ATTACHMENT AND LEADERSHIP IN THE NURSING ENVIRONMENT

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DEDICATION

For my parents, Max and Sylvia, and my sister, Colleen, the best “support staff” in the world.

For my Aunt Rachael, who fostered my love of literature and learning.

For Clinton, who is proof that superheroes do not exist solely in comic books, but in real life too. Excelsior.

ATTACHMENT AND LEADERSHIP IN THE NURSING ENVIRONMENT

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Attachment style is a characteristic that is directly related to interpersonal relationship functioning, and in recent years has been found to predict organizational behaviors. This study reports the relationship between the attachment styles of nurses and the attachment and leadership styles of nurse supervisors and nurse managers at a hospital in Dallas, Texas, as well as organizational factors such as nurse satisfaction with their supervisor. Some evidence was found in this study to support this relationship in that insecure attachment is positively associated with certain leadership styles and negatively associated with transformational leadership. Specifically, supervisors with anxious attachment tended to show a passive management-by-exception leadership style and score lower on contingent reward, and two of the five transformational scales, idealized influence attributed and individual consideration. Supervisors with avoidant

attachment demonstrated passive and active management-by-exception, and were the least likely to show transformational leadership in that they scored lower on four of the five transformational scales- idealized influence behavioral, inspirational motivation, intellectual stimulation, and individual consideration. Supervisors with higher scores on the active management-by-exception and contingent reward scales were found to have larger discrepancies between their self-ratings of leadership and ratings from their supervisees.

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Abbreviations

AAI	Adult Attachment Interview
ECR	Experiences in Close Relationships Scale
HLM	Hierarchical Linear Modeling
LBDQ	Leader Behavior Description Questionnaire
LPC	Least Preferred Coworker
LMX	Leader Member Exchange
MLQ	Multifactor Leadership Questionnaire
WRI	Workplace Relationships Inventory

Definitions

Active management-by-exception – style of leadership in which the leader takes corrective action on the basis of results of leader–follower transactions by anticipating problems.

Achievement oriented style – a style of leadership utilized when the leader must set challenging goals for followers and show strong confidence in those followers

Attachment - An enduring affectional bond between two persons

Attachment behavior - Any form of behavior (e.g., clinging or crying) intended to attain or retain proximity to a preferred individual

Attachment behavioral system – the organization of attachment behaviors within the individual having proximity to an attachment figure as its goal

Attachment figure – a preferred individual who provides a sense of security and with whom an affectional bond is formed

Attachment style – a characteristic pattern of relating to others that is based on the quality of one's infant relationship with a primary attachment figure

Autocratic style - style as directive, strong, and controlling in relationships, with followers having little discretionary over the nature of the work or work environment as the leader uses strict rules and regulations to run the environment

Contingent reward - the degree to which the leader sets up constructive transactions or exchanges with followers

Cybernetics – The theoretical study of communication, feedback, and control processes in biological, mechanical and electronic systems, especially the comparison of these processes in biological and artificial systems

Democratic style – a style of leadership that is collaborative, responsive, and interactive

Directive style – a style of leadership in which the leader must give specific guidance as to the work tasks or schedule and let followers know what is expected

Ethology – the biological study of animal behavior

Employee oriented – style of management that focuses on relationships

Full Range Leadership Theory - posits that there are four dimensions of transformational leadership, three dimensions of transactional leadership, and a non-leadership dimension

Internal working model – mental representation of the self in relation to others that enable a person to predict and prepare for future interactions with important people

Laissez-faire - the avoidance or absence of leadership

Participative style - leader must engage in joint decision making activities with followers

Passive management-by-exception – style of management in which the leader takes corrective action on the basis of results of leader–follower transactions after the problem occurs

Safe haven – the role filled by an attachment figure in providing safety and security to one who is attached

Secure base – the role of an attachment figure in providing security and thereby enabling an attached person to safely explore the environment

Supportive style- used when the leaders needs to express concern for follower's well being and social status

Task oriented – a style of management focused on getting work done

Transactional Leader - uses a reward contingency system to extrinsically motivate followers

Transformational Leader - inspire and excite followers to high level of performance

CHAPTER ONE
Introduction

Most are familiar with the old proverb, "A chain is only as strong as its weakest link," and this phrase is commonly applied in organizational settings in regards to personnel. This proverb highlights the fact that interpersonal relationships play a significant role in shaping the way organizations, work units, and individuals within the organization function. In the past, research investigating the influence of individual attributes on individual behavior in a work environment has focused on broad personality traits, most notably the "Big Five" (Costa & McCrae, 1992). Although broad traits are useful, individual characteristics that are more directly related to how people conceptualize relationships with other people and interact with them provides a better understanding of the nature of relationships and behavior at work. An individual's attachment style is one such characteristic that is directly related to interpersonal relationship functioning.

The concept of "attachment" has evolved over time, although in the traditional sense it refers to the relationship between a child and its mother or primary caregiver (Bowlby, 1969/1982). Sigmund Freud's reasoning that attachments form out of an infant satisfying its need for nourishment at the breast was the first step in launching what would later become a complex and multifunctional theory in its own right (Freud, 1940). Following Freud, John Bowlby developed a hypothesis that the attachment between a child and mother is the product of a biologically evolved behavioral system that has as its goal proximity to the mother (Bowlby, 1969/1982). Bowlby (1969/1982, 1973, 1980)

focused on the primacy of the infant's attachment to its mother and the enduring effects that this first relationship has on personality development throughout the lifespan.

In adulthood, individuals possess a dominant attachment pattern that tends to remain relatively stable. This pattern, also referred to as a working model, represents personality features that influence cognitions, affective experience and regulation, proximity seeking, and other behaviors throughout the life span (Collins, Guichard, Ford, & Feeney, 2004; Mikulincer, Shaver, & Pereg, 2003). The conceptualization of adult attachment has evolved over several decades of research (Bartholomew & Shaver, 1998; Ross, McKim, & DiTommaso, 2006). Based on previous work on infant attachment (Ainsworth, Blehar, Waters, & Wall, 1978), attachment was originally conceptualized as a three- (Hazan & Shaver, 1987) or four-category typology (Bartholomew & Horowitz, 1991). Mary Ainsworth and her research team were the first to empirically test Bowlby's theory utilizing a behavioral observation paradigm with infants (Ainsworth, Bell, & Stayton, 1973). Their research with this paradigm identified three main patterns of infant attachment to the mother, *secure, anxious* and *avoidant* (Ainsworth, Blehar, Waters, & Wall, 1978). More recently, the focus has shifted to a two-dimensional conceptualization consisting of attachment anxiety and attachment avoidance (Brennan, Clark, & Shaver, 1998; Mikulincer & Shaver, 2005), because research on the assessment of attachment has shown that this more accurately represents the underlying structure of attachment (Fraley & Waller, 1998).

Anxiously attached individuals possess a negative view of the self, which leads to "hyperactivating" strategies such as being over-dependent on others (Mikulincer & Shaver, 2005) and hypervigilant to social and emotional cues from others (Fraley,

Niedenthal, Marks, Brumbaugh, & Vicary, 2006). In contrast, avoidantly attached individuals view others as unavailable, unresponsive, or punishing (Bowlby, 1973; Mikulincer & Shaver, 2005), leading to what has been referred to as "deactivating" strategies, such as denying the importance of relationships and avoiding emotional intimacy (Mikulincer & Shaver, 2005). Conversely, individuals with low levels of attachment anxiety and avoidance, which characterizes secure attachment, are more likely to view themselves as worthy (low anxiety) and others as trustworthy (low avoidance), leading to greater security, resiliency, and ability to manage adversity by drawing upon internal coping resources and support from others (Mikulincer & Florian, 1998; Mikulincer & Shaver, 2005).

Mikulincer and Shaver (2007) suggested that attachment style can influence individual functioning in the work environment, and this assertion is supported by several previous studies. In an early investigation of attachment in the workplace, Hazan and Shaver (1990) found that securely attached individuals had higher levels of overall work satisfaction and were more confident that others evaluated them favorably. Conversely, they found that anxious individuals expected to be undervalued by coworkers and avoidant individuals gave themselves lower self-ratings in terms of job performance and expected they would receive low performance ratings from coworkers. Another study by Hardy and Barkham (1994) found that among individuals treated for work-related stress, anxiously attached individuals possessed anxiety about relationships at work and job performance, and avoidantly attached individuals reported more conflict with coworkers, concerns about hours of work, and difficulties with relationships outside of work. Joplin, Nelson, and Quick (1999) reported that secure attachment was negatively related to social

dysfunction and positively related to physical and psychological well-being and that insecure attachment generally showed opposite associations. The Mikulincer and Shaver (2007) study reported that anxiety and avoidance were correlated with lower levels of organizational commitment, prosocial actions, and spontaneous productive behaviors, and that avoidance was correlated with intention to quit. A study utilizing Israeli military officers (leader) and their soldiers (employees) found a significant interaction between officers' leadership styles and attachment styles, and that the interaction predicted the soldiers' performance and mental health (Davidovitz, Mikulincer, Izak, Shaver, and Popper, 2007). The results of this study indicated that a leaders' attachment anxiety was associated with more self-serving leadership motives and with poorer leadership qualities in task-oriented situations. Also a leaders' attachment anxiety predicted followers' poorer instrumental functioning. This study also suggested that a leaders' attachment-related avoidance was negatively associated with pro-social motives to lead, with the inability to act as a security provider, and with followers' poorer socio-emotional functioning and long-range mental health.

The purpose of this research study is to utilize attachment style as a characteristic that is directly related to interpersonal relationship functioning in order to explore its relationship to leadership in registered nurses and nurse supervisors and nurse managers (leaders). This study will concentrate on assessing the attachment styles of nurses and the attachment and leadership styles of nurse supervisors and nurse managers at a hopital in Dallas, Texas, as well as organizational factors such as nurse satisfaction with supervisors. The relationship between these factors may help to identify personal characteristics of nurses that can help promote a positive and collaborative work environment and increase job satisfaction.

CHAPTER TWO
Review of Literature

LEADERSHIP

Leadership is defined as "the process of guiding and directing the behavior of people in the work environment" (Nelson & Quick, 2009). Kotter (1990) made the distinction between leadership and management in that effective leadership's useful change in organizations and controls complexity in the organization and its environment. Specifically, the leadership process involves setting a direction for the organization or team, aligning people with that direction through communication, and motivating people to act both through personal empowerment and basic need gratification. This contrasts with management processes, which include planning and budgeting, organizing and staffing, and controlling and problem solving (Kotter, 1990). Therefore, while the management process is reduces uncertainty and stabilizes an organization or team, the leadership process actually creates uncertainty and change. The creation of uncertainty and change is crucial to the leadership position in order to fulfill organizational goals of growth and progress in a dynamic environment. An example may be a leader that looks to innovative and time-saving ways of doing business instead of sticking with the old but familiar way of operating.

Zaleznik (2004) posits that leaders differ from managers on along four separate dimensions of personality: attitudes towards goals, conceptions of work, relationships with other people, and sense of self. Specifically, he states that leaders have a persona

and active attitude towards goals and believe that goals are generated from desire and imagination, as opposed to the impersonal and functional attitude that managers take towards goals that are generated from necessity and reality. A leader's conception of work, according to Zaleznik, is to look for innovative approaches to old problems and seek high risk positions, especially with high payoff, whereas a manager would only seek moderate risk through coordination and balance. In regards to relationships with other people, a leader encourages close, intense working relationships and is not conflict averse, while maintaining comfort in solitary work activity. As opposed to a manager that accepts life as it is and makes a straightforward life adjustment, a leader engages in a struggle for a sense of order in life and questions life.

Theories of Leadership

The ability to identify who will be an effective leader is very important to welfare of an organization, and much research has aimed to identify exactly what characteristics make up an effective leader. The focus of much of the recent trait research has been on managerial motivation and specific skills, whereas earlier research focused more on personality traits and general intelligence. Early trait theories in the field explored physical characteristics, such as height and weight, but did not produce any valid conclusions (Stogdill, 1948). Personality characteristics, such as originality, adaptability, introversion-extraversion, dominance, self-confidence, integrity, conviction, mood optimism, and emotional control have also been studied within this context, and there is evidence that leaders are more adaptable and self confident than an average group member. Constructs such as social skills, intelligence, scholarship, speech fluency,

cooperativeness, and insight have also been examined, with some evidence suggesting that leaders tend to be more intelligent, verbal, and cooperative than the average group member, although none of these findings are strong, nor are they consistent.

Behavioral Theories

In response to the deficiencies in trait approaches, behavioral theories emerged to fill in the discrepancies. The behavior approach emphasizes what leaders and managers actually do on the job, and the relationship of behavior to leader/managerial effectiveness. Kurt Lewin was the first to research leadership style and he identified three basic styles known as autocratic, democratic, and laissez-faire (Lewin, Lippitt, & White, 1939). They defined an autocratic style as directive, strong, and controlling in relationships, with followers having little discretionary over the nature of the work or work environment as the leader uses strict rules and regulations to run the environment. A leader with a democratic style is collaborative, responsive, and interactive. A democratic leader places less emphasis on rules and regulations and followers have a high degree of discretionary influence. A laissez-faire leader is one that abdicates the authority and responsibility of the situation, often resulting in chaos. According to Lewin and his colleagues, the specific situation is not an important situation, as the leader's style is static.

In the late 1950's, researchers at the Ohio State University used aircrews and pilots to measure specific leader behavior. Using the Leader Behavior Description Questionnaire (LBDQ), the results suggested that there were two important underlying dimensions of leader behavior (Halpin & Winer, 1957). The first was the dimension of initiating structure, which is leader behavior aimed at defining and organizing work

relationships and roles as well as establishing clear patterns of organization, communication, and ways of getting things done. The second dimension was consideration, which is leader behavior aimed at nurturing friendly, warm, working relationships, as well as encouraging mutual trust and interpersonal respect within the work unit. The dimensions are thought to be independent of each other in that a leader can be high on one and low on another, or high on both, etc. Although useful in describing leadership behavior, the LBDQ is limited in that it only describes behavior (Halpin & Winer, 1957).

Another approach developed at the University of Michigan suggests that style of leadership has significant implications for the emotional atmosphere of the work environment, and by association the followers that work underneath that leader. The two styles of leadership identified were labeled production oriented and employee oriented (Kahn & Katz, 1960). A production oriented style leads to a work environment characterized by constant influence attempts by the leader, either through direct and close supervision or through the use of many written and unwritten rules and regulations for behavior, all with a focus on getting work done. The employee oriented style, in contrast, leads to a work environment that focuses on relationships. With this style, the leader exhibits less direct or less close supervision and establishes fewer written or unwritten rules and regulations for behavior. The focus of this style is concern for people and their needs.

