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ATTACHMENT STYLES AND USE OF DEFENSE MECHANISMS: A STUDY OF THE ADULT ATTACHMENT PROJECTIVE AND CRAMER'S DEFENSE MECHANISM SCALE

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DEDICATION

This dissertation is dedicated to my parents, Carl and Sharon Hoffman, who have supported me at every step of the way and always encouraged me to do my very best. It is also dedicated to Karen Wetzel without whose support I know I could have never accomplished what I have.

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ABSTRACT

The purpose of this study was to examine the relationship between adult attachment and maturity of defense mechanisms. 100 undergraduate students were given both the Adult Attachment Projective (AAP) and the Thematic Apperception Test (TAT), which was scored for defense mechanism use with Cramer's Defense Mechanism Manual (DMM).

The AAP's four scoring categories were condensed into two groups reflecting secure and insecure attachment. These were then compared to the three levels of defenses that the DMM scores for: denial, projection, and identification. These defenses exist on a hierarchy with denial being the most primitive and identification being the most mature.

Results suggest that insecure attachment is related to the primitive defenses of denial and projection. No differences were found between the insecure and secure groups for the mature defense of identification.

The findings of this study argue for the idea that attachment may be a factor in the development of defensive structures. Two theories for this finding are discussed. First, primitive defenses may become ingrained during childhood because of an inability to use an attachment figure for comfort and protection. Second, individuals with insecure attachment may not be able to use identification effectively as a defense, necessitating the greater use of other more immature defenses to guard against distress. This study also shows that immature defenses may be a better measure of psychological deficits than mature defenses.

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I. Introduction

Both the psychodynamic concept of defense mechanisms and John Bowlby's attachment theory have been well studied and researched over the years. At the heart of both theories lies the concept of human adaptation. Bowlby described how infants adapt to their environment by bonding with their caregivers and how the nature of these bonds impact subsequent interpersonal behavior. Defense mechanisms explain how individuals defend and protect themselves from intolerable anxiety while avoiding conscious awareness of the source of the anxiety. By comparing these two concepts, we can better understand how both defense mechanisms and attachment aid in human development and adaptation. Attachment theory generally does not venture much outside of the realm of interpersonal behavior. Investigating how attachment relates to defense mechanism use may be a way to better understand the implication of attachment status on other areas of psychological functioning.

Investigating the relationship between these two concepts also may shed light on the impact of attachment on psychological development. Recent views on defense mechanisms posit that they exist on a developmental hierarchy with some defenses being related to more immature psychological states and some reflecting a more mature developmental level. It is possible that early attachment to caregivers may be related to the development of psychological defensive structures.

Defense Mechanisms

The concept of defense mechanisms has a long history in the field of psychology. Sigmund Freud first proposed the concept of defense mechanisms in a paper titled "The Neuro-Psychoses of Defence" (1894) and further elaborated on his theory in "Further Remarks on the Neuro-Psychoses of Defence" (1896). Freud originally defined defenses to be unconscious mental operations that keep painful thoughts and emotions from awareness. He focused much of his early analysis of defenses on the concept of repression and its role in hysteria. In repression, he asserted, individuals merely do not remember painful events and feel as if they never happened. At the start of his work, Freud felt that all defenses were inherently pathological and represented barriers to psychological health. For a period of time, Freud moved away from using the term *defense* and instead used the word *repression* to describe defense mechanisms. Later in his career, Freud (1915, 1923, 1926) expanded his concept of defenses to describe a wider array of defensive processes, and the term repression was used to describe one specific type of defense mechanism. Freud also elaborated on the reasons why defense mechanisms existed. He claimed that they arose from the conflict between the ego and the id. The ego seeks to bar the expression of unacceptable impulses by using defense mechanisms (1923). Despite the fact that Freud still viewed defenses as pathological, other theorists classified his notion of defenses into groups. Otto Fenichel, in his book the *The Psychoanalytic Theory of Neurosis* (1945), organized Freud's defenses into what he termed successful and

unsuccessful defenses. Successful defenses allowed expression of the instinctual drive in a manner that the individual could tolerate. Unsuccessful defenses did not allow expression of the drive and thus needed to be repeated constantly. Even though Fenichel and other theorists such as Anna Freud (1946) and George Vaillant (1971) have described both categories of defenses, Sigmund Freud never included successful defenses into his overall category of defense mechanisms.

Sigmund Freud (1894, 1896, 1915, 1916, 1923, 1926) described a total of seven defenses that the ego uses against instincts arising from the id. Kline (2004) provided a good summary of the defense mechanisms that Freud described throughout his career.

1. Repression, as mentioned earlier, was one of the main defense mechanisms that Freud discussed. This involved the function of rejecting and keeping some unpleasant thought out of consciousness. Kline (2004) summarizes the two different types of repression:

   > Primal repression – where the mental presentation of the instinct is denied entry into consciousness, and repression proper – where the mental derivatives and associations of the repressed presentation, which are also denied entry into consciousness. The mental energy that belongs to repressed instincts is transformed into affects, especially anxiety, which renders repression an unsuccessful defense. (p. 44)

2. Denial describes a defense where a person's ego wards off certain painful perceptions from the outside world by simply denying that they exist.

3. Projection is a defense where a person's own unacceptable impulses and ideas get attributed to another person or persons.

4. Reaction formation describes a defense where a person develops an attitude that is the opposite of the instinct that is defended against.

5. Undoing describes an attempt to carry out an action that is the opposite of the instinct that is defended against and that will cancel out the perceived consequences of the instinct.

6. Isolation is a defense that Freud described which involves isolating experiences from their associations and emotions.

7. Last, regression describes a process where the ego regresses to an earlier stage of development.

In addition to the ego's defenses against instinct, Freud also felt that people defended against affect also. Freud described three types of defenses against affect: postponement of affect, displacement of affect, and identification with the aggressor. Freud (1916) also described the process of sublimation. In sublimation, a person abandons the sexual aim for another aim, which is no longer sexual but instead is productive and pro-social. Sublimation refers to successful

defenses and, thus, was not viewed by Freud as an actual defense. Sigmund Freud laid the groundwork for the study of defense mechanisms by developing the concept and elaborating on several different types of defense mechanisms. After his death, his daughter, Anna Freud, took over the study of defense mechanisms and developed a much more comprehensive theory. While the concept of defense mechanisms has changed and expanded, Sigmund Freud's original ideas serve as the backbone for much of the modern work on defenses.

Anna Freud's book *Ego and the Mechanisms of Defence* (1946) stands as one of the most important books in the study of defense mechanisms. Her work was one of the first steps in forming a comprehensive theory of defense mechanisms. Sigmund Freud described his defense mechanisms in a series of papers, lectures, and books (1894, 1896, 1915, 1916, 1923, 1926) and never pulled together all of the information into one comprehensive theory. Anna organized many of her father's ideas into her book, elaborated on them, and then made several changes to his theories. One of her most important contributions to the study of defenses was viewing defense mechanisms as adaptive processes that were not necessarily pathological. Anna Freud felt that depending on the circumstance defenses could be either pathological or adaptive, normal processes. Hentschel, Dragons, Ehlers, and Smith (2004) described her views of defenses as adaptive processes.

