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Emotional Content in Autobiographical Memory through an Attachment Theory Framework

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Emotional Content in Autobiographical Memory through an Attachment Theory Framework

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University of Connecticut

Honors Thesis

Psychology Honors Department

2010

Approved by:

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ABSTRACT

Elizabeth Tsatkin

The current study investigates the relationship between individual differences in *attachment style* and the recall of *autobiographical memories*. According to attachment theory, affect regulation strategies employed by individuals high in attachment anxiety and high in attachment avoidance are likely to influence how information about the past is recalled. This study examines how attachment anxiety and attachment avoidance relate to the presence of negative emotions in autobiographical memories of upsetting events with important relationship figures (i.e., mother, father, or roommate). Participants included 248 undergraduate students ranging from ages 18-22 that attend a public university in the northeast. As hypothesized, individuals with an avoidant attachment expressed less sadness in their responses to the written narrative task, especially when prompted for memories involving their primary caregiver. Contrary to the hypothesis, anxiously attached individuals did not display higher levels of worry/fear emotions in their responses to the written narrative. Attachment anxiety was related to some differences in emotional content; however, this varied by relationship partner. The results provide evidence linking attachment style to emotion selection and retrieval in autobiographical memories of ‘upsetting’ events. Implications for close relationships and therapy are discussed.

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INTRODUCTION

Interpersonal relationships are a fundamental component of the human experience. The quality of important relationships shapes how we feel, how we think, and how we behave. It is difficult to imagine human nature without the context of relationships. For over thirty years, attachment theory has provided a useful framework for understanding how relationships shape individual development. Attachment figures are typically characterized as primary caregivers during childhood. According to attachment theory, individuals have internal working models of attachment figures that influence the ways that information is interpreted and remembered (Bowlby, 1982). Internal working models are thought to serve as a guide to behavior in new social experiences across different contexts and people and therefore play an important role in healthy development.

The objective of this study is to further understand the under-researched topic of the relationship between attachment style and autobiographical memory. Autobiographical memory is the first-person recall of experiences from one's lifetime. This paper specifically explores whether adult attachment style predicts how young adults describe autobiographical memories of upsetting emotional experiences with important relationship figures (i.e. parents and roommates). Understanding how attachment style influences autobiographical memory can contribute to the growing literature on the role of attachment in close adult relationships, clinical disorders, and therapeutic interventions. It is important to study attachment, emotions, and memory together in order to gain a comprehensive understanding of how individuals' develop and maintain strategies for coping with trying interpersonal situations.

Attachment Theory

According to attachment theory, humans are born with innate mechanisms (i.e., the attachment system) to form attachments with caretakers (Bowlby, 1982). The attachment system, in theory, involves two related processes: 1) monitoring the environment for a caretaker's proximity and potential threats; and 2) engaging in proximity-seeking behaviors aimed at using the caregiver for support when some threat is perceived. The goal of these processes within one's internal working model is to maintain a sense of "felt security" which can be viewed as a sense of personal safety, emotional stability, and interpersonal closeness. It has been found that the way in which this goal is met will be largely determined by parental behaviors. Within the literature, parenting has typically been evaluated based on domains reflecting hostility, rejection, or insensitivity on one end and warmth, acceptance, and open communication on the other end (Caspi, Elder & Bem, 1987).

Attachment style is most commonly organized into four categories: secure, avoidant, anxious/resistant, and disorganized (Main & Cassidy, 1985). Secure children trust in the availability of adults. They are able to explore their environment as well as use an adult as a source of comfort when needed. Attachment theory is fundamentally a model that indicates the rate of success of individuals in using close relationships as a source of comfort when faced with stress (Sroufe et al., 1999). Secure children are found to behave in ways that suggest they expect caretakers to be consistently available, sensitive to needs, and highly reliable. A large body of literature has focused on the developmental implications of attachment quality (e.g., Sroufe et al., 1999; Thompson, 2000). In particular, Sroufe et al. (1999) claim that secure individuals show higher levels of subjective well-being, higher levels of self-esteem, perceive others as being more positive, and use adaptive coping mechanisms and strategies. The authors also claim that

avoidant or anxiously-attached individuals suffer from psychological distress, psychopathology, higher levels of general anxiety, higher levels of negative affect, and are more prone to anger than children with secure attachments, regardless of the variability in the functioning of the children. Attachment quality continues to be important in middle childhood, adolescence, and eventually through to adulthood (Belsky, Conger & Capaldi, 2009).

Theoretically, individuals high on attachment anxiety and avoidance are less able to use relationships with attachment figures as an effective means of dealing with stress. Following this line of thought, avoidant children do not typically display trust in the availability of the caretaker, so they are thought to disregard the attachment figure as a way of avoiding distress. Anxious children are believed to be overly worried about the caretaker's availability. As a result, they become very distressed when the attachment figure is not available and may exaggerate attachment needs (e.g. clinginess or excessive crying). Finally, children with a disorganized attachment relationship are described as exhibiting sequences of behavior lacking clear goals or strategies. These children are thought to lack a set of coherent behaviors to manage attachment needs. They may combine anxious and avoidant strategies for dealing with interpersonal stress, or they may perform unusual behaviors, (i.e. freezing or rocking). This pattern is thought to be the most pathological among the four attachment categories in children (Lyons-Ruth, 2006). This is theorized to transition into a dysfunctional internal working model of attachment in adulthood.

Adult attachment theorists borrowed from literature on human development and initially hypothesized four similar patterns of attachment style in adulthood in terms of the way in which adults conceptualize relationships with other adults (Bartholomew & Horowitz, 1991). These patterns are secure, preoccupied (i.e., anxious), dismissive (i.e., avoidant), and fearful (i.e.,

disorganized). More recent studies suggest that adult attachment styles are better conceptualized dimensionally, with relational anxiety and avoidance acting as two dimensions underlying these four patterns (Shaver & Fraley, 2000). A secure attachment is expressed through cohesion, positive expressiveness, and low levels of conflict throughout development. People who display low levels of attachment anxiety and avoidance have basic trust in the availability of a romantic partner and a sense of self-worth in regard to the relationship. As a result, these individuals are comfortable with intimacy and can effectively use their partner as a source of support during times of distress. On the other hand, people who display high levels of attachment anxiety and avoidance do not typically display trust in the availability of a partner and are found to fear rejection or abandonment. Although they seek out relationships, they often do not find comfort from them, are quick to perceive signs of abandonment, and may behave in overly dependent or jealous ways. In addition, individuals who are high in avoidance are not found to display trust in the availability of the relationship partner and instead respond with behaviors that limit closeness or intimacy. These individuals may distance themselves when relationship conflict arises and deny the importance or impact of relationships on them.