Contingency Theories

Contingency theories, also known as situational theories, share the belief that leadership style must be appropriate for the particular situation. In this way, contingency theories are "if-then" theories that are set up as "if the situation is ___, then the appropriate leadership behavior is ___." These theories emphasize the importance of contextual factors, such as the leader's authority and discretion, the nature of the work performed by the leader's unit, the attributes of subordinates, and the nature of the external environment. This research and its resulting theories fall into two major subcategories. One line of research treats leader behavior as a dependent variable in which researchers seek to discover how the situation influences behavior and how much variation occurs in managerial behavior across different types of managerial positions. The other line of research seeks to discover how the situation moderates the relationship between leader attributes or behavior and leader effectiveness.

Fiedler's (1967, 1978) Contingency Theory deals with the moderating influence of position power, task structure, and leader-member relations on the relationship between a leader trait called the Least Preferred Coworker (LPC) and leader effectiveness. This theory proposes that the fit between the leader's need structure and the favorableness of the leader's situation determine the teams effectiveness in work accomplishment. Fiedler's theory assumes that leaders are either task oriented or relationship oriented, depending on how leaders obtain their primary need gratification. Leaders are classified by using the Least Preferred Coworker Scale, which is a projective technique through which a leader is asked to think about the person with whom he or she

can work with least well, which is the LPC. A leader who describes their LPC in positive terms is classified as high LPC, or relationship oriented, and those who describe their LPC in negative terms are classified as Low LPC, or task oriented. The model specifies that high LPC leaders are more effective in some situations and low LPC leaders are more effective in other situations.

House (1974) developed a path-goal theory of leader effectiveness based on an expectancy theory of motivation. According to path-goal theory, the role of the leader is to clear the follower's path to the goal. The leader uses the most appropriate of four leader behavior styles to help followers clarify the paths that lead them to work and personal goals. A leader selects from one of four styles that is the most helpful to followers in a given situation. The directive style is used when the leader must give specific guidance as to the work tasks or schedule and let followers know what is expected. The supportive style is used when the leaders needs to express concern for follower's well being and social status. The participative style is used when the leader must engage in joint decision making activities with followers, and the achievement oriented style is utilized when the leader must set challenging goals for followers and show strong confidence in those followers. Path-goal theory tends to focus on subordinate motivation as the explanatory process for the effects of leadership, and the theory ignores other explanatory processes such as a leader's influence on task organization, resource levels, and skill levels (Yukl, 1981).

The Normative Decision Theory developed by Vroom and Yetton (1973) identifies the decision procedures most likely to result in effective decisions in a particular situation. The moderator variables are characteristics of the immediate situation

that determine whether a particular decision procedure will increase or decrease decision quality and acceptance. This model helps leaders know when to have employees participate in the decision making process using five forms of decision making. The first, known as *decide*, is when the leader makes the decision alone and either announces it or "sells" it to the group. The second is known as *consult individually*, and this when the leader presents the problem to the group members individually, gets their input, then makes the decision. The third is known as *consult group*, and this is when the leader presents the problem to the group members in a meeting, gets input, and then makes the decision. The fourth is known as *facilitate*, and this is when the leader presents the problem to the group in a meeting then acts as a facilitator, defining the problem and the boundaries that surround the decision. The leader's ideas are not given any more weight than the group member's ideas and the objective is consensus. The last form of decision making is known as *delegate*, and this is when the leader permits the group to make the decision within the prescribed limits, providing needed resources and encouragement (Vroom, 2000). The leader chooses the form of decision making based upon a matrix juxtaposed with the situational factors listed in the model, which are decision significance, importance of commitment, leader expertise, likelihood of commitment, group support, group expertise, and team competence. This model has been criticized for its over-complexity for daily use (Yukl, 1989).

The Situational Leadership Model, developed by Hersey and Blanchard (2001), suggests that the leader's behavior should be adjusted to the maturity level of the followers. This model employs the two dimensions of leader behavior, task oriented and relationship oriented, from the Ohio State University studies mentioned above,

juxtaposed with follower readiness and four levels of follower maturity. Four styles of leader behavior, known as telling, selling, delegating and participating, are associated with the four levels of follower readiness.

Leader-member exchange theory, or LMX, recognizes that leaders may form different relationships with followers (Gerstner and Day, 1997). The basic idea behind LMX is that leaders form two groups of followers: in-groups and out-groups. In-group members tend to be similar to the leader and given greater responsibilities, more rewards, and more attention, and work within the leader's inner circle of communication. As a result, in-group members are more satisfied, have lower turnover, and higher organizational commitment. In contrast, out-group members are outside the circle and receive less attention and fewer rewards. Out-group members are more likely to be managed by formal rules and policies, and these followers are more likely to retaliate against the organization (Townsend, Phillips, & Elkins, 2000). Among the in-group, more frequent communication with the leader generally leads to higher performance ratings, while the opposite is true for out-group members (Kacmar et. al., 2003).

In some cases, situations can neutralize or even replace leader behavior, which is the central tenet of the substitutes for leadership theory (Kerr & Jermier, 1978). When a task is very satisfying and employees get feedback about performance, leader behavior is irrelevant because the employee's satisfaction comes from the interesting work and the feedback. Things that can substitute for leadership can be an employee's high skill level, team cohesiveness, and formal controls on the part of the organization. In a service setting, significant leadership can come from customer demands, allowing the firm to provide less formal supervision in this setting.

Inspirational Leadership Theories

Inspirational leadership theories share the tenet that followers are inspired by the leader to perform well (Nelson & Quick, 2009). Charismatic leadership is one such theory in which a charismatic leader uses the force of personal abilities and talents to have a profound and extraordinary effect upon followers (Conger & Kaningo, 1987). Those close to these managers become passionately committed to seemingly impossible projects without regard to the practicality of their implementation or competitive forces in the marketplace. Followers often view the charismatic leader as possessing superhuman, or even mystical qualities, as the leader's unique and powerful gifts are the source of his or her great influence with followers. Charismatic leadership is especially effective in times of uncertainty (Waldman et.al., 2001).

The theory of transformational leadership holds that transformational leaders inspire and excite followers to high level of performance, as opposed to a transactional leader that uses a reward contingency system to extrinsically motivate followers. In the past 20 years, a considerable body of research has accumulated on the transformational–transactional leadership theory. Burns (1978) first introduced the concepts of transformational and transactional leadership in the context of political leadership. He conceptualized the difference between transformational and transactional leadership in terms of what leaders and followers offer one another (Conger & Kanungo, 1998). Transformational leaders offer a purpose that transcends short-term goals and focuses on higher order intrinsic needs. In contrast, transactional leaders focus on the proper exchange of resources. If transformational leadership results in followers identifying with

the needs of the leader, the transactional leader gives followers something they want in exchange for something the leader wants (Kuhnert & Lewis, 1987). According to Burns, transformational and transactional leadership represent opposite ends of a single continuum, and transactional leadership is more commonplace than is transformational leadership.

In 1985, Bass based his theory of transformational leadership on Burns's (1978) conceptualization, with several modifications or elaborations. First, Bass did not agree with Burns that transformational and transactional leadership reside on a single continuum. Bass argued that transformational and transactional leadership are separate concepts, and reasoned that the best leaders are both transformational and transactional, and that good transactional leadership must exist prior to transformational. Second, Bass elaborated considerably on the behaviors that manifest transformational and transactional leadership. Although the theory has undergone several revisions, the most recent version, known as the full range leadership model, posits that there are four dimensions of transformational leadership, three dimensions of transactional leadership, and a non-leadership dimension (Avolio & Bass, 2004).

The four dimensions of transformational leadership are charisma or idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Charisma, or idealized influence, is the degree to which the leader behaves in admirable ways that cause followers to identify with the leader. Charismatic leaders display conviction, take stands, and appeal to followers on an emotional level. Inspirational motivation is the degree to which the leader articulates a vision that is appealing and inspiring to followers. Leaders with inspirational motivation challenge

followers with high standards, communicate optimism about future goal attainment, and provide meaning for the task at hand. Intellectual stimulation is the degree to which the leader challenges assumptions, takes risks, and solicits followers' ideas. Leaders with this trait stimulate and encourage creativity in their followers. Individualized consideration is the degree to which the leader attends to each follower's needs, acts as a mentor or coach to the follower, and listens to the follower's concerns and needs.

The three dimensions of transactional leadership are contingent reward, management by exception—active, and management by exception—passive. Contingent reward is the degree to which the leader sets up constructive transactions or exchanges with followers: The leader clarifies expectations and establishes the rewards for meeting these expectations. In general, management by exception is the degree to which the leader takes corrective action on the basis of results of leader–follower transactions. As noted by Howell and Avolio (1993), the difference between management by exception—active and management by exception—passive lies in the timing of the leader's intervention. Active leaders monitor follower behavior, anticipate problems, and take corrective actions before the behavior creates serious difficulties. Passive leaders wait until the behavior has created problems before taking action.

A final form of leadership, actually non-leadership, is laissez-faire leadership. Laissez-faire leadership is the avoidance or absence of leadership. Leaders who score high on laissez-faire leadership avoid making decisions, hesitate in taking action, and are absent when needed. Although laissez-faire leadership bears some resemblance to management by exception—passive leadership, researchers have argued that laissez-faire leadership, because it represents the absence of any leadership (transformational or

transactional), should be treated separately from the other transactional dimensions (Avolio, 1999; Judge & Piccolo, 2004).

Leadership in the Nursing Environment

Although the application of leadership constructs to the nursing work environment is a relatively new avenue of research, it has grown in popularity and importance over the past decade. In particular, the application of the full range leadership theory. Murphy (2005) noted "Transformational leadership is heralded as new criterion for nurse managers, and can be achieved through training, education and professional development in key leadership competencies. Nurse managers that develop and foster transformational leadership can surmount oppressive traditions and confidently navigate a complex and rapidly changing health care environment."

In a study conducted by Hendel, Fish, & Golan (2005), they utilized the MLQ along with a measure of conflict management amongst nurse managers in Israel. The results of this study suggested that the nurse manager's leadership style significantly influenced conflict- handling behavior. Most nurse managers in this study perceived themselves as transformational leaders, and chose collaborating as their preferred, frequent choice of strategy in conflict management.

A study by Kanste, Miettunen, and Kyngäs (2006) utilizing the MLQ with 601 nurses and nurse leaders in Finland found that the internal consistencies of the leadership subscales were satisfactory in this population. In addition, the Multifactor Leadership Questionnaire was shown to be fairly stable measured at a 1-year interval. Although the data in this study failed to support the full nine-factor model, a reduced set of items from

the MLQ appeared to show evidence of a three- and a six-factor structure. The psychometric data in this study suggested that a modified version of the MLQ may be a highly suitable instrument to measure multidimensional nursing leadership, although the authors noted that making generalizations beyond a sample of nurses must be done with caution. Two limitations of this study were that the sample size was too small for subgroup comparisons, and that the factor structure of the instrument was not cross-validated.

ATTACHMENT THEORY

Infant Attachment Theory

John Bowlby, a British psychoanalyst and child psychiatrist, was the first to develop a theory of attachment (Bowlby, 1969/1982, 1973, 1980). Working closely with Mary Ainsworth, a developmental psychologist and initial member of his research team, Bowlby laid the conceptual and empirically grounded framework for attachment theory. This attachment theory, which is a lifespan developmental theory, highlights and clarifies the importance of a child's bond with its mother and the enduring effect of this primary relationship on personality development (Bowlby, 1956, 1969/1982, 1973, 1980). Bowlby's attachment theory had the ability to simultaneously address the stability and vicissitude of close relationships throughout the lifespan, as well as the psychological, biological, cognitive, and emotional correlates of the attachment system (Bowlby, 1979).

Bowlby conceptualized *attachment behavior* as any form of observable behavior intended to attain or retain proximity to a preferred individual, usually the primary caregiver (Bowlby, 1980). Infants learn to discriminate their primary caregiver from other stimuli or persons within the first weeks of life, and within the first three months show a preference for this person over others (Bowlby, 1969, 1982). A preference for the primary caregiver is indicated by different kinds of behavior, such as vocalization, smiling, postural orientation, following, and burying of face (Ainsworth, 1967). These behaviors, which are differentially expressed toward the primary caregiver, are designed to elicit proximity and therefore comfort (Ainsworth, 1967). These attachment behaviors

lead to the formation of an attachment bond to the primary caregiver, who then becomes an *attachment figure* (Bowlby, 1980). Initially the attachment bonds are developed between an infant and the principle attachment figure, which is typically the mother, although the infant concurrently forms attachment bonds with other salient figures, such as older siblings and grandparents (Bowlby, 1969/1982). Later in childhood, adolescence and adulthood, attachment bonds are formed with important others, such as peers or romantic partners. (Bowlby, 1980)

A fundamental component of Bowlby's theory was the biological basis of attachment behavior (Cassidy, 1999). Taking an evolutionary perspective, Bowlby theorized that the attachment behaviors are biologically evolved behaviors that increased the likelihood of an infant's proximity to a caregiver, which in turn increased the likelihood of protection from predation (Bowlby, 1969/1982). The reasoning follows that natural selection favored infants who were attached to their caregivers, because caregivers offered protection from predation (Bowlby, 1969/1982).

Attachment behaviors are mediated by a *behavioral system*, which Bowlby (1969/1982) thought of as an inborn, biologically-evolved, cognitive, goal-corrected program, with the specific goal of seeking proximity to a primary caregiver. Bowlby derived his conceptualization of the *attachment behavioral system* from the domains of ethology, the biological study of animal behavior, and cybernetics (systems theory), the study of feedback, communication and control in living organisms, machines and organizations (Bowlby, 1969/1982). From an ethological perspective, Bowlby described attachment in terms of behavior which is common to the human species and that organizes behavior to increase chances of survival (Bowlby, 1969/1982). From a

cybernetic perspective, Bowlby described the workings of the attachment behavioral system as utilizing feedback about its own performance to regulate its behavior. Taken together, Bowlby (1969/1982) drew on aspects of ethology and cybernetics, conceptualizing the attachment system as an organizing behavioral control system for achieving the set goal of survival.

The attachment behavioral system within the individual is organized by a variety of behaviors in response to internal and external stimuli (Cassidy, 1999). As Sroufe and Waters (1977) noted, the attachment behavioral system "is not a set of behaviors that are constantly and uniformly operative) (p.1185). Rather, attachment behaviors operate flexibly, "in terms of set goals, mediated by feeling, and in interaction with other behavioral systems" (Sroufe & Waters, 1977, p.1185). The dynamic organization of the attachment behavioral system allows the individual to operate in a goal-corrected manner, flexibly responding to context in pursuit of a set goal (Cassidy, 1999). Bowlby (1973) theorized that developmental trajectories turn, "… at each and every stage of the journey on an interaction between the organism as it has developed up to that moment and the environment in which it then finds itself" (p.412). Viewed as an organizing construct, the attachment control system regulates behaviors, which differ based on the developmental stage of the organism and the context in which it finds itself. This non-linear, dynamic viewpoint of human development suggests that attachment behaviors, unlike traits, may be different over time and depend on context. For instance, whereas clinging behavior is conducive to securing proximity to a caregiver in infancy, it may not go over so well as an adult with a colleague in the workplace. Thus attachment, as an organizing construct,

is always rooted in early infant-caregiver experiences, but takes on different roles at successive stages of development (Bowlby, 1969/1982.

