attachment (anxiety and avoidance) and disordered eating attitudes.

The significant mediation effects suggest that it is not only important to consider attachment anxiety and avoidance in understanding and treating disordered eating attitudes, but also that self-silencing plays a significant role in this association. In other words, the results imply counseling psychologists could work with women with attachment anxiety and avoidance to reduce their disordered eating attitudes by helping them recognize how their self-silencing in relationships contributes to these attitudes. Finally, limitations, future research, and detailed counseling implications are presented.

CHAPTER ONE: INTRODUCTION

Over the years, several studies have consistently provided evidence for the association between eating disorder symptoms and attachment-related variables such as low parental support (Calam, Waller, Slade, & Newton, 1990; Orzolek-Kronner, 2002), separation and attachment difficulties (Armstrong & Roth, 1989), and preoccupied/insecure attachment (Brennan & Shaver, 1995; Evans & Wertheim, 1998; Friedberg & Lyddon, 1996). However, the majority of studies have investigated these relations using measures of parental attachment (Ward, Ramsay, & Treasure, 2000) or outdated measures of adult attachment such as the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991). Furthermore, very few published studies to date have explored potential mediators and moderators of adult attachment and disordered eating. Finding mediators and moderators between these variables is particularly pertinent to the field of counseling psychology given that altering clients' attachment patterns is conceivably a longer-term endeavor (Bowlby, 1988). Focusing on mediators or moderators (i.e., silencing one's needs and emotions within relationships) could provide counselors with a more accessible and efficient means of alleviating attitudes associated with disordered eating.

At birth, infants are naturally oriented to maintaining connection with caregivers for survival. The sound of a mother's voice precipitates an infant glancing in her direction. Infant smiles beget smiles from adoring others. What drives behaviors such as these? According to Bowlby's (1969/1982) concept of proximity seeking behaviors, survival needs have resulted in the development of an evolutionary-based attachment behavioral system designed to maintain physical or psychological proximity to

caregivers. He suggested that five innate behavioral responses comprise the attachment system and serve to protect the child from danger by drawing caregivers closer. These five responses include smiling, sucking, crying, clinging, and following (Orzolek-Kronner, 2002). For example, if crying or following consistently reduces physical distance and increases comforting from a caregiver, this behavior is incorporated into an individual's attachment behavioral system. Throughout one's lifespan, attachment-facilitating behaviors are activated when one is under increased stress or in perceived danger (Bowlby, 1973; Shaver & Hazan, 1987).

There is a consensus that attachment is best described in terms of two relatively orthogonal latent dimensions: anxiety and avoidance (Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998). Individuals high on one or both dimensions suggest an insecure adult attachment orientation. In contrast, individuals with low on both dimensions suggest secure attachment (Brennan et al., 1998; Lopez & Brennan, 2000; Mallinckrodt, 2000). Theoretically, attachment anxiety is characterized by an excessive need for approval from others, a fear of interpersonal rejection or abandonment, and compulsive care-seeking. Attachment anxiety is likely to emerge when caregivers inconsistently respond to their child's emotional needs, resulting in a tendency to use hyperactivation strategies to exaggerate their emotional distress in order to elicit support from others (Brennan et al.). Conversely, attachment avoidance is defined by a fear of interpersonal closeness or dependence, suppression of one's attachment needs, and compulsive self-reliance (Brennan et al.). Attachment avoidance is likely to result when primary caregivers are unresponsive or ignore their child's emotional needs. As a consequence,

attachment avoidant individuals tend to use deactivation affect regulation strategies (e.g., actively repress conscious awareness of negative feelings) to avoid rejection from others.

Attachment and Disordered Eating Attitudes

Research has suggested that insecure attachment is a significant contributing factor to symptoms associated with eating disorders. In the last two decades, there has been a considerable amount of empirical research involving the use of parent–child relationship dynamics or attachment theory as conceptual frameworks for understanding the etiology of disordered eating. In terms of parent–child relationships, women with disordered eating reported their fathers as emotionally unavailable and highly critical of them (Cole-Detke & Kobak, 1996), the lack of parental care or empathy (Steiger, Van der Feen, Goldstein, & Leichner, 1989), or high parental hostility (Becker, Bell, & Billington, 1987). Also, M. E. Kenny and Hart (1992) reported that college students with secure parental attachment reported lower levels of weight and dieting preoccupation, bulimic behavior, and feelings of inadequacy compared to women with eating disorders.

Further underscoring the link between attachment and disordered eating, Armstrong and Roth (1989) found that 96% of the eating disordered inpatients reported a higher level of attachment anxiety. In contrast, Cole-Detke, and Kobak (1996) noted that 67% of females with eating disorder symptoms (e.g., drive for thinness) exhibited attachment avoidant tendencies. More recently, in a community sample of women Evans and Wertheim (2005) noted significant associations between eating disorder symptoms and both attachment anxiety and avoidance, with attachment anxiety showing a slightly stronger relation than avoidance. Interpreting these results, attachment theory could account for these findings in that the eating disorder symptoms may have evolved as a

means to divert attention away from possible futile attempts to gain direct support from unresponsive or inconsistent caregivers. An extreme focus on the pursuit of thinness, a central feature of eating disorders, could essentially be a way to reduce the anxiety an individual experiences when lacking support from others. Interestingly, this strategy may actually serve as an indirect means of eliciting support from others. For instance, without having to risk rejection by directly asking for what she needs (consistent love and support), a young woman with eating disorder symptoms may receive significant care and concern from alarmed parents trying to encourage healthy eating.

Similarly, Orzolek-Kronner (2002) expanded the concept of proximity seeking behaviors from Bowlby's (1969, 1973, 1980) attachment theory to disordered eating behaviors. She indicated that the feeding experience between infants and their mothers tends to engender closeness between them. Individuals may re-enact this experience through the refusal to eat to elicit their mother's feeding efforts and attention. Conversely, it is typical for children to frequently follow their parents to ensure their availability. Parents of individuals with bulimia are likely to follow them to reduce the potential for bulimic behaviors or look for any evidence for bingeing or purging. Orzolek-Kronner provided empirical evidence to confirm these hypotheses. For example, some female adolescents in their sample reported concern that the closeness they felt with their mothers would subside once the eating disorders symptoms abated. Ward, Ramsay, Turnbull, Benedettini, and Treasure (2000) also found that individuals with eating disorders scored significantly higher than those in the control group on compulsive care-seeking (e.g., you cannot leave me, I'm hungry for love [a feature of attachment anxiety]) and compulsive self-reliance (e.g., leave me alone, I do not need you [a feature of

attachment avoidance]). In conclusion, it seems that individuals with attachment avoidance and anxiety are more vulnerable to engage in disordered eating as a proximity seeking behavior to ensure the care and closeness they need from caregivers or significant others.

Self-Silencing and Disordered Eating Attitudes

Being female and residing in westernized countries significantly increases one's risk of developing eating disorder symptoms. In fact, the estimated female-to-male ratio of diagnosed eating disorders in the United States is 9:1 (Levine & Piran, 2004). What factors contribute to this elevated risk? One potential theoretical explanation is rooted in the findings from longitudinal research with young girls facilitated by Brown and Gilligan (1992). Interviewing young females over the course of several years, Brown and Gilligan observed striking similarities in the developmental crises the females encountered as they approached adolescence. Consistently, the researchers noted a tendency for adolescent females to repress their thoughts, feelings and needs to maintain relationships and avoid conflict with others. Based on these observations, Brown and Gilligan conceptualized a construct later termed "disavowal of the self" to describe young females' tendency to adopt a false sense of self to avoid conflict and rejection in relationships. Through continued work with women and young girls, Gilligan, Rogers, and Tolman (1991) noted disturbing patterns in which disavowing one's feelings and needs in the context of relationships often times resulted in the emergence of psychological distress (e.g., eating disorders or depression).

Although the disavowal of self, also referred to as loss of voice, construct emerged several years ago, Smolak and Munstertieger (2002) reported insufficient

investigation of this phenomenon and its association with poor psychological adjustment in females. The most frequently cited measure used to assess the loss of voice concept is the Silencing the Self Scale (STSS; Jack & Dill, 1992). Expanding Brown and Gilligan's (1992) original ideas, Jack and Dill introduced the silencing of self theory to explain the greater proportion of women rather than men who experience symptoms of depression. Jack (1991) posited that traditional female gender socialization, which influences females to put others' needs before their own and suppress their thoughts and feelings, places females at a higher risk of developing psychological distress. Supporting the self-silencing theory, studies have shown self-silencing to be a significant predictor of depression in women (Page, Stevens, & Galvin, 1996; Smolak & Munstertieger).

Jack and Dill's (1992) STSS involves four cognitive schemas (i.e., basing one's perception of self on external standards, presenting a compliant image while growing angrier inside, placing others' needs first in order to preserve relationships, and restricting self-expression to avoid relational conflict). Essentially, self-silencing is viewed as the repression of one's needs and emotions to protect interpersonal relationships or avoid conflict in relationships. Although the literature expanding the application of self-silencing theory to the etiology of eating disorders is limited, a few studies have examined this relation. For example, Geller, Cockell, Hewitt, Goldner, and Flett (2000) provided empirical evidence that females with anorexia reported a higher level of each self-silencing cognitive schema compared to those within the non-clinical and other psychiatric disorders control groups. Likewise, Zaitsoff, Geller, and Srikameswaran (2002) found that individuals with a greater degree of eating disorder symptoms had higher levels of self-silencing. Also, self-silencing contributed significant unique

variance to eating disorder symptoms (Zaitsoff et al.) or predicted bulimic behavior (Frank & Thomas, 2003) after controlling for body-related variables. Similarly, Smolak and Munstertieger (2002) noted significant correlations between self-silencing and disordered eating behaviors (e.g., dietary restraint, emotion-based eating, and binge-eating). More recent, Piran and Cormier (2005) reported self-silencing significantly predicted eating disorder symptoms ($r = .43$) as measured by the Eating Attitudes Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982).

Moreover, some studies have explored constructs theoretically similar to self-silencing (i.e., anger suppression) and disordered eating. Lerner, Hertzog, and Hooker (1988) proposed that self-silencing can be viewed in the form of internalized anger, as women learn that their expressions of anger are judged by others to be inappropriate and tend to push others away. Similarly, Hooker and Convisser (1983) suggested that, in attempt to suppress their anger, women may learn to engage in bingeing or emotion-based eating, essentially swallowing their anger, which then places them at higher risk for developing an eating disorder. They further hypothesize that overeating engenders feelings of guilt, providing a means to introject their anger instead of expressing it directly to others. Lending empirical support to this conceptualization, Waller et al. (2002) found women with eating disorders are significantly more likely to suppress anger than those with no eating disorder.

Attachment and Self-Silencing

According to attachment theory, individuals with attachment anxiety tend to fear abandonment in relationships and hold negative working models of self. It is possible that they may devalue their needs and place others' needs first to preserve relationships and

avoid abandonment or rejection. It is also possible that they may initially display proximity seeking behaviors (e.g., cling to people) to ensure others' responsiveness and availability. However, their frequent hyperactivation strategies may eventually drive people away because of their dependence and neediness. In order to maintain the relationship and avoid abandonment, they may continue to place others' needs first (i.e., pleasing others) but grow angry and frustrated inside and consistently suppress their emotions. Thus, it is possible that attachment anxiety may be positively related to self-silencing from attachment theory perspective.

Conversely, individuals with attachment avoidance may hold a different underlying reason or motivation for self-silencing. Individuals with attachment avoidance are likely to hold a negative internal working model of others. They are also likely to adhere to compulsive self-reliance (this can be defensive or false self-reliance) to avoid the anticipation of interpersonal hurt. In addition, they tend to use the deactivating affect regulation strategies (e.g., actively repress conscious awareness of needs or negative emotions; for a review, see Lopez, 2001; Pietromonaco & Barrett, 2000). This strategy can be viewed as a coping mechanism to protect themselves from possible psychological pain associated with neglect or rejection from others. For instance, individuals with attachment avoidance may restrict their self-expression in order to maintain superficial connections with others; thereby reducing the potential for interpersonal conflict or hurt. From the above theoretical reasoning, attachment avoidance is also likely to be positively associated with self-silencing.

To date, only one published study has simultaneously examined attachment and self-silencing. Remen, Chambless, and Rodebaugh (2002) found that attachment anxiety

is significantly related to self-silencing for college women and men. However, they found that attachment avoidance is significantly related to self-silencing for men only. These results of only partially supporting the theoretical prediction might be related to the use of only one item for measuring attachment avoidance (i.e., a categorical variable), which may fail to capture the complexity of attachment avoidance. In attachment literature, the concept of attachment avoidance tends to be more difficult to assess than attachment anxiety (Fraley, Davis, & Shaver, 1998). However, using a dimensional measure of attachment might be more sensitive to detect the positive association between attachment avoidance and self-silencing.