Bowlby (1982) suggested that when an attachment figure does not provide a sense of felt security, a child experiences negative emotions (i.e. anger, anxiety, or despair) and must develop alternative strategies to regulate these emotions. A parallel process is believed to occur in romantic relationships. In particular, adult attachment styles are thought to influence how the behaviors of a relationship partner are perceived and what strategies are used for controlling negative emotions that arise in the relationship (Mikulincer, Shaver, & Pereg, 2003). In this way, adult attachment influences experiences of emotions, especially those involved in relationships. However, negative emotions within relationships can be improved upon within the

context of therapy. When attempting to mend an unhealthy relationship, it may be vital to explore the issues of attachment and emotion-processing in a non-hostile, therapeutic environment.

Although the adult attachment literature has conceptualized attachment quality somewhat differently than the childhood literature, many other ideas are similar. In both developmental and adult literature, attachment style is thought to influence later behaviors due to biases in social information processing associated with attachment style. Bowlby (1982) proposed the concept of internal mental representations as the mechanism linking parent–child interactions to a person’s later social and emotional development. From this perspective, children develop a set of expectations about the availability and sensitivity of caretakers based on their repeated interactions. As cognitive abilities develop, mental representations of these interactions evolve into more generalized beliefs about the contingency of other individuals’ behaviors, and one’s personal worth (Zeanah & Barton, 1989). Another term commonly used within many theoretical perspectives is the ‘schema.’ It is thought that these schemas or representational models evolve for the sake of cognitive efficiency. Relying on existing knowledge eliminates the need to develop new plans for action with every social encounter (Baldwin, 1992). These early representations are believed to act as an interpretive filter in ongoing interactions with the environment and are therefore considered central to positive development throughout the lifespan (Bartholomew, Kwong & Hart, 2001; Cichetti, Toth & Lynch, 1995). These internal working models may work by influencing attention and memory processes, especially attention and memory for emotional experiences.

Attachment Theory and Memory

Autobiographical memory is part of attachment research in two ways. First, the personal account of memories is a primary way through which attachment researchers are able to categorize a person's attachment organization. In the Adult Attachment Inventory (AAI), for example, adults are asked to describe memories about an attachment provider from childhood. The nature and coherence of these memories is then used to categorize working models of attachment as secure, preoccupied, dismissive, or fearful/disorganized. Second, other researchers, primarily in social psychology, have examined how adult attachment style predicts the content of autobiographical memories. In this approach, the purpose is not to categorize attachment quality based on the nature of one's memories but rather to determine if attachment style influences memory processes. The assumption in this approach is that individual differences in attachment style involve distinct strategies for regulating negative emotions and how memories are accessed (e.g., types of memory, with what intensity, etc) may be one type of emotion regulation strategy (Fraley et al., 2000). The focus in this study is on whether attachment style predicts differences in how a relatively open autobiographical memory task is completed rather than whether autobiographical memory is a repository for attachment related material.

Studies of memory processes in attachment literature have focused more specifically on two aspects of memory: content and phenomenology (Sutin & Gillath, 2009). Content refers to the type of memory recollected, whether or not the memory involved a caretaker, and the dominant emotion of the event. Phenomenology of memory focuses more on characteristics of the memory experience, how coherent the memory is, and how intense or vivid the act of remembering is for the person. In studies on attachment and memory, researchers have been

especially interested in the narratives people give for important life events or *autobiographical memories*. Autobiographical memories are important because they influence how people construct and maintain self-identity and how they approach interactions and intimacy (Sutin & Gillath, 2009). People high in attachment avoidance are shown to have less coherent narratives when describing past events (Conway, Singer, & Tagini, 2004) and to have reduced memory for attachment-related material in experimental studies (Edelstein, 2006). Autobiographical memories do not reflect exact replicas of events that occurred but instead they show how a person subjectively interprets an interaction and how that interpretation may change over time. Autobiographical memories influence emotional and motivational functioning and are thus imperative to research and to understand (Marsh & Roediger, 2003).

One idea that has received considerable support in attachment literature states that internal mental representations of attachment relationships influence the interpretation of social information (Haggerty, Siefert & Weinberger, 2010). This notion has gained support in the last ten years from social experimental studies. For example, several studies have examined whether attachment anxiety and avoidance are related to biases in attention and memory for emotional, interpersonal information (Fraley et al., 2000). They have tended to find results supporting this idea. Studies testing attentional processes have also explored the idea that attachment anxiety predicts heightened awareness to changes in emotional facial expressions, while attachment avoidance predicts reduced attention to emotional information (Brumbaugh & Fraley, 2007; Fraley et al., 2006). From an attachment theorist's perspective, avoidance and anxiety may influence the types of emotions people experience during an event and how they recollect those events later on. Consistent with this view, researchers have found links between attachment styles and recall tasks for attachment and emotional information (Fraley et al., 2000). In general,

these studies show more evidence of biases associated with attachment avoidance. Also, people with higher attachment avoidance report fewer negative emotional events, while people with secure attachment are able to easily describe positive and negative emotional experiences from the past (Mikulincer & Orbach, 1995). This is interpreted as secure adults experiencing an event with more emotions to begin with which means they may be more open to accessing positive and negative emotional memories in the future. In contrast, existing research suggests that people with insecure attachments, especially attachment avoidance, may exclude or avoid memories with negative emotions (Mikulincer & Orbach, 1995).

Although attachment researchers have looked at biases in memory, research on attachment style and autobiographical memory is limited. There is still much to be explored about how attachment style may influence recollections of autobiographical events in terms of emotional content. This current study aims to add to the literature by examining how attachment style relates to memory of emotional events in a task that may be similar to experiences an individual has had outside of a lab setting. The purpose of this study is to better understand whether attachment style predicts how young adults remember interpersonal events associated with negative memories.

Clinical relevance of attachment and autobiographical memories

Attachment style has been considered an important contributing factor to therapeutic relationships. Specifically, attachment style may determine a client's ability or willingness to establish a relationship with their therapist (Dallos, 2009). When conceptualizing the importance of attachment theory to clinical therapy, most researchers have focused on the potential influence over the therapeutic relationship. Clients who are avoidant may be unwilling to form a therapeutic relationship. Clients who are anxious may become overly-focused on their

relationship with their therapist or constantly worry about rejection. Besides influencing the relationship between a therapist and a client, attachment style is likely to influence how open a client is to talking about their past relationships and the nature of what is said. When people go to therapy, they are often asked to describe what their relationships with parents, partners, and friends are like or to go into detail about upsetting events (e.g., “tell me about the things your mother did to make you upset”). Attachment style is likely to influence how they respond to these types of general questions.