> Defenses, she recognized, reduce or silence internal turbulence. However, they also help individuals cope with they demands and challenges of

> external reality. Even though the most spectacular instances of defense had come from the clinic, defenses are observed in psychologically unimpaired and non-distressed human beings. (p. 7)

Anna Freud also expanded the concept of defenses to include danger, or anxiety from external threats, where her father focused much of his work on internal threats and impulses. Anna Freud's other major contribution to the study of defenses was cataloging many of the major defense mechanisms that are still used today (Vaillant, 1977). Anna Freud described a total of 10 defenses in her book: regression, repression, reaction formation, isolation, undoing, projection, introjection, turning against the self, reversal, and sublimation.

While it may have been Sigmund Freud who originated the idea of defense mechanisms, it was Anna Freud who popularized the concept. In providing a comprehensive volume on defenses, she clarified many of her father's ideas in a way that he never did. Many of her ideas changed the way people thought of defenses and helped usher in a tidal wave of interest in the study of defenses. For the next several decades, empirical studies of defense mechanisms abounded.

Empirical studies of defense mechanisms flourished from the decades between 1930 and 1960. Cramer (2000b) has provided details about this period of research interest. She stated that many of these studies focused on the defense of repression or the defense of projection. "The majority of these investigations of repression were of two types: (a) experiments on learning and memory and (b) studies of perceptual defense" (p. 637). Repression often was studied in terms of

perceptual defenses. A prime example is McGinnies's (1949; McGinnies, Comer, & Lacey, 1952) work on the perception of taboo words. He found that individuals had a much more difficult time reporting perceptions of taboo words versus normal words. McGinnies credited this to the process of repression, which he said interfered with individual's ability to perceive taboo words that provoke anxiety.

In addition to the study of repression, several empirical studies were conducted to examine the presence of projection. Sears (1936) found that college students with an undesirable trait that was outside of their awareness were more likely to observe the same trait in others than students who were aware of their undesirable trait. He concluded that the anxiety provoked by possessing undesirable traits causes individuals to project the trait onto others, allowing the individual to keep the awareness of the trait from conscious knowledge. Other approaches presented subjects with evidence that they possessed some undesirable trait. Afterwards, investigators found that subjects often attributed these traits to other people (Bramel, 1962).

Eventually many of the studies of both projection and repression came to be heavily criticized. The major critic of these studies was D. S. Holmes (1972, 1974). He reported that many of the results researchers attributed to repression could be better explained by differences in attentional processes. The studies where repression was inferred because individuals had trouble perceiving taboo words came under attack by critics because of methodological problems. Howes

and Solomon (1950) pointed out that many factors other than repression could have accounted for the difference found in subjects perceiving taboo words versus normal words. The laboratory study of the defense of projection suffered a similar fate. Holmes (1968, 1978) attacked many of the studies of projection by making the claim that the studies never proved projection existed and ignored more parsimonious explanations that could have accounted for the results. In addition, he also pointed out that many of the studies of projection focused on attributive projection rather than defensive projection. The effect of this criticism was a decline in the interest of the laboratory study of defense mechanisms. Cramer (2000b) summed up the cumulative effects of this criticism:

> Thus, as the 1970's rang in, the death knell was being sounded for the study of defense mechanisms in academic psychology. Repression was explained by attentional processes and response suppression, while projection was explained by attribution. At least as studied in the laboratory, these processes were not seen to involve unconscious functioning and thus, by definition, did not involve defense mechanisms. (p. 638)

Despite the decline in interest in defense mechanisms among academic researchers, clinicians still used the concept of defense mechanisms, and there still remains an interest in defenses in the field of personality assessment. While academic psychology turned its back on the study of defense mechanisms, the concept remained popular within certain segments in the field of psychology. The

fact that the study of defense mechanisms remained popular in the field of personality assessment eventually led to improved measures, which, in turn, led to renewed interest in researching defenses.

One of the first important studies to renew interests in defenses was George Vaillant's "Thoeretical Hierarchy of Adaptive Ego Mechanisms" (1971). Vaillant extended the work of Anna Freud and theorized a developmental framework for defense mechanisms. A. Freud (1946) had claimed that certain types of defense mechanisms were more primitive than others, but she did not give an overall view on the development of defenses. Vaillant used clinical interviews with 30 men over a 30-year time period. He assessed defensive functioning, life adaptation, and maturation. Based on his results, he concluded that defense mechanisms could be placed on a hierarchy of maturity, with defenses representing different time points of the developmental continuum. Vaillant (1977) proposed a four-level hierarchy of defense mechanisms: (a) psychotic mechanisms (delusional projection, denial, and distortion); (b) immature mechanisms (projection, schizoid fantasy, hypochondriasis, passive aggressive behavior, acting out and dissociation); (c) neurotic defenses (isolation, intellectualization, repression, displacement, and reaction formation); and (d) mature mechanisms (altruism, suppression, anticipation, sublimation, and humor). As Hentschel et al. (2004) explained,

> At the lowest level, the mechanisms distort reality, at the highest, they bring about its integration with interpersonal relationships and feelings, At

> intermediate points, defenses alter distress and modify the experience of feelings, and they may appear odd, inappropriate, or socially undesirable from an outside point of view. (p. 8)

Vaillant's hierarchy of defenses expanded the concept of defenses and classified them as more than just successful or unsuccessful. Moreover, his theory allowed for the possibility that defenses could have implications for personality development. One could start to develop hypotheses about a person and his or her level of functioning based on defense use.

One of the most recent researchers to make a major impact on the field of personality assessment is Phebe Cramer. Much of Cramer's work has been in demonstrating the developmental aspect of defenses, quantifying defenses, and attempting to discover what defense use can tell us about an individual. One of Cramer's first major contributions was her development of a defense mechanism scoring system for the Thematic Apperception Test. The Defense Mechanism Manual (1991; 2000b) was developed as a tool to show what developmental level of defenses could tell us about people. First, Cramer (1987) tied defense use and maturity in children, who were found to use most primitive defense mechanisms when they are younger. As they get older, children begin to use more and more mature defenses. In fact, the children who continued to use immature defenses into late elementary school years tended to show more psychological distress and poorer adjustment than those who relied on more mature defenses (Sandstrom & Cramer, 2003). Defense mechanisms also have implications for psychological

functioning in adulthood. Adults who rely more heavily on immature defense mechanisms show more behavioral immaturity and greater levels of anxiety, while those people who rely on mature defenses show greater signs of psychological maturity (Cramer, 2002). Cramer (1999) further demonstrated the utility of examining defense mechanisms when she showed that people with borderline, narcissistic, histrionic, and psychopathic personality disorders could be differentiated by the maturity of the defenses they used. In addition to looking at the more pathological aspects of immature defenses, Cramer (2004) found that identity change in middle adulthood was related to an increased reliance on mature defenses.

Phebe Cramer's work studying defense mechanisms highlighted the utility of using the concept to show individual differences in development, personality, and identity. Her work showed that defense mechanisms had implications for overall psychological functioning. When Sigmund and Anna Freud wrote about defenses, they were most interested in the concept as a phenomenon unto itself, and they focused mostly on defining and describing the different types of defenses. Cramer showed that the concepts they first described had a meaning and a relationship to people's everyday lives.