One additional study exploring constructs similar to self-silencing (e.g., anger suppression) and attachment anxiety and avoidance (e.g., unhealthy core beliefs) provides additional support for the association among these variables. Specifically, Waller et al. (2002) found a significant correlation between anger suppression and unhealthy core beliefs, including fear of abandonment (i.e., a feature for attachment anxiety; $r = .39$), distrust of others (i.e., a feature for attachment avoidance; $r = .28$), and inability to cope without others' support (i.e., a feature for attachment anxiety; $r = .40$) in women with eating disorder symptoms compared to women without these symptoms. Based on the above theoretical perspective and partial empirical support, those with attachment anxiety are likely to be silent because of their tendency to place others' needs over their own needs in order to avoid interpersonal rejection. Similarly, those with attachment avoidance are likely to be silent because of their tendency to suppress their feelings in relationships in order to maintain superficial connections with others to prevent interpersonal hurt.

Attachment, Self-Silencing, and Disordered Eating Attitudes

Based on the above literature review, there are established direct associations among attachment, self-silencing, and disordered eating attitudes. However, some researchers have begun to move beyond the examination of direct associations with disordered eating to examine mediation or moderation effects. Regarding self-silencing as a mediator, Murray, Waller, and Legg (2000) found that internalized shame was a mediator for the relation between family dysfunction (e.g., paternal overprotection) and bulimic attitudes in a female college sample. Shame is characterized by a sense of feeling rejected or anticipating rejection from others as well as low self-worth (Murray et al.). Similarly, self-silencing is the anticipation of rejection or conflict if one does not suppress their needs and emotions in close relationships. Given the overlap in these concepts, it is possible that self-silencing might also serve as a mediator between adult attachment anxiety or avoidance and disordered eating attitudes.

In terms of moderation effects, only one published article to date examines the moderating effects between parent-child interactions and eating disorder symptomatology. Jones, Harris, and Leung (2005) found that beliefs that one should meet others' needs (i.e., self-sacrifice), one has no control over external threats (i.e., vulnerability to harm), and one is isolated from others (i.e., social isolation) moderated the relations between paternal rejection and drive for thinness or body dissatisfaction. In other words, a stronger belief of needing to meet others' needs significantly enhanced the relation between perceived paternal rejection and body dissatisfaction; and a stronger belief of one's vulnerability to harm and isolation from others significantly intensified the relation between perceived paternal rejection and drive for thinness. Given that self-

silencing suggests the tendency to focus on the needs of others, it is likely that self-silencing would also serve as a moderator between attachment and disordered eating attitudes. Considering the limited attention to mediating and moderating variables in the eating disorder literature, it is important to explore whether self-silencing may be acting as either an intermediate link in a causal chain (i.e., mediator) or as a variable that alters the strength of the association between attachment and disordered eating attitudes (i.e., moderator).

In conclusion, this study tested two main sets of hypotheses. First, self-silencing would mediate the link between attachment anxiety or avoidance and disordered eating attitudes (see Figure 1). Second, self-silencing would moderate (e.g., intensify) the relations between attachment anxiety or avoidance and disordered eating attitudes (see Figure 2). In other words, the magnitude of the increase in disordered eating attitudes for each unit of increase in attachment anxiety and avoidance would be greater as self-silencing increases. Furthermore, there were three specific hypotheses. First, it was hypothesized that attachment anxiety and avoidance would be positively related to disordered eating attitudes. Second, self-silencing would be positively associated with disordered eating attitudes. Third, attachment anxiety and avoidance would be positively related to self-silencing. If the results supported the above hypotheses, clinicians could work with women with disordered eating attitudes to help them understand how their attachment in relationships are positively associated with these attitudes through self-silencing and how self-silencing may intensify the relation of attachment and unhealthy eating attitudes. Subsequently, these women could decrease their self-silencing to lessen disordered eating attitudes.

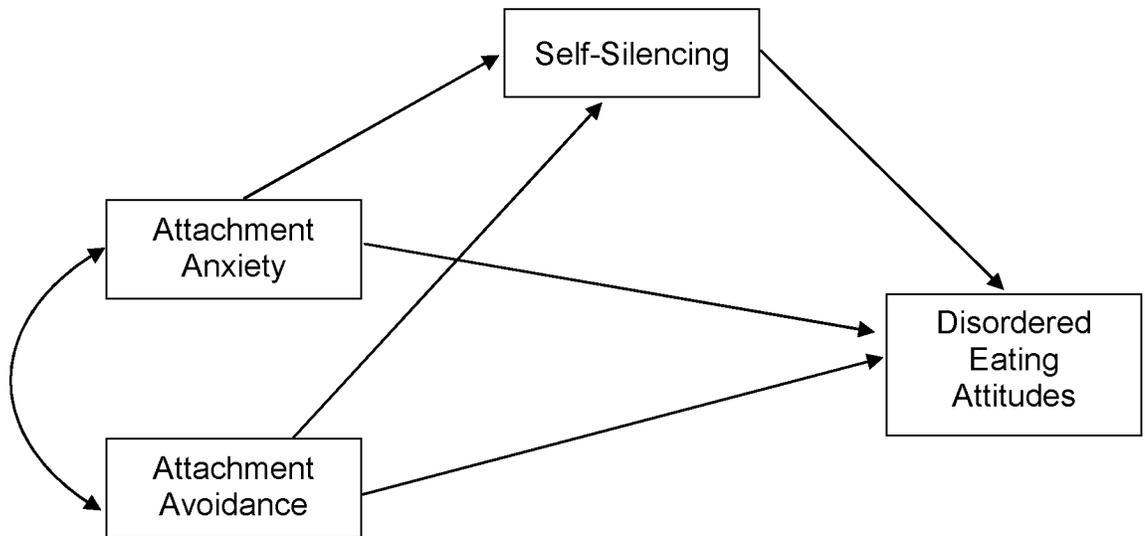


Figure 1. The Hypothesized Mediation Model

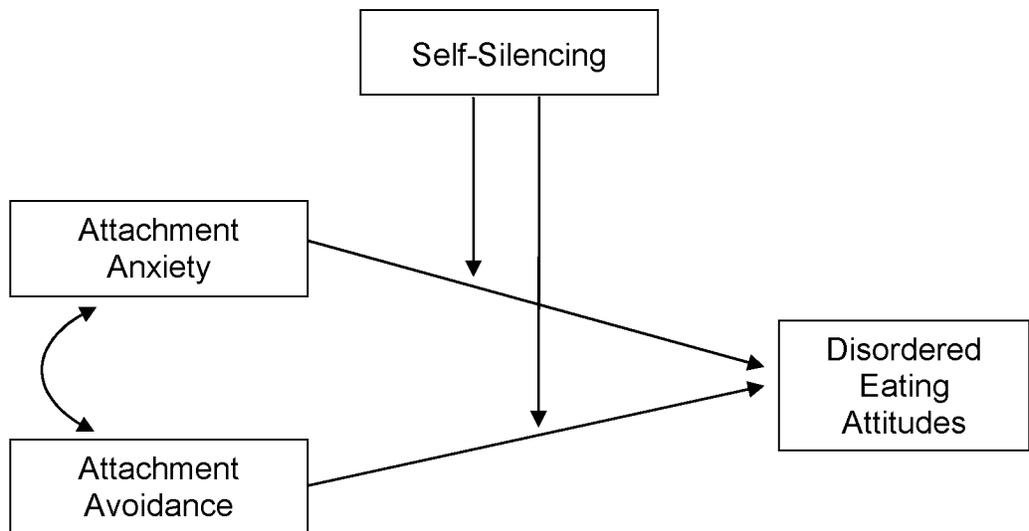


Figure 2. The Hypothesized Moderation Model

CHAPTER TWO: LITERATURE REVIEW

The present literature review will first explore the background, concepts, and grounding theory of attachment and provide a brief account of the measurement and rationale for the attachment measure chosen for this study. Next, disordered eating attitudes as they relate to attachment theory will be discussed, followed by a review of how disordered eating attitudes have been measured in the past and how they will be measured in the present study. Then, the background, concepts, and grounding theory of self-silencing will be explored, along with a description of measurement and justification for the chosen self-silencing measure. This section will be followed by a review of the literature pertinent to disordered eating attitudes as they relate to self-silencing theory. Finally, the conceptual links between attachment and self-silencing theories will be explored. The chapter will conclude with an overall discussion of how the three variables in this study, attachment, self-silencing, and disordered eating attitudes have been linked in previous literature and how they are linked in theory in the present study.

Attachment Theory

Disillusioned with the application of psychoanalytic theory to the understanding of infant–caregiver attachment, Bowlby (1956, 1969/1982, 1973, 1979, 1980, 1988) proposed that attachment is not simply a by-product of an underlying physiological drive for hunger satiation. Instead it is a naturally selected unitary biological system designed to support the survival of individuals’ genes. To support this contention, Bowlby noted striking observations in his work with infants that ran counter to the prevailing zeitgeist at the time, which declared infant–caregiver attachment arises from the infant’s association between the mother and pleasurable experiences of being fed. Specifically, he found

instances in which infants became attached to abusive mothers and not to surrogate caregivers who provided them with consistent sustenance (Bowlby, 1956). Further underscoring the theoretical limitations of traditional psychoanalytic theory with respect to infant–caregiver attachment, findings parallel to Bowlby’s arose from Harlow’s (1958) studies of baby rhesus monkeys. During stressful periods, Harlow observed baby monkeys’ preferences for a faux cloth-covered mother as opposed to the wire mesh substitute mother who supplied food, suggesting an innate yearning for emotional safety and security beyond mere nourishment needs.

Based on Bowlby’s studies of infant–mother interactions and supporting evidence from animal studies (Harlow, 1958) Bowlby proposed the existence of an innate attachment behavioral system specifically intended to maintain proximity with caregivers for the purpose of protection against internal and external threats to survival. Although this attachment system is inherent in all infants, behavioral manifestations of this system will vary significantly depending upon which infant proximity seeking behaviors elicit closeness from the caregiver. For example, the act of following the caregiver may result in closer contact in one relational context, but not necessarily in another. Repeated interactions between the infant and caregiver are thought to give rise to what Bowlby termed internal working models of attachment figures and the self. These internal working models form cognitive templates from which children anticipate future events and make decisions with respect to the functionality of behaviors that meet their emotional and physical needs.

Pioneering efforts to describe and study individual differences in attachment, Mary Ainsworth, a student of Bowlby’s, began naturalistic observations of young

children and their mothers. With the goal of identifying behavioral markers indicative of a specific type of attachment bond, Ainsworth devised the Strange Situation as a method to activate the attachment system. This method introduces unfamiliar and therefore stress-inducing stimuli into the young child's environment, attempting to reveal attachment behaviors that give clues as to the child's internal working models of the caregiver and the self. Unique patterns emerged from Ainsworth's experiments and resulted in the identification of three forms of attachment: secure, avoidant, and resistant (i.e., anxious) (Ainsworth, Blehar, Waters, & Wall, 1978).

Within Ainsworth's results, secure attachment was characterized by a clear preference for emotional comforting by the mother when reunited after a brief separation, yet at the same showing some degree of ease when alone with a stranger. Following overt distress from the separation phase of the experiment, securely attached infants sought reassurance from their mothers, but were able to readily return to exploring their surroundings through play. These infants exhibited working models in which caregivers can be relied upon to respond to one's emotional needs. Thus, the world is perceived as safe to explore and the self is capable of effectively communicating one's needs and worthy of support from others. Unlike their secure counterparts, infants exhibiting avoidant attachment were observed to refrain from initiating mutual sharing with their mothers (i.e., showing toys). Avoidant children were also less apt to show visible signs of distress when separated from their mothers and distanced themselves from their mothers upon reunion. In addition, these children tended to avoid eye contact with their mothers even when picked up by them. These children, undoubtedly, learned quickly that others are unreliable and their needs are unimportant to others.

The third attachment style, resistant or anxious, was exemplified by children who sought reassurance from their mothers before separation ensued. Upon separation, these children were inconsolable and even when their mothers returned they continued to cry (drawing the mother closer) yet were not soothed by her presence. These children also showed angry protests when their mothers attempted contact, demonstrating the ambivalence inherent in this form of attachment. Ainsworth noted mothers of anxiously attached children were inconsistent, vacillating between overly intrusive interactions to inattentive. As a result, these children appeared to have learned that caregivers are unpredictable and the self as ineffective with respect to communicating and getting their needs met by others.

As children mature, internal working models based upon repeated interactions with early caregivers continue to inform how others and the self are perceived. Although it is possible that later interpersonal experiences can alter internal working models, these foundations of attachment can be highly resistant to change especially when the attachment system was intensely activated and not diminished or even punished by primary caregivers (Bowlby, 1980). Regardless of attachment continuity, over time relationships beyond the parent-child dyad take on greater significance and become central to one's emotional well-being and security. Attachment functions once equated with the caregiver are gradually shifted to peers and sexual partners. However, attachments with primary caregivers are never entirely replaced by other attachment figures. Attachment relationships in adulthood are considered to be governed by the same principles as parent-child attachment, with a couple of qualitative exceptions. For instance, adult attachment ideally involves reciprocity of support, which does not

necessarily need to come in the form of physical contact as reflected in parent–child attachment formation (Hazan & Shaver, 1994).