The research questions in this study may have implications for thinking about the ways that attachment style can influence therapy. If therapy is to be useful to an individual, it is important for that individual to be able to talk about their own memories and relationships. Attachment theory suggests that many individuals will be unable to talk coherently about their past, especially emotional events they may have experienced. This infers that therapy may be the appropriate outlet to reflect upon and express some of the negative experiences an individual may have had throughout their past. According to Belsky et al. (2009), narratives have the ability to evolve if individuals actively work to move the scripts they base their experience on in a more positive direction. Psychotherapy may facilitate this process. To do this, therapists must understand the biases that influence how clients access and talk about important emotional events from their past. The research of Bowlby (1980) states the way in which situations are understood in terms of their working models of attachment relationships. How attachment style relates to memory is important due to the fact that the nature of one’s memory may have implications for how that person acts with specific attachment figures and with others in the future. If people tend to remember new events in the same way as their working models (e.g.

that they were rejected by someone), this may lead to broad generalizations about relationships overall.

Autobiographical memories are critical to assess for they are utilized when attempting to comfort the self or when creating intimacy with another. Consequently, biases in autobiographical memory may lead to ongoing difficulties in relationships. According to Sutin and Gillath (2009), it is easier for an individual to change aspects of remembered events, like emotional intensity, rather than change their entire attachment style. Thus, identifying and addressing emotions linked with attachment-related memories may be an important therapeutic goal. Attachment styles can be secure and healthy or insecure and thereby potentially hinder interpersonal growth and development. As the subsequent research addresses, it is important to emphasize the role of attachment in therapy. This research is geared towards exploring a method of improving destructive information and emotion-processing models at an individual level.

Current study

This study builds on previous research on attachment and memory by asking: how does attachment style influence autobiographical recollection of emotional interpersonal experiences expressed through written narratives? It is hypothesized that individuals with an avoidant attachment style will provide less negative emotional content in their responses than individuals with an anxious attachment style. In particular, they will be less likely to give responses coded as 'sad' or 'scared'. Furthermore, individuals with an anxious attachment style will be more likely to express anxiety/worry/fear (i.e. 'scared') in their responses about an upsetting experience. These emotions should differ due to differences in their attachment style being reflected in their internal working models and emotion-processing strategies. Individuals deemed as avoidant-attached are hypothesized as being more likely to inhibit their emotional expression

and will therefore express less negative emotional content in their responses. Alternatively, individuals deemed as anxious-attached are hypothesized as being more likely to exaggerate their emotional expression and will therefore express more anxiety and worry in their responses. There is some evidence that attachment style may influence types of memories but it is not clear whether or not it influences access to certain types of emotions. From a clinical perspective, knowing if an attachment style is linked to specific types of emotions (e.g., anger, anxiety) may help to inform or give insight to emotion-focused treatments regarding how attachment style may relate to different diagnoses (i.e. depression versus anxiety).

Previous research has focused largely on experimental tasks surrounding memory (e.g., remembering a list of words). These studies provide experimental control but they may not measure biases in autobiographical memory, which are significant in understanding mental health outcomes (Sutin & Gillath, 2009). In this study, we examine how attachment style relates to how participants respond to a task in which they are asked to write a brief description of an emotionally upsetting event.

Analyses for the current paper are based on a larger experimental study examining the priming of certain interpersonal figures and whether or not these figures trigger attachment related biases in processing emotional information about children. In the larger study, participants are asked to write a five minute description of an upsetting event with a specific relationship partner. The purpose of the writing task is to act as a prime of negative attachment experiences (i.e. those in a group are asked to write about a parental figure). The larger study examines whether priming for different attachment figures alters the influence of attachment style on how pictures of children's emotions are interpreted (from stimuli presented later in the study protocol). This honors thesis focuses specifically on the content of these written

narratives. As part of an honors project, these written narratives were coded for specific emotional content (sad, angry, scared), emotional intensity, loneliness/rejection themes, evidence of minimization of emotion, and coherence. Then, the relationship between adult attachment style and content of narratives for three relationship figures (mother, father, and roommate) was examined. The underlying assumption is that the way in which participants respond to this memory task will reflect attachment biases in memory and/or attachment-based strategies for regulating negative emotions in a memory task. To review, it is hypothesized that:

- 1) Those with an avoidant attachment style will provide less negative emotional content in their responses. In particular, they will be less likely to give responses coded as 'sad' or 'scared'.
- 2) Those with an anxious attachment style will be more likely to express anxiety/worry/fear, i.e. 'scared', in their responses about an upsetting experience.

METHODS

Participants

Participants included 248 University of Connecticut students recruited from a pool of students in an Introductory Psychology course through the Psychology Department Participant Pool website. Current results are based on students in three conditions of a larger experimental study of 400 students, as described in the Introduction. Of the participants included in the current analyses, 167 (67%) were female and 81 (33%) were male. 81% identified as White/Caucasian. The average age was 18.6 (standard deviation = 1.0). These numbers match with the Psychology Pool statistics. The population of students enrolled in Introductory Psychology at this university was approximately 85% White, 6% Asian-American, 5% African-American and 2% Latino. The

majority of students enrolled in this course were first or second-year students between the ages of 17-24, with a mean age of 18.8. Participants included dating as well as non-dating students. Screening was done as part of the pre-screening process in the Psychology Participant Pool. The study was conducted in groups of approximately 8-12 participants.

Procedure

Following consent procedures, students completed a series of self report measures, including measures of attachment style, completed by the participant via paper and pencil. Self-report measures administered to the participant assessed a) perceptions of their family of origin; b) emotional quality of current relationships; c) current psychosocial and mental health variables; and d) demographic characteristics. Next, they responded to a writing task in which they were asked to write about an upsetting event with a specific person. Participants were randomly assigned to one of five groups representing one of five different stimulus figures: mother (interpersonal attachment figure from childhood), father (interpersonal attachment figure from childhood), and roommate (recent interpersonal figure). In the larger study, a fourth group was asked to write about an upsetting event at UConn (non-interpersonal prompt) and a fifth group was asked to write about how they chose their major (non-interpersonal). The assumption here was that the UConn prompt should represent non-interpersonal experiences that will be less likely to elicit negative emotional content in the narrative responses. The “father” and “major” prompts were added later in the study and therefore do not have the same sample size. The prompts focused on in this study consisted solely of “mother,” “father” and “roommate.” For the written narrative task, participants were given somewhat vague instructions (write about an upsetting event). The responses were coded based on several concepts from attachment theory, including the predominant emotion within the memory, the intensity with which they described

this emotion, any evidence of minimization (i.e., describing a negative event but downplaying the emotional aspect), and any evidence of resolution (i.e., attempts to talk about positive aspects of the relationship, something learned from the experience, etc). For this thesis, only the content codes of the mother, father, and roommate prompts were examined. Gender, participants' reports of state emotions and relationship quality variables were controlled for in the statistical analyses.

