

Australian Journal of Educational & Developmental Psychology. Vol 11, 2011, pp. 60- 77

Attachment across the life span: Factors that contribute to stability and change

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ABSTRACT

The purpose of this paper is to provide a comprehensive review of the empirical findings on the stability of attachment from infancy through adulthood. More specifically, the paper discusses the longitudinal research concerning the continuity of attachment from infancy to adulthood as well as those studies that have assessed stability within a shorter time frame, across the various developmental periods (infancy, early childhood, adolescence and adulthood). This paper provides a unique contribution in examining developmental issues surrounding attachment stability and change. Additionally, since few studies have examined the factors that contribute to stable security and change from insecurity to security, this review highlights the variables that are influential in predicting attachment security.

Keywords: attachment; stability

Bowlby's attachment theory posits that experience with primary caregivers leads to expectations and beliefs ("working models") about the self, the world, and relationships (Bowlby, 1973/1980). These representations are expected to be stable yet open to revision in light of experience throughout childhood, adolescence and adulthood. A number of studies have examined continuity of attachment from infancy to adolescence and adulthood in both low and high-risk samples (Hamilton, 2000; Waters, Merrick Treboux, Crowell, & Albersheim, 2000; Lewis, Feiring & Rosenthal, 2000; Weinfeld, Sroufe, & Egeland, 2000). Results from these studies have indicated that factors such as divorce, single parenthood, life threatening illnesses within the family, parental drug abuse, death of a family member and other negative life events were all indicative of change to attachment insecurity.

In addition to the longitudinal studies looking at attachment stability, the research on this topic has expanded over the last two decades as investigators have examined continuity and discontinuity across particular development periods such as infancy (Bai-Haim, Sutton-Fox & Marvin, 2000; Egeland

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&Farber, 1984; Vondra, Hommerding & Shaw, 1999) early childhood (Moss, Cyr, Bureau, Tarabulsky & Dubios-Comtois, 2005; NICHD, 2001), middle childhood and adolescence (Allen, McElhaney, Kuperminc, & Jodi, 2004; Ammaniti, Van IJzendoorn, Speranza & Tambelli, 2000;), and adulthood (Crowell, Treboux, & Waters, 2002; Sharfe & Bartholomew, 1994; Zhang & Labouvie-Vief, 2004). These studies have also identified variables such as stressful life events, family risk, and depression as predictive of change from security to insecurity or disorganization (Allen, McElhaney, Kuperminc, & Jodi, 2004; Bai-Haim, Sutton-Fox & Marvin, 2000; Moss, Cyr, Bureau, Tarabulsky & Dubios-Comtois, 2005).

There have been fewer findings regarding the factors that contribute to stable security or change from insecurity to security. Of the studies that have succeeded in discovering results related to the trajectory towards security, variables such as relationship satisfaction, greater emotional openness, and fewer negative life events (Egeland & Farber, 1984; Vondra et al., 1999) have been found to be related to change towards attachment security.

Currently, there is a paucity of literature integrating all of the findings on attachment stability. There are no reviews that have examined the literature on attachment stability across the lifespan. The purpose of this paper is to provide a comprehensive review of the empirical findings on the stability of attachment from infancy through adulthood. More specifically, the paper will discuss the longitudinal research concerning the continuity and discontinuity of attachment from infancy to adolescence and adulthood as well as those studies that have assessed stability within a shorter time frame, across the various developmental periods (infancy, early childhood, adolescence and adulthood). Factors that predict continuity and change as well as the direction of change (e.g. from secure to insecure or insecure to secure) will be identified. Additionally, since few studies have examined factors that contribute to stable security or change from insecurity to security, this review will highlight variables that may be influential in predicting attachment security.

In sum, this paper will provide a unique contribution to the literature on attachment stability in examining developmental issues surrounding attachment stability and change. It is likely that there are certain variables that predict change within a given developmental period and that these variables should be isolated so that researchers and clinicians can target those specific areas when considering stability of attachment in both research and clinical settings. The paper could potentially contribute to further more research related to the specific processes underlying continuity and change in attachment relationships and could serve as a guide for clinicians in their work with families.

The present paper will begin by reviewing the literature on the short-term longitudinal studies that examine stability of attachment across infancy, early childhood, adolescence and adulthood as well as the long-term studies that focus on stability from infancy through adolescence and adulthood. The review will conclude by summarizing the main findings from the literature on the stability of attachment across the lifespan and provide a discussion of limitations and directions for future research.

Short-term Longitudinal Studies on the Stability of Attachment across Infancy

During the first year of life, a critical developmental issue is the formation of an attachment bond between an infant and his mother. The infant relies on the mother to respond to his or her “attachment behaviors”, which may include signaling in the form of crying or crawling, in order to achieve proximity to her. If the attachment figure, or mother, responds sensitively and promptly, and the child is able to achieve proximity when distressed, the child feels safe and protected. If the mother or caregiver fails to respond in this manner, the infant may resort to other, less direct strategies that fulfill the goal of proximity. In some cases, the child may not achieve proximity at all due to the caregiver’s inability to provide care, and is left unprotected. Over time, the infant develops an “internal working model” based on these interactions with their caregiver. In essence, an internal working model is a set of rules, used by child to predict future behavior and interactions attachment and other social relationships (Bretherton & Mulholland, 2008). With the development of the infant Strange Situation procedure (Ainsworth, Blear, Waters & Wall, 1978), researchers have produced many studies looking at how the quality of the attachment relationship changes or remains stable over time. On the basis of their reunion behaviors in the

Strange Situation Procedure, infants are classified as secure (group B), avoidant (group A), ambivalent (group C) or disorganized (group D). Secure children seek direct comfort from their caregiver, are easily soothed, and quickly return to exploration. Avoidant children minimize their attachment distress and appear to be more interested in exploration (although, upon closer examination, their exploration is usually shallow). Ambivalent-resistant children maximize their attachment needs and are difficult to soothe when distressed. Their attachment-exploration balance is skewed such that continually heightened attachment leads to a decrease in play. Disorganized children have no predictable strategy for protection and exhibit illogical behavior such as hand flapping and freezing upon reunion.