Measuring Adult Attachment

Based on Bowlby's and Ainsworth's research, several measures of adult attachment have emerged beginning with George, Kaplan, and Main's (1985) Adult Attachment Interview (AAI). Prior to the introduction of the AAI, attachment research used primarily non-verbal behavior as representations of internal working models. During the 1980s, however, studies were showing strong correlations between parents' attachment style with their caregivers and the quality of attachment exhibited by the same parents' infants in the Strange Situation experiments several years earlier (Ainsworth et al., 1978). In other words, parents who were insecurely attached to their caregivers were more likely to have insecurely attached children of their own. Similar results were noted for the other attachment orientations. These findings set the stage for the development of verbally based empirical measures that quantified internal working models to assess attachment style. Categorizing adults as secure, dismissive, preoccupied or disorganized, the underlying premise of the AAI is that adult attachment style can be determined by examining the quality and content of early childhood recollections.

Theorizing romantic love was essentially an attachment process, Hazan and Shaver (1987) proposed that infant attachment styles could also be applied to close relationships in adulthood. Subsequently, they developed a three-item self-report measure in which respondents were asked to choose which vignette best described how they act and experience romantic relationships. Corresponding to the Strange Situation classification system, the vignettes included descriptions of secure, anxious, and avoidant

attachment styles. Although this forced-choice measure overlapped considerably with the AAI categories, Bartholomew (1990; Bartholomew & Horowitz, 1991) noted discrepancies in the conceptualization of avoidant attachment. Specifically, Hazan and Shaver (1987) identified avoidant attachment by the individual's felt distress (e.g., "I am nervous when anyone gets too close."). Conversely, the AAI conceptualized avoidance as denial of relational distress and labeled this style as dismissing.

In response to this discrepancy, Bartholomew (1990; Bartholomew & Horowitz, 1991) suggested the addition of a fourth adult attachment style. The proposed categories included secure, preoccupied (i.e., anxious), fearful, and dismissing. Fearful and dismissing were considered two forms of avoidance. Furthermore, the four styles can be differentiated from one another on the basis of underlying internal working model configurations. Internal working models are essentially mental representations of the self and others as either positive or negative. The model of self reflects one's perceived self-worth and confidence and is directly related to one's reliance on others for reassurance and validation. The model of others indicates the degree to which others are considered reliable sources of support, determining one's proclivity to turn to others for reassurance. Fearful avoidant individuals desire intimate relationships, but are concerned about being hurt and uncomfortable with intimacy, whereas dismissing individuals are uninterested in close relationships and prefer complete self-reliance. Incorporating the fourth attachment style, Bartholomew and Horowitz developed the Relationship Styles Questionnaire (RSQ), a 30-item self-report inventory.

In attempts to improve the measurement of adult attachment, Brennan et al. (1998) factor analyzed 60 adult attachment measures with a total of 323 items from over

1,000 respondents. As a result, they found two underlying factors (anxiety and avoidance), which corresponded to the two dimensions of model of self and model of others. In other words, the model of self and anxiety relates to fear of abandonment, whereas the model of others and avoidance relates to level of distrust of others. Following this factor-analytic study, Brennan and colleagues developed the 36-item Experiences in Close Relationships scale (ECR). The ECR is a self-report inventory assessing a respondent's position along the relatively orthogonal dimensions of attachment anxiety and avoidance. Due to the extensive research conducted in the development of the ECR, it was selected as the measure of adult attachment in the present study.

Attachment and Disordered Eating Attitudes

Attachment theory, with its broad applicability to understanding not only how individuals relate interpersonally but also the etiology of various forms of psychological distress, has generated a growing body of research in the eating disorder literature (for a review, see Ward, Ramsay, & Treasure, 2000. Bowlby (1973, 1988; Lopez & Brennan, 2000) described the attachment system as a biological mechanism manifested in the form of proximity seeking behaviors designed to elicit support and nurturance in times of distress. As a result of repeated activation and resolution of the attachment system in the context of the parent-child relationship, an individual develops internal working models of self and others, which continue to guide behavior in adult relationships. Those with insecure attachment tend to either use hyperactivating or deactivating strategies to reduce psychological distress and manage their preferred degree of physical and emotional closeness with others. Although these strategies serve to meet individuals' emotional

needs, only short-lived relief results, with increased distress in the long run (Cassidy & Kobak, 1988).

A considerable amount of literature spanning over three decades suggests a significant relation between attachment disturbances and disordered eating (for a review, see Ward, Ramsay, & Treasure, 2000). Much of the empirical research exploring this relation has focused on the association between adolescents' and adults' recollection of their relationship with their primary caregivers and eating disorder symptoms. Findings from relevant studies using female clinical samples have shown links between preoccupied attachment and symptoms of anorexia and bulimia (Friedberg & Lyddon, 1996); avoidant attachment and mixed eating disorder symptoms (Fonagy et al., 1996); and dismissive attachment and intake restriction in anorexia, preoccupied attachment, and bingeing/purging (Candelori & Ciocca, 1998). Studies with non-clinical samples have yielded similar results. For example, research in this domain includes significant relations between deactivating strategies and mixed eating disorder symptoms (Cole-Detke & Kobak, 1996), anxious and avoidant attachment, and mixed eating disorder symptoms (Brennan & Shaver, 1995).

Seemingly apparent contradictions exist in the literature cited above. Specifically, both avoidant and anxious attachment were implicated as correlates of disordered eating patterns but not consistently across studies. Although there may be a number of possible reasons for these discrepancies, it is most likely attributable to methodological differences in how the eating disorder symptoms were classified in these various studies. For instance, Brennan and Shaver (1995) did not differentiate between symptoms specific to anorexia (e.g., restricting) and those that are common to anorexia and bulimia (e.g.,

bingeing and purging). Conversely, Candelori and Ciocca (1998) did distinguish these symptoms when examining correlations with attachment styles.

Expanding this line of research to adult attachment, Evans and Wertheim (2005), using the ECR, compared samples of women with symptoms of bulimia and those without. They found that women with bulimic symptoms reported higher levels of anxiety, $F(3, 220) = 13.12, p < .001$, and avoidant attachment, $F(3, 220) = 2.70, p < .05$, than the symptom-free group. Furthermore, attachment anxiety is more likely to discriminate those with eating disorders and those without more than attachment avoidance. Likewise, Broberg, Hjalms, and Nevonen (2001) compared samples of women with and without eating disorder symptoms and found anxious and avoidant attachment styles were over-represented in the eating disorder groups. More specifically, 55% of women with a diagnosed eating disorder compared to only 26% of those without a history of disordered eating reported insecure attachment patterns. This study did not report the proportion of attachment anxiety versus avoidance among the participants with symptoms and insecure attachment. Conceptualizing these results from an attachment theory framework, it is plausible that eating disorder symptoms, including but not limited to extreme dietary restrictions and compulsive bingeing and purging, represent proximity seeking behaviors that serve to increase one's emotional and physical closeness with significant others.

Supporting this idea, Orzolek-Kronner (2002) compared samples of adolescent females with and without eating disorder symptoms ($N = 108$), finding that those with symptoms endorsed a significantly higher amount of proximity seeking behaviors toward their parents. More specifically, the females with eating disorder symptoms perceived a

greater degree of psychological closeness with their caregivers as linked to the onset of symptoms. In a similar vein, Ward, Ramsay, Turnbull, et al. (2000) noted women with eating disorder symptoms exhibited a higher degree of compulsive care-seeking and compulsive self-reliance than normal controls. This finding suggests that these women may be demonstrating a combination of hyperactivating and deactivating attachment strategies. Here again, as in the studies discussed earlier, this mixture of inferred hyperactivating and deactivating strategies could be understood by the presence of mixed clinical features of anorexia and bulimia in the Orzolek-Kronner and Ward, Ramsay, Turnbull, et al. samples.

Interestingly, researchers disagree in terms of the utility of reconciling these discrepancies in the eating disorder literature. On one side of the debate, it is argued that searching for more evidence to solidify the ties between attachment orientations and certain eating disorder types is unlikely to result in meaningful information given that insecure attachment is linked to many forms of psychological disturbances in general. Others suggest it may be helpful to further examine interpersonal functioning uniquely linked to anorexic and bulimic symptoms as a means to improve diagnostic classification and treatment (for a review, see Ward, Ramsay, & Treasure, 2000).

Clearly, the association between adult attachment and disordered eating warrants further research given that only three published studies have examined this relation thus far. In the present study, it is anticipated that a combination of restricting, bingeing, and purging symptoms are likely to surface within the selected college sample of females. However, it is expected that attitudes as opposed to behaviors associated with disordered eating will be more prevalent within this non-clinical sample. Moreover, this study will

be using a composite score reflecting general attitudes and behaviors associated with disordered eating. As such, the present study is not seeking to differentiate between anorexic and bulimic symptoms and specific adult attachment patterns. Given studies suggest attachment avoidance is specifically related to anorexic restriction (Candelori & Ciocca, 1998) and anorexia-related drive for thinness (Cole-Detke & Kobak, 1996) and the prevalence rates of anorexia and bulimia in Western countries are 0.5% and 2%, respectively, it is expected attachment anxiety will show a stronger correlation with disordered eating attitudes than attachment avoidance in the present study.

Measuring Disordered Eating Attitudes

The present study seeks to isolate attitudes related to disordered eating. In doing so, there were several measures assessing behavioral and psychological traits associated with both types of eating disorders (anorexia nervosa and bulimia nervosa) available. Thus, selecting a suitable measure was a challenging endeavor. This section will explore two of the most popular measures of disordered eating attitudes and provide a justification for the measure chosen for this study.

The first widely used self-report instrument measuring behavioral and cognitive patterns associated with eating disorder symptoms was the Eating Attitudes Test-40 (EAT-40), which was developed by Garner and Garfinkel in 1979 using a clinical sample ($N = 300$). The EAT-40 was later modified to devise the Eating Attitudes Test-26 (EAT-26; Garner et al., 1982), which is the measure chosen to assess disordered eating attitudes in the present study. At the time of the EAT-40 development, bulimia nervosa was not a recognized diagnosis within the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association [APA], 1968). Thus, the EAT-40 was originally

conceptualized as a measurement of attitudes and behaviors associated with anorexia nervosa, the only type of eating disorder classification at that time. In reality however the items included in the EAT-40 assessed symptoms that have since been incorporated into the diagnostic category of bulimia (DSM-IV; APA, 1994).

The EAT-40 consisted of 40 items measuring dieting, bulimic symptoms, and oral control. The original factor analysis revealed three main latent factors, with 14 items not adequately loading on any factor. These 14 items were excluded, resulting in 26 items that comprise the EAT-26 (Garner et al., 1982). The EAT-26 requests respondents to rate on a 6-point Likert-type scale how often each disordered eating attitude or behavior applies to them, ranging from *always* (3) to *never* (0). Garner et al. (1982) recommended that the item responses never, rarely, and sometimes receive a score of 0 and the responses often, very often, and always receive scores 1, 2, 3, respectively. However, recent studies have used scores ranging from 6 (*always*) to 1 (*never*) to prevent a skewed distribution (e.g., Tylka & Subich, 2004). Following this reasoning, the present study will use scores ranging from 6 (*always*) to 1 (*never*). Supporting the convergent validity of this instrument, Berland, Thompson, and Linton (1986), also using a clinical sample, demonstrated strong EAT-26 total score correlations with the EAT-40 and Eating Disorder Inventory, Drive for Thinness subscale (EDI; Garner, Olmsted, & Polivy, 1983), $r = .90, .77$, respectively. Furthermore, Mazzeo (1999) found the EAT-26 and the Bulimia Test-Revised (BULIT-R; Thelen, Farmer, Wonderlich, & Smith, 1991) total scores were highly correlated as well in a non-clinical sample ($r = .79$). Although the EAT-26 has been described as a measure of anorexia and bulimia, this inventory was not empirically validated in a non-clinical sample for these purposes until fairly recently.

In a college sample of women, Mintz and O'Halloran (2000) found the EAT-26 total score discriminated between those with and without an established eating disorder diagnosis with 90% accuracy. Moreover, the mean score differentiated between diagnosed, symptomatic and asymptomatic women. As such, these results supported the use of this scale as a continuous measure of disordered eating in non-clinical samples. Likewise, Mazzeo (1999) provided additional psychometric support for using the EAT-26 as a general measure of disordered eating in a college sample (Cronbach's $\alpha = .92$). Although the original developers reported a three factor solution for the EAT-26, a recent study has suggested a five factor solution may be more appropriate (Doninger, Enders, & Burnett, 2005). However, given the present study is seeking a general measure, the factor structure discrepancy among these studies does not preclude the use of the EAT-26 total score.

Another popular self-report measure of disordered eating attitudes and behaviors is the Eating Disorder Inventory-2 (EDI-2; Garner, 1991). Combined with its predecessor, the EDI (Garner et al., 1983), these scales have been used in over 400 published studies (Espelage et al., 2003). Using data from the original sample, the only change from the EDI to the EDI-2 was the addition of three provisional subscales. One of central strengths of the EDI-2 is that it contains subscales assessing eating and weight as well as psychological and personality correlates of disordered eating. More specifically, the EDI-2 includes 91 items rated according to a 6-point Likert-type scale and has three subscales measuring attitudes and behaviors about weight, eating, and body shape; five subscales assessing personality constructs; and three provisional subscales tapping other psychological characteristics. Respondents are asked to rate the degree to which each

item applies to them, ranging from *always true of me* (3) to *never true of me* (0).

Furthermore, many researchers have found the EDI and the EDI-2 particularly useful in differentiating between clinical and sub-clinical respondents (Tylka & Subich, 1999).