Attachment Theory

John Bowlby's attachment theory has been one of the most influential theories in developmental psychology over the past few decades. Bowlby drew

from evolutionary, psychodynamic, and ethological influences to develop a theory that he felt would be more open to scientific investigation than the psychodynamic theories that prevailed at the time (Bowlby, 1988). Bowlby's main focus was the infant's relationship with its primary caregiver. He believed that infants have a drive to engage their primary caregiver as a means for survival that is separate from the drive to feed and mate. This drive to engage is necessary as the primary caregiver is the only way that the infant can get its needs met. Certain goal-oriented behaviors, such as crying, are instinctual means to signal to the mother that he or she is in distress. These signals then strengthen the bond between mother and child so that she can begin to meet the physical and emotional needs of the child (Bowlby, 1969). The mother also serves as a secure base that the infant can use to begin to explore his or her environment and still have a safe haven to return to for reassurance (Ainsworth, 1967). During infancy, the child is particularly sensitive to either adequate or inadequate care on the part of the mother. Bretherton (1992), commenting on Bowlby (1969), stated, "How effectively the attachment figure can serve in these roles depends on the quality of social interaction, especially the attachment figure's sensitivity to the infant's signals, although child factors also play a role." (p. 761) Bowlby (1969) commented,

> When interaction between a couple runs smoothly, each party manifests intense pleasure in the other's company and especially in the other's expression of affection. Conversely, whenever interaction results in

> persistent conflict each party is likely on occasion to exhibit intense anxiety or unhappiness, especially when the other is rejecting, . . . Proximity and affectionate interchange are appraised and felt as pleasurable by both, whereas distance and expression of rejection are appraised as disagreeable or painful by both. (p. 242)

Based on these early interactions, the child begins to develop a set of expectations of the world around him or her and a view of him or herself.

These expectations develop into cognitive models of the self and other people, which are used to make predictions and relate to the world. Bowlby termed these cognitive models *internal working models* (Bowlby, 1988). These models affect the way infants interpret events, construct plans and behaviors, and respond emotionally in different situations (Bowlby, 1988). If the parent meets the child's needs, the child will learn to expect that his or her needs will be met and that the environment is generally supportive and nurturing. If the parent does not meet the child's needs, the infant will learn to expect that the environment may be cold and rejecting. In addition to expectations about the environment, infants also will begin the develop views about him or herself. Bretherton (1992) stated,

> If the attachment figure has acknowledged the infant's needs for comfort and protection while simultaneously respecting the infant's need for independent exploration of the environment, the child is likely to develop an internal working model of self as valued and self-reliant. Conversely,

> if the parent has frequently rejected the infant's bids for comfort or exploration, the child will likely construct an internal working model of self as unworthy or incompetent. (p. 767)

A child's internal working model is the roadmap that is used to navigate through life and, especially, relationships. As a child's environment changes, so too does his or her internal working model change. If the internal working model of the environment and self get outdated after environmental changes, the child's behavior may become pathological (Bowlby, 1969). These models are carried throughout life and serve as a guide for personality development (Bowlby, 1973).

Mary Ainsworth collaborated with Bowlby and elaborated on some of his work. She developed the Strange Situation (1978) where children were separated from their parents for a length of time and then reunited. Initially, three patterns of behavior among the infants began to emerge as prevalent. Secure children showed signs of missing the parent upon separation but greeted the parents actively upon reunion. After they made contact with the parent for security, they were able to return to play. Avoidant children did not cry on separation, actively avoided the parent upon reunion, and did not express much emotion throughout the procedure. Resistant-ambivalent children seemed preoccupied with their parent throughout the entire process, often showing signs of anger. Upon reunion, these children did not return to active playing but instead focused on and clung to the parent (Ainsworth, Blehar, Waters, & Wall, 1978). Main and Solomon (1990) identified another subgroup of children who did not fit neatly into any of

the three categories. These children often were maltreated and often displayed somewhat bizarre behavior. At times they froze, with a trance-like expression upon reunion with a parent. Other times they threw tantrums. The distinct feature was that they appeared to not have a specific organized system of behavior that was guiding their responses. For this reason, they were labeled disorganized. These patterns of attachment were posited to be carried with the child and form the basis for development. For instance, a securely attached child would have an internal working model of a loving, responsible, and reliable caregiver and would generally bring these assumptions to relationships. Insecurely attached individuals would view the world as a dangerous place, inhabited by people who are unloving, untrustworthy, and unreliable (Holmes, 1993).

Defense Mechanisms versus Defensive Processes

The role of defenses has been given some attention in attachment theory. In Bowlby's theory, defenses were specifically related to interpersonal motives rather than to the broader idea of unmanageable feelings. He posited that there were two defenses: primary defense, a positive defense that is found in securely attached individuals; and secondary defenses that are pathological and relate to insecure attachment (Bowlby, 1987). These secondary defenses allow individuals to retain some sort of proximity to unreliable or rejecting attachment figures (Holmes, 1993). The defense that Bowlby elaborated on is what he called *defensive exclusion*, a way in which information is excluded from consciousness.

In defensive exclusion, painful attachment-related memories and emotions are separated off from conscious access so that the child can maintain some level of connection to an attachment figure (Bowlby, 1987). People who would tend to use defensive exclusion generally would feel that people and relationships are dangerous. The result of this defensive exclusion is a form of emotional detachment in relationships. The defensive processes that Bowlby described are similar to the traditional psychodynamic concept of defense mechanisms in that both are unconscious means by which people defend themselves against potential pain. Bowlby's concept is much narrower in focus because he limited his study of defenses to those that occur within the attachment system. Defense mechanisms, as defined by Anna Freud (1946), can function to defend any type of anxiety, from both internal conflicts and external threats. Defense mechanisms are not inherently pathological and can be a part of normal adaptation. In summary, Bowlby's defensive processes differ from the traditional concept of defense mechanisms in the fact that they are pathological processes by which people defend themselves against painful attachments, while defense mechanisms can be adaptive processes in which people defend themselves against any type of anxiety.

Attachment, Defense Mechanisms, and their Effects on Development and Personality

Much of the research on attachment has focused on childhood and adolescence. Evidence points to the fact that children's attachment style has an important effect on social adjustment. Children who are considered securely attached can overcome and tolerate separation and have the capacity for self-reflection (Holmes, 1993). Several studies have shown that the attachment status of children in the Strange Situation correlated moderately with corresponding measures of their attachment as adolescents (Hamilton, 2000; Water, Merrick, Treboux, Crowell, & Albersheim, 2000). This suggests that attachment status is a somewhat stable characteristic. Both Fongany (1991) and Main (1991) have suggested a link between childhood attachment and adult psychological functioning. Both link poor attachment to deficits in one's ability to reflect and his or her capacity for metacognition. This inability can lead to decreased levels of psychological functioning and is associated with certain psychological disorders, such as borderline personality disorder.

Even though many consider defense mechanisms as non-pathological, they also can speak to an individual's adaptive psychological functioning. Typically higher-level defense mechanisms require a greater capacity for relatedness and tend to minimally distort reality and experience. Meanwhile, more primitive defenses are less dependent on interpersonal relationships and tend

to distort reality to a greater extent. Cramer (1987) assessed defense mechanisms in different ages groups and showed that the use of defense mechanisms follows a developmental path. In her study, younger children tended to use primitive defense mechanisms such as denial, while older children tended to use more mature defenses such as identification. Sandstrom and Cramer (2003) also showed that well-adjusted children tended to use more mature defenses, while poorly adjusted children tended to rely heavily on primitive defenses. This developmental perspective has implications for adult psychopathology. Cramer (1999) assessed defense mechanisms in individuals diagnosed with personality disorders. She showed that more severe forms of personality disorders were associated with a reliance on immature defenses. Also, reliance on primitive defenses was associated with behavioral immaturity and anxiety in adults, while reliance on mature defenses was associated with maturity and social competence (Cramer, 2002).