In consideration of the evolving dynamic between the individual and the environment, Bowlby described how individual and environmental factors contribute, under varying circumstances, to activating and deactivating the attachment system (Cassidy, 1999). Bowlby theorized that the attachment behavioral system operates within set limits, activating and deactivating to allow, for instance, an infant to maintain optimal distance from its mother (Bowlby 1969/1982). Likewise, attachment-related behaviors such as clinging to a primary caregiver are initiated in the face of threat from the surrounding environment, and terminated with achievement of the goal of proximity (Cassidy, 1999). Within the context of set limits, Bowlby (1969/1982) conceptualized the infant as using the mother as a "safe haven" in times of danger.

Integral to the organization of the attachment behavioral system are cognitive components, such as "representational models" or "internal working models" which are mental representations of the self in relation to the environment and an attachment figure (Bowlby, 1969/1982). Bowlby proposed that internal working models are formed in early interactions with caregivers and serve as a template for predicting how future interactions will go with other important figures (Bowlby, 1969/1982, 1973). From a cybernetic and cognitive perspective, the attachment behavioral system utilizes (a) feedback from efforts to achieve proximity and (b) representational models of the self in relation to the environment, to modify successive attempts to achieve the primary goal of proximity to an attachment figure (Bowlby, 1980).

Bowlby proposed that the attachment behavioral system is intricately linked to other biologically based behavioral systems, such as the exploratory behavioral system (1969/1982). Bowlby (1969/1982) described exploratory behavior as involving (a) an orienting response to, (b) a bodily approach to, and (c) an investigation of a stimulus object. According the Bowlby (1969/1982) the goal of the exploratory behavioral system is to promote knowledge about how things work in the environment. The two systems are linked in such a way that when the attachment behavioral system is activated, exploration declines, and conversely, when the attachment system is not activated, exploration increases (Cassidy, 1999). From an evolutionary perspective, the dynamic interplay of these two systems is thought to ensure protection of the young through maintaining proximity to caregivers, while gradually using exploration to learn about the environment (Cassidy, 1999). Ainsworth (1963) conceived of this interplay as the infant using an attachment figure as a *secure base* from which to explore. Bowlby (1973) further speculated that in addition to physical proximity, the infant relies on psychological proximity to an attachment figure. Sroufe and Waters (1977) characterized the importance for the infant of sensing that the attachment figure will be available if needed as a sense of "felt security."

Ultimately, attachment behaviors, which arise out of the organization of the attachment behavioral system, lead to the formation of attachment bonds or attachments (Cassidy, 1999). Both Bowlby (1969/1982) and Ainsworth (1989) conceived of attachment bonds as a specific class of affectional bond. Ainsworth (1989) characterized an affectional bond is as involving (1) persistence (not transient in nature), (2) mental representation within an individual who is bonded, (3) a partner who is non-

interchangeable, and (4) a need to maintain proximity, and feeling distress upon involuntary separation. An attachment bond, is characterized by all four of these criteria, plus the seeking of security and comfort in the relationship with the partner (Ainsworth, 1989).

Bowlby proffered two major hypotheses regarding individual differences in attachment (Bowlby, 1969/1982, 1973). Bowlby's hypotheses have generated a vast and profound line of research on attachment processes in infancy/childhood through adulthood (see Cassidy & Shaver, 1999 for a review). Firstly, Bowlby predicted that the responsiveness of a caregiver in early infancy (within the first year) influences individual differences in the quality of attachment in later infancy. Mary Ainsworth and her research team helped lay the groundwork for attachment theory and conducted the first observational studies in classifying the quality of attachment organization in infant-mother dyads (Ainsworth, Blehar, Waters, & Wall, 1978). Ainsworth et al. (1978) identified three patterns of infant attachment, *secure*, *anxious* and *avoidant*. The secure type of infant exhibited behaviors consistent with normative developmental theory (Bowlby, 1969/1982), such as using the attachment figure as a secure base for exploration, and the insecure infant types, anxious and avoidant, differed in their abilities to exhibit the secure base phenomenon (Ainsworth et al. 1978). Her team's pioneering work opened the door to experimental research of attachment in infancy and childhood (see Kerns, Schlegelmich, Morgan, & Abraham, 2005; and Solomon & George, 1999 for reviews). Secondly, Bowlby predicted that internal working models, which are based on infant-caregiver interactions, influence the quality of all other later relationships and individual differences in personality. Bowlby's conceptualization of internal working

models as representations of attachment experiences provided a verifiable basis for empirically understanding their ongoing influence in adulthood. Main, Kaplan, and Cassidy (1985) were the first to use an interview to assess adults' internal working models of attachment as a means of classifying attachment style. Main et al. (1985) showed that their interview method of classifying an adult's state of mind with respect to attachment was strongly associated with the child's behavior toward that adult using Ainsworth's (1978) observational method. Main and her group (1985) set the stage for adult attachment research (Hesse, 1999).

Adult Attachment Theory

Bowlby (1969/1982) stated that human attachments serve a "vital role from the cradle to the grave" (p.208). He theorized that attachment bonds in infancy are similar to love relationships in adulthood (Bowlby, 1969/1982). Although Ainsworth's (1963, 1972, 1973, 1978) early work focused on providing a normative account of development during the first year of life, her later theorizing (1989, 1991) continued to account for the continuity of attachment system components throughout the lifecycle and across generations. For instance, Ainsworth (1991) theorized that the secure base phenomenon, a function of the attachment behavioral system, is a predominant feature of secure attachment relationships in adulthood. Although Bowlby and Ainsworth theorized about the development of attachments throughout the lifespan, they provided few guidelines regarding its functioning and expression in adolescence and adulthood (Crowell, Fraley, & Shaver, 1999). Their early work sparked the interest of a broad range of scholars and researchers who have shouldered the legacy of the original theory.

Adult attachment researchers and theorists have attributed the continuity of attachment patterns from infancy to adulthood to three main sources, including (1) the parent-child attachment relationship, (2) past experiences in romantic and peer relationships, and (3) current adult attachment relationships (Crowell, Fraley, & Shaver, 1999). As an innate, adaptive control system, the attachment behavioral system in adulthood functions in a self-regulatory fashion just as it does in childhood, activated by stress or danger, promoting proximity seeking, deactivating in times of safety and security, and working in concert with the exploratory behavioral system (Crowell, Fraley, & Shaver, 1999). An adult, however, unlike a child, serves as both an attachment figure or caregiver and an attached person or care receiver (Crowell, Fraley, & Shaver, 1999).

Mikulincer and Shaver (2007) elaborated a control systems model for understanding the activation and functioning of the attachment system in adulthood which is analogous to Bowlby's initial theorizing about how the attachment system works in infancy. Mikulincer's and Shaver's (2007) control systems model assumes that (a) all aspects of the attachment system can operate either consciously or unconsciously in the adult mind, (b) individuals depend on attachment figures throughout the lifespan, and (c) any threatening event, real or imagined, can activate the attachment system. Like Bowlby's model, Mikulincer's and Shaver's (2007) model is sensitive to environmental influences and personal dynamics, and as such, is helpful for understanding individual differences in attachment-related self-regulation in various contexts.

Much like attachment system functioning in infancy and early childhood, the adulthood attachment system is characterized by continual monitoring and appraising threatening events and seeking availability of an attachment figure in the face of a threat

(Mikulincer & Shaver, 2007). In the case that an attachment figure is available and effectively responsive to an adult's needs, the results are the alleviation of distress and a feeling of security (Mikulincer & Shaver, 2007). The positive outcome of attachment figure availability, felt security, reinforces the use of proximity seeking as an effective behavioral strategy and facilitates a "broaden-and-build" cycle of attachment security within the individual (Frederickson, 2001). In describing the "broaden-and-build" cycle, Frederickson (2001) goes on to explain that repeated experiences of felt security contribute to building self-confidence, self-esteem and positive expectations about the future. Thereby, secure individuals go on to learn that open expressions of neediness and vulnerability result in positive outcomes, which enables them to develop close, supportive relationships. With confidence that support is available, secure individuals are then able to broaden their experience by accepting new challenges and opportunities.

The control system model (as elaborated by Mikulincer & Shaver, 2007) further postulates that in the case that an attachment figure is not available, distress builds and leads to appraisal of the viability of proximity seeking and "secondary strategies" for coping with insecurity. As in childhood, secondary strategies consist of hyperactivation and deactivation (referred to by Bowlby, 1969/1982 as "activation" and "termination") of proximity seeking efforts. Hyperactivating strategies naturally draw attention to one's vulnerability and inability to cope as a means of garnering support. Over time, this focus on helplessness is reinforcing and leads to a negative impact on self-image, social perception, relationship satisfaction and emotional stability. Deactivating strategies are employed to minimize distress through the minimization of attachment needs. Over time, denial of vulnerability and dependency needs may lead to "compulsive self-reliance" and

a distorted self-perception. Thus, both hyperactivating and deactivating strategies are employed to minimize distress and are therefore self-reinforcing.

Whereas initially a child normally seeks proximity to an attachment figure within the immediate family, when an adult's attachment system is activated, the adult can seek proximity from various others who serve as attachment figures, including romantic partners, friends, mentors and leaders at work (Ainsworth, 1991; Bowlby, 1969/1982; Weis, 1982). From the start, Bowlby (1973) proposed that social experiences with attachment figures provide the basis for internal working models of relationships. Mental representations of past attachment relationships can be generalized across future relationships with a variety of others (Brumbaugh & Fraley, 2006).

Longitudinal studies bear out the theoretical continuity of attachment style throughout the lifespan. In a meta-analysis of 27 longitudinal studies of attachment classifications measured in infancy and adulthood, Fraley (2002) demonstrated moderate continuity (mean correlation of .27, N = 218) in support a "prototype perspective" of how "representations of early experiences are retained over time and continue to play an influential role in attachment behavior throughout the life course." Sroufe, Egeland, Carlson, and Collins (2005) present findings from a 30-year longitudinal study of attachment from infancy to adulthood in which they assessed the quality of attachment in infancy among more than 200 mother-infant dyads and followed their cohort, measuring attachment-related behaviors at successive developmental stages. Sroufe et al. (2005) found that attachment history, as assessed in infancy, is related to the development of self-reliance, emotional regulation and social competence over the course of the lifespan. Moreover, Sroufe's team (2005) demonstrated that development of these capacities is

evidenced by different behaviors in different contexts depending on the development of the person at a certain developmental stage, providing support for the attachment as an organizational construct.

Between 1987 and 2007, over 50 studies documented associations between attachment-related mental representations of parents and experiences in close adult relationships (as reviewed by Mikulincer & Shaver, 2007). At an early stage in the adult attachment research literature, Hazan and Shaver (1987) conceptualized romantic love in adulthood as having some overlap with the quality of affectional bonds formed in infant-caregiver relationships, and were the first to demonstrate that specific characteristics of infant-caregiver relationships influence the particular quality of adult romantic relationships. For instance, they found that discomfort with closeness in infant-giver relationships was associated with fear of intimacy in romantic relationships (Hazan & Shaver, 1987).

In 1990, Hazan and Shaver extended their initial research on adult romantic relationships into the workplace. Hazan and Shaver (1990) proposed that adult work activity is functionally similar to Bowlby's conceptualization of childhood exploratory activity in the context of the attachment organizational system, and that the quality of adult attachment facilitates work functioning in a similar manner as infant attachment supports exploration. The investigators (1990) theorized that for the adult, the workplace represents an opportunity for exploration and creativity, analogous to free play and exploration in childhood. They reasoned that the workplace can also be threatening, as it challenges workers' skill set, adaptability, self-control, communication skills, and flexibility, among other things. As with children, adults thrive on the organizational

stability offered by a safe haven and secure base, or romantic partner, and secure relationships at home are thought to promote self-confidence, creativity, productivity, and relationship satisfaction at work (Hazan & Shaver, 1990).

Hazan and Shaver (1990) compared self-reports about experiences in romantic relationships and workplace orientation and found that the experiences of workers with insecure attachment styles (anxious and avoidant) were compromised compared to securely attached workers. Following their groundbreaking study, researchers have become increasingly interested in the interface between attachment system functioning and organizational processes (see Mikulincer & Shaver, 2007 for a review). In addition to studying individual outcomes in the workplace, researchers have proposed that attachments are formed between individuals and groups and leaders and followers (Popper & Mayseless, 2003; Smith, Murphy, & Coats, 1999).

Assessment of Attachment

Individual differences in attachment are characterized by variations in the quality of the affective bond between an infant and caregiver, both in terms of the sensitivity of the caregiver, and the degree to which the infant effectively uses the caregiver to seek protection from the environment (Weinfield, Sroufe, Egeland, & Carlson, 1999). The first empirical investigation of attachment theory was undertaken by developmental psychologists using observational methods to study the behavior of mother-infant dyads (Ainsworth, Blehar, Waters, & Wall, 1978). The pioneering work of Ainsworth and colleagues (1978) was concerned with the first of Bowlby's two main propositions, that individual differences in attachment are based on the quality of care giving in early

infancy (Bowlby, 1962/1989, 1973). In studying Bowlby's hypothesis, the Ainsworth research team (1978) focused on observing infant attachment behaviors, such as clinging and crying, in relation to a primary caregiver. Consistent with Bowlby's conceptualization of the attachment behavioral system as an organizing construct (1969/1982), Ainsworth et al. (1972) conceived of individual differences in attachment style as being characterized by the type of attachment behavior (e.g., clinging), timing of the behavior (e.g., in the face of threat), effectiveness of the behavior (e.g., in attaining proximity), and the context in which the behavior occurs (e.g., in the face of separation from the caregiver). As noted by Weinfield et al. (1999), all infants express attachment behaviors at some point in time, depending on the degree to which an infant perceives the environment as threatening. In normative development, it is expected that an infant will cling to a caregiver in the face of a threat, and will return to exploring its environment in the absence of threat; it would be maladaptive to for an infant to cling to a caregiver in absence of a perceived threat (Weinfield, et al., 1999). Clinging, viewed as an attachment behavior, is relevant by virtue of the overall context in which it occurs, rather than simply the fact that it occurs at all. Thus, it would be misleading to count the number of time an infant cries without taking into consideration the context in which the infant finds itself. In this overall light, the Ainsworth team (1978) made a significant contribution to advancing the empirical investigation of attachment theory by identifying patterns of attachment behaviors, rather than simply counting the number of expressed attachment behaviors.