Studies assessing the psychometric properties of the EDI-2 include mixed results. For example, Raciti and Norcross (1987) reported a low correlation between the Bulimia subscale of the EAT-26 and the EDI Body Dissatisfaction subscale ($r = .35$), which in theory should be strongly related. However, internal consistency alphas were in an acceptable range from .80 to .92 among the eight main subscales. The authors did not report the Cronbach alpha for the total score. Furthermore, results from confirmatory factors analysis only partially supported the originally proposed eight factor solution, suggesting cautionary interpretations of the individual subscales (Espelage et al., 2003). Similarly, Klemchuk, Hutchinson, and Frank's (1990) factor analytic study yielded a six factor model, accounting for only 41% of the total variance and further recommended more studies to examine the use of two main factors for the purposes of disordered eating screening. Moreover, Garner (1991) recommended the subscales be used individually as the low intercorrelation between subscales suggests they are measuring distinct constructs instead of a general measure of eating disorder symptomatology.

In conclusion, the EAT-26 was chosen to assess the construct of disordered eating attitudes in this study. This selection was made for several reasons. First, this instrument is supported in the literature as a general measure of disordered eating in a college sample. Second, the brevity of the EAT-26 will minimize the response burden and increase the likelihood of acquiring more complete data. Finally, this measure has demonstrated strong internal reliability and construct validity.

Self-Silencing Theory

Grounded in the self-in-relation model of female identity development (Chodorow, 1978; Gilligan, 1982; Jack, 1987a; Jordan, Kaplan, Miller, Stiver, & Surrey, 1991; Miller, 1976) and influenced by collaborative research with her mentor, Carol Gilligan, examining females' loss of self in relationships, Jack (1987a, 1987b, 1991) developed the self-silencing theory of depression in women. The following review of the literature in this area will highlight theoretical propositions, concepts, and research pertinent to the understanding of self-silencing theory and its application to psychological distress experienced by females. First, self-in-relation theory will be explored followed by a synopsis of research findings and conclusions set forth by Gilligan and her colleagues (Brown & Gilligan, 1992; Gilligan, 1982; Gilligan et al., 1991). Lastly, concepts and research related specifically to self-silencing theory will be examined.

In contrast to other cultures around the globe that behold a sense of interdependence as the sociocultural ideal, Western societies, particularly the United States, exalt individual autonomy and achievement as the sine qua non of emotional and relational well-being. Consequently, widely accepted psychological theories of identity and personality development, including the Eriksonian model (Erikson, 1968), arose from these cherished Western values espousing rugged individualism. Within the Erikson model of identity development, it is suggested that during adolescence individuals must separate psychologically from their parents and not rely upon them to influence their personal values in order to achieve a healthy sense of self. Proponents of the self-in-relation model (Chodorow, 1978; Gilligan, 1982; Jack, 1987a; Jordan et al., 1991; Miller, 1976) fundamentally disagree with the application of this Eriksonian tenet to female

identity development. Furthermore, Gilligan et al. (1991) contended that the tendency for adolescent females to denigrate their own perceptions and beliefs contradicts Erikson's conceptualization that separation leads to a stronger sense of self.

Unlike Erikson's model, the self-in-relation model does not view psychological individuation from one's parents as a precursor to healthy identity formation in women. Instead, the self-in-relation model posits that female emotional well-being emerges from the ability to maintain mutually-supportive relationships in which there is authentic, reciprocal expression of emotions and needs (Carr, Gilroy, & Sherman, 1996). That being said, what happens for young females who live in a culture that undermines the importance of maintaining psychological connectedness to others as a means to develop a sense of self, but at the same time imposes social pressures to be the caretaker of others? Herein lies the developmental paradox facing young women as they enter adolescence. Gilligan et al. (1991) proposed that disavowing the self, or the equivalent of losing one's voice, in relationships is perhaps an attempt to resolve this developmental crisis. Meaning, by silencing one's emotions and thoughts in relationships young women are avoiding conflict to maintain connection, but at the same time this suppression also serves to protect the sense of self from others' criticism. In theory, the self and the relationship are preserved. On the other hand, a false relational self evolves which precludes true intimacy within relationships, denying young females the mutual authenticity needed for self-growth and emotional well-being.

Extending the study of women's development to that of younger females, Brown and Gilligan (1992) laboriously interviewed over 100 girls for four years during the late 1980s to capture their experiences on the journey from childhood to womanhood. This

extensive work resulted in interview transcripts laden with anecdotes of confusion about and silencing of one's emotions and perceptions once reaching adolescence. Girls who had once spoke so cogently and openly to others about their inner experiences began to suppress and doubt aspects of themselves in the face of possible relationship upheaval. These researchers concluded that as females become immersed in the social construction of reality (i.e., social pressures for females to suppress negative emotions) they begin to exhibit a façade of compliance and distrust their own experience of the world to inform their emotions, thoughts, and actions. Furthermore, this developmental process, which Gilligan referred to as disavowal of the self, was hypothesized to contribute to delinquency, teen pregnancy, and eating disorders in females.

Expanding Gilligan's ideas, Jack (1987b, 1991) suggested that underlying cognitive schemas, derived from the culture, regarding gender-specific interpersonal behaviors that build and sustain close relationships place women at a greater risk of developing depression. She hypothesized that the loss of voice women endure in the context of relationships endorsing traditional female roles precipitates depressive symptoms. Parallel to Gilligan's socially-constructed disavowal of self concept, loss of voice is characterized by women's suppression of their emotions and needs, which contributes to lowered self-esteem and eventually a feeling of losing one's sense of self. In a longitudinal study with 12 women experiencing clinical depression, Jack (1987b, 1991) noted consistent themes of sacrificing one's needs and denial of emotions that were viewed as contradictory to being seen as a selfless caretaker of others. She observed these women, as a consequence, becoming increasingly angry and resentful, holding these intense negative emotions inside while exhibiting a compliant self within relationships.

The schism between the inner self's feelings and outer conforming self's behaviors are theorized to perpetuate a psychological struggle whereby anger is turned toward the self for allowing inauthenticity to permeate relationships. Fearing the loss of close relationships and unaware of other strategies to alter interpersonal patterns, women become increasingly hopeless and alienated from themselves, resulting in the development of depressive symptoms. According to the self-silencing theory, the degree to which women endorse cognitive schemas related to traditional female role expectations interacts with societal and interpersonal pressure to conform to these roles thereby increasing women's vulnerability to depression.

Supporting the self-silencing theory of depression in women, in three separate samples of White women, including college students, residents in battered women's shelters, and mothers who abused drugs during pregnancy, Jack and Dill (1992) showed significant correlations between STSS and Beck Depression Inventory (BDI; Beck, 1978) scores ($r = .52, .50, .51$, respectively). Since this original study, several researchers also have found evidence to support self-silencing as a significant predictor of depression (Carr et al., 1996; Page et al., 1996; Smolak & Munstertieger, 2002) as well as eating disorder symptoms (Geller et al., 2000; Smolak & Munstertieger; Zaitsoff et al., 2002).

Measuring Self-Silencing

Currently, only two inventories, the STSS and the Saying What I Think Around Others scale (SWIT; Harter & Waters, unpublished manuscript), are used to measure females' loss of voice in relationships. Although both inventories assess the level of voice or tendency to self-silence in relationships, the SWIT contains subscales that are context specific to relationships with parents, teachers, female students, and male students,

whereas, the STSS measures cognitive schemas tied to the adherence to traditional feminine roles in intimate relationships. In addition, some of the SWIT items are directly geared toward adolescents (e.g., “Some teenagers share what they are really thinking with [particular other.]). Respondents are asked to rate on a four-point scale how closely the items describe themselves. Given the present study intends to sample from a college population, the STSS was chosen to measure self-silencing in a manner more consistent with participants’ developmental level.

Derived from the longitudinal study’s results, Jack and Dill (1992) developed the 31-item STSS to test their proposed self-silencing theory of depression in women. Originally, the STSS consisted of 41 items; however, 10 items were later dropped because they did not consistently vary with the four identified latent factors termed eternalized self-perceptions, care as self sacrifice, silencing the self, and divided self. Collectively, these four rationally derived subscales tap tendencies to suppress needs, emotions, and thoughts to build and maintain close relationships. Confirmatory and exploratory factor analysis supported a four factor solution (Remen et al., 2002) and strong Cronbach alphas for the total STSS score, ranging from .86 to .94 in samples of White and African American women (Carr et al., 1996; Jack & Dill, 1992).

Self-Silencing and Disordered Eating Attitudes

Empirical literature expanding the study of the internalization of traditional feminine roles and self-silencing to the understanding of symptoms associated with disordered eating in females is a relatively new area of inquiry, with only five published studies found. Two of these studies included non-clinical samples of Canadian women (Frank & Thomas, 2003; Piran & Cormier, 2005), one with a clinical sample of Canadian

women (Geller et al., 2000), one used a sample of Canadian high school females (Zaitsoff et al., 2002), and one study used a United States (U.S.) sample of college females (Smolak & Munstertieger, 2002). Clearly, additional research using U.S. samples would result in valuable contributions to the extant literature.

Researchers have suggested that women with disordered eating endorse a stronger adherence to traditional female gender roles than those without eating disorder symptoms (Martz, Handley, & Eisler, 1995). Likewise, Rost, Neuhaus, and Florin (1982) noted women with bulimia experience greater levels of stress from rigid compliance to feminine gender roles, which then triggers binge-eating episodes. Central features of traditional feminine gender roles include suppression of feelings, thoughts, and needs to be the embodiment of the ideal caretaker of others and nurturer of close relationships (i.e., self-silencing; Jack, 1987b, 1991). Several studies support the expansion of the self-silencing theory of depression (Jack, 1987b, 1991) in women to the development of eating disorder symptomatology in females.

More specifically, in a U.S. sample of undergraduate women ($N = 146$), Smolak and Munstertieger (2002) noted STSS total scores were significantly correlated with dietary restraint ($r = .52$), anger-triggered eating ($r = .32$), anxiety-triggered eating ($r = .23$), depression-triggered eating ($r = .29$), and binge-eating ($r = .44$). Furthermore, multiple regression analyses showed STSS Externalizing Self-Perceptions subscale scores predicted binge-eating ($R^2 = .25, p < .001$) and the STSS Silencing of Self subscale scores predicted restrained eating ($R^2 = .28, p < .0001$). Based on these results, it is possible that emotion-based eating serves as a means of suppressing feelings deemed counter to the female caretaker role. Furthermore, these authors also noted a significant

negative relation between women's self-silencing and the internalization of masculine gender roles ($r = -.55$), supporting Gilligan and Brown's (1992) and Jack's (1987b, 1991) contention that adoption of traditional female roles places women at greater risk for losing their voice in relationships.

Similarly, in a community-based sample of Canadian women ($N = 394$) Piran and Cormier (2005) reported strong correlations between disordered eating, measured by the EAT-26, and STSS total score ($r = .43, p < .001$). Further lending support to the link between suppression of the self and eating pathology, multiple regression analyses in this study demonstrated self-silencing ($R^2 = .22, p < .001$) and anger suppression ($R^2 = .01, p < .05$) contributed unique variance in the prediction of eating disorder symptoms. Consistent with these results, Frank and Thomas (2003) found aspects of the self-silencing construct predictive of anorexic and bulimic cognitions in a Canadian female sample ($N = 236$). Using an instrument introduced in Great Britain that assesses anorexic and bulimic cognitions and behaviors, the Stirling Eating Disorder Scales (SEDS; Williams et al., 1994), and the STSS Eternalized Self-Perceptions and Silencing the Self subscales, these researchers reported STSS scores added unique variance to the prediction of cognitions related to anorexia and bulimia (e.g., "I find myself preoccupied with food" and "When I binge I feel disgusted with myself") after controlling for body weight, body dissatisfaction, and endorsed importance of body shape and weight ($R^2 = .03, p < .05$). Taken together, these results further underscore the meaningful contributions correlates of interpersonal functioning and emotion regulation add to the understanding of eating pathology above and beyond the more established risk factors (e.g., body weight).

In the one study using a clinical sample, Geller et al. (2000) explored the differences in self-silencing attitudes and behaviors among women diagnosed with anorexia, those diagnosed with other psychiatric disorders, and a normal control group. Each group included 21 participants and the average length of disorder for those with anorexia was just over five years. Comparing group differences, they found the women with anorexia scored significantly higher on all four STSS subscales than did the psychiatric and normal participants, ($F(8, 108) = 8.23, p < .001$). Interestingly, the psychiatric and normal group did not significantly differ from one another on these indices, suggesting self-silencing may be a factor uniquely associated with eating pathology in women. In terms of the constitution of the psychiatric group, roughly 52% were diagnosed with major depressive disorder, 43% with some form of bipolar disorder, and 5% with dysthymic disorder. These results are consistent with Zaitsoff et al. (2000) who found higher self-silencing scores differentiated between adolescents ($N = 235$) with and without eating disorder symptoms, ($F(6, 204) = 5.34, p < .001$).

In sum, the literature clearly supports the relation between attitudes and behaviors associated with disordered eating and self-silencing. Moreover, this relation appears to exist among clinical and non-clinical populations of women. The present study aims to extend the extant literature in two ways. First, this study will add to the quite limited exploration of self-silencing and disordered eating attitudes in U.S. samples. Second, the present study also intends to incorporate an attachment theory framework to examine how self-silencing interacts with attachment to predict disordered eating attitudes.