The first study to address the issue of stability of attachment over the infancy period was conducted by Waters (1978) who observed a low-risk sample of 43 infants and their mothers in the infant Strange Situation procedure at 12 and 18 months of age. He reported the highest stability rate yet published (96%). Similarly, Main and Weston (1981) found a stability rate of 80% across the 12 to 18 month age period, in their study investigating the stability of attachment in a low-risk sample of both mothers and fathers. Out of the 15 infants observed with the father in the Strange Situation procedure at 12 months of age, 13 fell into the same categories (secure, avoidant, ambivalent, unclassifiable) at 18 months of age. Out of the 15 infants that were observed with the mother at 12 months of age, 11 fell into the same categories at 18 months of age. Since then, many other researchers have continued to investigate continuity and discontinuity in both low and high-risk samples across the infancy period, and have found mixed results.

A decade later, using data from two separate projects, Belsky, Campbell, Cohn and Moore (1996) investigated stability of attachment in two samples of low-risk families, both of which included infant-mother assessments at 12 and 18 months of age one of which included assessments of infant-father attachment at 13 and 20 months of age. The rate of stability in the first study was 46% for infant-mother attachment and 52% and 46% for infant-mother and infant-father attachment, respectively, in the second study. Therefore, these studies failed to replicate Waters (1978) findings of substantial stability in a low-risk sample.

Other research has taken research on stability of attachment during the infancy period a step further by examining the factors that predict continuity and discontinuity in the attachment relationship over the infancy period. Three studies have looked at the relationship between maternal employment status and the stability of the attachment relationship in infancy. Thompson, Lamb and Estes (1982) observed 43 low-risk infants and their mothers in the Strange Situation procedure at 12.5 and 19.5 months of age. Results indicated that 53% of the infants were assigned the same overall classification at both ages. Changes in attachment classification were associated with changes in family circumstances (maternal employment and regular nonmaternal care). The changes associated with maternal employment however, were inconsistent in nature; infant-mother attachments were equally likely to change from insecure to secure as from secure to insecure. In contrast, the infant-mother attachments in the nonemployed group, whether secure or insecure, were more likely to be stable over time.

In their study examining the effects of maternal employment on the stability of attachment in a sample of 104 economically disadvantaged mothers, Vaughn, Gove and Egeland (1980) distinguished between mothers who returned to full-time work early (during the first year), and late (in the second year). Among "early work," "late-work" and "no-work" groups, the greatest degree of change in the child's attachment between the 12- or 18-month assessments occurred in the late-work group (50% change), followed by the nonemployed group (42%), and finally the early-work group (27%). The authors suggested that the onset of this type of caregiving arrangement is particularly disruptive since it occurs after the initial attachment relationship has been consolidated (Vaughn et al., 1980).

Owen, Easterbrooks, Chase-Lansdale, and Goldberg (1984) extended the research on maternal employment and stability of attachment by assessing the effects of stable and changing maternal employment status on attachment stability and by including quality of attachment to the father as well as to the mother. The infant Strange Situation procedure was used to assess the quality of attachment to the mother and father in a low-risk sample of 59 children at 12 and 20 months of age. Stability of attachment was examined in 4 groups defined by maternal employment. Three of these groups (nonemployed, part-

time full-time employed) were characterized by no change in maternal employment status from the first assessment of attachment through the 20-month assessment. In the fourth group, maternal employment status changed between the two assessments of attachment. For those with stable conditions of maternal employment status, there were no differences in the stability of attachment to either parent regardless of whether the mother was employed or not, indicating that maternal employment can lend as much stability to attachment relationships as the condition of nonemployment. No changes in the quality of attachment to mother and relatively frequent changes in the attachment to father (46%) were present when the mother changed employment status.

Edwards, Eiden and Leonard (2004) investigated short-term attachment stability across infancy and sought to identify predictors of stability and change within a high-risk sample characterized by parental alcoholism. Participants were 217 families who participated in the infant Strange Situation procedure when their children were 12 and 18 months. Results suggested moderate stability of attachment classifications (60% for mothers, 53% for fathers) from 12 to 18 months. Higher levels of paternal and maternal alcohol symptoms, maternal depression, maternal antisocial behavior and higher levels of negative maternal affect during play were found in families with stable insecure mother-infant attachment compared to those who were stable secure. Children with stable secure relationships with their mothers had significantly higher levels of positive affect. Father-infant stable insecurity was associated with lower levels of paternal positive expression and decreased sensitivity during play. Children with stable secure relationships with their father had lower levels of negative affect expression and negative emotionality and higher positive affect expression.

A study conducted by Barnett, Ganiban and Cicchetti (1999) examined short-term attachment stability in a high-risk sample by comparing to group of maltreated infants to a nonmaltreated comparison group of infants. These researchers included the disorganized (D) classification in their assessment of the quality of the attachment relationship. Continuity of attachment was demonstrated between 12 and 18 months, 18 and 24 months and 12 and 24 months ($k = .43$, $k = .52$, $k = .53$). Stability was similar for comparison and maltreated infants across the 12 to 18 month period and the 18-month to 24-month period. However, for the 12 to 24 month period, continuity of attachment was higher for maltreated children (87% maltreated, 55%, comparison). Results also indicated general stability of the disorganized and secure patterns with nonmaltreated children more likely to be classified as secure and maltreated infants as disorganized.

In a study conducted by Frodi, Grolnick, and Bridges (1985), a low-risk sample of 38 mother-infant dyads were observed during a structured play session and in the Strange Situation at 12 and 20 months of age. Across time, there was 66% overall stability of attachment classifications. Results indicated that infants whose mothers had nonpunitive childrearing attitudes, were sensitive, and supportive of their infants' striving towards autonomy were more likely to remain or become secure in their attachment relationship over their second year of life than infants of mothers who were more punitive, more controlling and less sensitive.

Vaughn, Egeland, Sroufe & Waters (1979) looked at stability and change in a high-risk sample of 100 infant and their mothers, using the Strange Situation procedure at 12 and 18 months of age. The A, B, and C classifications were significantly stable across the 12-18 month period, with 62 infants assigned to the same category at both ages. The observed frequency of classification change was 38%. In analyzing the data, the researchers chose to combine the ambivalent and avoidant groups, forming one "anxious", or insecure group. Overall, anxious attachment was associated with less stable caregiving environments than secure attachment and change from secure to anxious attachment was associated with higher stressful life events than stable secure attachment.