Ainsworth's pioneering work investigating the developmental roots of the attachment system with infant-mother dyads at the behavioral level was subsequently

extended by developmental psychologists and clinicians in studies of attachment at the representational level by using interviews to assess parents' "state of mind with respect to attachment" (Hesse, 1999; Main, Kaplan, & Cassidy, 1985). Main and her research team (1985) took on Bowlby's second major hypothesis, that internal working models are based on early infant-caregiver interactions and influence later relationships. Main et al. (1985) were interested in the "adult's overall working model of attachment," and they developed the Adult Attachment Interview (AAI) to elicit adults' "descriptions of relationships, specific supportive memories, contradictory memories, assessments of relationships in childhood, and current assessments of the same experiences and relationships." Main et al.'s (1985) AAI has been studied extensively around the world (see Hesse, 1999 for a review), and has been adapted by other researchers in the development of interviews to assess adult attachment in various close relationships: the Attachment Style Interview (Bifulco, Lillie, Ball, & Moran, 1998); the Couple Attachment Interview (Alexandrov, Cowan, & Cowan, 2005); the Current Relationship Interview (Crowell & Owens, 1996); the Family and Peer Attachment Interview (Bartholomew & Horowitz, 1991); the Marital Attachment Interview (Dickstein, Seifer, St. Andre, & Schiller, 2001); and the Romantic Relationship Interview (Furman, Simon, Shaffer, & Bouchey, 2002).

Around the same time as Main and her team were launching investigations of attachment at the representational level, a divergent line of research was initiated by social and personality psychologists interested in applying Bowlby's and Ainsworth's ideas to the study of romantic relationships (see Feeney, 1999 for a review). Hazan and Shaver (1987) were the first to develop a self-report measure of adult attachment style in

regard to romantic relationships. Various self-report measures of adult attachment style of grown out of Hazan and Shaver's first instrument (Mikulincer & Shaver, 2007).

During the past two decades, two rather distinct lines of attachment research have grown out of Bowlby's original attachment theory, and have diverged in their conceptualization and assessment of individual differences in attachment (Shaver & Mikulincer, 2002). The first line of research started with developmental psychologists who used observational methods to study infant-mother dyads (Ainsworth, Blehar, Waters, & Wall, 1978), and was extended using interview methodologies in the investigation of parents' state of mind with respect to attachment (Main, Kaplan, & Cassidy, 1985). The second line of research was begun by social and personality psychologists (Hazan & Shaver, 1987) who developed self-report measures for assessing attachment-related emotions and behaviors in romantic relationships. Developmental theorists have focused on the primacy of the infant-caregiver dyad, and favored observational, interview and projection measures for assessing attachment behaviors and mental representations of child-parent experiences (Shaver & Mikulincer, 2002). Social and personality theorists have focused on romantic and other social relationships, and favored self-report and observational methods for assessing the quality of attachments (Shaver & Mikulincer, 2002). Although the two research traditions have branched off in different directions, both traditions are rooted in Bowlby's original theorizing about human emotional attachments, and both kinds of measures derive individual attachment classifications similar to Ainsworth et al.'s (1978) original attachment styles, secure, anxious and avoidant (Crowell, Treboux, & Waters, 1999). The studies of adult attachment are based on Ainsworth et al.'s (1978) early work, and are concerned with

how attachment-related aspects of personality continue to develop throughout the lifespan and how they influence other behavioral systems. This chapter reviews the conceptual distinctions between different measures of attachment developed by researchers in the developmental and social/personality traditions. Psychometric properties of each instrument are considered.

The Strange Situation

Mary Ainsworth, who collaborated with Bowlby, defines attachment as an enduring affectional bond formed between two persons (Ainsworth, 1989). Ainsworth and her colleagues developed an empirical assessment procedure for measuring individual differences in attachment orientation involving home observation of nonverbal behaviors of the mother-infant dyad in the infant's first year of life and a laboratory assessment called the "Strange Situation" (Ainsworth et al., 1978). The Strange Situation involves eight scripted laboratory episodes in which a caregiver, her 12- to 18- month-old infant and a stranger are observed in a series of separations and reunions. The episodes in which a stranger is introduced into the situation or the mother is separated from the infant are intended to signal danger and activate the infant's attachment system. Ainsworth et al. (1978) observed the interactive behavior between infants and caregivers during the eight episodes and thereby classified patterns of infant behavior toward the mother. The infant's attachment relationship with the mother was classified into one of three main groups, or attachment styles, *avoidant*, *anxious* or *secure*. In the Strange Situation, the *avoidant* infant is characterized by a lack of interest in the presence of the caregiver, agitation when she leaves the room, wariness about the stranger, and little fussing when the caregiver returns to the room. The *anxious* infant is hypervigilant about

the caregiver's presence and his ability to make contact with her, wariness about the stranger, and a high level of visible distress when the mother leaves the room and resistance and anger when she returns. The *secure* infant is characterized by easy interactions with the caregiver, interest in exploring the situation, only mild wariness toward the stranger, upset when the caregiver leaves the room, and relief and proximity seeking when she returns. Using a discriminant function analysis Ainsworth et al. found that two linear functions most accurately assigned infants into one of the three attachment categories, thereby mapping attachment *anxiety*, *avoidance* and *security* as regions in a two-dimensional space. Ainsworth et al. conceptualized the two dimensions as (1) *avoidance* of closeness and dependency and (2) *anxiety* about a caregiver's availability.

In a later study of Strange Situation classifications, Main and Solomon (1986) reported that approximately 15% of infants are difficult to classify using Ainsworth et al.'s (1978) original classification system. Main and Solomon (1986) described the behavior of the infants in this group as lacking a coherent attachment strategy in regard to the mother, and thereby created an additional attachment style labeled as "disorganized/disoriented." The infants who fall into the disorganized/disoriented are also assigned into one of the three primary categories providing the best fit for the infant (Siegel, 1999).

In a meta-analysis of 1,584 Strange Situation classifications in North American, non-clinical samples of children from 12-24 months of age, 67% were classified as secure, 21% as avoidant, 12% as ambivalently attached, and 15% as disorganized/disoriented (van Ijzendoorn, Goldberg, Krronenberg, & Frenkel, 1992). Studies of intercoder reliability, involving inter- and intra-laboratory comparisons, have

ranged from 80% to 88% (Carlson, Cicchetti, Barnett, & Braunwald, 1989; Lyons-Ruth, Repacholi, McLeod, & Silva, 1991; Solomon & George, 1999). Short-term stability, between two and six months, of attachment classifications ranges between 50% and 96% (Solomon & George, 1999). Long-term stability of attachment classifications from 12-18 months to 60 months has been shown to be quite high at 82% (Main & Cassidy, 1988; Wartner, Grossmann, Fremmer-Bombik, & Suess, 1994).

In the original sample of infant-mother dyads, Ainsworth et al. (1978) found that patterns of secure and insecure infant behavior in a structured laboratory environment were related to observed patterns of behavior in the home and in other contexts. At home, for instance, infants classified as anxious in the Strange Situation cried more than secure infants. Similarly, mothers showed greater sensitivity to the signals from secure (as classified in the laboratory) versus insecure infants. This link between Strange Situation attachment classification and home behavior was confirmed in another study (Vaughn & Waters, 1990) using an observation-based Attachment Q-Sort method to qualify infant attachment on a secure continuum. In home observations using the Q-Sort method to assess attachment security, Vaughn and Waters found that infants who were secure in their relationship with their mothers scored in the secure range on the Q-Sort. Additionally, in contexts outside the home, infants classified as secure in the Strange Situation have been found in later childhood to have longer attention spans and to be more empathic, socially competent and happier than insecure types (Bretherton, 1985).

Adult Attachment Interview (AAI)

On the basis that infants exhibited consistent patterns of behavior at home and in the laboratory, and that their attachment classification correlated with observed behavior

in other contexts, Main, Kaplan and Cassidy (1985) inferred that these stable individual differences in behavior were attributable to relatively stable mental representations of the self in relation to important others. In earlier years, Bowlby (1969/1982, 1973, 1980) had termed these mental representations "internal working models," which he speculated enabled a person to predict and prepare for future interactions with important relationship partners. Building on Bowlby's theorizing about internal working models and the Ainsworth research group's early infant observational work, Main, Kaplan and Cassidy (1985) extended childhood attachment theory and research into the adult realm by re-conceptualizing individual differences in attachment as differences not only in nonverbal behavior but also as differences in "patterns of language and structures of the mind." Main and her research team (1985) called their re-conceptualization "a move to the level of representation." Main and her group focused on the mental organization of information about one's self in relation to important others and how this attachment-specific organization of experience at the mental level guides the attachment behavioral system. Main and team redefined the internal working model as "a set of conscious and/or unconscious rules for the organization of information relevant to attachment and for obtaining or limiting access to that information, that is, to information regarding attachment-related experiences, feelings, and ideations" (Main, Kaplan & Cassidy, 1985, p. 66). In contrast to Ainsworth's observational methods, Main and her colleagues used an interview method for eliciting verbal responses to questions about autobiographical attachment-related experiences as a means of assessing an adult's organization and accessibility of information relevant to attachment.

George, Kaplan and Main (1985) created the Adult Attachment Interview (AAI) to assess an adult's "current state of mind with respect to attachment." Up until this point, research had focused almost exclusively on nonverbal attachment-related behavior and its relation to Ainsworth's Strange Situation. In contrast, the AAI is a semi-structured, hour-long interview consisting of 18 questions in which the interviewer asks the adult interviewee about past experiences with parents and the meaning that the interviewee associates with these experiences (Main, Kaplan & Cassidy, 1985). For example, one of the 18 items of the interview asks the participant to provide five adjectives that best describe the participant's relationship with his or her mother/father during childhood (Hesse, 1999). The interviewer then asks the participant to provide memories or experiences that led them to choose each adjective. The entire interview is transcribed and quality of the subject's discourse is analyzed. Hesse (1996) has suggested that the AAI challenges the subject to recall attachment-related memories while maintaining a collaborative and coherent discourse with the interviewer.

Main and Goldwyn (1984; 1998) developed a scoring system for the AAI that emphasizes the quality of the discourse between the interviewer and interviewee. In line with the view that internal working models operate largely unconsciously, the coding system focuses less on the manifest content of the interviewee's report, and more on the quality of the narrative (Main, Kaplan & Cassidy, 1985). For instance, Main and her colleagues reasoned that an interviewee's access to attachment-related memories will be limited in cases of insecure attachment, and the quality of attachment will be evidenced by the degree to which the interviewee's narrative is, for example, balanced, consistent, and coherent. Main and Goldwyn (1998) defined coherence as "a connection or

congruity arising from some common principle or relationship; consistency; [or] connectedness of thought, such that the parts of the discourse are clearly related, form a logical whole, or are suitable or suited and adapted to context" (p. 44). Accordingly, Main and Goldwyn found it important that an interviewee's manner of speech was internally consistent and conversationally cooperative, not excessively or inappropriately verbose or brief, and rather appropriate to the context and flow of the interview (Hesse, 1999). In refining their classification system, Main and Goldwyn (1998) found that their conceptualization of coherence was related to the work of Paul Grice (1975; 1989), a linguistic philosopher, on principles of cooperative discourse. Grice (1975; 1989) proposed four maxims by which effective communication is achieved in cooperative, coherent discourse: (1) *Quality* – be truthful, and have evidence for what you say, (2) *Quantity* – be succinct, and yet complete, (3) *Relation* – be relevant to the topic at hand, (4) *Manner* – be clear and orderly. Transcripts that evidenced adherence to or violations of Grice's maxims were classified accordingly, as secure or insecure (Main & Goldwyn, 1998).

The Main & Goldwyn (1984; 1998) scoring system is comprised of two primary scales, including (a) inferred early experiences with each parent and (b) state of mind with respect to attachment. Although both scales emphasize the importance of the quality of the discourse between the interviewer and interviewee, the inferred early experiences with each parent scale is also concerned with content-oriented parameters such as the value the interviewee places on attachment relationships (Hesse, 1999). The interviewer forms an impression of the interviewee's valuation of attachment relationships, making a judgment which is not necessarily based on the interviewee's literal statements, because

the interviewee may be unconsciously or defensively limiting information (Mikulincer & Shaver, 2007). For instance, an interviewee might describe his parent as loving, but then launch into a number of stories about the parent, which in the interviewer's opinion, cast the parent in a rejecting light. In this case, the interviewer rates the degree to which it seems that the interviewee's parent was rejecting, despite the interviewee's conscious description of the parent as loving. Regarding the state of mind scale, the coder focuses on the quality of the interviewee's discourse, such as whether the interviewee presents a coherent narrative of attachment-related experiences. In the case that the interviewee's narrative is marked by such things as swings in affect, lack of details, or exceptional brevity or verbosity, the discourse is rated to the degree of its incoherence (Mikulincer & Shaver, 2007). The scale score patterns are used to classify interviewees as "free and autonomous with respect to attachment," "dismissing of attachment," "enmeshed and preoccupied with attachment," or "unresolved/disorganized."

In their initial study, Main, Kaplan and Cassidy (1985) studied a sample of adult parents, whose children's' attachment orientation had already been classified by the Strange Situation. Main et al. correlated the children's Strange Situation attachment classifications with their parent's recollections about past experiences with parents. Main and her colleagues found that a parent's AAI classification (secure/autonomous, dismissing, preoccupied, and unresolved/disorganized) predicted, respectively, the quality of the child's attachment style as measured by Ainsworth's Strange Situation (secure, avoidant, anxious, and disorganized/disoriented). For the mother, the correspondence of her attachment classification to her infant's attachment style was strong ($r = .62$, $p < .001$) and good ($r = .37$ ($p < .05$)) with respect to the father (Main et

al., 1985). More specifically, Main's group found that Strange Situation infant behaviors were associated with AAI parent's recollections of childhood experiences. For instance, the behavior of an infant who avoided the mother during one of the reunion episodes of the Strange Situation was correlated with the mother's lack of recall of childhood experiences during the AAI interview.

A meta-analysis of 14 studies (18 samples consisting of 854 dyads) comparing Strange Situation infant attachment orientation to AAI parent's state of mind with respect to attachment, confirmed the predictive validity of the AAI, showing a 75% correspondence between secure versus insecure classifications (van Ijzendoorn, 1995); each distinct AAI classification was related to its corresponding Strange Situation style. van Ijzendoorn's meta-analysis (1995) also showed in its review of 10 different studies that parental state of mind with respect to attachment was strongly associated with parental responsiveness to the child. The AAI has been shown to be stable across time from 1-48 months with correspondence ranging from 70%-95% (Bakermans-Kranenburg & van IJzendoorn, 1993; Benoit & Parker, 1994; Sagi et al. (1994); Hesse, 1999). Inter-rater reliability has been established between 80%-82% (Hesse, 1999; van Ijzendoorn & Bakermans-Kranenburg, 1997). The AAI demonstrates strong discriminant validity from non-attachment-related autobiographical memory, social desirability, and verbal and performance intelligence (Bakermans-Kranenburg & van IJzendoorn, 1993). In a recent meta-analysis of more than 200 studies presenting data on over 10,000 Adult Attachment Interviews, Bakermans-Kranenburg and van IJzendoorn (2009) found that the distribution of AAI classifications in combined samples of North American, non-clinical mothers was 55% secure, 16% dismissing, 9% preoccupied, and 19% unresolved. The comparable

distribution of Strange Situation child classifications reported by van Ijzendoorn et al. (1992) (67% secure, 21% avoidant, 12% ambivalent, and 15% disorganized/disoriented) are consistent with Main et al.'s (1985) report of a good correspondence between AAI and Strange Situation classifications.