Measurement of Defense Mechanisms

One of the most difficult tasks in measuring defense mechanisms is figuring out how to measure something that is, by definition, unconscious. Anna Freud (1946) discussed the difficulties in observing defenses at work.

> All the defensive measures of the ego against the id are carried out silently and invisibly. The most we can ever do is reconstruct them in retrospect: we can never really witness them in operation. This statement applies, for

> instance, to successful repression. The ego knows nothing of it; we are aware of it only subsequently, when it is apparent that something is missing. I mean by this that, when we try to form an objective judgment about a particular individual, we realized that certain id-impulses are absent which we should expect to make their appearance in the ego in pursuit of gratification. If they never emerge at all, we can only assume that access to the ego is permanently denied to them, i.e. that they have succumbed to repression. But this tells us nothing of the process of repression itself. (pp. 8-9)

At first, the only approach was to presume the existence of defense mechanisms, to look for something that should be there. If it is not there, then presume that some mechanism is keeping it from being there. This was the way many of the early studies of defense mechanisms were conducted. As mentioned earlier, one of the most popular ways of measuring defense mechanisms was to give a subject a list of words to remember (McGinnies, 1949; McGinnies, Comer, & Lacey, 1952). Some of the words were taboo or had sexual connotations. When subjects as a whole had a difficult time remembering the more taboo words, it was presumed that a defense mechanism was keeping them from being perceived. As Holmes (1972) pointed out, it is difficult to assume that these results are the products of defense mechanisms. A large part of the decline in interest in laboratory studies of defenses resulted from the difficulty in measurement. The study of defense mechanisms was kept alive by clinicians and

people interested in personality assessment. For them the concept was a useful one for describing phenomena they witnessed in their work, and they argued that the laboratory research lacked ecological validity (Cramer, 2000b).

Even though clinicians and researchers in personality assessment still showed interest in defense mechanisms, the basic questions of how to measure them still did not have a satisfactory answer. One type of measure that gained some popularity was pencil-and-paper self-report measures (Byrne, 1961; Haan, 1965; Joffe & Navdich, 1977). Despite their popularity, there were a number of problems with these scales. Davidson and MacGregor (1998) examined the four most popular self-report measures and found that no self-report measure adequately assesses the defining features of defense mechanisms. They felt that "self-report defense mechanism measures ignore individual differences in defense motivation and behavior awareness, psychic threat type and frequency, defense consistency and predictability, adaptive defense activation, and defensive behavior meaning" (pp. 988-989). Despite these problems, self-report measures of defense mechanisms remain popular in research studies.

The other means of assessing defense mechanisms is through observer-rated measures. There are two main types of observer-rated measures: clinical interview data and projective measures. Vaillant (1971) used behavioral observations in his pioneering work, studying the effects of defense mechanism use on life adjustment. In his studies, interviewers rated defense mechanism use by participants during clinical interviews. This approach allowed for the subject

to freely express his or her thoughts and the interviewer to systematically categorize and rate defense mechanism use. While clinical interview data have been promising, this method requires considerable effort both to administer and to score. The lack of standardized interviewing procedures also presents a problem because it is difficult to assess how much of the interviewees' apparent differences in defensive functioning are due to differences in interviewers.

Projective measures also have been utilized to measure defense mechanism use. Several different scales have been developed for the Rorschach Test. Lerner and Lerner (1980) developed the Lerner Defense Scales, which assess five defense mechanisms associated with borderline personality disorder that were scored for human responses on the Rorschach. Cooper, Perry, and Arnow (1988) developed the Rorschach Defense Scales, which measured 15 defenses across a range of psychotic, borderline, and neurotic defenses. Perry and Ianni (1998) in their review of observer-rated measures of defenses conclude that, while both have some promising results, each has limitations and further work is needed to determine their usefulness. Currently one of the most popular measures of defense mechanisms is Phebe Cramer's Defense Mechanism Manual (DMM) (1991; 2000b) for scoring the Thematic Apperception Test (TAT) (Murray, 1943). This method has raters score for the presence of several of the major categories of defense mechanisms (denial, projection, and identification) which are theorized to fit along a developmental hierarchy with denial being the most immature and identification being the most mature. Interrater reliability yielded

median Pearson *r* correlations of .81 for both denial and projection and .64 for identification (Cramer, 1991). Validity has been demonstrated in observational studies of children, adolescents, college students, and psychiatric patients where defense mechanism use differentiated age groups, diagnostic groups, and personality variables that were predicted by theory (Cramer, 1998, 1999, 2000b; Cramer & Block, 1998). Validity also was demonstrated through studies where an experimental manipulation produced changes in defense mechanism use (Cramer, 2002). Because of its numerous advantages, the current study uses Cramer's Defense Mechanism Manual as the method for assessing people's use of defense mechanisms.

Measurement of Attachment

Much of the original measurement of attachment was based on direct observation. As discussed previously, Mary Ainsworth (1978) developed the first systematic measurement of attachment, which she termed the Strange Situation. Through this measure, four attachment patterns were observed for children: Secure, Avoidant, Resistant-Ambivalent, and Disorganized-Disoriented. While direct observation with Ainsworth's Strange Situation has proven to be a very useful tool when studying parent-child interactions, it is limited because it can be used only with young children. If one wishes to classify older children or adults, different methods must be devised.

The Adult Attachment Interview (AAI) developed by Mary Main (1985) has been considered one of the best tools for measuring attachment status for adults. It is a semi-structured interview that is audiotaped and then coded. It places individuals into four classifications similar to those in the Strange Situation. The categories are Autonomous-Secure, Dismissing-Detached, Preoccupied-Entangling, and Unresolved-Disorganized. This instrument has proven to be a valuable tool in understanding how attachment status affects behavior in adults. One of the disadvantages of the AAI is that it takes a long time to administer, transcribe, and score. In addition, it has a complex scoring system that requires lengthy training to achieve inter-rater reliability.

Recently, a new method of assessing Adult Attachment has been developed. George, West, and Pettem (2002) have developed a new instrument called the Adult Attachment Projective (AAP). The stimuli for the AAP consist of eight cards depicting various attachment themes. Scores are tallied across the cards on the variables of narrative coherence, relatedness, agency of self, and defensive processing. The variables are used to classify individuals into four categories: secure, dismissing, preoccupied, and unresolved (George & West, 2001). These categories correspond to the four categories in the AAI. The AAP has shown high levels of agreement with the AAI for classifying individuals into the four major attachment groups. AAP-AAI convergence for the major attachment groups was .94 (kappa = .86, p = .000) (George & West, 2001).