Measures

Demographic Questionnaire: Participants completed a brief demographic questionnaire that included questions about age, gender, race/ethnicity, socio-economic status (SES), and family structure.

Experiences in Close Relationships-Revised: The ECR-R (Fraley, Waller & Brennan, 2000) assesses individual differences with respect to attachment-related anxiety (i.e., the extent to which people are insecure versus secure about partner's availability and responsiveness) and attachment-related avoidance (i.e. the extent to which people are uncomfortable being close to others versus the extent to which people are secure depending on others). The participants were asked to rate their feelings in close relationships on a 7-point scale, from 1 (not at all) to 7 (very much). The ECR-R is the most widely used measure of adult attachment style in the literature. It has good internal consistency (Brennan & Shaver, 1997) and has been shown to relate to measures of relationship quality and observed interpersonal behaviors.

Revised Neuroticism Extroversion Openness (NEO) Personality Inventory: Costa & McCrae (1992) examined the potentially confounding effects of individual differences in tendencies towards negative affect, participants completed several subscales of personality, including

depression (7 items; $\alpha = .82$), anxiety (7 items; $\alpha = .85$), and hostility (7 items; $\alpha = .88$) domains of the NEO.

Parental Bonding Inventory (PBI): The PBI (Parker, Tupling & Brown, 1979) is a 25-item self-report measure designed to assess two dimensions of parent-child relationships:

hostility/affection and autonomy/control. For this study, participants completed the 13 item subscale reflecting hostility/affection, which is viewed as a reflection of general parental warmth and relationship quality (Parker et al., 1979). The alpha value was .83.

Roommate Relationship Quality: Participants completed a 10-item measure about the quality of relationship with their roommate ($\alpha = .85$). This measure was constructed for this study.

Items included statements like “I enjoy spending time with my roommate” and “My roommate and I disagree a lot”. Respondents indicated how true each item was for them on a 1-5 point Likert scale.

Narrative Task: Participants were experimentally primed to access mental representations of attachment figures (i.e. schema activation). Participants were then asked to describe an upsetting experience on paper for 5 minutes. The exact instructions were:

For the next 5 minutes, we would like for you to write about an incident that made you feel upset in some way. Below you will be given a specific type of situation to write about (e.g., with a friend, at UConn, etc.) By upset, we mean something that made you feel sad, angry, worried, or some kind of negative emotion. Please use as much detail as possible to describe the event and why it made you upset. Do not worry about things like grammar or spelling; we are more concerned with how people describe emotional events than with writing style. You will be told when 5 minutes is up. Please write about a situation WITH YOUR MOTHER (FATHER or ROOMMATE) that made you upset.

A coding scheme was developed based on attachment theory concepts. These written narratives were then coded by three independent undergraduates who were unaware of other data on

participants and were trained for reliability on a subset of narratives. The narratives were coded for emotional content (presence/absence of sadness, anger/hostility, fear/worry/anxiety, shame/embarrassment), emotional intensity (1-3 rating), minimization of emotions/events, and evidence of loneliness/rejection in the narrative. Raters had high agreement, meaning the rating in this research is reliable (See Table 1). Disagreements were resolved by consensus of two graduate students.

Mood Rating: Participants indicated how much they were currently feeling eight different mood states (happy, bored, sad, worried, angry, excited, tired, and annoyed) on a separate 1-7 scale per emotion immediately after completing the narrative task.

There are few, if any, identifiable risks associated with participation in this study. At the beginning, the voluntary and confidential nature of the study was described to willing participants. The study was approved by the IRB and participants received credits in their introductory psychology course for their participation.

RESULTS

Descriptive Statistics

There were a total of 248 participants. Those in the mother condition represented 25.6% of the participants, (frequency = 95). Those in the father condition represented 13.4% of the participants, (frequency = 51). Finally, those in the roommate condition represented 23.8% of the participants, (frequency = 91). There were equal numbers of male and female students in each group. Results were first presented for the reliability of the narratives. Then, differences by prompt were described (e.g., differences in frequency of sad content depending on prompt).

Finally, to examine if attachment style related to narratives, a series of logistic regressions were used.

Table 2 shows the prevalence of particular emotions (sad, angry, scared, shame, and mixed emotions) within the particular prompts (mother, father, and roommate). As a group overall, anger and sadness were expressed with the highest frequency while fear was expressed with the lowest frequency. Shame was not found in high frequency and was therefore not considered further for the purposes of this study. A series of four chi-square tests were run to examine the association between prompt type (mother, father, or roommate) and emotional content (sadness, anger, fear/worry, shame) from remembered events. Results were as follows: for sadness ($\chi^2(2, N = 247) = 19.66, p < .01$), for anger ($\chi^2(2, N = 247) = 7.34, p < .05$), for fear ($\chi^2(2, N = 247) = 5.06, p < .10$), and for shame ($\chi^2(2, N = 247) = 4.17, p > .10$). Sadness was more common in father (47%) and mother (32%) prompts compared to roommate (14%) prompts. Anger was more common in roommate prompts (70%) compared to mother (54%) and father (51%) prompts.

Chi-square test was also used to test whether there was an association between emotional complexity and relationship figure. Individuals were more likely to have complex emotions, meaning they gave a response coded with two or more emotions present, in memories involving parent-child interactions ($\chi^2(2, N = 247) = 12.23, p < .05$). 30% of participants in the mother prompt condition and 41.5% of participants in the father prompt condition expressed two or more emotions in their narrative. In contrast, 18.1% of participants in the roommate prompt condition expressed 2+ emotions.

Next, chi-square analysis was used to test for gender differences in emotions across the prompts (shown in Table 3). Females were higher in sadness, fear/worry, and shame while

males expressed more anger emotions in their narratives. As for mixed emotions, females tended to display more mixed emotions (2+) in their prompts than males.

Correlations between Variables

Pearson correlations were used to assess bivariate relationships between variables (anxious attachment, avoidant attachment, NEO depression, anxiety, hostility, maternal and paternal bonding, and roommate quality). These results are presented in Figure 5. ECR-R anxiety and avoidance were significantly correlated ($r = .47$). There were also several significant correlations present between the particular attachment styles, as measured by the ECR-R, and other variables involved in the study. Specifically, there was a moderate correlation between anxious attachment style and NEO depression ($r = .47$), anxiety ($r = .37$), and hostility ($r = .30$). Attachment anxiety was also significantly related to mother and father PBI ($r = -.18$ and $-.20$), but these relationships were small in magnitude. Finally, there was no correlation of attachment style with the roommate relationship quality measure. ECR-R attachment avoidance was significantly associated with NEO depression ($r = .28$) and hostility ($r = .23$) and mother PBI ($r = .19$). However, these correlations were smaller than those with ECR-R anxiety. In general, the small correlations between ECR-R and the relationship measures (PBI and roommate quality) indicate that these measures were assessing different aspects of relationship experiences.

