

From J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 25-45). New York: Guilford Press, 1998.

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### Methods of Assessing Adult Attachment

#### *Do They Converge?*

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In recent years, several streams of research have emerged from Bowlby's (1988) and Ainsworth's (1982) attachment theory. Originally, the theory was aimed at explaining child and adult psychopathology in terms of nonoptimal relationships between children and their caregivers, or "attachment figures." According to attachment theory, the long-term effects of early experiences with caregivers are due to the persistence of "internal working models"—cognitive/affective schemas, or representations, of the self in relation to close relationship partners (Bartholomew, 1990; Shaver, Collins, & Clark, 1996). Theoretically, these representations influence a person's expectations, emotions, defenses, and relational behavior in all close relationships. Although the theory does not assume or require that internal working models persist without change across the life span, both theory and empirical evidence from longitudinal studies have led researchers to suspect that the effects of childhood attachment relationships extend into adulthood, where they can be seen in the domains of parenting and close peer relationships, including romantic relationships (e.g., Bartholomew, 1990, 1993; Main, Kaplan, & Cassidy, 1985; Shaver, Hazan, & Bradshaw, 1988; Weiss, 1982).

## TWO TRADITIONS OF ADULT ATTACHMENT RESEARCH

In the 1980s, two distinct programs of research were initiated to investigate patterns of attachment in adulthood. In one line of research, Main and her colleagues focused on the possibility that adult "states of mind with respect to attachment" (i.e., adults' current representations of their childhood relationships with parents) affected parenting behavior, which in turn influenced the attachment patterns of the parents' young children. Members of Main's research group interviewed parents about their childhood family relationships and then searched for scorable features of the interview transcripts that could "postdict" their infants' already known attachment classifications in the Ainsworth Strange Situation (Ainsworth, Blehar, Waters, & Wall, 1978). In subsequent predictive studies using this Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) procedure, the research group confirmed that parents' interview codes were associated with independent assessments of their infants' attachment classifications (a connection that has since been replicated many times; see van IJzendoorn, 1995, for a review). Infants classified as "avoidant" in the Strange Situation had primary caregivers who themselves were dismissing of attachment-related memories and feelings; infants classified as "anxious" had primary caregivers who were anxiously preoccupied with attachment-related issues; and infants classified as "secure" had caregivers who were "free and autonomous" with respect to attachment. In subsequent work, a fourth infant pattern, "disorganized," was found to be associated with caregivers who were "unresolved" with respect to losses and traumas in their attachment history.

In the second, completely independent line of research, Hazan and Shaver (1987), who had been studying adolescent and adult loneliness, followed up Weiss's (1982) idea that chronic loneliness is associated with insecure attachment. Reasoning that most chronically lonely young adults were unsuccessfully seeking a secure romantic attachment, and that orientations to romantic relationships might be an outgrowth of previous attachment experiences, Hazan and Shaver devised a simple self-report questionnaire for adults based on Ainsworth's three patterns of childhood attachment: secure, avoidant, and anxious. The measure asked people to think back across their most important romantic relationships and decide which of the three types was most self-descriptive. In subsequent studies, this measure and several variants of it have been related to a host of theoretically relevant personality variables, behaviors, and experiences in close relationships (for reviews, see Shaver & Clark, 1994; Shaver & Hazan, 1993). Although a few studies have correlated this measure with retrospective reports of childhood experiences with parents, the bulk of research in this tradition has focused on the influence of attachment patterns on personal adjustment and adult relationships.