George, West, and Pettem (2002) describe the features associated with each classification. Secure individuals have mental representations that are flexible and organized, know they can rely on relationships for safety and protection, and show an integration of attachment experience. People who fall into the dismissing category tend to avoid, dismiss, or neutralize difficulties in attachments. Preoccupied individuals tend to show an attachment pattern that is marked by uncertainty, ambivalence, and a preoccupation with emotions. People whose attachment classification is unresolved tend to have some experience with attachment-related trauma and have not resolved or re-integrated this experience into current representations of attachment figures and the self. These individuals tend to have feelings of abandonment, vulnerability, and helplessness. Since the development of the AAP, West and George (2002) have used the scale to demonstrate a relationship between preoccupied attachment and dysthymia. The AAP also has been used to show a relationship between immigrant status and unresolved attachment (van Ecke, Chope, & Emmelkamp, 2005). Because of its high agreement with the AAI and the relative ease of administration and scoring, the AAP was chosen as the measure of attachment in this study.

Hypotheses

Not much research has been conducted examining the relationship between attachment and defense mechanisms use. Most of the research on attachment has confined itself to the study of interpersonal behavior and

relationships. Examining how attachment status relates to defense mechanism use may be a way to expand our understanding of attachment. Does a person's attachment style relate to his or her ability to develop adaptive defense mechanisms? This might be one of the links that shows how attachment status relates to psychological development.

This dissertation seeks to provide an understanding of how an individual's attachment status relates to use of defense mechanisms. There are three main hypotheses for this dissertation.

1. It is hypothesized that insecurely attached subjects will use the primitive defense of denial significantly more than securely attached subjects.
2. Insecurely attached subjects should also tend to use the defense of projection significantly more than securely attached subjects.
3. Last, it is expected that securely attached subjects will show greater use of identification than insecurely attached subjects.

In sum, it is expected that a person's attachment style will relate to the type of defense mechanisms they rely on.

II. Method

The current study was one part of a larger study attempting to compare attachment to different psychological constructs including object relations variables and defense mechanisms. The research team consisted of eight graduate students who collected and scored data and one undergraduate student who assisted in transcription of protocols and data entry. Data collection lasted approximately four months and scoring lasted another four months. The current study was the second study conducted with this data set and compares attachment status to maturity of defense mechanisms.

Participants

We recruited 102 undergraduate students from psychology courses at the University of Tennessee, Knoxville. Two students were not included in the statistical analysis due to missing information. A total of 100 students, with a total of 70 females and 30 males, were used in the study. The mean age for subjects was 21 years, with the youngest being 18 and the oldest 35. The ethnic backgrounds of the sample broke down as follows: 90 Caucasians, 7 African-Americans, and 3 Asians. All subjects were treated in accordance with the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 2002). The Institutional Review Board of the University of Tennessee waived written informed consent due to the fact that

there was no identifying information on the data collected and no foreseeable risks to the subjects. All of the participants received extra credit in their psychology courses as compensation for their participation in the study.

Materials

The Adult Attachment Projective (AAP) is a picture projective test that is designed to assess a person's attachment classification. It is comprised of eight line drawings that, with the exception of the first drawing, which is used as a warm-up picture, are meant to depict attachment-related themes. The pictures depict children and adults alone and in relationship dyads. One of the primary researchers in the study attended a formal, 2-week training seminar conducted by Carol George and Malcom West, the developers of the AAP, which addressed administration, scoring, and interpretation of the test. This researcher then trained the other four scorers who assisted in the study over the course of three months.

The AAP is designed to classify people into a four-group attachment model (secure, dismissing, preoccupied, unresolved) that is often used by developmental researchers. Individuals are placed into these four categories based on their ratings in three different areas: (a) discourse, (b) story content and action, and (c) defensive processing. George, West, and Pettem (2002) described the different variables associated with the AAP. Discourse refers to the coherency (quality of story and quantity of story length) and whether personal experiences are directly expressed during the testing. Story quality is coded 0

(low), 1 (moderate), or 2 (high) based on the preciseness, organization, and specification of the story plot. Quantity scores are coded based on whether the individual's response is sufficient to tell his or her story. Lower scores are given to bare bones stories, overly elaborated stories, stories filled with repetition, or stories where plot lines are not fully developed. Similar to the quality scores, quantity scores go from 0 to 2, with 0 representing poor story quantity and 2 reflecting good story quantity. In addition to quantity and quality, the individual is scored either 0 (not present) or 1 (present) depending on whether the individual violated the story-telling task by overly injecting direct personal experience into the narrative.

George, West, and Pettem (2002) also provided the criterion for coding content variables. Content variables include agency of self, connectedness, and synchrony. Agency of self and connectedness variables are coded on the four cards where only one figure is depicted. Synchrony is coded on the other three cards where more than one figure is depicted. Agency of self refers to the degree to which the person is moving psychologically or behaviorally towards empowerment, integration, or understanding. Individuals may demonstrate agency of self in three different ways. First, an individual may show a capacity for solitude and self-reflection, which is termed *internalized secure base.* Second, an individual may be able to use relationships for comfort, protection, and problem solving, which is termed *haven of safety.* Last, an individual may depict characters who have the ability and confidence to make things happen by

themselves, which is termed *capacity to act*. Agency of self scores are coded 2 if a person gives a response that can be scored either internalized secure base or haven of safety. Scores of 1 are given to individuals whose stories reflect a capacity to act. Scores of 0 are given to those who depict characters who have little or no ability to solve problems. The second variable that is coded for pictures that only depict one character is connectedness. Connectedness refers to the desire and ability of the characters in the story to be in relationships with others. Scores range from 3 (connected), 2 (not connected), 1 (own activity) based on whether the individual depicts characters who can be in reciprocal relationships and acknowledge the need for interpersonal relationships. Finally, synchrony is the only content variable coded for pictures that depict a dyad. Synchrony refers to the quality of the relationship that is depicted between the characters in the story. Scores of 2 reflect characters who have reciprocal relationships that are mutually enjoyable and positive. Scores of 1 reflect relationships that are not reciprocal or positive or when the storyteller depicts characters who have a functional relationship, which is more superficial and not very emotional. Scores of 0 are given when the individual fails to tell a story that includes both characters.

Defensive processing involves three different variables (deactivation, cognitive disconnection, and segregated systems). Deactivation refers to attempts by the individual to diminish, dismiss, or devalue themes related to attachment. Nine different types of deactivation are coded: social roles, authoritarian

orientation, achievement/intellect, negative evaluation, rejection, deactivation, neutralizing, shutting down the narrative, and demotion. The second type of defensive processing is termed cognitive disconnection, which refers to a type of defensive exclusion in which the individual becomes preoccupied with ambivalence, uncertainty, and his or her own feelings in response to the stimuli. Eleven different types of cognitive disconnection are coded: uncertainty, withdraw/withhold, anger, busy/distracted, feisty, entangling, disconnection, unfinished sentences or thoughts, stumbling, glossing over, and literal interpretations. The last type of defensive process that George, West, and Pettem (2002) included is called segregated systems. Segregated systems refer to a process where painful attachment-related feelings and thoughts are blocked from conscious awareness. This usually is evidenced by statements that reflect scary, dangerous, ominous, or bizarre themes. Seven different types of segregated systems are described: danger/failed protection, helplessness/out of control, emptiness/isolation, disturbing content, spectral themes, obtrusions, and constriction. When individuals give material suggesting the presence of a segregated system, it then is scored either as resolved or unresolved. Any attempt by an individual to contain, organize, or protect the self from the segregated system material is coded as resolved. If the individual fails to organize or contain the material in any way, the segregated system in coded as unresolved (George, West, & Pettem, 2002).