Logistic Regression

The relationship between attachment style and emotional content of memory was examined using logistic regression. The goal of these analyses was to see if attachment anxiety and avoidance predicted the likelihood that responses included a certain emotion beyond relationship quality measures and negative emotional tendencies. Some individuals were excluded from the analysis, resulting in: $N = 95$ for the mother prompt, $N = 51$ for the father

prompt, and $N = 91$ for the roommate prompts. Each emotion variable (sad, anger, scared) was used in turn as an outcome. Separate analyses were done for the three prompts. All analyses controlled for gender, the appropriate relationship measure (father PBI for father prompt, etc.), and the appropriate NEO emotion measure (e.g. hostility for anger in narrative outcome). The outcomes for the emotions were dichotomous: (1) present, (0) not present. Results are presented in Table 5 for Sadness, Table 6 for Scared and Table 7 for Anger.

For sadness, there was a consistent expression in all of the prompts. The mother, father, and roommate prompt all showed model significance for sadness, in a positive direction of effect. Furthermore, there was a pattern in which people high in avoidance were less likely to have described memories with sadness in them. This was true regardless of whether they were prompted to talk about mother, father, or roommate. Moreover, this effect was present controlling for general depressive tendencies and for participants' overt response about the quality of that specific relationship (i.e., PBI or Roommate relationship quality measure). Overall, these results suggest that elevated attachment avoidance is associated with a decreased likelihood of sadness in memory recall of 'upsetting' events. There was also some indication that when asked to think about their fathers, participants who were high in anxiety were more likely to write about sad events ($p = .01$). However, this expression of sadness in prompts seemed to be relationship specific, as it was not true for any other relationship figure, (i.e. mother or roommate).

None of the attachment variables were associated with the likelihood of describing an event characterized by anxiety, fear, or worry (i.e. the scared code). Attachment anxiety was associated with decreased likelihood of anger for the mother prompts (Adjusted Odds Ratio =

.53, 95% CI = .32 - .90). No other associations were found for anger. In general, attachment variables were not related to emotions in roommate prompts.

DISCUSSION

Attachment theory views interpersonal and psychological difficulty as rooted in experiences with attachment figures. From this perspective, cognitive processes such as attention and memory are some of the mechanisms through which relationship experiences obtain a lasting influence on subsequent experiences. Although this assumption was part of early writing on attachment theory, empirical tests of the relationship between attachment style and memory have recently increased and expanded the literature. Several of these studies have focused on experimental memory tasks, such as word learning or script recall. Other memory tasks have been utilized, such as the type included in the current study, which capture free recall of personal events through the use of narratives. In this study, participants were asked to recall an upsetting event with a specific person. This type of task may have more relevance for understanding how attachment style can shape client behaviors in therapy since accessing interpersonal, emotional memories is a major component of therapeutic activity.

The goal of this research was to examine how adult attachment style manifests in autobiographical interpersonal memories. Based on theory, it was hypothesized that avoidance would be associated with reduced negative emotional content in memories and that anxiety would be associated with increased anxiety, worry, and fear in memories. Some support for these hypotheses were found, as discussed below.

Differences by prompt

Narratives are a way of presenting experiences in clear and coherent manners that draw on all of the resources within our representational systems (Vetere & Dallos, 2008). Regardless of attachment style, participants were more likely to report memories characterized by sadness or being scared when asked to think about an event with a parent as opposed to an event with a roommate. They were more likely to describe an angry event when writing about their roommate. While potentially not surprising, it does highlight that relationships are associated with different types of emotions, and that some attachment figures may be more likely to elicit one type of emotion over another. Participants were asked to describe an ‘upsetting’ event, rather than an event with an explicit type of emotion, in order to examine differences in how this somewhat vague task was handled. Results suggest that anger may be the most salient emotion for college students, particularly in regards to relationships. When asked to think about a parent (more likely an attachment figure), ‘upsetting’ was more often interpreted to mean an event that elicited sadness or worry. In contrast, when asked to talk about a roommate, being asked to think about an ‘upsetting’ event lead most students to write about an experience associated with anger. These different emotional experiences emphasize the importance of the different stimulus relationships. Therefore, it is important to note how a relationship figure differs between contexts. For example, an upsetting experience with a romantic partner will conjure up different emotions than an upsetting experience with a caregiver.

Consistent with Hypothesis 1, people high in attachment avoidance were less likely to describe sad events from their past. Avoidance was associated with a reduced likelihood to describe sad events for all relationship figures, although this tendency was stronger for parents and did not reach statistical significance ($p < .05$) for roommates (although a trend was present).

It is interesting to note that they did not describe more negative relationships in general, as shown by the lack of correlation between attachment avoidance and the PBI and roommate relationship measure. Thus, it was not the case that avoidance was associated with a general tendency to perceive relationships more negatively than individuals with a secure attachment. Those who express avoidance in attachment may utilize preemptive processes in which information is not initially attended to in way that allots for later encoding, retrieval and recollection (Haggerty et al., 2010). One previous study found that individuals high in avoidant attachment have a tendency to report childhood experiences associated with attachment in more emotionally bland terminology and with less intensity (Mikulincer & Orbach, 1995). While this study did not examine intensity, intensity ratings were coded and participant mood assessed immediately after the narrative; thus, it will be possible to further examine these memory attributes. The reduced tendency to recollect sad memories among people with high attachment avoidance may also represent an emotional regulation strategy. These people may have experienced sad events in their past, but when presented with a vague task like “write about an upsetting event” they consciously or unconsciously avoid bringing these events to mind. This may reflect a defensive strategy when processing attachment-related memories (Fraley et al., 2000). In doing so, people high in avoidance minimize their potential for feeling sad, but they also may not have an opportunity to revisit, and potentially rethink, important events that have happened to them in the past.

Inconsistent with Hypothesis 1, there was no evidence that attachment avoidance was predictive of a reduced tendency to remember events associated with worry, fear, or anxiety. Rather, avoidance was only associated with sadness as opposed to the other coded emotions. In general, participants did not tend to report a lot of events coded as describing worry, fear, or

anxiety. The term 'upsetting' may be less likely to lead these individuals to think of these types of events. Alternatively, these types of events may be less common in relationships with parents and roommates and more common in other types of relationships for college students (e.g. romantic, with a boss or professor, etc.).