Self-Report Measures of Adult Attachment

Self-report measures of adult attachment elicit respondents' feelings and experiences in adult relationships (Mikulincer & Shaver, 2007). Self-report measures of adult attachment focus on different kinds and levels of social relationships as the targets in assessing attachment-related processes (Mikulincer & Shaver, 2007). For example, measures ask about experiences in relationships with specific kinds of people, including parents, friends and romantic partners, about relationships in general or a specific relationship with one person. Whereas some self-report instruments measure attachment patterns using categorical descriptions of attachment styles, others use continuous ratings of multiple items designed to tap the dimensions of attachment (Mikulincer & Shaver, 2007). While some (Backstrom & Holmes, 2001) argue that the number of dimensions underlying the attachment construct are unclear, others (Brennan, Clark, & Shaver, 1998) argue that the items on self-report attachment measures boil down to two primary dimensions, commonly called anxiety and avoidance. This section reviews the development of some of the more widely used self-report measures of adult attachment (Mikulincer & Shaver, 2007). Differences in instrument design, conceptualization of the attachment construct and psychometric properties are considered.

The Attachment Style Measure

In 1987, around the same time of the emergence of the AAI (1985), Hazan and Shaver developed the first self-report measure of adult romantic attachment. Hazan and Shaver (1987) conceptualized romantic love between adult lovers as an attachment process similar to the bond formed between infant and parent. Further, Hazan and Shaver proposed that adult romantic relationships are grounded in attachment relationships formed in infancy. As social psychologists interested in the study of feelings and behavior in romantic relationships, Hazan and Shaver (1987) conceptualized adult attachment in terms of internal representations that guide interpersonal behavior and information processing, and strategies that individuals use to feel secure. In constructing their measure of romantic attachment, Hazan and Shaver wrote three brief, multi-sentence descriptions of each of the Ainsworth et al. (1978) attachment styles, as summarized in her original book, and asked participants to rate how well each of the descriptions characterized their feelings in romantic relationships. In an attempt to link self-reported experiences in romantic relationships with internal working models of attachment, the investigators also asked participants about their beliefs about love and relationships and memories about their early experiences with parents.

In a sample of 620 respondents, Hazan and Shaver (1987) found that the frequencies of the three attachment styles (56% secure, 24% avoidant, and 20% anxious) were comparable to the frequencies of infant-parent attachment styles (62% secure, 23% avoidant, and 15% anxious) summarized by Campos et al. (1983) in a review of American studies of infant-parent attachment style. Hazan and Shaver found that participants' self-reported attachment style was related to different types of love

experiences. For instance, secure lovers described love experiences as trusting, and avoidant lovers characterized experiences by fear of intimacy. The findings extended to working models or beliefs about love relationships, with differences shown among the attachment styles in beliefs about the availability and trustworthiness of romantic partners. Finally, Hazan and Shaver found parallels between memories of infant-mother interactions and romantic attachment style. For instance, secure lovers as compared to insecure lovers recalled a warmer relationship with parents. With these results, Hazan and Shaver (1987) purported to advance attachment theory by showing that adult attachment behaviors in romantic relationships are conceptually similar to infant patterns of attachment and are related to other theoretically relevant attachment variables, thereby demonstrating that adult attachment style can be tapped by a self-report instrument.

In their original study, Hazan and Shaver (1987) did not report on the psychometric properties of their instrument. In subsequent studies involving the Attachment Style Measure (ASM), moderate reliabilities have been reported for the three scales, with alpha coefficients ranging from .45-.64 (Chongruksa, 1994; Vacha-Haase, Murphy, Rotzien, & Davenport, 1994). Test-retest reliability for a period of two weeks for the three scales has been reported between .48 and .65 (Levy & Davis, 1988). Hazan and Shaver (1987) performed a factor analysis that yielded three factors they termed "comfort with closeness, concern about insufficient closeness, and discomfort with closeness." In using discrete prototypes to categorize attachment style, Hazan and Shaver moved away from mapping attachment style on a continuum as Ainsworth (1978) had done in identifying individual variability of attachment styles. A problem with

categorical measures is that they assume that individual differences between people within a category are unimportant (Mikulincer & Shaver, 2007).

Recognizing the importance of individual differences, future researchers adapted the Hazan and Shaver (1987) prototype measure for use in gathering continuous ratings on romantic attachment styles, thereby re-plotting adult attachment patterns in the two-dimensional space originally mapped by Ainsworth et al. (Levy & Davis, 1988; Simpson, 1990; Collins & Read, 1990). Levy and Davis (1988) asked participants to rate how well each of Hazan's and Shaver's prototypes of romantic attachment described them, and found that the continuous ratings of the three attachment categories reduced to the two familiar dimensions of avoidance and anxiety.

Experiences in Close Relationships Scale

Given the multitude of adult attachment self-report measures that followed the original Hazan and Shaver (1987) measure, and the corresponding identification of multiple attachment-related constructs, Brennan, Clark, and Shaver (1998) conducted an extensive review of the existing measures to date. Brennan et al. (1998) factor-analyzed all non-redundant items (323) from the existing attachment measure items (482) and found that two higher-order factors, anxiety and avoidance, underlie most of these measures. Brennan et al. selected 36 items that correlated most highly with the two higher-order factors, thereby constructing two 18-item scales tapping anxiety and avoidance. Brennan and associates modified the wording of some of the items to refer to romantic relationships and called their measure the Experiences in Close Relationships (ECR) scale. The items on the anxiety and avoidance scales of the ECR are analogous to

Ainsworth et al.'s (1978) coding scales describing anxious and avoidant attachment styles. In addition to constructing a precise and comprehensive measure of attachment-related anxiety and avoidance, Brennan et al. used hierarchical and nonhierarchical clustering procedures to classify attachment patterns in a two-dimensional space. Brennan et al. showed that continuous scores on their 36-item measure clustered together into four patterns resembling Bartholomew's four-category attachment classification system. Thus, the ECR is a 36-item self-report survey comprised of two 18-item subscales measuring anxiety and avoidance which uses these continuous scores to plot attachment style in a two-dimensional space where scores cluster around secure, anxious, dismissing avoidance and fearful avoidance patterns (Brennan et al., 1998).

The ECR has become a reliable point of reference for attachment researchers by virtue of its use in hundreds of experimental research studies (Mikulincer & Shaver, 2007). It is an amalgam of its predecessors' items most sensitive to attachment-related avoidance and anxiety. It maintains high reliability, with Chronbach's alpha coefficients around .90, and test-retest coefficients between *r*'s of .50 and .75, and the correlation of the two continuous scales is usually close to zero (Mikulincer & Shaver, 2007). Research has demonstrated that continuous ratings, such as those used on the ECR, of the two-dimensional space occupied by attachment patterns best characterize individual differences (Fraley & Waller, 1998). Moreover, continuous ratings on individual self-report items (ECR item: "I find it difficult to allow myself to depend on romantic partners") are more descriptive than categorical assignments (e.g., Avoidant) (Brennan, Clark, & Shaver, 1998). The ECR offers both categorical- and item-level data for understanding individual differences in attachment (Brennan et al., 1998).

Interview versus Self-Report Measures

Measures of adult attachment orientation, whether interview measures such as the AAI or self-report measures such as the ECR, are similarly grounded in Bowlby's (1979) original theorizing that '"attachment behavior is held to characterize human beings from the cradle to the grave" (Jacobvitz, Curran, & Moller, 2002). Nonetheless, stark differences in the classification systems employed by each methodology have sparked a long-standing debate, revolving around which classification system most accurately assesses adult attachment style (Shaver & Mikulincer, 2002). The AAI and self-report measures of attachment differ in regard to the type of representation of relationships they measure (Jacobvitz, Curran, & Moller, 2002). Whereas the AAI assesses adults' representation of their relationship with their parents, self-report measures have focused on representations of partners in romantic relationships and important other close relationships. Furthermore, the AAI classification system (Main & Goldwyn, 1998) purports to measure unconscious processes such as defensiveness during discussions about childhood experiences with parents, and the self-report measures focus on conscious reports of behavior in romantic relationships (Jacobvitz, Curran, & Moller, 2002). Given these differences in assessment methodology and systems of classification, it is remains unclear exactly how the two assessment approaches compare.

Although some studies comparing self-report and AAI classifications have found moderate associations (Creasy & Ladd, 2005; Shaver, Belsky, & Brennan., 2000), other studies have found mild to no significant associations between classification systems (De Haas, Bakermans-Kranenburg, & van Ijzendoorn, 1994; Bouthillier, Julien, Dube,

Belanger, & Hamelin, 2002; Crowell, Treboux, & Waters, 1999; Holtzworth-Munroe, Stuart, & Hutchinson, 1997; Simpson et al., 2002; Treboux, Crowell, & Waters, 2004; Waters et al., 2002). Inconsistencies in classifications of interview and self-report measures of attachment may, in part, be an artifact of categorical level comparisons that do not take into account important individual differences at the item level (Mikulincer & Shaver, 2007). Shaver, Belsky and Brennan (2000) conducted a detailed comparison of the items and subscales of the Adult Attachment Scale (AAS), a self-report measure of romantic relationships, and the coding scales of the AAI. Shaver et al. (2000) found multiple moderate-sized associations between the self-report scales and items and the AAI coder-rating variables. Further studies comparing interview with self-report measures are needed to clarify the nature of the differences in the classification systems (Jacobvitz, Curran, & Moller, 2002).

ATTACHMENT IN THE WORKPLACE

Attachment theory has been applied to the study of attitudes, social relations and individual and group performance in organizational settings such as the workplace, military, and community groups (Mikulincer & Shaver, 2007). Researchers in this area have proposed that relationships formed in organizations, between leaders and followers and between individuals and groups may be analogous to attachments formed between infants and parents and between adults (Popper & Mayseless, 2002; Smith, Murphy & Coats, 1999). There is considerable evidence to suggest that a secure attachment style is associated with a variety of positive outcomes in regard to relationships and functioning within a workplace environment (Mikulincer & Shaver, 2007).

Individual Differences in Attachment Patterns

Hazan and Shaver (1990) were among the first to demonstrate a link between people's romantic attachment orientations and workplace attitudes and experiences. In their 1990 study, Hazan and Shaver slightly modified their original self-report measure (the Attachment Styles Measure) to capture continuous ratings of attachment categories and compared adult attachment style to workplace related variables. Hazan and Shaver found significant differences among attachment styles in regard to work satisfaction, feelings about work and coworkers, balancing love and work, the importance of leisure time, and indices of well-being. For instance, the investigators found that insecurely attached individuals had more difficulties and were less satisfied overall at work than securely attached individuals. More specifically, as compared to securely attached

workers, anxiously attached workers' reported lower work satisfaction, as characterized by perceived job insecurity and perceived lack of appreciation and recognition by coworkers. Avoidant workers reported lower work satisfaction, characterized by lower self- and other- ratings on job performance, and dissatisfaction with coworkers. In regard to the balance between love and work, securely attached individuals were more likely than insecure individuals to value and derive pleasure from relationships over work. Anxiously attached individuals reported that relationships interfered with work, and avoidant individuals emphasized the importance of work over love. Secure workers were also significantly less likely than insecure workers to report symptoms such as depression, anxiety, hostility, psychosomatic illness and physical illness. Overall, secure individuals were more likely to report enjoying leisure time and not allowing work to interfere with relationships or health; anxious individuals were more likely to report that interpersonal issues interfered with work; avoidant individuals were more likely to report that work takes priority over close relationships and leisure time is lacking in pleasure.

Since Hazan's and Shaver's (1990) study, others studying individual differences in romantic attachment style on work performance have also found lower levels of work satisfaction among anxious and avoidant adults (Hardy & Barkham, 1994; Krausz, Bizman, & Braslavsky, 2001). The Hardy and Barkham study (1994) further demonstrated that workers with insecure attachment styles experience interpersonal difficulties in workplace relationships, with anxiously attached workers having problems with "relationships in your office," and avoidant attached workers having problems with "fellow workers." In five separate studies, involving a range of participants from various occupations and cultures, it was found that securely attached individuals are significantly

less likely than those who are insecurely attached to experience burnout, or "a state of physical, emotional and mental exhaustion and lowered sense of accomplishment," (Pines, 2004). This study also demonstrated that secure individuals were more likely than insecure individuals to actively attempt to face and solve problems related to the source of a problem. Longitudinal studies show that attachment insecurities in relation to parent-adolescent and romantic relationships predict work-related difficulties 2-3.5 years later (Burge et al., 1997; Vasquez, Durik, & Hyde, 2002). Collectively, the above studies illustrate the relevance of individual attachment style to important outcomes in the workplace.

Group Differences

Mikulincer and Shaver (2007) have argued that a cohesive group may serve as an attachment figure, providing a safe haven in times of distress and a secure base for exploration. Smith, Murphy, and Coats (1999) developed a self-report measure, modeled after the ECR, of attachment-related avoidance and anxiety in regard to groups. Smith et al. (1999) found that individual attachment style in close dyadic relationships was significantly correlated with attachment style with respect to the group. Additionally, the study found that insecure attachment styles predicted lower individual engagement and identification with, and evaluation of the group, as compared with a secure style. In a series of four studies of attachment style differences in cognitions and behaviors with respect to groups, Rom and Mikulincer (2003) provided further evidence for the relevance of individual attachment style to groups. Across the four studies, attachment insecurity, as measured by (a) self-report statements about close relationships in general

and (b) the ECR scale, predicted more negative group-related representations, memories, goals and performance in group tasks. In the opposite direction, the investigators found that group cohesion reduced the deleterious effects of attachment anxiety on individual functioning within the group, providing support for the theory that a group can serve as a safe haven and thereby deactivate a hyperactivating attachment response. Taken together, these studies provide support for the idea that dyadic-level attachment styles are related to group-level attachment styles and the ability of an individual to function instrumentally within a group. These studies further suggest that individual attachment style is relevant to understanding the relationship between an individual and an organization.

Attachment Orientation and Leadership

The relationship between leaders and followers in organizations are theoretically similar to those of parents and children (Popper, Mayseless, & Castelnovo, 2000). Just as Bowlby (1969/1982) theorized that a parent serves as a secure base for an infant, adult attachment researchers theorize that leaders in organizations provide a similar sense of security for followers (Mayseless and Popper, 2007). Leaders, like parents, provide sensitive care giving for followers through providing support, guidance, motivation, encouragement, and an overall sense of security. Followers, like children, find a safe haven and secure base in a "stronger and wiser" leader in times of attachment system activation (Popper and Mayseless, 2003). Sensitive leaders can provide the security needed for followers to feel safe to explore and develop in their own right. It follows that an insensitive or unavailable leader can activate, rather than deactivate, a follower's

attachment system. Studies conducted in Israeli military units have demonstrated that leaders' avoidant attachment style has a detrimental effect on followers' socioemotional functioning and mental health over the course of two to four months of training (Davidovitz, Mikulincer, Izsak, Shaver, & Popper, 2007).