In a study examining a high-risk sample conducted by Egeland and Farber (1984) 189 mother-infant pairs were observed in the infant Strange Situation procedure at 12 and 18 months. Sixty percent of the sample had stable attachment classifications. The only maternal characteristics that differentiated between the stable and changing attachment groups were their personality variables and education level. Mothers whose infants changed from secure to avoidant had higher scores on the aggression and suspiciousness scales and had lower scores on the social desirability scale than mothers whose infants remained securely

attached. Mothers in the change group were also less educated than in the stable secure group. Maternal variables such as interest in the child, fear of motherhood and understanding of infants were important factors in the formation of attachment whereas the more basic characteristics of hostility and suspiciousness were related to change from a secure to an avoidant pattern of attachment.

Mothers with infants who changed from secure to ambivalent classifications were more aggressive and suspicious and had lower social desirability scores in comparison with mothers whose infants remained securely attached. Mothers in the change group (B-C) were also more likely to have experienced an increase in life stress between 12 and 18 months while mothers in the stable group had a decrease in life stress. In terms of infant characteristics, babies who changed from secure to ambivalent attachment were rated as being less easygoing temperamentally during feeding and less satisfied and attentive during play. The authors noted that the most important factor accounting for change from secure to ambivalent was the mother's living arrangement and change in living arrangement (Egeland & Vaughn, 1984). Seventy percent (70%) of the mothers of B-C infants were single who were not living with their boyfriends. The remainder of the infants who changed from secure to ambivalent had mothers who were single parents during the first 6 months of the infant's life but lived with the husband/boyfriend starting sometime during the period from 6-12 months.

Children who changed from insecure to secure attachments had mothers who were young and initially responded negatively to pregnancy. However, over time, their negative attitude became more positive and they became more skillful at parenting their child. Therefore, these mothers became more competent in the parenting role, which allowed their children to feel more secure in the attachment relationship.

Vondra, Hommerding & Shaw (1999) studied stability and change in a high-risk sample of 90 mother-infant dyads. The families participated in the Strange Situation when the children were 12 and 18 months of age. Results indicated an overall stability rate of 50%. Twenty-nine percent of the sample were coded as securely attached at both 12 and 18 months of age, 13% disorganized at both ages and only 8% of the sample showed a stable secure pattern or organized insecurity (either avoidance or resistance).

The researchers distinguished between those infants who were consistent over time in their security (stable B) or their disorganization (stable D) and those who moved toward security or disorganization. The infants that stayed secure (stable B) across infancy had the lowest scores on all mean risk indices, indicating that relatively few mothers reported aggressive or suspicious feelings, depression, angry feelings, disruptive life events, or dissatisfaction with intimate relationships. Those infants who were classified as insecure initially and changed to secure at 18 months, were more likely to have mothers who were young, high school drop outs, and/or of minority race and were the least likely have a spouse or cohabitating partner at both 12 and 18 months of age. They also scored lower on aggression/suspiciousness and disruptive life events and higher on relationship satisfaction. The small subgroup of infants that changed to a resistant pattern at 18 months scored high on measures of infant difficulty and had mothers that were more negative about their marital relationship. Infants who changed to an avoidant pattern at 18 months, had mothers who were the least likely to have a partner at both time points, and who reported feeling the most angry. The infants that remained disorganized (stable disorganized) had mothers who scored the highest on aggressiveness, defence or suspiciousness, and low on social desirability. Mothers of the infants who moved out of an organized attachment pattern to a disorganized classification at 18 months reported the most disruptive family events and influences. These mothers however, reported the *least* expressed anger and *most* anger control.

Vondra, Shaw, Swearingen, Cohen and Owens (2001) examined stability of attachment in a high-risk sample of 223 children at 12, 18 and, and 24 months. Attachment in the Strange Situation at 12 and 18 months was scored using the infant classification system and at 24 was scored using the preschool classification system developed by Crittenden (1994). The overall rates of stability were identical from 12 to 18 months (45% stability) and from 12/18 months to 24 months (45% stability). Twenty-six percent of the sample changed classification at each of the three time points. Stability was more likely for the secure (B) and disorganized (D) groups attachments from 12 to 18 months but the avoidant (A) and resistant (C) groups showed greater stability across classification systems from 12/18 months to 24 months. The

percentage of secure classifications consistently declined and the percentage of insecure attachments increased both across time (12, 18, 24 months) and classification systems (Ainsworth to Crittenden). Within the insecure category, the percentage of avoidant (A) attachments increased. The children with stable ambivalent (C) attachment classifications were rated as less task-oriented, scored lower on adaptive behavior, sociability, competent exploration and scored higher on externalizing behavior at 3.5 years and mothers rated them as significantly more difficult. The stable secure (B) group scored higher on sociability, competent exploration and scored lower than both the stable A and C groups on externalizing behavior problems. There was a relative lack of significant differences for the change groups. In general, those infants that changed from a secure infant classification to an insecure 24-month classification scored between the stable secure and stable insecure but did not score significantly different from either.

Summary of Findings from Stability Studies across the Infancy Period

Results from studies that have examined stability and change in both low and high-risk samples show mixed findings with regard to overall stability rates across infancy. Among the studies that examine stability of attachment in low-risk samples, there are significant discrepancies in the rates of stability (96%, Waters, 1978; 46%, Belsky et al, 1996). These differences could be attributed to sample size, measurement error or some other factor that might be related to the various changes within the family environment that occurred between the two time periods in which the studies were conducted. In general, greater instability (change to insecurity or disorganization) is found in many of the studies looking at high-risk samples, which is consistent with the idea that attachment changes as a function of disruptive life events, which tend to occur more frequently for these families. Events such as the death of a family member and parental divorce can negatively impact caregiving, and therefore produce changes in the quality attachment relationship. Within the context of maltreating families, the disorganized classification was found to be the most stable classification (Barnett et al, 1991), suggesting that child maltreatment sustains patterns of disorganization by frightening the child and leaving them unprotected.

Several studies examining stability across the infancy period have highlighted the salient factors that influence the trajectory of the attachment relationship during this time. In terms of the trajectory towards security and remaining secure across infancy, factors such as an increase in parenting competence and maturity, a lower incidence of negative life events, nonpunitive childrearing methods, sensitivity and supportive attitudes surrounding the child's developing autonomy and characteristics of the infant such as sociability, competent exploration and fewer behavior problems were shown to be significant in maintaining a secure pattern of attachment. Therefore, factors related to the quality of caregiving, negative life events, and infant characteristics all play a role in maintaining and promoting a secure attachment relationship across infancy.