How does attachment anxiety influence memory for emotional events? These results are less clear. Hypothesis 2 was that attachment anxiety would be associated with an increased tendency to report experiences associated with anxiety, fear, or worry based on the assumption that negative memories may be more available to consciousness for individuals high in anxiety (Fraley et al., 2006). In this study, however, attachment anxiety was less consistently associated with any one emotion. Rather, attachment anxiety was associated with emotional content differently depending on the relationship partner being written about. Anxious individuals showed an increased likelihood of sadness when writing about their father, but not when writing about their mother or roommate. Attachment anxiety was also associated with a decreased likelihood for anger when participants wrote about their mother; this was not true among participants writing about their father or roommate. In the case of fathers, anxious individuals have a tendency to focus more on sadness in this relationship, which is consistent with the idea of over-focus on negativity, the threat of possible rejection, etc. that anxious individuals tend to consume themselves with. Interestingly, high attachment anxiety decreased the likelihood of bringing up angry memories with a mother. One possibility is that individuals high on attachment anxiety may have fewer experiences of anger directed at their parent, hence, fewer of these angry memories to recall. This reduced tendency may also reflect an attachment-related emotion-regulation strategy. As an emotion, anger creates distance and can disrupt relationships. For people high in attachment anxiety (i.e., over concern with stability of relationships), anger

may be perceived as a “dangerous” emotion. As a result, anxious people may in effect avoid recalling angry experiences with an attachment figure as a way to maintain the relationship and avoid becoming distressed or deregulated.

It is important to note that these results were significant even after controlling for individual differences in tendencies towards specific negative affect (e.g. depression, anxiety, and hostility) and reports on the quality of specific relationships (maternal and paternal PBI and roommate relationship quality). Thus, findings reflect more than just emotional tendencies (e.g., depression) to influence memory and what could be construed as poor relationships that have more negative events to recall. Instead, the significant findings that did emerge suggest that adult attachment style is capturing something important and distinct in how people differ in accessing autobiographical memories of emotional, interpersonal experiences.

Implications for Close Relationships

Many relationship partners beyond childhood can be conceptualized as attachment figures and early attachment experiences can have a lasting influence on how people think, feel and behave in these adult relationship (Collins, 1996). The results from the current study have some implications for thinking about ongoing and intimate relationships in adulthood. The way an individual interprets and expresses emotion can change the way a relationship partner reacts to him or her. Responding in an appropriate manner to an “upsetting” event can affect the quality of interaction in all subsequent contexts. For example, anxious individuals possess a strong need for reassurance due to perceptions of being unworthy or undeserving of kindness (Mikulincer & Shaver, 2005). It may grow to be exhausting for a relationship partner to maintain constant reassurance which will, ultimately, damage the quality of the relationship. In contrast, secure individuals tend to believe that relationship partners generally have good intentions at heart (p.

154). Similarly, the extent to which a person has biased memories of a specific event, or how often they access and discuss this event with their partner, may serve to strengthen or weaken the quality of that relationship.

Having a secure base of attachment will grant a person access to emotions that an anxious or avoidant attached individual lacks. This is critical to relationships because emotion regulation (e.g., restraint and reaction) are vital to maintaining a healthy and balanced romantic and/or close relationship (Collins, 1996). Both the rumination of the person with an anxious attachment style and the minimization of the person with an avoidance attachment style can hinder positive relationship formation or maintenance. Biased memory for emotional events may eventually contribute to actual distance or rejection in relationships, which can then lead to repeated cycles of similar relationship problems. Through attachment influences on memory, an individual's past experiences may serve to bias their future interactions with a potential mate, spouse, or mere acquaintance.

An important area of research to be examined in the future is how biases in autobiographical memory may contribute to intergenerational patterns of problematic parenting or even child maltreatment. Individuals who experience maltreatment are likely to have insecure attachments (Cicchetti & Lynch, 1995). When these individuals grow up and find themselves in the transition to parenthood, they may reflect on their own attachment-related history. If attachment creates biases in how these events are remembered, it may influence how they then approach parenting their own child. Belsky (2009) points out how adults' childhood experiences of care-giving relationships is important to examine, as they may act either as a resource or a liability for influencing the quality of parenting they provide to their own offspring (Belsky,

2009). The role of attachment and autobiographical memory in this process would be an interesting area for future research.

Future longitudinal research is also needed to tease apart whether biases in memory for sad events in people with avoidant attachment style reflects a difference in how events are initially experienced or a difference in how they are subsequently recalled. Through the use of self-report daily diaries, Torquati & Raffaelli (2004) found that secure participants are more likely to report extreme positive emotions in terms of their daily experiences. This is opposed to insecure participants, who are more likely to report extreme negative emotions about daily events. Thus, attachment differences may occur at the time of experiencing an event. There is also some evidence (e.g., Feeney & Cassidy, 2003) that attachment style influences both how events are initially experienced emotionally and how emotions from those events are later recalled. However, more research in this area is needed.

Implications for Therapy

What is the clinical relevance of these findings? Some individuals desire the ability to gain a better grasp on their regulatory emotion strategies so as to tap a little more or a little less into their emotions, especially when faced with conflict. Perhaps an insecure attachment style has led to relationship problems and an individual wishes to make adjustments to their cognitive and behavioral patterns to cope. Therapy may be the place for them to facilitate the changes they wish to make.

Avoidant individuals may benefit from therapy as a place to hone communication skills about negative interpersonal experiences. The general lack of willingness to disclose information about negative events differs from individual to individual but is more evident among the avoidant. This has clear implications for therapy and the capacity to be open and effectively

communicate emotions surrounding negative events to a therapist/counselor. By shutting down or distancing themselves from the source of frustration, avoidant individuals are closing themselves off to details and specific information about their environment and/or experiences. Therapy can help to engage their inner dialogues and make sense of their strategies for coping, which may not be explicitly obvious to a person with avoidant or dismissive tendencies (Vetere & Dallos, 2008). An avoidant individual may be more willing to learn to engage in some emotionally risky behavior in a non-threatening environment, much like therapy.

Anxious individuals tend to possess a negative self-image. They are worried that others will abandon them and are consumed with doubt in relationship interactions. According to Vetere & Dallos (2009), this doubt and preoccupation makes reflection very difficult. A therapist can step in to help “soften down” or de-escalate an anxious-attached individuals negative attribution tendencies. The heightened negative awareness and rumination disables the anxious individual to collect and decipher their thoughts. Also, these findings suggest that anxious people may require help accessing angry memories with attachment figures. While it is not healthy to hold onto anger, it is important for individuals to be able to access and discuss angering events openly in order to maintain optimal health. Therapy may be able to provide the avenue for individuals to manage automatic responses and to explore difficult emotional events more openly.