The AAP uses four categories to describe patterns of attachment. These categories and their associated criterion are described by George, West, and Pettem (2002) as follows:

1. Secure: Individuals who score in the Secure category give stories that score high on coherence. Along with this, they maintain good self-other boundaries by not overly injecting direct references to their own personal experiences. They also show little evidence of any type of defensive exclusion when compared to insecure individuals. While they may show some evidence of deactivation and cognitive disconnection, it must not be excessive or interfere with the story. In addition, they cannot have any unresolved segregated systems. Secure individuals also demonstrate an interest in and understanding of relationships by showing high levels of connectedness and synchrony. Secure individuals score high on agency of self by depicting characters who have the ability to draw from internal psychological resources as well as attachment figures as a way to resolve attachment-related conflicts.
2. Dismissing: The major feature of Dismissing individuals is their attempt to ignore or dismiss expression of attachment-related emotions. They tend to have moderate coherency scores and low scores on agency and synchrony. Dismissing individuals may show evidence of the use of cognitive disconnection, but they also must

show evidence of using deactivation on at least three of the stories. People in this category may have segregated systems, but they must all be resolved.

3. Preoccupied: People falling into the Preoccupied category tend to be overly absorbed in their own emotion and experience, leading to greater use of personal experience and lower coherence. This obsession with internal experience often leads to descriptions of characters who are often unable to act or rely on attachment when faced with distress. This usually leads to low connectedness, synchrony, and agency of self. People who fall into this category show evidence of using cognitive disconnection on many of their stories and do not use deactivation on more than two of their stories. Individuals who are classified as preoccupied may have segregated system scores, but they must be resolved.
4. Unresolved: The major feature of Unresolved individuals is that they portray characters who have experienced some type of attachment-related trauma and have not discovered any way to effectively cope or defend against the trauma. To score in the unresolved category, an individual must give segregated system material and fail to resolve it in any way. In this classification, it is only unresolved segregated systems that matter; no other scores factor into the final classification.

One of the primary researchers also trained one other clinical psychology graduate student, in addition to the AAP, in the scoring of Phebe Cramer's Defense Mechanism Manual (1991; 2000b) for use with the Thematic Apperception Test (TAT). Cards 1, 2, 3BM, 4, and 13MF were the cards used across all subjects. The DMM scores three different types of defense mechanisms: Denial, Projection, and Identification. These defenses are theorized to exist along a developmental hierarchy with Denial being the most primitive and Identification being the most mature. The DMM subdivides each of these three defenses into seven subcategories.

Cramer (2000a) provides these categories and associated examples:

1. *Denial*

    a. Omission of major characters or objects--where the subject fails to perceive stimuli that are seen by nearly all one's peers--e.g, failing to see a boy or violin on TAT 1 or failing to acknowledge the person on TAT 3BM. (p. 4)

    b. Misperception--this is when the storyteller changes an object into something it is no--e.g., seeing the violin on TAT 1 as a crossbow. (p. 6)

    c. Reversal--or modifying the disturbing aspects of the stimulus into the opposite--e.g., "He's dead, and he'll come back to life." (p. 7)

d. Negation--this refers to negating an experience that is painful or disturbing--e.g., "At first I thought he was dead, but he isn't." (p. 8)

e. Denial of reality--this includes efforts to avoid a disturbing reality either through actively avoiding or through sleeping or daydreaming--e.g., "It was all just a dream." (p. 9)

f. Overly maximizing the positive or minimizing the negative--this refers to a type of pollyannish denial where a person magnifies positive experiences to reduce the impact of painful events--e.g., "The biggest in the world." (p. 11)

g. Unexpected goodness, optimism, positiveness, gentleness--this is demonstrated when the individual shows the need to see the world as an overly positive place despite evidence to the contrary--e.g., "He found peace with is violin" (p. 12)

2. *Projection*

a. Attribution of hostile feelings, emotions, or intentions to a character; or the attribution of any other feelings, emotions, or intentions that are normatively unusual--this is when the storyteller attributes negative feeling without having a justifiable reason for the attribution--e.g., "Probably that look on his face is a signal of some kind." (p. 14)

b. Additions of ominous people, ghosts, animals, objects or qualities--this is when the storyteller adds qualities or objects that have a scary or negative quality when they are not suggested by the picture--e.g., "He has these horrible nightmares." (p. 16)

c. Magical or circumstantial thinking--this refers to a mechanism where the person absolves the characters of any personal responsibility by saying that events occur as a result of magical, uncontrollable, or illogical outside forces--e.g., "This hypnotist turned him into a little green thing." (p. 17)

d. Concern for projection from outside threat--this is the projection of negative feelings and intentions onto others as a way of ridding the anxiety about having these feelings--e.g., "He has witnessed a crime and is being hunted by the killer." (p. 18)

e. Apprehensiveness of death, injury, or assault--this refers to overt themes of physical harm or death--e.g., "He murdered her." (p. 19)

f. Themes of pursuit, entrapment, escape--where the storyteller relates themes about one character trapping or imprisoning another, or the implication of this by references to pursuit or escape--e.g., "He escaped from the tower and left the country." (p. 20)

g. Bizarre or very unusual story or theme--this is a somewhat

subjective category that includes negative themes or twists that occur very rarely--e.g., "He's going to eat the whole house because no one's there." (p. 22)

3. *Identification*

   a. Emulation of skills--where one character is imitating, or acquiring a skill of another character--e.g., "He picked up the violin and thought, 'Maybe if I could be as great as my father.'" (p. 24)

   b. Emulation of characteristics--where one character is imitating or acquiring a characteristic or quality of another character--e.g., "He gets the giant's muscles and now he's a giant." (p. 25)

   c. Regulation of motives or behavior--this category refers to assigning internalized values to one character in the story who is attempting to enforce them on another character--e.g., "His mother didn't hear him practicing so he had to start practicing again." (p. 25)

   d. Self-esteem through affiliation--this includes instances of satisfaction that comes about through relationships with peers--e.g., "He was happy that he had a friend." (p. 27)

   e. Work; delay of gratification--this refers to times when the storyteller relates themes of working hard or that significant time is required to work and attain goals--e.g., "He has practiced hard his entire life." (p. 28)

f. Role differentiation--this category is scored when the subject refers to characters in the story in specific adult roles that are not directly suggested by the picture--e.g., "doctor", "husband", "priest." (p. 29)

g. Moralism--when the storyteller's narration has a specific moral outcome or when a lesson is learned--e.g., "The prisoner breaks out and starts to run. Then he thought sooner or later the police will find him. So he decided it would just be better to go back, so he goes back." (p. 31)

Each rater scores for the presence of each type of defense mechanism on each card. Then the total for each defense is tallied across all cards to get a total score for Denial, Projection, and Identification, for each subject.

Procedure

Subjects were administered the AAP and then the TAT, and they also were given a demographic questionnaire. The AAP was administered first according to directions that were described by the test creator in the training seminar (Carol George, Personal Communication, 2003). All data were collected in assessment rooms at the University of Tennessee Psychology Building. Testing usually lasted approximately a one to two hours and always was completed within one session. Following administration, subjects were given an explanation of the purpose of the study and a chance to ask questions.