These two streams of adult attachment research—one focused on parenting and the other focused on romantic relationships—derive from different disciplinary subcultures. Bowlby was primarily a child psychiatrist, and Ainsworth was a child clinical and developmental psychologist. Many of the current attachment researchers in the first “subculture” (e.g., Bretherton, Cassidy, Crittenden, Kobak, Main, and Waters) were students of Ainsworth’s. Researchers in this group tend to think psychodynamically, be interested in clinical problems, prefer interview measures and behavioral observations over questionnaires, study relatively small groups of subjects, and focus their attention on parent–child relationships. Hazan and Shaver were personality/social psychologists, and their work was quickly assimilated by other such psychologists, who tend to think in terms of personality traits and social interactions, be interested in normal subject populations, prefer simple questionnaire measures, study relatively large samples, and focus on adult social relationships, including friendships, dating relationships, and marriages. Not surprisingly, the members of these two research subcultures tend to speak past each other, or to concentrate their energies on activities within their own subdiscipline without paying much attention to activities and developments within the other subdiscipline.

Because both lines of research are grounded in Bowlby’s and Ainsworth’s attachment theory, and both focus on individual differences and classify people into categories parallel to Ainsworth’s infant attachment typology, it was inevitable that some researchers would assume that the two adult classification systems, Main’s and Hazan and Shaver’s, must be highly related. In other words, since both the AAI and Hazan and Shaver’s questionnaire place people into categories roughly designated as secure, avoidant, and anxious or preoccupied, it is often assumed that the two assessment procedures are more or less interchangeable.

In 1990, Bartholomew reviewed the adult attachment research in both traditions and came to the conclusion that the two approaches to assessing attachment differed in a number of ways. First, she noted that the dismissing–avoidant individuals identified by the AAI denied experiencing subjective distress and downplayed the importance of attachment needs, whereas avoidant subjects identified by Hazan and Shaver’s self-report measure reported relatively high levels of subjective distress and fears of becoming close to others. She argued that two distinct forms of avoidance were evident, one pattern motivated by a defensive maintenance of self-sufficiency (labeled “dismissing”) and the other motivated by a conscious fear of anticipated rejection by others (labeled “fearful”). Second, she noted that the two approaches focused on different domains, one on retrospective descriptions of parent–child relationships and the other on more recent experiences in adult love relationships, and that the equivalence of representations in the two domains should not be assumed, but rather was a question for empirical study. Third, she pointed

out that the use of interviews and the use of self-reports reflected differing conceptualizations of adult attachment. The AAI focuses on dynamics of internal working models that are revealed indirectly by the way a person talks about childhood relationships; the measure is not based on the assumption that people are conscious of these dynamics. In contrast, the self-report measure focuses on feelings and behaviors in close relationships of which a person is aware and which the person can describe fairly accurately. Building on both traditions, Bartholomew proposed an expanded model of adult attachment that included two forms of avoidance. To assess this model, she used a self-report measure of experiences in close relationships in general (by revising Hazan and Shaver's measure) as well as two interviews, one focusing on childhood experiences (along the lines of the AAI) and the other focusing on peer relationships, including friendships and romantic relationships (Bartholomew & Horowitz, 1991).

### **Problems in Comparing Measures from the Two Traditions**

In recent years, papers have begun to appear (e.g., Borman & Cole, 1993; Crowell, Treboux, & Waters, 1993) that report comparisons between adult attachment measures from the two research traditions we have outlined. Typically, the authors of such papers conclude that the two kinds of measures fail to correspond, in which case the authors usually question the validity of the self-report measure. These kinds of studies are typically conducted by researchers from the clinical/developmental subculture, because, with the exception of Bartholomew and her colleagues, researchers in the personality/social subculture have not taken the time to master the interview techniques. It is easy for interview researchers to add a simple self-report measure to their studies, but difficult for questionnaire researchers to learn to conduct and code what are essentially intensive clinical interviews. Thus, comparisons between different kinds of attachment measures have been made largely by researchers who concentrate on parent-child relationships and take Ainsworth's Strange Situation and the AAI as benchmarks.