Factors that predicted stable insecurity or change to insecurity included parental alcoholism, higher levels of maternal punitive, controlling, insensitive parenting, greater negative affect, depression and anti-social characteristics as well as a higher incidence of negative life events. Maternal characteristics were more indicative of change to an avoidant strategy whereas change to an ambivalent pattern of attachment was related to maternal characteristics, as well as life stress and infant characteristics across infancy. Since stable ambivalent patterns were associated with only infant characteristics, it appears that maintaining this type of classification is less influenced by maternal characteristics and more by what the child brings to the relationship. Infants who have a more difficult temperament present challenges for the caregiver and can trigger feelings of frustration or uncertainty about providing care. Mothers who cannot adapt to the child's needs and provide consistent, sensitive caregiving, are more likely to leave the child feeling ambivalent about the mother's availability to provide care and protection. With regard to maintaining a stable disorganized classification across infancy, problematic maternal personality variables, may influence the maintenance of infant disorganization through the mediation of aggressive and hostile caregiving. Change to disorganization was characterized both by problematic maternal characteristics and experience of disruptive life events, suggesting that negative life events have an impact on the mother and can change the quality of her caregiving skills. These changes can then provoke the infant's shift to a state of dysregulation where they are left unprotected by the caregiver.

The findings regarding maternal employment are inconsistent. Thompson et al. (1982) and Vaughn et al. (1980) both found maternal employment to be related to changes in attachment whereas Owens et al. (1984) did not find an association between maternal employment and changes in attachment classification. The only significant finding was regarding infant-father attachment; changes in the infant-father attachment relationship were related to the mother changing her employment status, indicating that there could be a difference in maternal versus paternal response to the alterations in life-style initiated by the mother's employment changes (Owens et al., 1984). The inconsistent results regarding maternal employment might be explained by the different ways the researchers chose to measure maternal employment or the fact that the study by Vaughn et al. (1980) included a high-risk sample while Owen et al. (1984) investigated the effects of maternal employment on stability of attachment in a low-risk sample.

Some of the studies on stability across infancy look at infant-father attachment. In addition to the study by Owens et al. (1984), which found that change in maternal employment status resulted in changes in the father-infant attachment relationship, Edwards et al. (2004) looked at stability of attachment with both the mother and father across infancy in a high-risk sample. Stability with the father was comparable to that of the mother which mirrors the results of Belsky et al. (1996) who also found similar rates of stability for both infant-mother and infant-father attachment. In terms of predictors of change, Edwards et al. (2004) found that different types of predictors were associated with stability of infant-mother attachment and infant-father attachment. Both maternal, and child characteristics as well as parenting behavior predicted stability and change in the attachment relationship with the mothers whereas only infant characteristics and parenting behavior predicted stability and change in the attachment relationship with the father. One reason for this could be that because the mother is often the primary caregiver and more time is spent with her, maternal characteristics have a greater influence on the infant than do paternal characteristics.

Short-term Longitudinal Studies from Infancy to Early Childhood and Across the Early Childhood Period

During the early childhood or preschool period, the attachment relationship is transformed into a goal-corrected partnership (Bowlby, 1973). Secure-base behavior is more likely to be manifested in verbal exchanges with the caregiver that emphasize co-constructive experiences rather than being restricted to non-verbal proximity seeking behavior (Moss, Cyr, Bureau, Tarabulsky, & Dubois-Comtois, 2005). Over the past 15 years, procedures have become available to assess the quality of attachment beyond the infancy period (Cassidy & Marvin, 1992; Main & Cassidy, 1987). The assessment of the quality of attachment to caregivers in preschoolers takes into account a wider range of behaviors such as body position, visual attention, content and manner of speech directed towards parents, and verbal expression of affect (Cassidy & Marvin, 1992). During this developmental period, the majority of disorganized children come to develop controlling behavior toward the parent, in a caregiving or punitive fashion (Main & Cassidy, 1988). Children who are classified as controlling-punitive use "authoritarian" behavior with the caregiver that may include harsh commands, verbal threats, and occasional physical aggression toward the parent. Children classified as controlling-caregiving direct the parent's activities and conversational exchanges by structuring interactions in a helpful and/or emotionally positive manner (Moss, Cyr, Bureau, Tarabulsky, & Dubois-Comtois, 2005).

In comparison with the infant literature there are fewer studies examining the stability of attachment during the preschool period. One study by Main and Cassidy (1988), looked at stability of attachment in a low-risk sample of 33 children and their families. Quality of attachment was assessed using the infant Strange Situation procedure at 12 months with both the mother and father and a modified Strange Situation procedure developed by Main and Cassidy (1988) at 6 years of age with both parents. These researchers found an overall stability rate of 84% for the infant-mother attachment classifications A, B and D from infant to age 6 (they did not report any C patterns). For attachment to the father, an overall stability rate of 61% was found. In a second study with another low-risk sample, Main and Cassidy (1988) found less impressive yet still significant stability over a 1-month period: the stability of children's

6-year attachment classifications with mothers across the 1-month period was 62% for the four classes, with the D-category being found to be the least stable.

A cross-cultural replication of the Main and Cassidy (1988) study was conducted by Wartner, Grossman, Fremmer-Bombik and Suess (1994). In their low-risk sample of 40 German children, concordance between the four types of attachment classifications (A, B, C, D) in infancy and at age 6 was 82%. Although the stability of disorganized attachment was lower than the stability of children with organized attachment strategies, 75% of those children classified as disorganized kept their disorganized status at age 6.

Howes, Hamilton and Philipsen (1998), examined stability of attachment in a low-risk sample of 55 children. Quality of attachment with the mother was assessed when the children were 12 months using the infant Strange Situation procedure. Attachment was assessed again when the children were 4 years of age using the Cassidy and Marvin (1992) preschool Strange Situation procedure. Results indicated that there was substantial stability (76%) for attachment classifications between the two time periods.