Mikulincer and Florian (1995) provided the first evidence of the relationship between leadership and attachment style. In a study of Israeli military recruits during four months of combat training the investigators found that securely attached recruits were more likely than anxiously attached recruits to be perceived by their fellow trainees as leaders. These results were replicated in a similar, but larger, sample in 2004 (Popper, Amit, Gal, Mishkal-Sinai, & Lisak).

In a groundbreaking series of three studies involving Israeli Police officer cadets, Popper, Mayseless and Castelnovo (2000) compared leaders' attachment orientations to leadership style using the transformational leadership model. Popper et al. (2000) found that a secure attachment style was significantly associated with a transformational leadership style, whereas insecure styles of attachment were associated with lower levels of transformational leadership behaviors. Studies comparing personalized and socialized leadership styles and leadership attachment styles have found that insecure attachment styles (anxious and avoidant) are associated with lower levels of socialized leadership and higher levels of personalized leadership (Davidovitz, Mikulincer, Shaver, Ijzak, & Popper, 2007; Popper, 2002). Personalized leaders tend to be dictatorial and put their own needs in front of the needs of their followers, and socialized leaders are characterized by their tendency to serve others and respect their followers' feelings (Howell, 1988). Davidovitz et al. (2007) also demonstrated that attachment insecurities were associated

with self-focused motives to lead, and had detrimental effects on the quality of leader-follower relations and followers' instrumental and emotional functioning. Overall, these leadership style studies suggest that attachment security is associated with a focus on the success of others, which manifests in variables pertaining to the actual positive functioning of followers.

Purpose of the Present Study

The purpose of this research is to explore the relationships between leadership and attachment styles in registered nurses and nurse supervisors. This study has two general aims:

1. To examine the relationship between nurse and nurse supervisor attachment and leadership styles.
2. To examine the relationships between a nurse supervisor's self and nurse supervisee evaluations of the supervisor's leadership style.

Hypotheses

Hypothesis One: Nurse supervisor attachment style is related to leadership style.

It is hypothesized that nurse supervisors with secure attachment style will be more likely to show leadership qualities in the active range and those with anxious attachment will be associated with leadership qualities in the passive range.

Specific Hypothesis 1a: Nurse supervisors with secure attachment will be more likely to have a transformational or active transactional leadership style as opposed to laissez faire or passive leadership style.

Specific Hypothesis 1b: Nurse supervisors with anxious attachment will be more likely to show passive management by exception or laissez faire leadership style than transformational or active transactional leadership style.

Specific Hypothesis 1c: Nurse supervisors with avoidant attachment will be less likely to show a transformational leadership style than those with secure attachment.

Hypothesis Two: Nurse attachment style affects how satisfied the nurse supervisee is with a supervisor.

Since those with avoidant attachment have negative mental representations of others, it is hypothesized that nurse supervisees with avoidant attachment are more likely to give their supervisors lower evaluation ratings than nurses with either secure or anxious attachment.

Hypothesis Three: Attachment style will impact the discrepancy between a nurse supervisor's self-rating of leadership style and the nurse supervisee's rating of their leadership style in that the discrepancies for nurse supervisors with insecure attachment will be larger than in nurse supervisors with secure attachment.

Hypothesis Four: Nurse supervisors with a leadership style other than transformational will have more divergence between their self-ratings of leadership style and the nurse supervisee's ratings of their leadership style.

Secondary Hypothesis: An exploratory analysis will be conducted to determine whether certain service lines within the hospital environment, such as emergency services and women's services, attract nurses with a particular attachment style.

CHAPTER THREE
Methodology

Participants

This study utilized a set of data collected from nurses, nurse supervisors, and nurse managers employed at a hospital in Dallas, Texas, between October 2010 and December 2010. Eligible nurses were defined as both male and female registered nurses age 18 or older in direct patient care who were willing to participate and currently a Baylor employee working in an area that participated in the annual National Database of Nursing Quality Indicators RN Survey.

Procedure

A list of RNs was developed from the human resources database at the hospital for recruitment of research participants. The accuracy of supervisory assignment on the recruitment list was validated with each nurse manager. Recruitment activities for survey participants included sending individual emails using hospital email addresses, fliers posted in the designated units, presentations at service line practice councils, and reminder emails during the survey. All nurses were administered online versions of the Workplace Relationship Inventory (WRI), a measure specifically designed to assess attachment style in a workplace relationship, and the Multifactor Leadership Questionnaire (MLQ), a measure of leadership qualities, in two phases. The WRI was presented to the

nurses with the name Workplace Interaction Survey (WIS). For phase 1, all nurses received an email sent to their Baylor email address requesting participation in the first phase of the study in which they were asked to complete the WIS on themselves along with the Retention Practices Inventory (of which the data will not be utilized for this paper.) In phase 2a, two weeks following the first email the nurses received an email to their Baylor email address requesting participation in the second phase of the study, in which they were asked to complete the MLQ on their supervisor, or in the case of nurse supervisors, their manager. For phase 2b of the study, two weeks after the second email the nurse supervisors and nurse managers were sent an email requesting that they complete the MLQ on themselves as well. Recruitment activities continued throughout the phases and all phases were open for participation at any time after the initial beginning of the phase in order to maximize participation. Employee opinion survey data and patient satisfaction data for all units were also collected from the Baylor University Medical Center human resources department.

Instruments

Workplace Relationships Inventory

The Workplace Relationships Inventory (WRI) contains 36-items adapted from the Experiences in Close Relationships (ECR) Scale, a well-validated self report measure of adult attachment style in romantic contexts that is considered a benchmark by leading researchers in adult attachment (Young, 2010; Mikulincer & Shaver, 2007). The WRI contains 36 items comprised of two scales, with 18 items worded to tap attachment-

related anxiety and 18 items worded to tap attachment-related avoidance. Participants are asked to rate, on a 7-point scale, how much they agree or disagree with each statement.

Multifactor Leadership Questionnaire

The most frequently used survey to assess leadership in an organization is the Multifactor Leadership Questionnaire. This is a questionnaire that measures each of the components of the full range of leadership, initially starting with Bass' (1985) factors and analysis. The original scales in the questionnaire are based on a initial factor analysis and earlier versions. Most items in the scale of charismatic leadership described the result of leadership, instead of specific actions of the leader that can be observed and that, in turn, lead to the results. In response to the critics, Bass and Avolio (1990) included in the revised and subsequent versions more items that describe leadership actions that are directly observed.

The current version of the MLQ Form 5X includes 45 items that are broken down into 9 scales with 4 items measuring each scale and the rest of the items tapping into satisfaction (Avolio & Bass, 2004). The nine scales represent the full range of leadership spectrum, with five scales corresponding to the "4Is" of transformational leadership, which are idealized influence attributed, idealized influence behavior, individual consideration, intellectual stimulation, and inspirational motivation. Three of the scales tap into transactional leadership, passive management by exception, active management by exception, and contingent reward. The laissez faire scale represents a "hands off" approach to leadership. Subsequent validation work by John Antonakis and his colleagues provided strong evidence supporting the validity and reliability of the MLQ5X. Indeed, Antonakis et al. (2003) confirmed the viability of the proposed nine-

factor model MLQ model, using two very large samples (Study 1: N=3368; Study 2: N=6525). Although some researchers have continued their criticism of the MLQ model, none have been able to provide contrary evidence of the theorized nine-factor model with such large sample sizes at those published by Antonakis et al. (2003).

CHAPTER FOUR
Results

From October 2010 to December 2010, 1600 nurses, nurse supervisors, and nurse managers from 33 different hospital units at the hospital were invited to participate in the current study. Out of the original 1600 solicited nurses, a total of 411 nurses, nurse supervisors, and nurse managers participated in phase 1, with 327 nurses, 67 nurse supervisors, and 17 nurse managers responding. In phase 2a, a total of 355 nurses and nurse supervisors completed the MLQ on their supervisor, with 303 nurses and 52 nurse supervisors responding. A total of 66 nurse supervisors and nurse managers completed the MLQ on themselves in phase 2b, with 50 nurse supervisors and 16 nurse managers responding.

Characteristics of the Sample

The demographic makeup of phase 1 and phase 2 were similar (see Table 1). Of the nurses, nurse supervisors, and nurse managers that participated in phase 1, 91% (n= 373) were female and 9% (n= 38) were male. The ethnic composition of the phase 1 sample consisted of 68% Caucasian (n= 278), 16% Asian (n= 65), 9% African Americans (n= 36), 5% Hispanic (n= 22), <1% Native Americans (n= 3), <1% two or more ethnicities (n= 5), and <1% unspecified (n= 2). For phase 2, 91% (n= 322) were female and 9% (n= 33) were male. Phase 2 ethnic composition was 70% Caucasian (n= 248), 16% Asian (n= 57), 7% African Americans (n= 26), 5% Hispanic (n= 19), <1% Native Americans (n= 1), <1% two or more ethnicities (n= 3), and <1% unspecified (n= 1). The

mean tenure in number of years was 10.16 for phase 1 and 9.6 for phase 2. The average age was 42.17 for phase 1 and 41.76 for phase 2. In terms of service line participation, 8% (n= 35) from medicine, 15% (n= 60) from surgery, 6% (n= 23) from cardiovascular, 17% (n= 70) from critical care, 16% (n= 67) from women's services, 8% (n= 32) from oncology, 14% (n= 56) from perioperative services, 6% (n= 25) from emergency room, and 10% (n= 43) from other units responded in phase 1. For phase 2, 8% (n= 29) from medicine, 14% (n= 49) from surgery, 7% (n= 26) from cardiovascular, 20% (n= 70) from critical care, 16% (n= 57) from women's services, 6% (n= 21) from oncology, 12% (n= 44) from perioperative services, 7% (n= 25) from emergency room, and 10% (n= 34) from other units responded.

Analyses of the Hypotheses

For all of the analyses, the 33 hospital units were grouped in to the nine organizational service lines determined by the hospital (e.g. women's services, perioperative services, cardiovascular services, etc.) to maximize the number of subjects. Only nurses who completed all of the 36 items on the WRI were included in the analyses utilizing these scores (n= 356). A total of 253 nurses participated in both phase 1 and phase 2. In addition, all variables met the normality assumption with a Shapiro-Wilk statistical value >.8 (Shapiro & Wilk, 1965). All analyses were conducted with SPSS version 19.

Hypothesis one and the exploratory hypothesis were tested using multiple regression analyses with an alpha set at .05. Hypotheses two through four were tested using hierarchical linear modeling to account for the hierarchical structure of the data

gathered from the hospital. Hierarchical linear modeling (HLM) is a form of multi-level analysis that allows for variance in outcome variables to be analyzed at multiple hierarchical levels (Sullivan, Dukes, & Losina, 1999). It not only duplicates the results of a standard ANOVA model for multi-level data, but also extends the study of fixed and random effects to include unbalanced data, predictors that are either continuous or discrete, and random effects that covary (Raudenbush, 1993). An additional confirmatory factor analysis was used to test the fit of the two-dimensional structure of the WRI.

Hypothesis 1: Nurse supervisor attachment style is related to leadership style.

It was hypothesized that nurse supervisor attachment style would be related to leadership style in that nurse supervisors with secure attachment style will be more likely to show leadership qualities in the active range and those with anxious attachment will be associated with leadership qualities in the passive range. Correlation and multiple regression analyses were conducted to examine the relationship between attachment style as indicated by the anxiety and avoidance scales on WRI and the nine measures of leadership style from the MLQ as predictors. Tables 2 and 3 summarize the analysis results. Anxiety was positively and significantly correlated with the passive management by exception scale (r= .463, $p<.01$), indicating that supervisors with higher scores on the anxiety scale also tend to have higher scores on the passive management by exception scale. Anxiety was negatively correlated with the idealized influence attributed (r= -.248, $P<.05$) and individual consideration scales (r= -.209, $p<.05$), indicating that supervisors with higher scores on the anxiety scale tend to also have lower scores on these two components of transformational leadership. The multiple regression model with all nine

predictors produced R square = .515, F(9, 81) = 9.557, $p < .001$. As can be seen in Table 2, the management by exception passive scale had a significant positive regression weight, indicating that supervisors with higher scores on this scale were expected to have higher scores on the anxiety scale, after controlling for the other variables in the model. The contingent reward and laissez faire scales have a significant negative weight, indicating that after accounting for the passive management by exception scores, those supervisors with higher contingent reward and laissez faire scores were expected to have a lower score on the anxiety scale.

Avoidance was negatively and significantly correlated with the idealized influence behavior (r= -.235 , P<.05), individual consideration (r= -.471, p<.01), inspirational motivation (r= -.352 p<.01), and intellectual stimulation scales (r= -.431, p<.01), indicating that supervisors with higher scores on the avoidance scale tend to also have lower scores on these four components of transformational leadership. The multiple regression model with all nine predictors produced R square = .440, F(9, 81) = 7.084, $p < .001$. As can be seen in Table 3, both the passive and active management by exception scales along with the idealized influence behavior scale had a significant positive regression weight, indicating that supervisors with higher scores on this scale were expected to have higher scores on the avoidance scale. The correlation of the idealized influence scale with avoidance was negative, suggesting that it has a suppressor effect on the regression model. A suppressor effect is when the association between two variables can be reversed, diminished, or enhanced when another variable or variables are statistically controlled for, in this case both passive and active management by exception (Nunnally & Bernstein, 1994). The individualized consideration and inspirational

motivation scales have a significant negative weight, indicating that after accounting for the positively weighted scores mentioned above, those supervisors with higher individualized consideration and inspirational motivation scores were expected to have a lower score on the avoidant scale.

Hypothesis 2: Nurse attachment style affects how satisfied the nurse supervisee is with a supervisor.

It was hypothesized that since individuals with avoidant attachment have negative mental representations of others, nurse supervisees with avoidant attachment would be more likely to give their supervisors lower evaluation ratings than nurses with either secure or anxious attachment. A hierarchical linear mixed model utilizing the satisfaction score from the MLQ as the dependent variable, the anxiety and avoidance scales from the WRI as covariates, and service line as a factor found no significant effect of anxious attachment style $F(1, 99.430)= .323$, $p>.05$, avoidant attachment style $F(1, 92.121)= 2.339$, $p>.05$, or service line $F(8, 41.898)= 1.405$, $p>.05$, with rating how satisfied a nurse is with their supervisor. Table 4 summarizes the results.

Hypothesis 3: Attachment style will impact the discrepancy between a nurse supervisor's self-rating of leadership style and the nurse supervisee's rating of their leadership style in that the discrepancies for nurse supervisors with insecure attachment will be larger than in nurse supervisors with secure attachment.