To the extent that conclusions about attachment measures affect researchers' understanding of attachment processes or lead them to have little confidence in particular bodies of research, the question of measure convergence is important. Some of the authors who have found little convergence between self-report and interview measures have concluded that self-report measures are especially prone to measurement error and unlikely to be related to behavior. They fail to consider studies such as those by Shaver and Brennan (1992), Feeney and Noller (1991), Kirkpatrick and Davis (1994), Kobak and Hazan (1991), Mikulincer and Nachshon (1991), and Simpson, Rholes, and Nelligan (1992), which show that self-report measures of adult attachment patterns *do* relate significantly to the

ways in which a person discusses close relationships, to observations of marital communication, to relationship breakups, to patterns of self-disclosure, and to seeking and providing social support under stressful conditions. Within the personality/social research subculture, to consider the flip side of the coin for a moment, there is a danger of overlooking discoveries made with interview procedures that cannot be duplicated with simple self-report measures. These include insights and research ideas that arise when an investigator hears what people actually say when interviewed in depth about important relationships. Many researchers relying on self-report measures of attachment have also failed to seriously consider the possibility that there are aspects of attachment patterns that are inaccessible to conscious awareness and, therefore, cannot be assessed by self-report methods (cf. Crowell & Treboux, 1995).

Given the significance of the measure convergence issue, it is essential that comparisons between measures be thoughtful and statistically appropriate. Most of the existing comparisons involve cross-tabulations of AAI categories and Hazan-Shaver categories, a strategy which implicitly assumes that the two measures are assessing parallel attachment classifications. Some (e.g., Borman & Cole, 1993) even label the Hazan-Shaver avoidant category "dismissing" (a term never used by Hazan and Shaver), as if the designers of the two measures all had dismissing qualities in mind. This conflation ignores Bartholomew's (1990) distinction between two kinds of avoidance, which indicates that the AAI dismissing category and the Hazan-Shaver (fearful) avoidant category are *not* the same. Other studies include the "unresolved" AAI category, which has no match in the self-report measure, and/or a "cannot classify" interview coding category, which also has no match in the self-report measure. These differences make it unlikely that the two kinds of measures will converge strongly.

Some authors who compare attachment measures also overlook or misinterpret the domain differences between the AAI, which focuses on adults' characterizations of their childhood relationships with parents, and the Hazan-Shaver measure, which focuses on experiences in romantic relationships. Although the AAI has sometimes been conceptualized as assessing generalized attachment representations, the Hazan-Shaver measure was specifically designed to measure attachment patterns in the domain of romantic relationships. Of course, even if the two measures had been intended to measure precisely the same construct, method variance would be expected to reduce the degree of association between them. Self-report measures focus on conscious, potentially inaccurate summaries by a person of his or her own experiences and behaviors. The AAI focuses primarily on the way a person talks about childhood attachment experiences, with the major distinctions having to do with what might be called defensive style (e.g., denial, repression, compulsive self-reliance, and dismissal of attachment needs, on the one hand, versus

vigilance, sensitization, enmeshment in relationships, and preoccupation with attachment needs, on the other). These differences in communicational behavior and defensive style are not necessarily noticed or acknowledged by the people who exhibit them. Given all of these differences, a moderate association, at best, would be expected between the AAI and Hazan and Shaver's self-report measure.

Also problematic is the fact that comparers of measures often fail to conduct power analyses (Cohen, 1988) before performing statistical tests. Consequently, they tend to perform insufficiently powerful tests and then conclude that two measures are unrelated (i.e., the null hypothesis is supported) because a test statistic fails to reach conventional levels of significance. Insufficient power (a reflection of sample size and expected effect size) is especially disconcerting when investigators are inclined to accept the null hypothesis, and sufficient power is especially difficult to attain when categorical variables are under investigation. Researchers have also failed to consider that unreliability in both measures will always attenuate the observed degree of correspondence. Single-item measures are particularly likely to be unreliable. Given the systematic differences between the AAI and self-report romantic attachment measures, the low power of the tests used to test the associations between them, and the relatively low reliability of some attachment measures, it is hardly surprising that previous studies have failed to show convergence.