Other studies examining stability of attachment across the preschool period have also examined some of the predictors of continuity and change. Bar-Haim, Sutton, & Fox (2000) examined stability and change of attachment in a low-risk sample of 48 children at 14, 24 and 58 months of age. At 14 months, children were assessed with the infant Strange Situation procedure and a modified version of the same procedure at 24 months. At 58 months, children were assessed using Cassidy and Marvin's (1992) preschool Strange Situation Procedure. Children were also administered a revised version of the Klagsbrun-Bowlby Separation Anxiety Test (SAT), (Klagsbrun & Bowlby, 1976), which provided a measure of children's mental representation of the attachment relationship and an assessment of their emotional openness. Results indicated that attachment classifications showed stability between 14 and 24 months (64%) and lack of stability was the case between either 14 or 24 months and 58 months (38%). Twelve children or 29% of the sample had the same classification across all three time periods. In the 14 to 58 month comparison, mothers of children who did not exhibit stability of attachment reported more negative life events compared to the stable secure group. The same trend was found for the 24 to 58 month time points. Mothers in the stable secure group were found to report a greater number of positive life events and their children showed greater emotional openness in the SAT than the change group. More specifically, these children were more likely to describe the child undergoing separation in the drawings as experiencing appropriate negative emotions and offer reasons for the discerned negative emotions. No correspondence was found between attachment classification at 14 or 24 months of age and mental representations at 58 months of age. However, there was agreement between observational and representational measures at 58 months. Therefore, mental representations of attachment appear to corroborate current behavioral classification of the attachment relationship with the mother.

A study conducted by the NICHD Early Child Care Research Network (2001) examined stability and change in a low-risk sample of 1,060 families when the children were 15 and 36 months of age. At 15 months of age, quality of attachment was assessed using the Strange Situation procedure while Cassidy and Marvin's (1992) preschool Strange Situation procedure was used at 36 months. Results indicated modest stability of attachment from 15 to 36 months ($k = .06$), especially for A and C infants. At 36 months, there were significantly fewer A classifications and significantly more C classifications than there were at 15 months. These findings were predicted by Crittenden (2000), who speculated that preschoolers will tend to use more coercive strategies that are available to them. Children who changed from a secure classification to an insecure classification at 36 months had families with higher income-to-needs ratios and mothers with less education and lower sensitivity at 24-36 months. Additionally, those infants who changed to an insecure pattern were more likely to have entered into at least 10 hours per week of childcare between 15 and 36 months. Mothers of stable secure and insecure to secure children had higher sensitivity scores than did mothers of secure to insecure and stable insecure children.

Moss, Cyr, Bureau, Tarabulsky, & Dubois-Comtois (2005) examined patterns of attachment in a low-risk sample of 120 French-Canadian children. Attachment was examined using the preschool Strange Situation procedure (A, B, C, D, 4-category system) at 3.5 and 5.5 years of age. Overall, stability of attachment was moderate (68%). Change from security to disorganization was associated with the most

dramatic decline in interactive quality with the mother, lowest marital satisfaction, and greatest likelihood of severe attachment-related family events such as loss and parental hospitalization. Families of children who changed from security to insecurity presented levels of caregiving (e.g. decrease in quality of communication with children, lower level of dyadic interactive quality) and marital satisfaction that fell between those of stable secure children and secure children who changed toward disorganization. There were no significant findings related to transitioning from insecurity to security.

Summary of Findings from Stability Studies Across the Preschool Period

The studies examining stability of attachment across the preschool period also present inconsistent findings. Although all of the studies investigate continuity in low-risk samples, they present stability rates that range from very high (84%; Main & Cassidy, 1988) to barely above chance ($k = .06$; NICHD, 2001). Similar to the studies in infancy that found differences in overall stability rates, reasons for these discrepancies include differences in age range, sample size, or measurement issues. Alternatively, there could be some other developmental mechanism operating that could better explain the discrepancies in stability rates.

Some of the aforementioned studies investigated the variables that predict continuity and change in attachment over the preschool period. Factors that predicted stable insecurity or change to insecurity included experiencing negative life events, less maternal education, higher income to needs ratio, less maternal sensitivity, 10 hours a week or more in child care, lower level of dyadic interactive quality and marital dissatisfaction, and lower quality of communication with children. Factors that predicted stable security or change towards security were greater maternal sensitivity, and experiencing positive life events. These results highlight the importance of not only the quality of caregiving as an important variable influencing the stability of attachment during this time, but the role of the environment as well. Whereas in infancy the role of the mother and the quality of caregiving has a more direct influence on the stability of the attachment relationship, it appears that external factors such as experiencing negative life events also have an impact on the relationship during the preschool period as well. Additionally, the quality of the marital relationship seems to play a role in predicting change towards insecurity, which suggests that the relationship between parents can threaten the quality of the parent-child relationship if the marital relationship becomes dysfunctional. In terms of remaining secure or making the shift towards security, experiencing positive life events and greater maternal sensitivity seem to strengthen the parent-child relationship by providing the child with emotional responsiveness and exposure to external events in ways that positively impact the attachment relationship.

The study by Moss et al. (2005) is unique in the sense that these researchers reported results related to change towards a disorganized classification during the preschool period. Change from security to disorganization was associated with the most dramatic decline in interactive quality with the mother, lowest marital satisfaction, and greatest likelihood of experiencing severe attachment related life events. Therefore, those children who shift to towards a disorganized classification, experience the most disruption in the quality of caregiving and maternal relationship as well as extreme negative life events such as loss of a caregiver or parental hospitalization.

Short-term Longitudinal Studies Examining Stability Across Adolescence

In adolescence, the attachment relationship with caregivers is distinct from the attachment relationship that is formed with caregivers in early childhood. During this developmental period, the adolescent conceives his attachment figure as having their own needs and can take them into account (Bowlby, 1969/1982). This change reflects the adolescent's becoming less dependent on parents in a number of ways, rather than the parents becoming unimportant as a whole. Adolescence is a period in which attachment needs and behaviors are not relinquished; rather, it is one in which they are gradually transferred to peers (Allen, 2008). Therefore, although the attachment relationship with caregivers in adolescence is distinct from the attachment relationship in early childhood, it is just as important since the adolescent still relies on the attachment figure to provide care and protection.