Attachment and Self-Silencing

According to attachment theory, attachment anxiety stems from an underlying fear of abandonment or rejection from others and likely results in the use of hyperactivating strategies to elicit support from others (for a review, see Lopez, 2001). In using exaggerated emotional responses to external and internal threats, these individuals may actually find that they push important sources of support away by their repeated proximity seeking behaviors. As such, alternate methods to ensure others' emotional availability may be used to better serve the goal of maintaining close relationships. More specifically, individuals may begin to present themselves to others as accommodating and overly nurturing of others' needs, but at the same time conceal negative emotions to avoid potential desertion by others. Similarly, the hallmark of self-silencing is placing the needs of others before one's own and denying the expression of negative affect to build and sustain interpersonal relationships.

Attachment avoidance, on the other hand, is characterized by a pervasive distrust of others and what may either be a positive or negative internal working model of self. As children, individuals with attachment avoidance have learned to deactivate or repress their feelings and needs in the wake of apathetic or punishing caregivers. Consequently, as adults these individuals may present an exterior person of overstated confidence and steadfast self-reliance, denying minimal need for support and attention from others (for a review, see Lopez, 2001). However, given these personal attributes may be defensively employed to counter underlying feelings of inadequacy (negative model of self) it is possible they may also be motivated to engage in self-silencing. Self-silencing may be used as a defensive means to minimize intimacy, which evolves from mutual self-

disclosure in relationships. Without the self being fully known and understood by another person, there is less of a chance the true self will experience psychological pain if rejected by others. Supporting this possibility, Fraley and Shaver (2000) suggested that avoidance can engender behaviors designed to avoid being hurt or rejected by others (e.g., self-silencing) as well as behaviors driven by a desire to maintain staunch self-reliance in the absence of actively anticipating interpersonal hurt. Essentially, the overt behaviors may appear similar yet the underlying motivation differs. Defensively viewing others as dependent on them for guidance and support, avoidant individuals may also exhibit compulsive caretaking (an aspect of self-silencing), which could foster an illusory sense of overconfidence.

Only one published study has examined the relation between attachment and self-silencing. With the goal of exploring the construct validity of the STSS, Remen et al. (2002) tested the association between constructs theorized to be linked to self-silencing. In a college sample of men ($n = 169$) and women ($n = 187$), the researchers assessed the correlation between self-silencing and attachment (anxiety and avoidance) using the Attachment Style Prototype (ASP; Hazan & Shaver, 1987). The ASP is a categorical measure of attachment consisting of three forced-choice items. In the female sample, moderate correlations were found between anxious attachment and self-silencing ($r = .35$). As the authors predicted, self-silencing was not significantly correlated with avoidant attachment in women. Conversely, in the male sample, self-silencing was significantly related to avoidant attachment ($r = .26$).

On the surface, the lack of association between avoidance and self-silencing in the female sample seems theoretically logical given that avoidance is generally characterized

by rigid self-reliance, whereas self-silencing entails sacrificing one's needs and emotions to protect relationships. However, as noted above, avoidant individuals may defensively use self-silencing to avoid intimacy or build a false sense of self-confidence in relationships. It is quite conceivable that the categorical measure used by these researchers was not sensitive enough to capture these nuances of avoidance that can emerge. Supporting this possibility, Fraley et al. (1998) suggested the difficulty of measuring avoidance given the ability of attachment avoidant individuals to suppress their thoughts, emotions, and physiological arousal in the presence of attachment-related threats. Furthermore, Remen et al. (2002) suggested the significant relation between attachment avoidance and self-silencing in the male sample is tied to the documented tendencies of males to withdraw from conflict to maintain power in the relationship. Likewise, it is possible that attachment avoidant individuals may defensively employ self-silencing as a means to feel more in control and avoid potential interpersonal hurt.

Although adult attachment and self-silencing constructs were not specifically explored, Waller et al. (2002) examined the relation between variables similar in nature, providing additional empirical support for the relation between attachment avoidance and anxiety and disordered eating. In a clinical sample of women ($N = 140$), these researchers found higher levels of anger suppression and unhealthy core beliefs in those with disordered eating. Moreover, constructs similar to attachment anxiety and avoidance, unhealthy core beliefs, were significantly correlated with eating disorder symptoms, including fear of abandonment ($r = .39$), distrust of others ($r = .28$), and inability to cope without others' support ($r = .40$).

In sum, although the literature is very limited in scope, there is some evidence to support the relation between attachment and self-silencing. Clearly, more research is necessary given only one study has directly linked adult attachment and self-silencing. Moreover, additional study of these variables is also warranted in light of the conflicting gender differences that have been documented. As such, the present study seeks to expand the literature by examining the association between adult attachment and self-silencing. Furthermore, it is hypothesized that there will be a positive correlation between attachment anxiety and self-silencing, as well as attachment avoidance and self-silencing.

Attachment, Self-Silencing, and Disordered Eating Attitudes

Although the direct relation between adult attachment, self-silencing, and indices of disordered eating attitudes are supported by existing literature, there have been no published studies directly linking these three variables. The expansion of empirical literature beyond direct associations to possible moderators and mediators are important contributions to the field of counseling psychology. If mediators and moderators are discovered, they can be used to develop counseling interventions to help individuals diminish their disordered eating attitudes. For example, if self-silencing acts as a mediator or a moderator between attachment insecurity and disordered eating attitudes, individuals can be helped to understand how their attachment orientations contribute to the tendency of through self-silencing and how self-silencing may intensify the relation of attachment and disordered eating attitudes. Only a few studies have examined mediators and moderators associated with negative childhood experiences and disordered eating attitudes.

Murray et al. (2000) conducted one study exploring the mediating role of internalized shame between family dysfunction and bulimic attitudes. Using a female college sample ($N = 139$), these researchers found internalized shame to fully mediate the relation between paternal overprotection and bulimic attitudes. Shame is characterized by a sense of feeling rejected or anticipating rejection from others as well as low self-worth (Murray et al.). Similarly, self-silencing entails the anticipation of rejection or conflict if one does not suppress one's needs and emotions in close relationships. Given the overlap in these concepts, it is possible that self-silencing could also serve as a mediator between insecure attachment and disordered eating attitudes.

Tylka (2004) examined how seven theoretically related variables (e.g., neuroticism or objectified body consciousness) moderated the relation between body dissatisfaction and eating disorder symptoms. In a sample of college women, neuroticism ($\beta = .18, p < .001$) and objectified body consciousness ($\beta = .25, p < .001$) were found to significantly moderate (i.e., intensify) the body dissatisfaction–eating disorder symptomatology relation. These moderating variables (i.e., neuroticism or objectified body consciousness) are of particular interest to the present study because they share associations with attachment anxiety and externalized self-perceptions (i.e., an aspect of self-silencing). Specifically, Remen et al. (2002) cited a significant association between attachment anxiety and neuroticism ($r = .28$). Furthermore, in Tylka (2004) objectified body consciousness is defined as the extent to which women internalize and focus on how others see them as opposed to attending to their own feelings and perceptions, which is also a feature inherent in the self-silencing construct.

A second study found to explore moderators in the eating disorder literature is of particular interest to the present study as well. Jones et al. (2004) examined the moderating roles of core beliefs between dysfunctional parent-child interactions and disordered eating. Using a clinical sample of women ($n = 66$), several core beliefs (e.g., self-sacrifice or vulnerability to harm) were found to moderate the relation between rejection from fathers and two symptoms related to disordered eating: drive for thinness or body dissatisfaction. Specifically, the belief that one should satisfy others' needs (i.e., self-sacrifice) significantly moderated the relation between paternal rejection and body dissatisfaction ($\beta = - 1.10, p < .05$). Moreover, believing one has no control over external adversities (i.e., vulnerability to harm) significantly moderated the relation between paternal rejection and drive for thinness ($\beta = - 1.46, p < .001$). In sum, unhealthy core beliefs (i.e., self-sacrifice, vulnerability to harm) intensified the relation between paternal rejection and eating disorder symptomatology.

Taken together, the studies mentioned above suggest that self-silencing could either serve as a mediator or moderator in the attachment anxiety or avoidance and disordered eating attitudes link. Therefore, the final goals of the present study were to examine (a) whether self-silencing mediates the relations between attachment avoidance or attachment anxiety and disordered eating attitudes and (b) whether self-silencing alters the strength of association (i.e., moderates) between attachment anxiety or avoidance and disordered eating attitudes.

CHAPTER THREE: METHODS

Power Analysis

To estimate the number of participants needed to obtain a small to medium effect size, a power analysis was completed using the power and precision program (Borenstein, Rothstein, & Cohen, 2001). Power is a function of effect size, sample size, and alpha level. Effect size can be expressed by correlation, R^2 , or standardized regression coefficient. Using the power and precision program, the power was calculated using R^2 for regression analyses. To determine sample size requirements, each predictor variable (i.e., attachment anxiety, attachment avoidance and self-silencing) was assigned an effect size of either $R^2 = .01$, $.09$, or $.25$ (i.e., $r = .10$, $.30$, or $.50$ for small, medium, or large effect size, respectively, which is recommended by Cohen and Cohen (1983) in relation to the criterion variable (i.e., disordered eating attitudes). This resulted in five sets of possible effect size combinations: $.01/.01$, $.01/.09$, $.09/.09$, $.09/.25$, and $.25/.25$. These combinations indicated that a sample size of 470, 90, 47, 22 or 14, respectively, was needed for a power of $.80$ or higher at $p < .05$. Based upon these calculations, a sample size of approximately 200 was chosen to yield a small to medium effect.

Participants

Participants were 221 female undergraduate students enrolled in psychology courses at a large Midwestern university who were either in or had been in a committed dating relationship. The participants' mean age was 20.1 years ($SD = 2.65$, range = 18–41 yrs.). Approximately 44% of the participants were freshmen, 15% sophomores, 17% juniors, and 24% seniors. The vast majority of participants were White/Caucasian (84.2%) followed by Asian/Asian American (6.8%), Hispanic American (3.6%),

Black/African American (3.2%), multiracial American (.9%), Native American (.5%), international student (.5%), and other (.5%). A large portion of the participants (66%) indicated they were currently in a committed relationship, and 6% were married. The remaining participants, approximately 26%, indicated they were currently single, but had previously been in a committed relationship.

Instruments

Attachment: Experiences in Close Relationships Scale

The ECR (Brennan et al., 1998) is a 36-item self-report measure that assesses adult attachment along two theoretically underlying dimensions: avoidance and anxiety. This instrument was derived from a factor analysis of 14 self-report measures and 60 subscales of adult attachment administered to a sample of 1,086 undergraduates (Brennan et al.). The avoidance subscale (18 items) assesses one's comfort with closeness in intimate relationships (e.g., "I get uncomfortable when my romantic partner wants to be very close"). The anxiety scale (18 items) assesses one's fear of rejection and abandonment (e.g., "I worry a lot about my relationships"). ECR items are rated on a 7-point Likert-type scale ranging from 1 (*disagree strongly*) to 7 (*agree strongly*) and direct participants to answer in terms of typical experiences within romantic relationships. Scores on each subscale range from 18 to 126 with higher scores indicating either higher avoidance or higher anxiety. The developers reported internal consistency with coefficient alpha of .94 for the Avoidance subscale and .91 for the Anxiety subscale. In a later study, Lopez (2001) reported coefficient alphas for the Avoidance and Anxiety subscales as .92 and .91, respectively. In the present study the alphas were Avoidance (.81) and Anxiety (.80). Lopez and Gormley (2002) cited test-retest reliabilities of .68

and .71 for Avoidance and Anxiety, respectively. ECR scores have demonstrated construct validity with emotional cutoff and emotional reactivity (Wei, Vogel, Ku, & Zakalik, 2005), depression (Wei, Heppner, Russell, & Young, 2006), or loneliness (Wei, Shaffer, Young, & Zakalik, 2005).

Self-Silencing: Silencing the Self Scale

The STSS (Jack & Dill, 1992) is 31-item self-report measure designed to assess the intensity of cognitive schemas associated with inhibiting one's self-expression in order to establish and protect intimate relationships. This scale consists of four rationally derived subscales. The first subscale is Externalized Self-Perception, which is the tendency to judge oneself by external standards (e.g., "I tend to judge myself by how I think other people see me"). The second subscale is Care as Self-Sacrifice, meaning the tendency to establish and maintain relationships by putting the others' needs before one's own (e.g., "Caring means putting the other person's needs in front of my own"). The third subscale is Silencing the Self, which refers to the inhibition of one's self-expression to avoid relational conflict or possible relationship loss (e.g., "I don't speak my feelings in an intimate relationship when I know they will cause disagreement"). The fourth subscale is Divided Self, indicating the tendency to present a compliant external demeanor while the inner self feels angry and hostile (e.g., "I find it is harder to be myself when I am in a close relationship than when I am on my own"). The items are rated on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores range from 31 to 155 with higher scores indicating increased pressure to meet traditional socially prescribed expectations for women. Internal consistency for three of the four subscales range from coefficient alphas of .76 to .91 for women with the

exception of the Care as Self-Sacrifice scale, which has consistently had alphas from .59 to .67 (Ali, Oatley, & Toner, 2002; Besser, Flett, & Davis, 2003; Smolak & Munstertieger, 2002; Witte, Sherman, & Flynn, 2001). In the current study, the coefficients alphas were: .81 for Care as Self-Sacrifice, .78 for Divided Self, .78 for Externalized Self-Perception, and .79 for Silencing of the Self. Internal consistency alpha for the STSS total score is .88 (Cramer & Thoms, 2002). In the present study, the coefficient alpha was .77 for the total score. Because the STSS subscales are highly intercorrelated, a total score will be used in the present study. Test–retest reliability coefficients are good with a range of .88 to .91 over a 2-week time period (Jack & Dill, 1992; Carr et al., 1996).