Therapy can help people who find themselves consistently negatively affected by their attachment style. Utilizing attachment style and narratives, Vetere & Dallos (2008) published their approach to therapy. Therapy is the opportunity to “model open and straightforward communication” (p. 380). The two initial steps which applied to the current study were 1) creating a secure base and 2) exploring narratives (p. 374). The goal is to enable clients to

identify, elaborate on, and effectively communicate their emotions to one another, typically in a family-style format. The authors maintain that it takes a supportive environment to activate less destructive patterns of thinking and behaving. Good listening is the key to helping an individual understand themselves, to understand another, as well as to feel understood (p. 377). The key to a positive therapeutic experience is to focus on improving the way individuals find themselves *relating* to others. Hill (2009) stresses the importance of providing a client with an appropriate therapeutic environment by forming “a therapeutic alliance” (p. 8). This entails: warmth, support, empathy, genuineness, the use of humor as well as the use of optimism (p. 1). Furthermore, Vetere & Dallos (2008) say they can provide a client with an expanded repertoire of responses and even go so far as to say that they can shift a client’s attachment style to include other possibilities. Although a constructive attitude, there is also the concern that inner working models are only so flexible and subject to change.

Limitations

There were several important limitations to the current study. Most experimental studies focusing on attachment have only included college populations in their samples. Because the population in the current study consists of northeastern undergraduate students, the results may not generalize as well to individuals outside of the population. It may also benefit future research to employ a longitudinal design.

The idea of social desirability, or social pressure to agree with or conform to opinions of the interviewer or society in general, could have played a significant role in biasing the results, especially on the self-report measures. Chae, Ogle, & Goodman (2009), claim insecure children may show a stronger tendency to susceptibility of demand characteristics from an interview; they

may be more nervous and unsure of themselves and thereby provide answers in an attempt to receive approval rather than protect the accuracy of their memory (p. 8).

In this study, many causal variables were not measured or coded. For example, the narrative prompt of choosing a major was excluded from further analysis under the assumption that it was not an emotional or interpersonal experience. The data from those prompts may have proven a valuable variable in the line of reasoning utilized in the current study for many individuals may have significant emotional stake involved when making a decision about their future, i.e. choosing a major. However, the data analyzed in this study only proves a correlation; no causal relationships can be extracted solely from the evidence provided. Despite limitations, the current study has implications for future research.

Concluding Remarks

Mikulincer & Shaver (2005) state that only securely attached individuals possess the ability to experience the full extent of joy, love, and pride. If insecurely attached people are to be helped to improve the quality of their interpersonal life, more information is needed about the role insecurity plays. One way an insecure attachment style may influence the quality of ongoing relationships is through memory processes of interpersonal, emotional events. In this study, some evidence was found of specific ways in which attachment style may influence how people access or discuss emotional events. This line of inquiry can inform treatment strategies and other efforts to improve people's relationships (e.g., self-help books, social skills training, etc.). Although attachment style may shape relationships, this influence need not be permanent. Rather, as people learn to be more open to emotional experiences from the past, they may develop more positive relationships. This could, over time, lead to a more secure attachment style and healthier relationships overall.

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TABLES AND FIGURES

Table 1

Inter-rater Reliability (% Agreement and Kappa Value)

Emotion	% Agreement	Kappa Value
Sad	86.9 %	.634
Angry	88.3 %	.752
Scared	94.1 %	.820
Shame	95.1 %	.77

Table 2

Emotional Content Based on Narrative Task

<i>Emotion</i>	Mother	Father	Roommate	Total
Sad	32.0 %	47.2 %	13.8 %	27.7 %
Angry	54.0 %	50.9 %	70.2 %	45.5 %
Scared	19.0 %	30.2 %	14.9 %	22.2 %
Shame	14.0%	9.4%	5.3%	9.7%
Mixed Emotions (>1 emotion)	30.0 %	41.5 %	18.1 %	19.2 %

Table 3

Gender Differences in Emotion

<i>P Gender</i>	Sad	Angry	Scared	Shame	Mixed Emotions
Male	13.2 %	60.5 %	14.0 %	5.3 %	13.2 %
Female	34.9 %	53.0 %	23.7 %	10.3 %	31.5 %
Total	27.7 %	55.5 %	20.5 %	8.7 %	25.4 %

Table 4

Correlations between ECR attachment anxiety and avoidance and other independent variables for sample

	ECR Anxious	ECR Avoidant
ECR Anxious	-	.47**
ECR Avoidant	.47**	-
Gender	.05	.15
NEO Depression	.47**	.28**
NEO Anxiety	.37**	.14*
NEO Hostility	.30**	.23**
Mother PBI	-.18**	-.19**
Father PBI	-.20**	-.15*
Roommate Relationship Quality	.12	-.08

Note: *p<.05; **p<.01

ECR-R: Experiences in Close Relationships-Revised

NEO: Revised NEO Personality Inventory

PBI: Parental Bonding Inventory

Table 5

Logistic regression results predicting sadness in narratives

	OUTCOME = SAD		
	Mother	Father	Roommate
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Gender	.44 (.15 – 1.30)	.16 (.03 – 1.00) [*]	.77 (.17 – 3.41)
NEO-Depression	1.14 (.52 – 2.50)	1.45 (.53 – 3.96)	2.34 (.94 – 5.79)
Relationship Measure (PBI or Roommate)	1.10 (.66 – 1.82)	.74 (.35 – 1.55)	2.77 (.89 – 8.62)
Anxious (ECR-R)	1.15 (.66 – 2.03)	2.23 (.93 – 5.31) ⁺	1.15 (.55 – 2.41)
Avoidant (ECR-R)	.49 (.28 – .85) [*]	.43 (.19 – 1.01) ⁺	.43 (.17 – 1.09) ⁺
Model Significance	$\chi^2(5, N = 95) = 13.11$ p = .02 [*]	$\chi^2(5, N = 51) = 15.01$ p = .01 [*]	$\chi^2(5, N = 91) = 11.99$ p = .04 [*]