A few studies have investigated the stability of attachment representations across adolescence. Ammaniti, van Ijzendoorn, Speranza, & Tambelli (2000), investigated stability of attachment representations in a sample of 31 low-risk Italian adolescents. The Attachment Interview for Childhood and Adolescence (AICA; Ammaniti et al., 1990) was administered at 10 and 14 years of age. This interview is a revised version of the Adult Attachment Interview (AAI; George, Kaplan & Main, 1998) for participants in late childhood and early adolescence. The AAI taps into adult representations of attachment (i.e. internal working models) by assessing general and specific recollections from childhood. The interview is coded based on the quality of discourse and content. Adults can be classified as: Autonomous, Dismissing, Preoccupied or Unresolved. Autonomous individuals describe attachment relationships in a balanced way and their discourse is coherent and non-defensive in nature. Individuals classified as Dismissing tend to minimize negative aspects of their attachment relationships and their discourse is defensive. Preoccupied individuals are preoccupied with their parents and have angry or ambivalent representations of the past. Individuals classified as Unresolved show trauma resulting from unresolved loss or abuse.

Ammaniti et al. (1990) found a stability rate of 71% across four years. Stability of the dismissing (78%) and secure (74%) categories was somewhat higher than the stability of the preoccupied (50%) and unresolved (50%) categories. However, since there were very few participants in the preoccupied and unresolved categories, this finding is not surprising. Participants tended to show more dismissing strategies across the four years and to report more rejection from their parents. The authors speculate that there might be a higher rate of dismissing classifications in adolescence due to the detachment processes that distance the adolescent from the parent, which is often associated with this period of development (Ammaniti et al., 1990).

Zimmerman and Becker-Stoll (2001) investigated stability of attachment representations in a low-risk sample of 41 adolescents. Attachment representations were assessed using the Adult Attachment Interview (AAI; George, Kaplan & Main, 1985) when the adolescents were 16 and 18 years of age. The quality of attachment representation in adolescence remained relatively stable (77%) over the course of two years. Stability of the dismissing classification was predicted by identity diffusion, characterized by a lack of clear commitments, an avoidant information processing style and an incoherent life perspective. Stability of a secure representation was predicted by identity status achievement, characterized by successful solution of that task, and coherent commitment to specific values based on exploration and personal experiences.

Allen, Boykin McElhaney, Kuperminc, and Jodi (2004) examined stability and change in attachment security in a sample of 101 moderately at-risk adolescents. Attachment was assessed using the AAI Q-set (Kobak, Cole, Ferenz-Gilles, Fleming, Gamble, 1993) at 16 and 18 years of age. Results indicated substantial stability in attachment security ($r = .61$). In terms of discontinuity, adolescents who perceived their mothers as being more supportive during disagreements made relative gains in security. Alternatively, adolescents who at age 16 were caught up in overpersonalized, enmeshed discussions of disagreements with their parents, had relatively lower levels of security two years later. Adolescent's depressive symptoms and poverty status were also found to predict decreases in levels of security over the two-year period. When these factors (overpersonalizing family interactions, depression and poverty) were combined, they accounted for 15% of the variance in attachment security at age 18.

Summary of Findings from Stability Studies across Adolescence

The three studies that examined stability of attachment representations across adolescence all used the Adult Attachment Interview or a modified version of this measure to look at continuity and discontinuity at this stage of development. Although greater stability was found in the two low-risk samples, all three studies found substantial stability. Therefore, stability of attachment representations across adolescence are evident in both low-risk and high-risk environments. A significant limitation of the Ammaniti et al. (1990) study was that these researchers did not look at the factors that might explain processes of stability and change in the organization of the attachment system across adolescence. The study by Zimmerman and Becker-Stoll (2001) found that variables related to ego-identity status were

significant in predicting stable patterns of dismissing and secure classifications while the Allen et al., (2004) study found that overpersonalizing family factors, depression and poverty were related to decreases in security. Adolescents who perceived their parents as supportive during disagreements, made gains in security. These findings suggest that internal factors such as depression and those which contribute to identity development are influential in predicting stability and change of attachment in adolescence. Given that adolescents typically struggle with depression and identity formation as they navigate through this tumultuous developmental period, this finding doesn't seem surprising. Additionally, the findings by Allen et al. (2004) which suggest that family interaction patterns are influential in predicting stability and change of attachment in adolescence, highlight the importance of the adolescent's desire to feel supported by parents while maintaining their independence. The fact that poverty was related to decreases in security in the Allen et al. (2004) study indicates that external factors can also be influential in predicting discontinuity during the period of adolescence.

Short-term Stability Studies of Attachment across Adulthood

Although the parental attachment figure is often displaced by a spouse in adulthood, the parent persists as a close attachment figure through the later years of life. As Bowlby (1977) aptly stated, "Whilst especially evident during early childhood, attachment behavior is held to characterize human beings from the cradle to the grave." (pp. 129). While the initial patterns of infancy and childhood develop in direct response to the caregiver's actions (or failures to act), the attachment patterns of adults arise from the internal working models of the attachment figure, and of the self, that are built on childhood experiences and significantly affect the adult's ability to form new attachment relationships. There has been very little research on the stability of attachment over the adult years and to date, only two studies have examined continuity and discontinuity of attachment in close relationships during this developmental period.

Zhang and Labouvie-Vief (2004) studied stability of attachment style in a low-risk sample of 370 individuals, ranging in age from 15 to 87 years of age. Attachment style was measured three times over a six-year period, using the Relationship Questionnaire (RQ; Bartholomew and Horowitz, 1991), which consists of four paragraphs of statements that describe different types of adult attachment in close relationships: secure, preoccupied, dismissing and fearful-avoidant. Results demonstrated that over the six-year period, attachment style was relatively stable. The test-retest correlations of attachment style ranged from .40 to .49 for between Time 1 and Time 2 and from .24 to .45 between Time 1 and Time 3. The stability of attachment style was lower for the 6-year as opposed to the 2-year interval. Results of this study also indicated a great deal of change as well as stability. Change to attachment insecurity was predicted by defensive coping (characterized by rigid, immature, and maladaptive ways of interacting with the world) and depressive symptoms and change to security was predicted by integrative coping (characterized by flexible and reality-oriented ways of interacting with the world) and a better state of well-being. Additionally, an age affect in attachment change was found. Over time, older individuals became more secure and more dismissing, but less preoccupied than young people.