The STSS total score has shown convergent validity by moderate associations with the score of Neuroticism subscale from the Eysenck Personality Inventory (EPI; Eysenck & Eysenck, 1968) with $r = .39$ and $.50$ for males and females, respectively, and Anxious/Ambivalent Attachment ($r = .29$ and $.35$ for males and females, respectively) and Avoidant Attachment ($r = .26$ for males), both of which were measured by the Attachment Style Prototypes scale (3 items; Remen et al., 2002). Haemmerlie, Montgomery, Williams, and Winborn (2001) observed significant correlations between the STSS and several subscales of the College Adjustment Scales (Anton & Reed, 1991) measuring anxiety, depression, low self-esteem, interpersonal problems, family problems, academic problems, and suicidal ideation.

Disordered Eating Attitudes: Eating Attitudes Test-26

EAT-26 is 26-item self-report measure that assesses characteristic attitudes and behaviors associated with disordered eating. Based on Tylka and Subich's (2004)

suggestion, the items are rated on a 6-point Likert-type scale with forced-choice responses ranging from 1 (*never*) to 6 (*always*). There are three subscales for this measure, Dieting (e.g., “[I am] aware of the calorie content in the foods I eat”), Bulimia (e.g., “[I] have the impulse to vomit after meals”), and Oral Control (e.g., “[I] avoid eating when I am hungry”). Although there are three subscales, use of the total score in a college sample is supported in the literature (e.g., Tylka, 2004; Tylka & Subich, 2004). Therefore, in the present study the total score was used, with a higher score (range from 26 to 156) indicating a higher level of disordered eating attitudes. Internal consistency for the EAT-26 ranges from .90 (Miller, Schmidt, Vaillancourt, McDougall, & Laliberte, 2006) to .91 (Mazzeo, 1999) in college female samples. This scale has also demonstrated good stability over a 3-week interval ($r = .86$; Mazzeo). In the present study, the internal consistency was very good, with a coefficient alpha of .92 for the EAT-26 total score.

Berland et al. (1986) found the total score of EAT-26 has high convergent validity with the total score of Eating Attitudes Test-40 (EAT-40) developed by Garner and Garfinkel (1979; $r = .90$). High convergent validity was also demonstrated between the EAT-26 total score and the following measures: all subscales of Eating Disorder Inventory (EDI; Garner et al., 1983) and the total score of the Eating Inventory (EI; Stunkard, 1981).

Procedure

Prior to administering questionnaires to participants, the author obtained the Iowa State University Institutional Review Board’s approval to conduct a study with human subjects. Participants signed up via two methods, a paper and pencil posting sheet and an on-line sign-up procedure through the Iowa State University’s Department of

Psychology's Sona Research System. Both sign-up methods invited students to participate in a study examining factors related to eating attitudes. Students signed-up for group data collection sessions where pencil and paper surveys were distributed. For those using the paper and pencil sign-up method, the participants' anonymity was protected by requesting only the last four digits of their university ID number instead of their names. Within the Sona Research System, each student is only able to view the studies for which they have registered, eliminating the need to preserve anonymity by using only portions of ID numbers. During each group data collection sessions, undergraduate research assistants or the principal investigator were present to disburse the surveys. Participants were informed that the study took approximately 30 to 40 minutes to complete, and they were given one research credit toward their psychology course grade for their participation.

Each survey packet began with an informed consent explaining the nature of the study, the risks and benefits, and a signature page (see Appendix A). After consenting to participate in the study by signing the informed consent, participants completed demographic questions (including one question asking students if they had ever been in a dating relationship) and three scales (EAT-26, STSS, and ECR; see Appendix B). To control for order effects, two forms were used. Specifically, the order of these three scales for one survey form was ECR, STSS, and EAT-26, whereas in the other form the order of these three measures was reversed (i.e., EAT-26, STSS, and ECR). Participants recorded their answers to the survey items using a scantron form. After completing the survey, participants were given a research card indicating that one research credit would be assigned to their psychology course grade. A debriefing form (see Appendix C) that

explained the possible emotional impact following completion of the survey and contact information for the principal investigator and faculty supervisor, the Iowa State University Student Counseling Service and the Office of Research Assurances was given to each participant before exiting the data collection session.

CHAPTER FOUR: RESULTS

Descriptive Statistics

The normality of the residual scores was first assessed for regression model with all predictors (i.e., attachment anxiety, attachment avoidance, self-silencing, and their interaction terms). The residual skew and kurtosis were 1.31 and 3.14 indicating non-normality, failing to meet the assumption of residual normality in the regression analysis. A natural log transformation was used for the dependent variable disordered eating attitudes. After the natural log transformation, the disordered eating attitudes variable was used in the regression model, resulting in a skew and kurtosis of residual scores was .42 and .89, respectively. This indicates very mild non-normality, which satisfies the residual normality assumption in the regression analysis. Therefore, the disordered eating attitudes variable after the natural log transformation was used in all the analyses. A multivariate analysis of variance (MANOVA) was computed to determine if there were order effects among the four main measured variables (attachment anxiety, attachment avoidance, self-silencing, and disordered eating attitudes). No significant result was found from the MANOVA, Wick Lambda = .98, $F(4, 216) = .336$, $p = .38$, indicating that there is no significant difference due to different ordering of the main variables within the questionnaires. Therefore, the data from both questionnaire forms were combined for the following analyses.

Next, two ANOVAs were used to examine whether there were significant differences between the dependent variable (disordered eating attitudes) and two demographic variables (ethnicity and years in school). After applying the Bonferroni correction for multiple comparisons ($.05/2 = .025$), the results indicated no significant

differences on disordered eating attitudes among different ethnic groups, $F(7, 213) = 2.19, p = .04$, and different educational levels, $F(4, 216) = .75, p = .56$. Moreover, a Pearson product moment correlation was computed to examine whether there was a significant correlation between the dependent variable (disordered eating attitudes) and age. No significant correlations were found, $r = .08, p = .25$. Therefore, the data were combined across ethnicity, educational level, and age.

Scoring ranges, means, standard deviations, and zero-order correlations for two attachment dimensions (attachment anxiety and attachment avoidance), self-silencing, disordered eating attitudes, and disordered eating attitudes (transformed variable) are shown in Table 1. The results indicated that attachment anxiety and attachment avoidance are significantly associated with self-silencing and disordered eating attitudes. Also, self-silencing is significantly associated with disordered eating attitudes.

Table 1

Ranges, Means, Standard Deviations, and Correlations Among Five Observed Variables

	<i>Range</i>	<i>M</i>	<i>SD</i>	2	3	4	5
1. Attachment Anxiety	18-126	65.02	1.31	.26**	.47**	.32**	.34**
2. Attachment Avoidance	18-126	45.72	1.30		.41**	.21**	.22**
3. Self-Silencing	31-155	78.33	1.07			.38**	.41**
4. Disordered Eating Attitudes	26-156	69.47	1.31				.98**
5. Disorder Eating Attitudes (transformed)	26-156	4.21	.02				

Note. $N = 221$.

* $p < .05$. ** $p < .01$.

Test for Mediation

Traditionally, Baron and Kenny (1986) recommended four requirements or conditions performed with three regression equations to assess mediation or indirect effects based on a three-variable model (i.e., one predictor, one mediator, and one dependent variable). The first requirement or condition (performed in the first regression equation) is to show that there is a significant association between the predictor (attachment anxiety or attachment avoidance) and the dependent variable (disordered eating attitudes). The second requirement or condition (performed in the second regression equation) is to test that there is a significant association between the predictor (attachment anxiety or attachment avoidance) and the mediator variable (self-silencing). The third requirement or condition (performed in the third regression equation) is to test if there is a significant relation between the mediator variable (self-silencing) and the dependent variable after controlling for the predictor. The fourth requirement or condition (performed in the third regression equation) is that the strength of the relation between the predictor and the dependent variable is significantly reduced when the mediator is added into the model. If there is a complete mediation, the relation between the predictor and the dependent variable will not be significant after the mediator is included in the model. If there is a partial mediation, the relation between the predictor and the dependent variable is significantly smaller when the mediator is in the model than when the mediator is not in the model.

Therefore, in the first step, in order to examine the significant association between the predictors and dependent variable, the predictor variables (attachment anxiety and attachment avoidance) were entered into the equation to predict disordered eating

attitudes. The standardized regression coefficient ($\beta = .31, p < .001$; see Table 2) associated with the relation between attachment anxiety and disordered eating attitudes was significant, even after controlling for attachment avoidance. Likewise, the standardized regression coefficient ($\beta = .14, p < .05$; see Table 2) associated with the relation between attachment avoidance and disordered eating attitudes was significant after controlling for attachment anxiety. Thus, both attachment anxiety and attachment avoidance were included in the subsequent steps in testing the mediation effects.

At the second step, in order to establish that the predictors (attachment anxiety and avoidance) were significantly related to the mediator (self-silencing), attachment anxiety and attachment avoidance were entered into a regression equation to predict self-silencing. The standardized regression coefficients (β s = .39 and .31, p s < .001, respectively; see Table 2) associated with the relations between both attachment anxiety and attachment avoidance and self-silencing were significant. This suggested that the results met the second requirement or condition for examining mediation effects.

The third step is to test whether the mediator variable (self-silencing) is significantly related to the dependent variable (disordered eating attitudes) after controlling for the predictors (attachment anxiety and attachment avoidance). In order to examine this requirement or condition for testing mediation effects, the predictor variables (attachment anxiety and attachment avoidance) and the mediator variable (self-silencing) were entered into the regression to predict disordered eating attitudes. The standardized regression coefficient ($\beta = .30, p < .001$) associated with the relation between self-silencing and disordered eating attitudes was significant after controlling for the predictors. As such, the result met the third requirement or condition in testing

Table 2

Hierarchical Multiple Regression Analyses Testing Mediating Effects of Self-Silencing on the Relationship Between Attachment and Disordered Eating Attitudes

Variable	<i>B</i>	<i>SE B</i>	β
Step 1: Predicting Disordered Eating Attitudes			
Attachment Anxiety	.004	.001	.31**
Attachment Avoidance	.002	.001	.14*
Step 2: Predicting Self-Silencing			
Attachment Anxiety	.317	.048	.39***
Attachment Avoidance	.251	.048	.31***
Step 3: Predicting Disordered Eating Attitudes			
Attachment Anxiety	.003	.001	.19**
Attachment Avoidance	.001	.001	.05
Self-Silencing	.005	.001	.30***

Note. $N = 221$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

mediation effects. The results in the third step indicated the standardized regression coefficient associated with the relation between attachment anxiety and disordered eating attitudes was reduced but remained significant ($\beta = .19, p < .01$). Also, the third step indicated the link between attachment avoidance and disordered eating attitudes was non-significant ($\beta = .05, p > .05$). This suggests self-silencing partially mediated attachment anxiety and disordered eating attitudes and fully mediated attachment avoidance and

disordered eating attitudes (see Figure 3). While these interpretations are supported by Baron and Kenny (1986), it should be noted that the magnitude of the association between attachment avoidance and disordered eating was small prior to examining the mediation effects. Thus, caution should be used when interpreting the full mediation results. Before being certain about the mediation effects, the bootstrap procedure was used to examine the significance of the mediation or indirect effects.

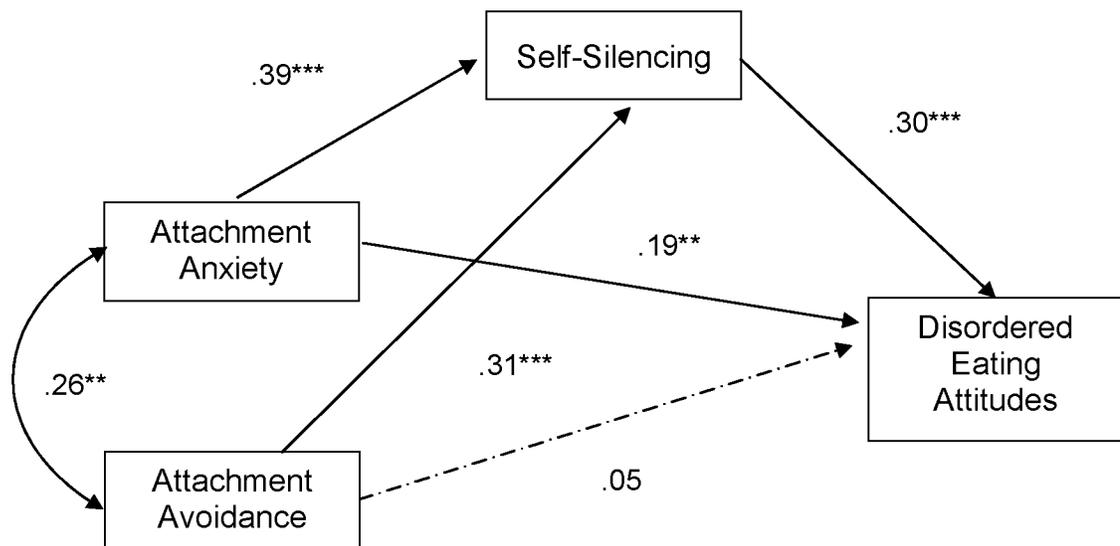


Figure 3. The Mediation Model

Note. $N = 221$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

The dashed line indicates the path was not significant.