To calculate reliability between the scoring of the raters, a subsample of 20 AAP protocols were distributed to the five raters. Inter-rater reliability among the raters was calculated using multi-rater kappa, due to the categorical nature of the AAP scores. Twenty TAT protocols also were selected to measure reliability and were distributed to the two raters who were scoring, using the DMM. Two-way mixed intra-class correlation coefficients were calculated for the continuous variables on the DMM. Four AAP protocols from each rater from the reliability sample were selected to be used in the analysis. Ten protocols were randomly selected from each rater from the TAT sub-sample to be used in the final analysis. After reliability for the measures was achieved, AAP protocols were randomly distributed among the five raters and TAT protocols were randomly divided between the two raters.

III. Results

When reliability rates were calculated both rates for the AAP and the DMM fell in the excellent range (see Table A-1). When the final distribution of adult attachment classifications was determined, there proved to be a disproportionate number of individuals who fell into the four attachment categories (Secure = 45, Dismissive = 15, Preoccupied = 5, Unresolved = 35, Total $N = 100$). The Dismissive, Preoccupied, and Unresolved categories were condensed into one group, as they all represent different types of insecure attachment. This yielded two groups, securely attached and insecurely attached, that were more equal in number (Secure = 45, Insecure = 55). Levene's Test of Equality of Error Variances showed that the dependent variables have equal group variances (see Table A-2).

Before testing the primary hypothesis, demographic data were examined to rule out the possibility of covariance (see Table A-3 for sample demographic data). Pearson's *r* correlations were run between age and the dependant variables of defense mechanism use. Independent samples *t*-tests were run between gender and defense mechanisms use. Chi-Square analyses were run between Adult-Attachment classification and gender, and independent samples *t*-tests were run between age and adult attachment. The results of these analyses can be seen in Table A-4, A-5, A-6, and A-7. The results of these analyses show no significant relationship at the $p < .05$ level between age and gender and any of the attachment or defense mechanism variables.

A 3 x 2 analysis of variance was run with AAP category as the factor and denial, projection, and identification as the dependant variables. The results support two of the three hypotheses. First, insecurely attached individuals showed significantly greater use of denial than did securely attached individuals ($F = 10.12, p = .002$). Second, insecurely attached individuals showed greater use of projection than did securely attached subjects ($F = 7.21, p = .009$). The last hypothesis in the study that securely attached subjects would show significantly greater use of identification was not supported by the data. For results, see Table A-8.

IV. Discussion

This study expands the view of how attachment may relate to psychological development. Much of the previous research on the relationship between attachment and development has looked at behaviors or symptom development. Very little research has examined how attachment may relate to the development of unconscious processes or defenses. This study points to a relationship between attachment status and the maturity of defense mechanisms that people use to manage anxiety. In addition, it points to the utility of a relatively new projective instrument, the Adult Attachment Projective, as well as provides further validation of Cramer's Defense Mechanism Manual.

Two of the three hypotheses were supported by this study. Indeed, individuals who were insecurely attached used significantly greater primitive defense mechanisms than did securely attached individuals. The use of identification did not differentiate the two groups. In fact, identification was the most commonly used defense for both groups.

The finding that insecurely attached individuals use more primitive defenses is consistent with the idea that defense mechanisms are related to psychological adjustment and functioning. Sandstrom and Cramer (2003) have provided a theory as to how poor adjustment in childhood and use of immature defenses in adulthood could be related.

It is also plausible that children who, early in life, are besieged by a host of behavioral and emotional problems make excessive use of the defenses

> available at the time, such as denial. In this case the immature defense may become ingrained, or fixated . . . in general. We envision a reciprocal relationship between defenses and stress such that excessive reliance on denial leaves children vulnerable to stress and the emergence of problematic symptoms, while increased stress leads children to increasingly fixate on developmentally immature mechanisms for managing the stress. As with most reciprocal systems, we imagine this as a self-perpetuating cycle that is increasingly difficult for children to change. (p. 493)

One can easily see how this pattern of defense use might be affected by a child's quality of attachment. If, as Bowlby (1969) proposed, the purpose of the attachment system is to regulate infant safety and survival, then it is probable that problematic or insecure attachment often will lead to increased distress during early childhood when more primitive defenses are developmentally normative. Unable to predictably count on the attachment figure for safety, a child may have to depend on denial as a way to defend against intolerable anxiety or fear. In addition to being attachment figures who may fail to protect the child, some parents may be a major source of anxiety for the child by being perpetrators of abuse. In these cases, children may have to rely heavily on denial if they are in constant contact with the abusive parent and rely on them for care taking. It is this type of denial, which was termed *defensive exclusion* by Bowlby, that is used in the context of the attachment system. It is certainly possible that through

troubled attachment a child may learn to rely on denial and generalize to other anxiety-provoking areas. Cramer and Block (1998) further discussed the idea of individuals becoming fixated at a certain stage of development:

> Overuse [of a defense] may contribute to the defense eventually becoming part of the enduring personality of the individual. In other words, the overuse of denial in early childhood establishes the defense as a strong and continuing feature of the individual's personality. (p. 160)

Similarly, if the individual experiences significant distress during his or her early teens it is possible to develop an over-reliance on the defense of projection, which is considered an age-appropriate defense during adolescence.

While this study examines the current association between defense use and attachment, it does not speak to how defense mechanism styles develop. For one, it is difficult to prove the stability of attachment classification across time. While Bowlby (1958) initially proposed that attachment was a relatively stable construct, several studies have called into question the stability of attachment. Hamilton (2000); Lewis, Feirling, and Rosenthal (2000); and Weinlfeld, Stroufe, and Egeland (2000) all looked at the stability of attachment status from childhood to adulthood and found moderate stability of attachment in low-risk samples but instability in high-risk samples. This indicates the difficulty in showing that attachment status during infancy could lead to a fixation in using defense mechanisms at a certain stage that could be measured during late adolescence and early adulthood.

Another way of explaining the results of this study is to look at the relationship between an individual's current internal working models and the nature of the defenses they use. Because our sample was entirely a college student population, many of the subjects would fall into the late adolescence and early adulthood age range. During this stage of development, the defense of identification should be the most prominently used defense, and indeed, this was found to be the most commonly used defense by our subjects. By its definition, identification involves taking certain qualities of others as one's own, which, in turn, provide a sense of security when faced with threats to self-esteem or with the loss of support of the other (Cramer, 2004). It stands to reason that, for identification to work effectively to protect the individual, the person needs to have somewhat positive relationships with others. Cramer (1987) described the development of identification.

> It begins in infancy and continues through childhood and adolescence, involving the internalization of parental attitudes, values, interests, and skills during childhood. It continues with the separation from these early identifications and the creation of an individuated self based on new identifications with consciously selected role models during adolescence. (p. 600)

While insecurely attached individuals may use identification as a defense, they may have greater difficulty successfully relying on identification because they may experience some conflict or ambivalence about the qualities they have taken

on as part of the process. Unable to adequately defend against anxiety through identification, individuals may turn to more primitive defenses that rely less on the quality of relationships.

In sum, two possible explanations for the supported hypotheses have been suggested. One explains the result through a developmental perspective and looks at the quality of attachment and its function of protecting the individual from anxiety and how, in the absence secure attachment, individuals may have to rely on primitive defense mechanisms to protect themselves. This, in turn, could lead to a fixation at the developmental stage in which they had to use the defense excessively. The second proposed explanation focuses more on the intrapsychic mechanisms that may lead to greater primitive defense mechanism use among insecurely attached individuals. This results because the defense of identification is less effective in those who are insecurely attached, necessitating other, more primitive defense mechanism use to contain the person's anxiety.