In a study conducted by Consedine & Magai (2006) stability of attachment was examined in a high-risk sample of 415 older adults. Attachment was measured twice, at 72 years of age and again at 78 years, using the Relationship Scales Questionnaire (Bartholomew & Horowitz, 1991). Overall, 81.4% of the sample remained stable, while 18.6% changed classification over the six-year period. Results indicated a significant drop in both security and dismissiveness. Increases in attachment security were predicted by increases in positive affect and reduced stress. Increases in fearful avoidance were predicted by increases in both depressed and hostile affect and by increased environmental stress. Relative increases in dismissiveness were however, predicted by increases in hostile affect and positive affect and by reductions in relationship and environmental stress.

Summary of Findings from Stability Studies Across Adulthood

When examining the results found in both the Zhang and Labouvie-Vief (2004) and Consedine and Magai (2006) studies, it is of great importance to consider the method of measurement. These researchers

both look at adult attachment “style” which typically use self-report measures that focus on the bonds that form in close relationships with others, which could mean a partner or attachment figure. Therefore, this approach to measuring adult attachment must be considered since it differs from the developmental approach of measuring attachment, which uses measures such as the Adult Attachment Interview (AAI) that draw upon current representations of parental attachment figures. Therefore, the findings from both studies must be interpreted from the perspective of adult attachment style in close relationships.

The aforementioned studies looking at the stability of adult attachment style present mixed findings in that the first study conducted by Zhang and Labouvie-Vief (2004) found an increase in both secure and dismissing attachment styles whereas Consedine and Magai (2006) found a decrease in secure and dismissive styles over time. Perhaps the discrepant findings relate to the demographic differences between the samples as well as the age ranges studied. Another explanation could be that individuals in the later stage of life (over 70), may place more emphasis on developing intimate relationships since they perceive their time as limited (Consedine & Magai, 2006). However, individuals in this stage of life may also experience a greater loss of people with whom they were in a close attachment relationship with, which could account for the decrease in security. Conversely, individuals in the earlier stage of adulthood, are more likely to have access to others they are close to. The increase in dismissiveness at this earlier stage could be due to the desire for maintaining the independence that is often encouraged in adulthood. Consedine and Magai (2006) address their paradoxical findings regarding the predictors of changes towards dismissiveness by stating that they suspect that the pattern of increasing dismissiveness in the presence of improving affective and stress-related changes may represent a progressive disengagement from social relations and an increasingly rigid and defensive personality structure.

Both studies reflect a great deal of stability suggesting that in both low and high-risk samples, there is continuity in attachment across the adult years. However, there was still fluctuation in stability of attachment styles in both studies, indicating that change is possible in the later years given certain personal and environmental influences. Variables such as defensive coping and depressive symptomology, hostile affect, increases in environmental stress all lead to changes towards insecurity while factors such as an integrated coping, better state of well-being, increases in positive affect and reduced stress lead to changes towards security. These findings suggest that both external factors such as environmental stress and internal factors such as depression and coping are important variables that uniquely affect the stability of attachment style across the adult years.

Long-term Stability Studies from Infancy through Adolescence and Adulthood

A handful of studies have examined stability between infancy and adolescence and adulthood in both low and high-risk samples. Moderate stability was found in two low-risk samples (Hamilton, 2000; Waters, Merrick, Treboux, Crowell & Albersheim, 2000). In the study conducted by Waters et al. (2000) attachment was measured using the infant Strange Situation procedure at 12 months and the AAI was administered at 20-22 years of age. Thirty-two out of the fifty (64%) participants were assigned to corresponding classifications while thirty-six percent of the sample changed classifications. Infants whose mothers reported one or more negative life events such as loss of a parent, parental divorce, life-threatening illness of parent or child, parental psychiatric disorder or physical or sexual abuse by a family member, were more likely to change classifications (become insecure) as an adult.

Hamilton et al. (2000) also looked at stability of attachment in a low-risk sample of 30 children. Attachment at 12 months was assessed using the infant Strange Situation procedure and the adolescent version of the AAI was used to assess attachment representations in adolescence. Overall, 77% of the adolescents retained the same classification over time. Negative life events operated primarily by maintenance of already established patterns of insecurity or movement from secure to insecure patterns.

Conversely, instability was found in two other studies, one looking at a middle risk sample (Lewis, Feiring, & Rosenthal, 2000) and the other looking at a high-risk sample (Weinfeld, Sroufe & Egeland, 2000). Lewis et al. (2000) examined the stability of attachment with 84 children. The infant Strange Situation procedure was used to measure the quality of attachment at 12 months and the AAI was used to measure attachment representations at 18 years of age. The findings revealed a lack of continuity between

attachment behaviors in infancy and attachment representations in adolescence. These researchers also looked at parental divorce as a possible moderator between attachment in infancy and attachment in adolescence. Findings indicated that there was no interaction between 1-year attachment and divorce as it impacts on the 18-year classification.

Weinfeld, Scroufe and Egeland (2000) explored the stability of attachment in a sample of high-risk sample of 57 children. Attachment was assessed at 12 months using the infant Strange Situation procedure and at age 19 using the AAI. An overall stability rate of 38% was found, indicating that there was no significant continuity between infant and adult attachment. For infant attachment, a secure classification was the predominant classification (60%) whereas for adult attachment, an insecure-dismissing classification was the predominant classification (60%). Participants who had an insecure infant attachment relationship and an insecure adult attachment classification were significantly more likely to have experienced maltreatment than those participants with insecure infant attachment who transitioned to adult security. The secure-insecure has mothers who were significantly more depressed than the mothers of the secure-secure group. The insecure-secure group had better family functioning at age 13 than the stable insecure group.

A more recent study conducted by Aikens, Howes and Hamilton (2009) examined the stability of attachment representations in a low-risk sample of 47 participants. Attachment was assessed at 12 months using the infant Strange Situation procedure, at 4 years using the modified Strange Situation procedure and again at 16 years with the Adult Attachment Projective (George, West, & Pettem, 1997). As in the case with the Adult Attachment Interview (AAI), this measure assesses adolescent and adult attachment through the analysis of eight standardized projective pictures. Individuals are classified as secure, dismissing, preoccupied and unresolved. Only 25% of the participants in this study demonstrated continuity in attachment. While 62% of the participants were classified as secure in infancy, only 30% were classified as secure in adolescence. The number of adolescents classified as unresolved (27.65%) was almost equal to the number classified as secure. Only one participant (2%) was classified as disorganized at both time points, indicating that there was no continuity in disorganization at both time points. The emergence of unresolved classifications in adolescence was associated with a higher rate of negative life events, lower levels of early mother-child relationship security (an aggregate measure of the 12-month and 4-year measures, more negative teacher-child relationship experiences in middle childhood and lower early adolescent friendship quality. The strongest predictor was the experiences of a significant negative life event such as parental divorce or death of a family member, which increased the likelihood of an unresolved classification significantly.