The Bootstrap Method for the Significant Level of Mediation Effects

Traditionally, researchers have followed Baron and Kenny's (1986) recommendations to assess the statistical significance of indirect effects. However, among the 14 mediation procedures available, MacKinnon, Lockwood, Hoffman, West, and Sheet (2002) found that Baron and Kenny's formula resulted in the least power to detect significant indirect effects. Moreover, Shrout and Bolger (2002) suggested using the bootstrap method to test indirect effects. Essentially the bootstrap method is an empirical procedure used to determine the significance of statistical estimates. Preacher and Hayes (2004, 2005a) developed a SPSS macro program for conducting the bootstrap method with simple and multiple mediator models (see Preacher & Hayes, 2005b). Based on the suggestion from Mallinckrodt, Abraham, Wei, and Russell (2006), 10,000 samples were used to examine the significant level of mediation or indirect effects through employing a SPSS macro program in SPSS 14. An indirect effect is significant at the .05 level if the 95% confidence interval does not include zero. Conversely, there would be no significant indirect effect at the .05 level if the 95% confidence interval includes zero. In the present study, the results from the bootstrap method indicated that the indirect effects of attachment anxiety and attachment avoidance through self-silencing to disordered eating attitudes were significant because the 95% confidence interval did not include zero (see Table 3). The standardized regression coefficient, mean unstandardized regression coefficient, mean standard error, 95% percentile confidence interval, and 95% bias corrected confidence interval are reported in Table 3.

Table 3

Bootstrap Analysis of Magnitude and Statistical Significance of Indirect Effects

Indirect Effect	β (standardized path coefficient and product)	Mean Indirect Effect (b) ^a	Mean SE ^a	Percentile CI for Mean Indirect Effect ^a (Lower to Upper)	Bias Corrected CI for Mean Indirect Effect ^a (Lower to Upper)
1. Attachment Anxiety → Self-Silencing → Disordered Eating Attitudes	$(.39) \times (.25) = .10$.0016	.0006	.0006 to .0028*	.0006 to .0028*
2. Attachment Avoidance → Self- Silencing → Disordered Eating Attitudes	$(.31) \times (.25) = .08$.0012	.0005	.0004 to .0023*	.0005 to .0024*

Note. $N = 221$.

^aThese values are based on the unstandardized path coefficients.

*This 95% confidence interval excludes zero and therefore is significant at $p < .05$.

Test for Moderation

A hierarchical regression (Baron & Kenny, 1986; Frazier, Tix, & Barron, 2004) was used to test for moderation effects using SPSS 14 (see Table 4). Before analyses of the data began, the predictors (attachment anxiety, attachment avoidance, and self-silencing) were standardized to control for possible multicollinearity among variables in the regression (Aiken & West, 1991; Frazier et al., 2004). The two interaction terms were then created by calculating the products of predictors (attachment anxiety and attachment avoidance) with the moderator (self-silencing). That is, the two interaction terms are (a) attachment anxiety \times self-silencing and (b) attachment avoidance \times self-silencing. Next the variables were entered into the regression model in the corresponding order. First, the standardized predictors (attachment anxiety and attachment avoidance) were entered into the first block of the regression equations. At step one, the overall model was significant, $F(2, 218) = 17.34, p < .001$. As expected, attachment anxiety was found to be a significant predictor of disordered eating attitudes after controlling for attachment avoidance. To a lesser extent, attachment avoidance was also found to significantly predict disordered eating attitudes after controlling for attachment anxiety. Then the moderating variable (self-silencing) was entered into the second block of the regression. The change in F value was significant at step two, $\Delta F(1, 217) = 16.64, p < .001$, indicating that self-silencing predicted disordered eating attitudes above and beyond the two attachment dimensions (i.e., anxiety and avoidance). To evaluate for moderation effects, the interaction variables (i.e., attachment anxiety \times self-silencing and attachment avoidance \times self-silencing) were entered into the third block of the regression. If the paths from the interaction variables (i.e., attachment anxiety \times self-silencing or

attachment avoidance \times self-silencing) to disordered eating attitudes are significant, then evidence supports a moderating effect. The change in F value, $\Delta F(2, 215) = 2.26, p = .11$, did not reach significance, nor did the addition of either the interaction variables. Thus no moderation effect was detected for either attachment anxiety \times self-silencing or attachment avoidance \times self-silencing on disordered eating attitudes.

Table 4

Hierarchical Multiple Regression Analyses Testing Moderating Effects of Attachment and Self-Silencing on Disordered Eating Attitudes

Variable	<i>B</i>	<i>SE B</i>	β
Step 1: Predictors			
Attachment Anxiety	.08	.02	.31***
Attachment Avoidance	.04	.02	.14*
Step 2: Moderator			
Attachment Anxiety	.05	.02	.19**
Attachment Avoidance	.01	.02	.05
Self-silencing	.08	.02	.30***
Step 3: Interaction			
Attachment Anxiety	.04	.02	.16*
Attachment Avoidance	.02	.02	.07
Self-silencing	.09	.02	.33***
Attachment Anxiety \times Self-silencing	-.02	.02	-.09
Attachment Avoidance \times Self-silencing	-.02	.02	-.10

Note. $N = 221$; $R^2 = .14$, $p < .001$ for Step 1; $\Delta R^2 = .06$, $p < .001$ for Step 2; $\Delta R^2 = .02$, $p = .11$ for Step 3.

* $p < .05$. ** $p < .01$. *** $p < .001$

CHAPTER FIVE: DISCUSSION

Although limited in scope, past literature has suggested positive associations between adult attachment and disordered eating attitudes (e.g., Broberg et al., 2001; Evans & Werthheim, 2005). The present study expands this line of research by exploring possible mediators and moderators of this association cited in extant research. Specifically, this study examined whether self-silencing serves as a mediator and moderator between adult attachment anxiety or avoidance and disordered eating attitudes. The most significant findings were self-silencing partially mediated the relation between attachment anxiety and disordered eating attitudes and fully mediated the link between attachment avoidance and disordered eating attitudes. The significant path coefficients in Figure 3 suggest that attachment anxiety and attachment avoidance showed significant positive relations with self-silencing. In turn, self-silencing had a significant positive relation with disordered eating attitudes. This finding suggests that individuals with high attachment anxiety and avoidance can reduce their tendency to self-silence in relationships to decrease the likelihood of disordered eating attitudes.

These mediation results are consistent with previous research suggesting anticipation of rejection from others (i.e., internalized shame) mediated the relation between family dysfunction (e.g., parental overprotection) and bulimic attitudes in female college students (Murray et al., 2000). Moreover, there are two possible interpretations for the present results. First, women with high attachment anxiety tend to have a negative internal working model of self (Pietromonaco & Barrett, 2000). They not only devalue their own needs and emotions but also pay more attention to meet external standards in order to please others and maintain relationship and self-worth. Because their self-worth

is built on external standards and sources of validation their vulnerability to unrealistic societal standards of body size and beauty is increased, which may then contribute to disordered eating attitudes. Likewise, women with high attachment avoidance tend to hold a negative working model of others (Pietromonaco & Barrett). Thus, they might have limited capacities for trusting others and anticipate others will disappoint them. As such, they may be less likely to engage in emotional self-disclosure to others and may defensively deny relational needs, presenting a façade of independence through excessive self-reliance. However, these defensive strategies may engender the added risks of disordered eating (e.g., emotion-based eating and/or rigid control of food consumption) to suppress their feelings.

Another important finding of the study is that attachment anxiety and avoidance are positively associated with self-silencing. These results are consistent with attachment theory perspectives. That is, previous literature has suggested that those with attachment anxiety and attachment avoidance may engage in behaviors to avoid hurt or rejection in relationships by relationship preoccupation and relationship distance, respectively. However, the underlying motivations may differ depending on the degree of avoidance and anxiety experienced (Fraley & Shaver, 2000). Specifically, those with high attachment anxiety are more likely to sustain close emotional connections with others by placing others needs over their own needs but silencing their frustration and anger. However, those with high attachment avoidance are more likely to diminish true intimacy and dependence on others by restricting their expression of needs or emotions to prevent interpersonal hurt. Empirically, the results of this study are consistent with past research suggesting that those with attachment anxiety are likely to demonstrate self-silencing

within relationships (Remen et al., 2002). In contrast to Remen et al.'s findings of a non-significant relation between attachment avoidance and self-silencing, the present study found a significant association between attachment avoidance and self-silencing. As mentioned earlier, Remen et al. used one item to assess attachment avoidance. Perhaps this inconsistent result may be due to the use of a more comprehensive attachment measure in the present study, which is more capable of detecting significant associations than using a one-item measure.

In addition to the findings mentioned above, a significant positive relation between self-silencing and disordered eating attitudes was found. This finding is congruent with Hooker and Convisser's (1983) perspective that some women may suppress their anger through bingeing behaviors to swallow their anger, which increases their vulnerability to developing disordered eating. Empirically, this result is consistent with previous studies reporting significant links between self-silencing and binge-eating (Smolak & Munstertieger, 2002) and anorexic and bulimic cognitions (Frank & Thomas, 2003). It is also worthwhile to note that self-silencing was still significantly associated disordered eating attitudes even after controlling for attachment anxiety and avoidance. This result is similar to studies suggesting that self-silencing was significantly related to symptoms of disordered eating (Zaitsoff et al., 2002) and bulimic behavior (Frank & Thomas) even after controlling for body-related variables.

Moreover, the findings did not support self-silencing as a moderator between attachment (anxiety and avoidance) and disordered eating attitudes. These results are in contrast to past literature suggesting the interaction of various core beliefs (e.g., need to self-sacrifice, perceived vulnerability to harm) and paternal rejection on indices of eating

disorder symptoms (i.e., body dissatisfaction, drive for thinness; see Jones et al., 2005). However, this study explored the impact of these variables on a clinical sample of women. Consequently, it could be that moderating effects are more difficult to discern within a non-clinical population exhibiting fewer disordered eating symptoms.

The findings in the present study suggest several possible clinical implications. First, the current results might inform clinicians to recognize that women with a high level of attachment anxiety and attachment avoidance may be more vulnerable to developing symptoms of disordered eating particularly when these women suppress their emotions and needs, base their self-worth on external evaluation, and withhold anger within close relationships. Second, mental health professionals can help these women develop awareness of how their tendency to self-silence is associated with disordered eating attitudes. Third, they can work with these women to recognize their feelings and needs within relationships and develop more direct ways to express them to significant others in their lives. For example, they can help these women change their focus from external sources to internal sources of validation (e.g., positive self-talk), from suppressing their needs to expressing their emotions and needs to others, or taking risks for reality testing, which in turn decreases their disordered eating attitudes. Finally, psychologists could implement preventative interventions to reduce the likelihood of developing disordered eating attitudes. For instance, they could develop preventative programs advocating the awareness of healthy relationship boundaries (e.g., the right to respectfully express one's feelings and needs to others) and promoting self-esteem maintenance by relying on one's self-defined strengths instead of external validation.

Despite the potential implications of these findings there are some important limitations that should be mentioned. First, the sample consisted mostly of White college students, limiting the degree to which the results can be generalized to women of color, older and younger women, women not enrolled in college, and men. For instance, in a four-year test–retest reliability study Nunes, Camey, Olinto, and Mari (2006) found the EAT-26 to be a poor predictor of disordered eating in a sample of Brazilian women. As such, applying the current study’s model to other ethnic groups may necessitate the use of other measures that are more valid for the population of interest. Second, all of the measures used in this study were self-report questionnaires, introducing a mono-method bias. Thus, the relations among variables may be inflated due to common methodology effects and demand characteristics as well as other sources of mono-method bias.

Based on the limitations previously mentioned, it is recommended that future studies consider using other methods (other’s report, clinical interview, laboratory situation manipulation) to gain a different, objective perspective on the variables examined. For instance, given the degree to which individuals with attachment avoidance may deny their intimacy needs and suppress their emotions the use of physiological measures could render less-biased assessments. This design is supported by a recent study using recordings of spectral bandwidths of heart rate variability and self-report measures to determine which instrument better predicted attachment anxiety and avoidance. The researchers found that attachment avoidance, unlike attachment anxiety, was not associated with subjective reports of stress. However, heart rate variability was a clear indicator of attachment avoidance (Mauder, Lancee, Nolan, Hunter, & Tannenbaum, 2006). In addition, the use of longitudinal methodology could impart more

information regarding causality among the variables examined. Specifically, a study could be designed to follow adolescent females beginning in the first year of high school to high school graduation, measuring attachment, self-silencing, and disordered eating attitudes at different time points to examine causal relations. Although challenging in many ways, a study of this caliber could provide strong support for the need for funding to implement preventative programs at an earlier age before disordered eating attitudes become entrenched and more intractable to reparative treatment.