Note: ^{*}p<.05; ^{**}p<.01

ECR-R: Experiences in Close Relationships-Revised

NEO: Revised NEO Personality Inventory

PBI: Parental Bonding Inventory

AOR: Adjusted Odds Ratio

Table 6

Logistic Regression Results Predicting Scared in Narratives

	OUTCOME = SCARED		
	Mother	Father	Roommate
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Gender	.32 (.08 – 1.30)*	.23 (.02 – 2.32)*	1.39 (.34 – 5.68)
NEO-Anxiety	.79 (.34 – 1.82)	1.06 (.43 – 2.65)	1.40 (.59 – 3.29)
Relationship Measure (PBI or Roommate)	.94 (.56 – 1.57)	1.30 (.60 – 2.80)	.67 (.19 – 2.34)
Anxious (ECR-R)	1.28 (.65 – 2.50)	1.32 (.62 – 2.81)	.84 (.42 – 1.66)
Avoidant (ECR-R)	.72 (.40 – 1.32)	1.12 (.55 – 2.28)	.74 (.38 – 1.44)
Model Significance	χ^2 (5, N = 95) = 4.49 p = .48	χ^2 (5, N = 51) = 5.22 p = .39	χ^2 (5, N = 91) = 2.53 p = .77

Note: *p<.05; **p<.01

ECR-R: Experiences in Close Relationships-Revised

NEO: Revised NEO Personality Inventory

PBI: Parental Bonding Inventory

AOR: Adjusted Odds Ratio

Table 7

Logistic Regression Results Predicting Anger in Narratives

	OUTCOME = ANGRY		
	Mother AOR (95% CI)	Father AOR (95% CI)	Roommate AOR (95% CI)
Gender	2.42 (.90 – 6.51)	1.02 (.19 – 5.42)	1.53 (.54 – 4.33)
NEO-Hostility	2.09 (1.05 – 4.16) *	5.70 (1.53 – 21.24) *	.64 (.31 – 1.37)
Relationship Measure (PBI or Roommate)	1.70 (1.03 – 2.82) *	.98 (.49 – 1.94)	.74 (.31 – 1.76)
Anxious (ECR-R)	.53 (.32 – .90) *	.60 (.28 – 1.29)	1.14 (.68 – 1.90)
Avoidant (ECR-R)	1.21 (.76 – 1.93)	1.46 (.72 – 2.97)	1.11 (.67 – 1.83)
Model Significance	χ^2 (5, N = 95) = 16.62 p = .01 *	χ^2 (5, N = 51) = 12.37 p = .03 *	χ^2 (5, N = 93) = 2.94 p = .71

Note: * p<.05; ** p<.01

ECR-R: Experiences in Close Relationships-Revised

NEO: Revised NEO Personality Inventory

PBI: Parental Bonding Inventory

AOR: Adjusted Odds Ratio

Figure 1

Emotions present within Prompts

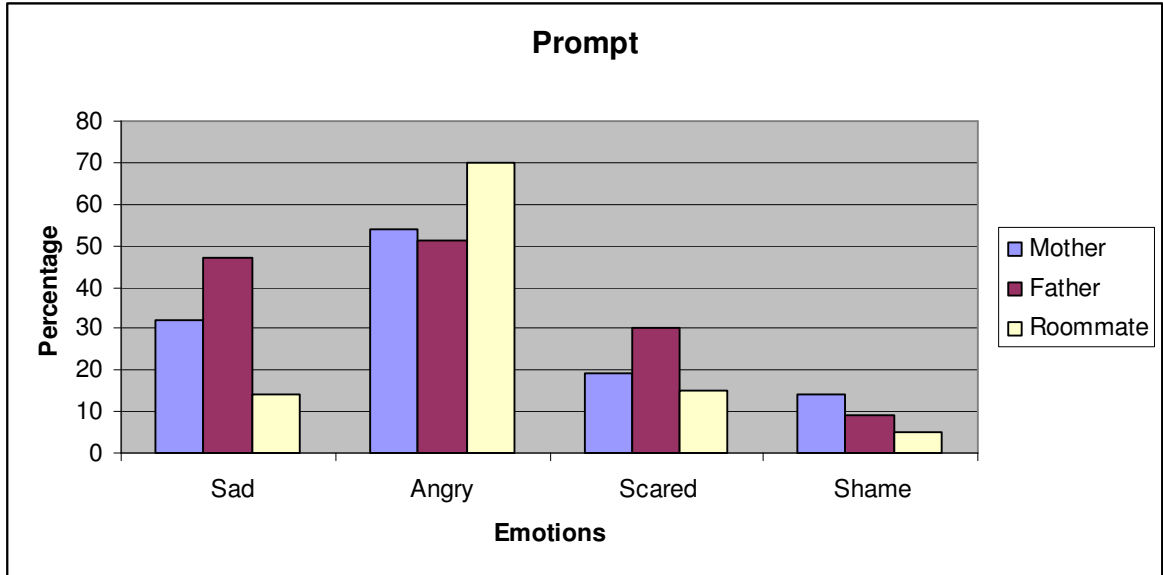


Figure 2

Mean ECR Avoidance by Prompt and Sadness

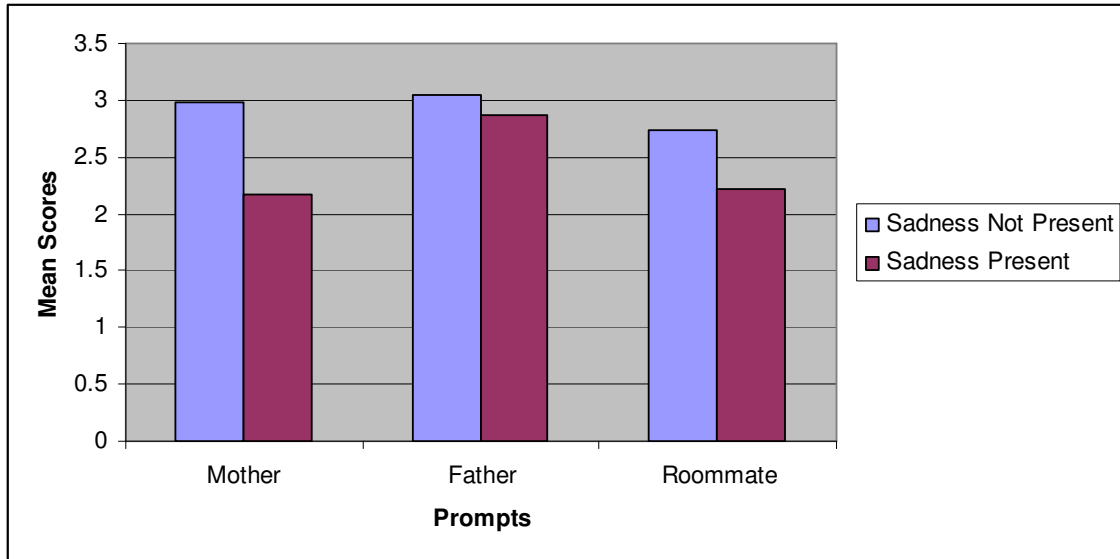


Figure 3

Mean ECR Anxiety by Prompt and Sadness