Summary of Findings from Long-Term Stability Studies from Infancy to Adolescence and Adulthood

The studies that examine stability from infancy through adolescence and adulthood show mixed results. Moderate stability was found in the Hamilton (2000) and Waters et al. (2000) studies looking at stability of attachment in low-risk samples while instability was found in two others, one middle risk (Lewis et al., 2000) and the other high-risk (Weinfeld et al., 2000). It should be noted that a major limitation of these studies was exclusion of the disorganized and unresolved classifications. Results of these studies show that difficult life experiences, including child maltreatment, loss of a parent and parental divorce, are related to change from security to insecurity. Therefore, it seems that external factors that influence the quality of caregiving have the greatest influence in predicting discontinuity in the attachment relationship between infancy and adolescence or adulthood.

The study by Aikens et al. (2009) is noteworthy in the sense that these researchers presented data that included the disorganized and unresolved classifications. Only 25% of the participants in this study involving a low-risk sample demonstrated continuity in attachment. The authors state that the high rate of unresolved classification in adolescence could relate to the temporary changes that often accompany adolescent development (Aikens et al., 2000). There was no continuity in disorganization, indicating that unresolved representations in adolescence are not best predicted by disorganization in infancy. The results of this study indicated that negative life events were the most significant predictor of an unresolved

classification in adolescence. Additionally, low levels of early attachment security, negative child-teacher experiences and low friendship quality were also related to shifts towards an unresolved classification. The findings from this study further support the idea that external factors (negative life events), which can significantly alter the quality of caregiving, have the strongest influence on the stability of the attachment relationship between infancy and adolescence and adulthood.

CONCLUSION

In summary, this review documents the variables that influence stability and change in attachment across the developmental periods of infancy, preschool, adolescence and adulthood and between infancy and adolescence and adulthood. This paper provides a unique contribution to the literature on attachment stability by identifying the specific developmental factors that influence continuity and discontinuity across the lifespan. Additionally, variables that are influential in predicting stable security and change to security were examined.

In infancy, variables such as maternal depression, antisocial behavior, maternal employment, childrearing methods, etc. seem to have more of an influence in predicting stability and change in attachment across infancy since they directly impact caregiving behavior. Since the attachment relationship is in the process of formation during infancy, variables that directly alter caregiving behavior have a significant impact on the attachment relationship. Additionally, external factors such as negative life events and factors that operate within the marital relationship such as relationship satisfaction also influence stability and change during this developmental period. Therefore, factors that influence maternal behavior directly as well as factors that stem from the environment and within the family are all important predictors of stability and change during infancy.

During early childhood, maternal factors appear to play less of a role in predicting stability and change in attachment. While there are still associations between some caregiving behaviors such as maternal sensitivity and change in attachment classification, factors such as negative life events, marital satisfaction and more than 10 hours of week in child care are just as influential in predicting stability and change in attachment during this period. This makes sense given that developmentally, the preschool child is more capable of interacting with their environment and less restricted to proximity seeking behavior.

Across the period of adolescence, factors related to identity and communication in family interactions as well as depression play a role in predicting stability and change during adolescence. These are important issues that adolescents often struggle with and it seems appropriate that they would be influential in affecting the course of the parent-child relationship during this period. Negative life events were also shown to predict stability and change during this time, indicating that external factors continue to operate in ways that alter or stabilize the parent-child relationship.

In adulthood, variables such as coping, well-being and environmental stress all influence stability and change in attachment relationships with parents or partners during this period. It seems that factors which are more prevalent for adults such as coping and well-being have a greater impact on attachment relationships, with either a parent or partner. These variables, along with those which are external, such as environmental stress, work together to either sustain or modify attachment relationships.

In regard to stability from infancy to adolescence and adulthood, negative life events stand out as the strongest predictor in influencing change to insecurity in attachment relationships over time. Events such as the loss of a parent or family member, parental divorce, living in poverty, parental hospitalization, or abuse all significantly alter caregiving behavior and dynamics within the family. Those factors that maintain stability or predict change to security in attachment relationships over time are less clear. What is clear however, is that experiencing a negative life event has a dramatic effect on the quality of the parent-child relationship and this will likely set the stage for other maladaptive outcomes for the child later in life.

Limitations and Directions for Future Research

While research on the stability of attachment relationships has made important advances over the last two decades, there are several questions that remain unanswered. First, given the focus in prior research on the stability of mother-child attachment, little is known about the stability of father-child attachment. Although there were a few studies that incorporated stability data on father-child attachment, there is still a lot of research that needs to be done looking at what factors are specific in maintaining or changing the attachment relationship between fathers and their children. Second, there are only a handful of studies that focus on stability and change from the preschool years through adulthood. More short-term longitudinal research looking at stability across the various development periods (preschool, adolescence, etc.) as well as long-term longitudinal research looking at stability from infancy through adulthood needs to be conducted. Third, additional research looking at other factors that could be influential in predicting stability and change in attachment relationships would provide a better understanding of the specific processes involved in maintaining or changing the quality of the attachment relationship. Specific factors that predict change to security also need to be identified since there is very little research on the processes involved in this particular shift in the quality of attachment. Additionally, there are few studies that examine the shift towards disorganization so research on the factors that predict stability and change with regard to the disorganized classification needs to be conducted. Finally, other methods of assessing attachment relationships should be employed when focusing on stability and change in attachment in adulthood. The few studies that have looked at this period have used self-report methods, which are essentially measuring the perceptions that one has about close relationships and not the attachment relationship with a parent per se. Measures such as the Adult Attachment Interview (AAI) and the Adult Attachment Projective (AAP), which examine attachment representations that an individual has of their primary caregiver, would be more appropriate to use with adults when investigating stability and change of attachment relationships with caregivers.

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