The main findings in this study also provide some speculations for future research. Most importantly, the present study is the first to examine a moderator and mediator between adult attachment and disordered eating attitudes. Thus, further empirical investigation is clearly warranted in this area. In terms of the non-significant moderating effects of self-silencing, it is possible that replicating this study's model within a clinical population may render different results. That is, in clinical populations as opposed to non-clinical samples there would likely be higher rates of disordered eating attitudes and behaviors, which would then increase the likelihood of detecting significant relations.

Another possibility meriting further exploration is whether examining the specific components of self-silencing (i.e., the STSS subscales scores) would be more sensitive to moderating effects than examining the whole construct of self-silencing (i.e., the STSS total score alone). It is possible that specific components of self-silencing are differentially associated with certain categories of disordered eating attitudes. Furthermore, attachment anxiety and avoidance may also correlate with specific components of self-silencing consistent with attachment theory. For example, scores on

attachment avoidance may be positively associated with the scores on the STSS Divided Self subscale as this subscale measures the tendency to conceal one's true self in relationships. Moreover, considering self-silencing serves as a mediator between attachment (anxiety and avoidance) and disordered eating attitudes, future research designed to assess the treatment efficacy of interventions helping women develop alternative ways to express their feelings and needs in relationships is strongly supported. Lastly, given that the path from attachment anxiety and disordered eating attitudes remained significant after adding self-silencing to the mediation model, other variables may also mediate this relation. For instance, Wei et al. (2006) found that attachment anxiety was positively associated with maladaptive perfectionism. Also, Miller-Day and Marks (2006) found that paternally prescribed perfectionism significantly predicted maladaptive eating patterns above and beyond individual factors such as perceived loss of control in a sample of college students. Based on these findings, future research can explore the possibility of maladaptive perfectionism as a mediator between the link of attachment anxiety and disordered eating attitudes.

In conclusion, the present study empirically examined self-silencing as a mediator or moderator between attachment and disordered eating attitudes in a female college sample. The results suggest that self-silencing acts as a mediator but not a moderator between attachment and disordered eating attitudes. These results contribute to the limited empirical data on the implications of the attachment theory to adult female populations demonstrating disordered eating attitudes. Finally, this study suggests that mental health professionals may be able to help women with attachment anxiety and

avoidance by validating and encouraging emotional expression within relationships as a means to decrease their levels of disordered eating attitudes.

APPENDIX A: INFORMED CONSENT DOCUMENT

Title of Study: Relationship Styles and Eating Attitudes
Investigator: Shannon Young (Principal Investigator), Dr. Meifen Wei, Lauren Slater, Hima Reddy, Abigail Root, Celeste Marie Kruger, Julia Keleher, Daniel Utterbuck, Lynn Sando, KimAnh Tran, and Alison Ranker

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time. You must be 18 years old to participate in this study.

INTRODUCTION

The purpose of this study is to learn more about how relationship styles impact eating attitudes and behaviors. You are being invited to participate in this study because you are a potential member of the psychology department's research participation pool.

DESCRIPTION OF PROCEDURES

Participation in this research is completely voluntary. If you agree to participate in this study, your participation will last for 50 minutes or less. During the study you may expect to complete a survey related to relationship style, expressing needs and feelings in relationships, and eating attitudes and behavior. You may skip any question that you do not wish to answer or that makes you feel uncomfortable, without receiving any penalty.

RISKS, BENEFITS, COSTS, AND COMPENSATION

While participating in this study you may experience the following risks: some mild personal discomfort when you respond to personal questions related to your relationship style, how you express feelings and needs in relationships and attitudes and behavior related to eating. If you decide to participate in this study there will be no direct benefit for you. It is hoped that the information gained in this study will benefit our professional area in psychology by providing valuable information about how interpersonal functioning impacts eating attitudes and behaviors. You will not have any costs or be monetarily compensated for participating in this study. If you decide to participate in this study, you will be given one research credit to be applied to your psychology course grade.

PARTICIPANTS RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide not to participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

CONFIDENTIALITY

To preserve your anonymity, no personal identifiers will be attached to your responses to the surveys. The informed consent signature page will be kept in the primary investigator's locked filing cabinet and separate from your responses to the surveys. After the data is collected, participants' questionnaire responses will be assigned arbitrary identification numbers for purposes of creating a data file. This data file will be transferred to an SPSS file to which only the principal investigator and faculty supervisor will have access. The data will be stored on the principal investigator's and faculty supervisor's computer with a specific password in order to access the computer file. If the results are published, your identity will remain confidential.

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. The records may contain private information.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study. For further information about the study contact either the principal investigator, Shannon Young, MSSW, Department of Psychology, W161 Lagomarcino Hall, (515)294-7053, kellim@iastate.edu or the faculty supervisor, Meifen Wei, Ph.D., Department of Psychology, W214 Lagomarcino Hall, (515)294-7534, wei@iastate.edu. If you have any questions about the rights of research subjects or research-related injury, please contact the Office of Research Assurances, 1138 Pearson Hall, Janice Canny, IRB Administrator, (515) 294-4566, jcs1959@iastate.edu

SUBJECT SIGNATURE

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You will receive a copy of the signed and dated written informed consent prior to your participation in the study.

Subject's Name (printed) _____

(Subject's Signature)

(Date)

INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

(Signature of Person Obtaining Informed Consent)

(Date)

APPENDIX B: SURVEYS

Demographic Questions

Please fill in the scantron sheet with the appropriate information.

1. **Age:** fill in the first digit of your age for item #1 (e.g., age 18, fill in “1” on scantron)
2. **Age:** fill in the second digit of your age for item #2 (e.g., age 18, fill in “8” on scantron; age 20 fill in “10” on scantron)
3. **Year in College:**

1 = freshman	4 = senior
2 = sophomore	5 = graduate
3 = junior	6 = other
4. **Gender:**

1 = female	2 = male
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5. **Ethnic Identification that Best Describes You:**

1 = Caucasian American	5 = Native American
2 = African American	6 = Multi-racial American
3 = Asian American	7 = International student
4 = Hispanic American	8 = Other
6. **Relationship Status:**

1 = single	4 = divorced or separated
2 = in a committed relationship	5 = widowed
3 = married	6 = other
7. **Have you ever been in a dating relationship?**

1 = no	2 = yes
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EAT-26

Directions: The following statements concern your eating attitudes and behaviors. Please respond to each statement by indicating how often each statement applies to you. In doing so, use the following options:

1	2	3	4	5	6
Always	Usually	Often	Sometimes	Rarely	Never

1. Am terrified about being overweight.
2. Avoid eating when I am hungry.
3. Find myself preoccupied with food.
4. Have gone on eating binges where I feel that I may not be able to stop.
5. Cut my food into small pieces.
6. Aware of the calorie content of foods that I eat.
7. Particularly avoid food with high carbohydrate content (i.e. bread, rice, potatoes, etc.).
8. Feel that others would prefer I eat more.
9. Vomit after I have eaten.
10. Feel extremely guilty after eating.
11. Am preoccupied with a desire to be thinner.
12. Think about burning up calories when I exercise.
13. Other people think that I am too thin.
14. Am preoccupied with the thought of having fat on my body.
15. Take longer than others to eat my meals.
16. Avoid foods with sugar in them.
17. Eat diet foods.
18. Feel that food controls my life.
19. Display self-control around food.
20. Feel that others pressure me to eat.
21. Give too much time and thought to food.
22. Feel uncomfortable after eating sweets.
23. Engage in dieting behavior.
24. Like my stomach to be empty.
25. Enjoy trying new rich foods.
26. Have the impulse to vomit after meals.

STSS

Directions: Please select the number on the scale that best describes how you feel about each of the statements. If you are not currently in an intimate relationship, please indicate how you felt and acted in your previous intimate relationship.

1	2	3	4	5
Disagree Strongly	Disagree Somewhat	Neither Agree or Disagree	Agree Somewhat	Agree Strongly

1. I think it best to put myself first because no one else will look out for me.
2. I don't speak my feelings in an intimate relationship when I know they will cause Disagreement.
3. Caring means putting the other person's Needs in front of my own.
4. Considering my needs to be as important as those of the people I love is selfish.
5. I find it harder to be myself when I am in a close relationship than when I am on my own.
6. I tend to judge myself by how I think other people see me.
7. I feel dissatisfied with myself because I should be able to do all things people are supposed to be able to do these days.
8. When my partner's needs and feelings conflict With my own, I always state mine clearly.
9. In a close relationship, my responsibility is to make the other person happy.
10. Caring means choosing to do what the other Person wants, even when I want to do something different.
11. In order to feel good about myself, I need to feel independent and self-sufficient.
12. One of the worst things I can do is to be selfish.
13. I feel I have to act in a certain way to please my partner.
14. Instead of risking confrontations in close Relationships, I would rather not rock the boat.
15. I speak my feelings with my partner, even when it leads to problems or disagreements.
16. Often I look happy enough on the outside, but inwardly I feel angry and rebellious.
17. In order for my partner to love me, I cannot reveal certain things about myself to him/her.
18. When my partner's needs and opinions conflict with mine, rather than asserting my own point of view I usually end up agreeing with him/her.
19. When I am in a close relationship I lose my sense of who I am.
20. When it looks as though certain of my needs can't be met in a relationship, I usually realize that they weren't very important anyway.
21. My partner loves and appreciates me for who I am.
22. Doing things just for myself is selfish.
23. When I make decisions, other people's thoughts and opinions influence me more than my own thoughts and opinions.
24. I rarely express my anger at those close to me.
25. I feel that my partner does not know my real self.
26. I think it's better to keep my feelings to myself when they do conflict with my partner's.
27. I often feel responsible for other people's feelings.
28. I find it hard to know what I think and feel because I spend a lot of time thinking about how other people are feeling.
29. In a close relationship I don't usually care what we do, as long as the other person is happy.
30. I try to bury my feelings when I think they will cause trouble in my close relationship(s).
31. I never seem to measure up to the Standards I set for myself.

ECRS

Directions: The following statements concern how you feel in romantic relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Please respond to each statement by indicating how much you agree or disagree with it.

1	2	3	4	5	6	7
Disagree Strongly			Neutral/Mixed			Agree Strongly

1. I prefer not to show a partner how I feel deep down.
2. I worry about being abandoned.
3. I am very comfortable being close to Romantic partners.
4. I worry a lot about my relationships.
5. Just when my partner starts to get close to me I find myself pulling away.
6. I worry that romantic partners won't care About me as much as I care about them.
7. I get uncomfortable when a romantic partner Wants to be very close.
8. I worry a fair amount about losing my partner.
9. I don't feel comfortable opening up to romantic partners.
10. I often wish that my partner's feelings for me were as strong as my feelings for him/her.
11. I want to get close to my partner, but I Keep pulling back.
12. I often want to merge completely with Romantic partners, and this sometimes scares them away.
13. I am nervous when partners get too close to me.
14. I worry about being alone.
15. I feel comfortable sharing my private Thoughts and feelings with my partner.
16. My desire to be very close sometimes Scares people away.
17. I try to avoid getting too close to my partner.
18. I need a lot of reassurance that I am loved by my partner.
19. I find it relatively easy to get close to my partner.
20. Sometimes I feel that I force my partners to show more feeling, more commitment.
21. I find it difficult to allow myself to depend on romantic partners.
22. I do not often worry about being abandoned.
23. I prefer not to be too close to romantic partners.
24. If I can't get my partner to show interest in me, I get upset or angry.
25. I tell my partner just about everything.
26. I find that my partner(s) don't want to get as close as I would like.
27. I usually discuss my problems and concerns with my partner.
28. When I'm not involved in a relationship, I feel somewhat anxious and insecure.
29. I feel comfortable depending on romantic partners.
30. I get frustrated when my partner is not around as much as I would like.
31. I don't mind asking romantic partners for comfort, advice or help.
32. I get frustrated if romantic partners are not available when I need them.
33. It helps to turn to my romantic partner in times of need.
34. When romantic partners disapprove of me, I feel really bad about myself.
35. I turn to my partner for many things, including comfort and reassurance.
36. I resent it when my partner spends time away from me.

APPENDIX C: DEBRIEFING FORM

Thank you very much for participating in this study. This project seeks to understand the process of how relationship style and how individuals express their needs and feelings in relationships are related to eating attitudes and behaviors. It is possible that some participants may experience mild discomfort from reflecting on factors related to their relationships, communication, and psychological functioning. If you experienced any discomfort, please feel free to contact Shannon Young, MSSW, kellim@iastate.edu, (515) 294-7053; Dr. Meifen Wei, wei@iastate.edu, (515) 294-7534, or the Student Counseling Service, 2223 Student Service Building, 3rd Floor, (515) 294-5056. Free counseling is available at the Student Counseling Service for all ISU students. If you have any questions about the rights of research subjects or research-related injury, please contact the Office of Research Assurances, 1138 Pearson Hall, Janice Canny, IRB Administrator, (515) 294-4566, jcs1959@iastate.edu

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