It was hypothesized that supervisors with insecure attachment, measured as high scores on the anxious and/or avoidant scales on the WRI, would have larger discrepancies

between their self-rating of leadership style and their supervisee's ratings of their leadership style. A hierarchical linear mixed model utilizing a calculated average discrepancy score (d) from the nine leadership scales of the MLQ as the dependent variable, the anxiety and avoidance scales from the WRI as covariates, and service line as a factor found no significant effect of anxious attachment style $F(1, 20.870)= .068$, $p>.05$, avoidant attachment style $F(1, 24.409)= .704$, $p>.05$, or service line $F(7, 22.827)= .397$, $p>.05$, with the discrepancy between supervisor self-rating of leadership style and their attachment style. Table 5 summarizes the results.

Hypothesis 4: Nurse supervisors with a leadership style other than transformational will have more divergence between their self-ratings of leadership style and the nurse supervisee's ratings of their leadership style.

It was hypothesized that supervisors with a leadership style other than transformational, measured as higher scores on the laissez faire, contingent reward, active management by exception, and passive management by exception scales as opposed to the five scales that tap into transformational leadership on the MLQ, would have larger discrepancies between their self-rating of leadership style and their supervisee's ratings of their leadership style. A hierarchical linear mixed model utilizing a calculated average discrepancy score (d) from the nine leadership scales of the MLQ as the dependent variable, the nine leadership scales from the MLQ as covariates, and service line as a factor found a significant effect of active management by exception $F(1, 46)= 6.035$, $p=.018$, and contingent reward $F(1, 46)= 4.050$, $p=.05$, suggesting that those who score higher on these scales have larger discrepancies between their self-ratings of leadership

and ratings from their supervisees. There was no significant effect for passive management by exception F(1, 46)= .075, *p*>.05, laissez faire, F(1, 46)= 1.135, *p*>.05, intellectual stimulation F(1, 46)= .289, *p*>.05, inspirational motivation F(1, 46)= .065, *p*>.05, individual consideration F(1, 46)= .150, *p*>.05, idealized influence behavior F(1, 46)= .060, *p*>.05, idealized influence attributed F(1, 46)= .000, *p*>.018, or service line F(7, 46)= .867, *p*>.05. Table 6 summarizes the results.

Secondary Hypothesis: An exploratory analysis will be conducted to determine whether certain service lines within the hospital environment, such as emergency services and women's services, attract nurses with a particular attachment style.

Correlation and multiple regression analyses were conducted to examine the relationship between service line and attachment style as measured by the anxiety and avoidance scales of the WRI as predictors. Table 7 summarizes the descriptive statistics and analysis results. Neither the anxiety nor the avoidance scales were significantly correlated with service line. The multiple regression model with both predictors produced R square = .001, F(2, 353) = .192, $p > .05$, which reveals that there is no significant relationship between nurse attachment style and line of service.

Factor Analysis of WRI

Although the original intent was to perform a confirmatory factor analysis on a two-factor structure, preliminary analysis using a parallel analysis criterion indicated the presence of three factors, as in the Young, 2010 study (Horn, 1965; Humphreys & Ilgen, 1969; Humphreys & Montanelli, 1975; Montanelli & Humphreys, 1976). The first four

observed eigenvalues were 10.125, 4.40, 1.858, and 1.339, whereas, the average of 50 randomly generated screes where 1.61, 1.54, 1.48. 1.43 (Cattell, 1966). An exploratory factor analysis specifying two factors was carried out to test the fit of the two dimensional structure of the WRI model. A principle component analysis with promax rotation and Kaiser normalization showed a correlation of .397 between factors one and two. Factor one contributed to 28.125% of the variance and factor two contributed to 12.223% of the variance. Proposed anxiety items loaded on factor 1, avoidance on factor 2. Thus, with some noise, the factor structure fits with Young (2010). See Table 8 for the pattern and structure matrix.

CHAPTER FIVE
Discussion

Adult attachment style is an individual characteristic that is directly related to how people conceptualize relationships with others and interact with them, and as such the interaction between attachment style and leadership provides useful information on organizational functioning. The relationship between adult attachment style and organizational outcomes, such as leader/follower relations (Davidovitz, et al., 2007) and individual workplace satisfaction (Pines, 2004), has been visibly established. In addition, the recent application of the full range leadership theory in the nursing environment, such as the study conducted by Hendel, Fish, & Golan (2005) in which they utilized the MLQ along with a measure of conflict management amongst nurse managers in Israel and found that the nurse manager's leadership style significantly influenced conflict- handling behavior, suggests the importance of exploring leadership in this population. Murphy (2005) further noted the significance of transformational leadership in the nursing environment, stating, "Transformational leadership is heralded as new criterion for nurse managers…Nurse managers that develop and foster transformational leadership can surmount oppressive traditions and confidently navigate a complex and rapidly changing health care environment." With the aim of converging the attachment and leadership research with research in nurse leadership, the present study focused on (1) examining the relationship between nurse and nurse supervisor attachment and leadership styles, and (2) examining the relationships between a nurse supervisor's self and nurse supervisee evaluations of the supervisor's leadership style. Additionally, this study examined a

possible relationship between attachment and organizational line of service, as well as confirming the two dimensional structure of the WRI measure of attachment in the workplace.

Nurse Attachment and Leadership

The relationship between attachment style and leadership style has already been demonstrated in several studies (Davidovitz, et al., 2007). Specifically, a study by Popper et al. (2000) found that a secure attachment style was significantly associated with a transformational leadership style, whereas insecure styles of attachment were associated with lower levels of transformational leadership behaviors. The current study hypothesized that nurse supervisors with a secure attachment style would be more likely to show leadership qualities in the active range and those with anxious attachment will be associated with leadership qualities in the passive range. It was further specified that nurse supervisors with secure attachment will be more likely to have a transformational or active transactional leadership style as opposed to a laissez faire or passive leadership style, those with anxious attachment will be more likely to show passive management-by-exception or laissez faire leadership style than a transformational or active transactional leadership style, and those with avoidant attachment will be less likely to show a transformational leadership style than those with secure attachment.

Analysis of the relationship between nurse supervisor attachment style, as indicated by the anxiety and avoidance scales on WRI, and the nine measures of leadership style from the MLQ found that nurse supervisors that scored higher on the anxiety scale tended to have higher scores on the passive management-by-exception

scale. Passive management-by-exception leaders wait until a behavior has already created problems before taking action (Avolio & Bass, 2004). This could possibly be explained by an anxiously attached individual's greater likelihood of possessing anxiety about relationships at work and job performance (Hardy & Barkham, 1994) and reporting that interpersonal issues interfere with work (Hazan & Shaver, 1990) in that these characteristics prevent the anxiously attached individual from actively managing problems. Although this result supports the aforementioned hypothesis that those with anxious attachment show leadership qualities in the passive range, higher scores on the laissez faire scale were actually associated with lower anxiety scores. A possible explanation could be that due to the "hyperactivating" strategies, such as being over-dependent on others (Mikulincer & Shaver, 2005) and hypervigilance to social and emotional cues from others (Fraley, Niedenthal, Marks, Brumbaugh, & Vicary, 2006), the nurse supervisor is motivated to be more involved than a laissez faire leader, but will remain passive due to anxiety concerning relationships and over-dependence on others.

In addition, high anxiety was also associated with low contingent reward, which is a transactional form of leadership that measures the degree to which the leader sets up constructive transactions or exchanges with followers (Avolio & Bass, 2004). Once again, anxiety concerning relationships could be hindering the nurse supervisor's ability to set up these constructive exchanges. Nurse supervisor anxiety was found to be negatively associated with two of the five transformational scales, idealized influence attributed and individual consideration, providing some support for the hypothesis that anxiously attached individuals are less likely to show transformational leadership

behaviors due to their anxiety concerning relationships impairing their ability to productively interact with supervisees.

Avoidant attachment was shown to be negatively correlated with four of the five transformational scales- idealized influence behavioral, inspirational motivation, intellectual stimulation, and individual consideration. This finding supports the hypothesis that nurse supervisors with avoidant attachment style are less likely to show transformational leadership. Individuals with avoidant attachment are characterized by an *avoidance* of closeness and dependency (Ainsworth et. al., 1978), which is a hindrance in successfully working with others in a complex organizational environment such as nursing. Avoidantly attached individuals are more likely to report dissatisfaction with coworkers and that work takes a priority over close relationships (Hazan & Shaver, 1990). Both of those characteristics are in opposition to the transformational leadership style components of intellectual stimulation, which is the degree to which the leader challenges assumptions, takes risks, and solicits followers' ideas, and individualized consideration, which is the degree to which the leader attends to each follower's needs, acts as a mentor or coach to the follower, and listens to the follower's concerns and needs (Avolio & Bass, 2004). Although idealized influence behavior was negatively correlated with avoidant attachment, it figured positively significant in the regression model, which is likely due to a suppressor effect of the idealized influence behavior scale. Passive and active management-by-exception were positively associated with avoidant attachment in the regression model, suggesting that avoidantly attached supervisors tend to utilize a transactional leadership style. Transactional leadership style is characterized by a supervisor's focus on the proper exchange of resources and short-term goals as opposed

to the higher order intrinsic needs of supervisees that transformational leadership represents, which only requires a superficial relationship with the supervisee (Burns, 1978).

Since individuals with an anxious attachment style show "hyperactivating" strategies such as hypervigilance to social and emotional cues from others (Fraley, Niedenthal, Marks, Brumbaugh, & Vicary, 2006) and avoidantly attached individuals show "deactivating" strategies, such as denying the importance of relationships and avoiding emotional intimacy (Mikulincer & Shaver, 2005), it was hypothesized that attachment style may predispose a nurse to work in a certain service line. It was thought that those with anxious attachment may be drawn to work in a service line such as critical care, where their hyperactivating strategies would be an asset to patient care, as opposed to a service line like emergency services, in which the deactivating strategies of avoidantly attached individuals would be beneficial. Analysis did not reveal a relationship between attachment and line of service for this study, which may be the result of minimal differences between the service lines at BUMC.

Self and Supervisee Evaluations of Leadership Style

Hazan and Shaver (1990) found that individuals with avoidant attachment had lower self- and other- ratings on job performance. It was hypothesized that nurse supervisees with avoidant attachment would be more likely to give their supervisors lower evaluation ratings than nurses with either secure or anxious attachment. An analysis of the satisfaction scores from the MLQ and the anxiety and avoidance scales from the WRI showed no effect of attachment on a nurse's rating of how satisfied they

are with a supervisor. Although no effect was evident in this study, the results could be due to the low number of nurse-nurse supervisor combinations that completed both the WRI and the MLQ. In addition, it was also hypothesized that supervisors with insecure attachment, measured as high scores on the anxious and/or avoidant scales on the WRI, would have larger discrepancies between their self-rating of leadership style and their supervisee's ratings of their leadership style. Again, there was no significant effect of attachment style on the discrepancy between supervisor self ratings and ratings from their supervisees.

Another hypothesis for this study was that supervisors with a leadership style other than transformational, measured as higher scores on the laissez faire, contingent reward, active management by exception, and passive management by exception scales as opposed to the five scales that tap into transformational leadership on the MLQ, would have larger discrepancies between their self-rating of leadership style and their supervisee's ratings of their leadership style. The reasoning behind this hypothesis is that since transformational leaders solicit followers' ideas, attends to each follower's needs, acts as a mentor or coach to the follower, and listens to the follower's concerns and needs (Avolio & Bass, 2004), then these supervisors will be more likely to accurately rate themselves in relation to their supervisees. A significant effect of active management-by-exception and contingent reward was found, suggesting that supervisors with these predominant leadership styles have larger discrepancies between their self-ratings of leadership and ratings from their supervisees. As both active management-by-exception and contingent reward are considered active range transactional styles, the discrepancy in ratings and divergence from supervisee's scores may result from the first-order exchange

nature of transactional leadership, which likely produces superficial relationships and higher rating divergence (Avolio & Bass, 2004).

Factor Structure of the WRI

Young (2010) reported that the WRI did not conform to the proposed two-factor model, and the reasoning was that there might have been limitations inherent in the modeling approach that led to misinterpretations of the relationship between the items and latent factors. This study found that the WRI generally conformed to the two-factor model that was initially proposed by Young. In Young's study, one of the limitations noted was that the population studied consisted of university undergraduate and over half (57%) of the participants were currently employed at the time of the study, whereas all of the participants in the current study were employed.

Limitations

There were some important limitations to this study, the first being the relatively small number of nurse-nurse supervisor combinations in which both the nurse and the supervisor completed both phase 1 and phase 2 of the study. As several of the hypotheses required a hierarchical linear model for the analysis, the lack of power from the low number likely impacted the results. Several nurses who participated in the study relayed confidentiality concerns to investigators in relation to rating their supervisor on the MLQ, and it is possible that participation rate was affected by global uncertainty of confidentiality. In addition, this was the first nurse participation study conducted at this hospital by investigators outside of the organization, which also may have contributed to

confidentiality concerns. Another limitation of this study was that an overwhelming number of the participants were female, although the Davidovitz et. al. (2007) study population was mostly male and the results were applicable and complimentary to this study. Lastly, a major limitation is imposed on this study regarding the classification of secure attachment as an absence or low score on the anxiety and avoidance scales or the WRI in relating these study results to other studies that have used a measure that specifically classifies secure attachment. Future studies utilizing this paradigm should attempt to maximize the participation rate with incentives for participation.

General Conclusions

The current examination extended the study of the relationship between attachment and leadership style to nurses and nurse supervisors utilizing the Workplace Relationship Inventory and Multi-factor Leadership Questionnaire. Some evidence was found in this study to support this relationship in that insecure attachment is positively associated with certain leadership styles and negatively associated with transformational leadership. Specifically, supervisors with anxious attachment tended to show a passive management-by-exception leadership style and score lower on contingent reward, and two of the five transformational scales, idealized influence attributed and individual consideration. These findings suggest that anxious attachment in a supervisor impairs leadership functioning in that the optimal transformational and active leadership behaviors are not exhibited due to anxiety and over-dependence concerning relationships with others. Supervisors with avoidant attachment demonstrated passive and active management-by-exception, and were the least likely to show transformational leadership

in that they scored lower on four of the five transformational scales- idealized influence behavioral, inspirational motivation, intellectual stimulation, and individual consideration. This result suggests that avoidant attachment also hinders optimal leadership functioning owing to the avoidantly attached supervisor's aversion to deep personal relationships. Additionally, supervisors with higher scores on the active management-by-exception and contingent reward scales were found to have larger discrepancies between their self-ratings of leadership and ratings from their supervisees, also likely owing to the superficial relational nature of these transactional leadership scales. Although no relationship was found between nurse attachment and supervisor satisfaction in this study, this relationship has been previously demonstrated and future studies would find it worthwhile to examine this construct further within the nursing environment.