The hypothesis that was not supported by the data was that securely attached individuals would tend to use identification more than insecurely attached individuals. Several possible explanations for this finding exist. The first relates to the characteristics of the sample. Because the sample consisted of college undergraduates, even the insecurely attached groups likely demonstrated moderate psychological adjustment. The reliance solely on primitive defenses would make it difficult to manage the demands associated with attending college. The current study only examines the presence of defense mechanisms and does

not address how successful the defenses are at reducing anxiety. It is possible that both attachment groups rely on identification as their primary defense and use it with the same frequency. However, in the insecurely attached group, identification is less effective, necessitating the use of other defenses. The lack of effectiveness of identification may not affect the frequency of the use of identification, as insecurely attached individuals may need to use greater numbers of defense mechanisms to cope with anxiety. The second explanation relates to the predictive quality of the defense of identification. In past studies, identification has proven to be a predictor of perceived competence and maturity but not of psychological maladjustment or psychiatric symptoms (Cramer, 2002; Sandstrom & Cramer, 2003). It appears that the defense of identification is better at predicting psychological strengths than it is at predicting deficits. This study further illustrates that use of immature defenses may be a better predictor of maladaptive psychological functioning in adults than is use of mature defenses.

In addition to providing some ideas about the relationships between attachment and defense mechanisms, this study also provided further support for the validity of both the AAP and the DMM. It was easy for raters to score the data reliably. The results of this study suggest that both measures used in the study have construct validity. This is an important finding as both measures are charged with the task of measuring unconscious processes. The fact that it was possible to compare two constructs that are unconscious and find a relationship between them speaks to the quality of the measures used.

Limitations of the Study

While the results of this study are promising, several important limitations need to be mentioned. First, the correlational design of the study prevents the investigators from making any causal conclusions about the results. While several speculations were offered to explain the possible relationship between the variables of attachment and maturity of defenses, it is not possible to verify whether these speculations have any validity from this particular study. Second, the sample that was used in this study was a relatively limited one. The largest group in the sample were college freshmen, and the whole sample had little variability in terms of age and ethnicity. One of the other difficulties, in terms of the sample, is that many of the subjects were having their first experience being away from home. It is not clear how this process could have affected an individual's attachment classification or defense mechanism use. It is possible that the large number of people who fell into the insecure attachment classification may have done so only because of the situational distress of moving away from home for the first time. If this is the case, it certainly argues for the malleability of attachment status and internal working models.

In the future, larger and more diverse samples could be used to better understand how the results of this study might generalize to different ethnic groups and different age groups. Also, comparing the results from this sample to a clinical sample might provide a better understanding of the relationship between troubled attachment and defense use. It is definitely possible that, with a clinical

sample, mature defense use might have a greater predictive power because the range of the use of identification would likely increase, as would mean differences between groups. Unfortunately, due to the nature of the variables, a controlled experimental design study would be extremely difficult. What could yield interesting results, however, might be a longitudinal study, examining the same subjects across several points in time. If defense mechanism use and attachment were measured in the same subjects across different points in time, some more definitive conclusions might be able to be reached about how attachment affects the types of defenses people tend to use over time and whether there is variability in defense type over time.

Strengths of the Study

Several unique strengths of this study should be mentioned. First, it attempts to expand the understanding of attachment theory and how attachment relates to other psychological constructs. While the limited scope of the sample may present some difficulty in generalizing to other groups, the fact that significant differences were found demonstrates the robustness of the relationship between the variables. This study also used a relatively new projective measure, the AAP. Both the AAP and the DMM allowed measurement of the constructs in an open-ended manner that did not force subjects into giving predefined responses. Also, due to the projective nature of the measures, they were relatively immune from the effects of social desirability. The results point to differences in

how individuals adapt to their respective environments. People tend to use relationships to help buffer them and provide some protection from distress. When these relationships are unpredictable or do not adequately provide protection, individuals must find a way to adjust or adapt. The findings of this study suggest that one way individuals adapt may be to rely on internal defense mechanisms-and in particular, primitive defense mechanisms-to manage their psychological distress.

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Appendix

Table A-1: Kappa and Intra-class Correlation Coefficients for the Interrater Reliability of the AAP and DMM

Measure	Reliability Rate	*p*
Multi-rater Kappa, 5 raters		
$N = 20$		
Adult Attachment Projective	.87	.00

(A)

Measure	Reliability Rate	*p*
Intra-class Correlation Coefficient, 2 raters		
$N = 20$		
Thematic Apperception Test (DMM)		
Denial	.86	.00
Projection	.84	.00
Identification	.84	.00

(B)

Table A-2: Levene's Test of Equality of Error Variances

Defense Mechanism	Levene Statistic	*df*	*p*
	$N = 100$		
Denial	3.73	1	.056
Projection	3.16	1	.079
Identification	.34	1	.565

Table A-3: Sample Demographic Data

Demographic	Frequency	Percent
Gender		
Male	30	30.0
Female	70	70.0
Total	100	100.0
Ethnic Background		
Caucasian	89	89.0
African American	7	7.0
Asian	4	4.0
Total	100	100.0
Year in College		
Freshman	34	34.0
Sophomore	12	12.0
Junior	25	25.0
Senior	29	29.0
Total	100	100.0

Table A-4: Pearson r Correlation between Age and DMM scores

Defense Mechanism	Age	Sig. (2-tailed)
Denial	.038	.710
Projection	.137	.174
Identification	.140	.174

Table A-5: Independent Samples t-test for Gender and DMM Scores

Defense Mechanism	*t*	*df*	Standard Error Difference	*p*
Denial	.449	98	.45	.655
Projection	.794	98	.56	.429
Identification	1.683	98	.62	.096

Table A-6: Gender and AAP Scores Cross-Tabulation and Chi-Square Test

Adult Attachment	Male	Female	Total
Secure	11	34	45
% Within AAP	24.4	75.6	100.0
% Within Gender	48.6	36.7	45.0
% Within Total	11.0	34.0	45.0
Insecure	19	36	55
% Within AAP	34.5	65.5	100.0
% Within Gender	63.3	51.4	55.0
% Within Total	19.0	36.0	55.0
Total	30	70	100
% Within AAP	30.0	70.0	100.0
% Within Gender	100.0	100.0	100.0
% Within Total	30.0	70.0	100.0

(A)

Test	Value	df	Asymp. Sig (2-sided)
Pearson Chi Square	1.203	1	.273

(B)

Table A-7: Independent Samples t-test for AAP Scores and Age

Dependant Variable	*t*	*df*	Standard Error Difference	*p*
		$N = 100$		
Age	.807	98	.76	.422

Table A-8: ANOVA between AAP Category and DMM Scores

Defense Mechanism	*df*	*F*	Sum of Squares	*p*
		Between Subjects		
		$N = 100$		
Denial	1	10.12	38.33	.002*
Projection	1	7.21	44.13	.009*
Identification	1	.002	.020	.961
Within-group error				
Denial	98	(3.79)		
Projection	98	(6.12)		
Identification	98	(8.22)		

Note. Values in parentheses represent mean square errors, *p < .01

Vita

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