Figure 1

Scree Plot of WRI

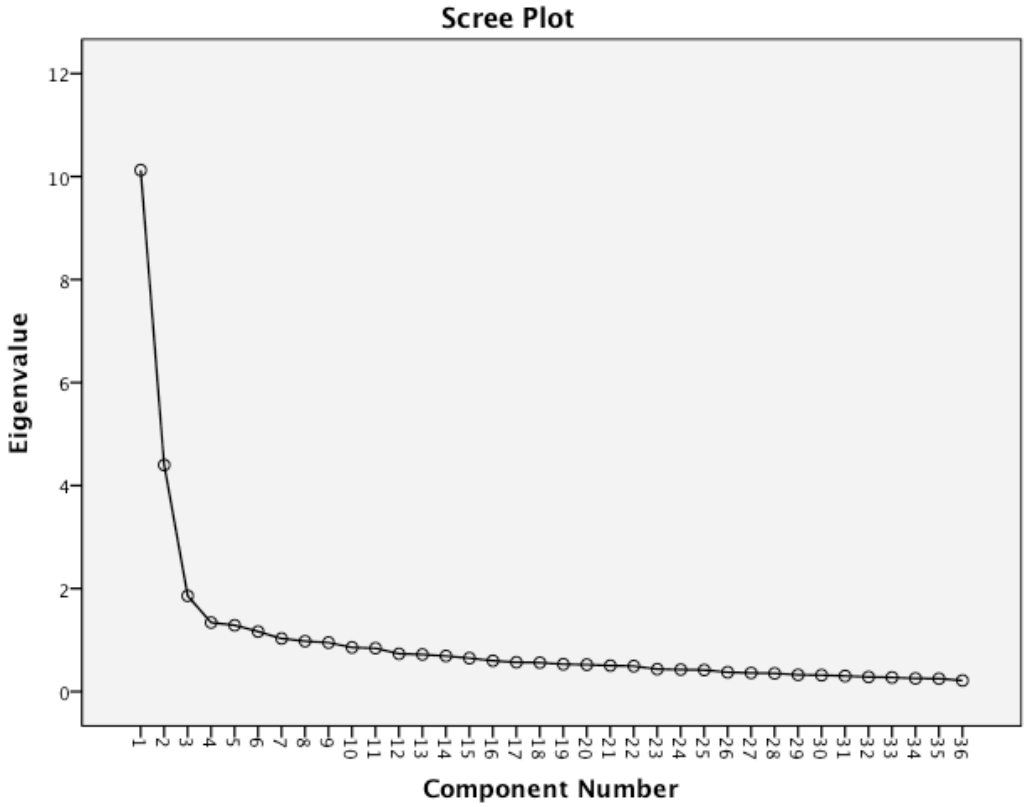

Table 1

Demographic Characteristics of the Sample

	Minimum	*Maximum*	*Mean*	
Tenure*	0.5	40	10.159124	
Age*	22	67	42.17	
				*Both Phases
		Phase 1	Phase 2	
Gender	Female	373	322	
	Male	38	33	
Ethnicity	American Indian	3	1	
	Asian	65	57	
	African American	36	26	
	Hispanic	22	19	
	Caucasian	278	248	
	Two or more	5	3	
	Unknown	2	1	
Service Line	Critical Care	70	70	
	Cardiovascular	23	26	
	Emergency Room	25	25	
	Medicine	35	29	
	Oncology	32	21	
	Perioperative	56	44	
	Surgery	60	49	
	Women's Services	67	57	
	Other	43	34	
Total		411	355	

Table 2

Hypothesis 1 Analysis Results- Anxiety

		Anxiety	*ConRew*	*IdInflAtt*	*IdInflBeh*	*IndCons*	*InspMot*	*IntellStim*	*Laissez*	*MbyExAct*	*MbyExPass*
Pearson Correlation	Anxiety	1	-0.276	-0.248	-0.145	-0.209	-0.093	-0.165	-0.073	0.023	0.575
	ConRew	-0.276	1	0.652	0.639	0.625	0.509	0.664	-0.381	0.328	-0.083
	IdInflAtt	-0.248	0.652	1	0.659	0.621	0.534	0.557	-0.39	0.615	-0.162
	IdInflBeh	-0.145	0.639	0.659	1	0.718	0.841	0.725	-0.345	0.361	-0.143
	IndCons	-0.209	0.625	0.621	0.718	1	0.628	0.868	-0.364	0.241	-0.116
	InspMot	-0.093	0.509	0.534	0.841	0.628	1	0.753	-0.128	0.336	-0.093
	IntellStim	-0.165	0.664	0.557	0.725	0.868	0.753	1	-0.317	0.188	-0.062
	Laissez	-0.073	-0.381	-0.39	-0.345	-0.364	-0.128	-0.317	1	-0.279	0.208
	MbyExAct	0.023	0.328	0.615	0.361	0.241	0.336	0.188	-0.279	1	0.028

R	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
.718a	0.515	0.461	0.7152963

Coefficients(a)	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.386	0.869		5.048	0
ConRew	-0.508	0.207	-0.297	-2.454	0.016
IdInflAtt	-0.344	0.269	-0.179	-1.277	0.205
IdInflBeh	-0.007	0.329	-0.004	-0.022	0.982
IndCons	-0.213	0.446	-0.085	-0.477	0.634
InspMot	0.503	0.359	0.265	1.4	0.165
IntellStim	-0.16	0.389	-0.087	-0.412	0.682
Laissez	-1.529	0.371	-0.394	-4.125	0
MbyExAct	0.067	0.138	0.053	0.484	0.63
MbyExPass	1.512	0.204	0.61	7.423	0

a. Dependent Variable: ANXIETY

Table 3
Hypothesis 1 Results- Avoidance

Pearson Correlation										
	Avoidance	ConRew	IdInflAtt	IdInflBeh	IndCons	InspMot	IntellStim	Laissez	MbyExAct	MbyExPass
Avoidance	1	-0.212	-0.157	-0.277	-0.471	-0.394	-0.478	0.083	0.159	0.283
ConRew	-0.212	1	0.652	0.639	0.625	0.509	0.664	-0.381	0.328	-0.083
IdInflAtt	-0.157	0.652	1	0.659	0.621	0.534	0.557	-0.39	0.615	-0.162
IdInflBeh	-0.277	0.639	0.659	1	0.718	0.841	0.725	-0.345	0.361	-0.143
IndCons	-0.471	0.625	0.621	0.718	1	0.628	0.868	-0.364	0.241	-0.116
InspMot	-0.394	0.509	0.534	0.841	0.628	1	0.753	-0.128	0.336	-0.093
IntellStim	-0.478	0.664	0.557	0.725	0.868	0.753	1	-0.317	0.188	-0.062
Laissez	0.083	-0.381	-0.39	-0.345	-0.364	-0.128	-0.317	1	-0.279	0.208
MbyExAct	0.159	0.328	0.615	0.361	0.241	0.336	0.188	-0.279	1	0.028
MbyExPass	0.283	-0.083	-0.162	-0.143	-0.116	-0.093	-0.062	0.208	0.028	1

R	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
.664a	0.44	0.378	0.4631754

Coefficients(a)	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	5.108	0.563		9.077	0
ConRew	0.025	0.134	0.025	0.189	0.851
IdInflAtt	-0.014	0.174	-0.012	-0.078	0.938
IdInflBeh	0.538	0.213	0.507	2.527	0.013
IndCons	-0.743	0.289	-0.491	-2.573	0.012
InspMot	-0.649	0.233	-0.568	-2.79	0.007
IntellStim	-0.035	0.252	-0.031	-0.138	0.891
Laissez	0.083	0.24	0.036	0.347	0.729
MbyExAct	0.226	0.09	0.294	2.518	0.014
MbyExPass	0.34	0.132	0.228	2.578	0.012

a. Dependent Variable: Avoidance

Table 4

Hypothesis 2 Results

Estimates of Fixed Effects(b)					
Parameter	Estimate	Std. Error	df	t	Sig.
Intercept	3.439145	0.884362	69.665	3.889	0
Medicine	0.538986	0.856486	44.074	0.629	0.532
Surgery	-0.740909	0.849631	43.16	-0.872	0.388
Cardiovascular	0.496531	0.934489	41.739	0.531	0.598
Critical Care	0.608921	0.833238	46.271	0.731	0.469
Women's Services	0.642418	0.87072	42.535	0.738	0.465
Oncology	1.036118	0.882	40.997	1.175	0.247
Perioperative Services	0.126039	0.868303	45.051	0.145	0.885
Other	0.169505	0.834191	46.184	0.203	0.84
Emergency Room	0	0	.	.	.
Avoidance	-0.244749	0.160018	92.121	-1.53	0.13
Anxiety	-0.079897	0.140676	99.43	-0.568	0.571

b. Dependent Variable: Satisfaction.

Table 5

Hypothesis 3 Results

Type III Tests of Fixed Effects(a)				
Source	Numerator df	Denominator df	F	Sig.
Intercept	1	23.616	0.198	0.66
Serviceline	7	22.827	0.397	0.894
Avoidance	1	24.409	0.704	0.41
Anxiety	1	20.87	0.068	0.797
a. Dependent Variable: Discrepancy				

Table 6

Hypothesis 4 Results

	Type III Tests of Fixed Effects(a)			
Source	Numerator df	Denominator df	F	Sig.
Intercept	1	46	1.116	0.296
Serviceline	7	46	0.867	0.54
MbyExPassL	1	46	0.075	0.786
MbyExActL	1	46	6.035	0.018
LaissezL	1	46	1.135	0.292
IntellStimL	1	46	0.289	0.593
InspMotL	1	46	0.065	0.8
IndConsL	1	46	0.15	0.7
IdInflBehL	1	46	0.06	0.807
IdInflAttL	1	46	0	0.998
ConRewL	1	46	4.05	0.05
a. Dependent Variable: Dsq.				

Table 7

Secondary Hypothesis Results

Pearson Correlation

	Service line	*Avoidance*	*Anxiety*
Service line	1	0.032	0.005
Avoidance	0.032	1	0.406
Anxiety	0.005	0.406	1

R	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
.033a	0.001	-0.005	2.294

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	4.55	0.57		7.978	0
Avoidance36	0.118	0.192	0.036	0.614	0.54
ANXIETY36	-0.027	0.155	-0.01	-0.172	0.864

Table 8

Factor Analysis Results

Items	*Structure Matrix*		*Pattern Matrix*		*H square*
	Factor 1	2	Factor 1	2	
"I find it relatively easy to work in a close working relationship. Avoidance(R)"	-0.273	-0.576	-0.05	-0.56	0.33
"I need reassurance that I am valued in a close working relationship. Anxiety"	0.422	-0.055	0.53	-0.26	0.24
"I want to work closely with others, but I keep pulling back. Avoidance"	0.608	0.478	0.50	0.28	0.44
"I worry that I care more about the people I work with than they care about me. Anxiety"	0.65	0.3	0.63	0.05	0.42
"Close working relationships make me nervous. Avoidance"	0.626	0.632	0.45	0.46	0.57
"In a close working relationship, I get frustrated when a coworker is not around as much as I would like. Anxiety"	0.632	0.288	0.62	0.04	0.40
"I don' t feel comfortable opening up in close working relationships. Avoidance"	0.556	0.682	0.34	0.55	0.56
"I find that most of my coworkers don' t want to work as closely with me as I would like. Anxiety"	0.699	0.424	0.63	0.17	0.51
"I don' t mind asking for comfort, advice, or help from people I work closely with. Avoidance (R)"	0.039	-0.485	0.28	-0.60	0.30
"My enthusiasm for working closely with others sometimes makes them withdraw. Anxiety"	0.617	0.335	0.58	0.11	0.39
"When I find myself in a close working relationship, I start to pull away. Avoidance"	0.66	0.634	0.48	0.44	0.60
"I often get too close in working relationships and sometimes it makes my coworkers uncomfortable. Anxiety"	0.605	0.323	0.57	0.10	0.37
"I find it difficult to allow myself to depend on people I work closely with. Avoidance"	0.508	0.575	0.33	0.44	0.42
"Sometimes I feel that I pressure coworkers to show appreciation and loyalty to me. Anxiety"	0.592	0.293	0.57	0.07	0.36
"I am very comfortable in close working relationships. Avoidance (R) "	-0.311	-0.648	-0.06	-0.62	0.42
"I feel somewhat anxious and insecure when I' m not involved in a close working relationship. Anxiety"	0.605	0.05	0.69	-0.23	0.41
"I prefer not to be too close to coworkers. Avoidance"	0.344	0.678	0.09	0.64	0.47
"In close working relationships, I often wish that my coworkers would appreciate me as much as I appreciate them. Anxiety"	0.63	0.243	0.63	-0.01	0.40
"In a close working relationship, I prefer not to show how I feel deep down. Avoidance"	0.47	0.653	0.25	0.55	0.48
"When coworkers disapprove of me, I feel really bad about myself. Anxiety"	0.595	0.053	0.68	-0.22	0.39
"In times of need, it helps to turn to someone I work closely with. Avoidance (R) "	0.036	-0.574	0.31	-0.70	0.41
"In working relationships, I get frustrated if coworkers are not available when I need them. Anxiety"	0.627	0.186	0.66	-0.08	0.40
"I don' t feel comfortable in a close working relationship. Avoidance"	0.507	0.668	0.29	0.55	0.52
"I do not often worry about being rejected by people I work closely with. Anxiety (R)"	-0.311	0.035	-0.39	0.19	0.13
"I feel comfortable sharing my private thoughts and feelings in a close working relationship. Avoidance (R)"	-0.143	-0.648	0.14	-0.70	0.44
"I worry a fair amount about a close working relationship not working out. Anxiety"	0.62	0.083	0.70	-0.19	0.42
"I feel comfortable depending on people I work closely with. Avoidance (R)"	-0.236	-0.575	-0.01	-0.57	0.33
"I resent it when a coworker that I depend on is not available. Anxiety"	0.581	0.27	0.56	0.05	0.34
"In a close working relationship, I don' t hold anything back. Avoidance (R)"	0.055	-0.318	0.22	-0.40	0.14
"I worry about being rejected by people I work with. Anxiety "	0.693	0.153	0.75	-0.15	0.50
"I try to avoid getting too close in a working relationship. Avoidance"	0.447	0.677	0.21	0.59	0.50
"If I can' t get a coworker to show interest in me and what I am doing, I get upset or angry. Anxiety"	0.642	0.252	0.64	0.00	0.41
"I usually discuss my problems and concerns with the person I work closely with. Avoidance (R)"	0.123	-0.509	0.39	-0.66	0.38
"I worry a lot about my close working relationships. Anxiety"	0.581	0.213	0.59	-0.02	0.34
"I turn to a coworker for many things, including comfort and reassurance. Avoidance (R)"	0.095	-0.569	0.38	-0.72	0.45
"I worry about working alone. Anxiety"	0.562	0.044	0.65	-0.21	0.35

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