In the remainder of this chapter we compare various measures of attachment based on Bartholomew's typology. Because Bartholomew has created both interview measures of parental and peer attachment and a self-report measure of peer attachment, similar in many respects to the Hazan-Shaver measure but including two avoidant categories, it is possible to compare assessment methods without confounding them with different conceptual schemes. In addition, continuous prototype ratings of the four attachment patterns allow for adequate power to test for moderate associations in relatively small samples. In two separate samples, the associations between three measures of attachment were assessed—a self-report measure of general orientation to close relationships, an interview measure focusing on early family relationships, and a second interview focusing on peer relationships.

### **BARTHOLOMEW'S TWO-DIMENSIONAL FOUR-CATEGORY SCHEME**

Bartholomew has systematized Bowlby's (1973) conception of internal working models in a four-category classification scheme (Bartholomew, 1990; Bartholomew & Horowitz, 1991) (see Figure 2.1). Four prototypical attachment patterns are defined in terms of two dimensions: positivity of a person's model of self and positivity of a person's model of others. The

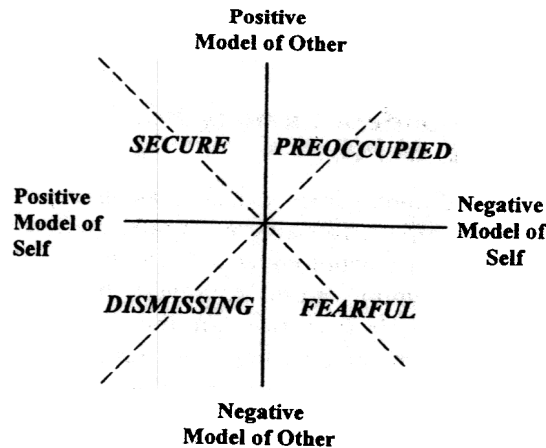


FIGURE 2.1. Two-dimensional four-category model of adult attachment.

positivity of the self model indicates the degree to which a person has internalized a sense of his or her self-worth (versus feeling anxious and uncertain of the self's lovability). The self model is therefore associated with the degree of anxiety and dependency on other's approval in close relationships. The positivity of the other model indicates the degree to which others are generally expected to be available and supportive. The other model is therefore associated with the tendency to seek out or avoid closeness in relationships.

*Secure* adult attachment is characterized by the combination of a positive self model and a positive model of others. Secure individuals have an internalized sense of self-worth and are comfortable with intimacy in close relationships. *Preoccupied* attachment is characterized by a negative self model and a positive model of others. Preoccupied individuals anxiously seek to gain acceptance and validation from others, seeming to persist in the belief that they could attain safety, or security, if they could only get others to respond properly toward them. *Fearful* attachment is characterized by negative self and other models. Fearful individuals, like the preoccupied, are highly dependent on others' acceptance and affirmation; however, because of their negative expectations, they avoid intimacy to avert the pain of loss or rejection. *Dismissing* attachment is characterized by a positive self model and a negative model of others. Dismissing individuals also avoid closeness because of negative expectations; however, they maintain a sense of self-worth by defensively denying the value of close relationships.

As indicated previously, three of these patterns—secure, preoccupied, and dismissing—are conceptually similar to the corresponding AAI cate-

gories. And three—secure, preoccupied, and fearful—are similar to Hazan and Shaver's secure, anxious-ambivalent, and avoidant categories.

### **A Test of Correspondence among Bartholomew's Attachment Measures**

The convergence of different approaches to assessing adult attachment was tested in two samples. In Sample 1, participants were 69 college students (see Study 2 in Bartholomew & Horowitz, 1991); in Sample 2, participants were 134 young adults involved in established romantic relationships (for more information on the sample, see Scharfe & Bartholomew, 1994). Participants completed three measures: (1) a brief self-report measure that asked them to rate their degree of fit with each of the four attachment prototypes (the Relationship Questionnaire), (2) an interview focusing on close friendships and past and present romantic relationships (the Peer Attachment Interview), and (3) an interview focusing on representations of childhood experiences in the family (the Family Attachment Interview). Two independent raters coded each interview for interviewee's degree of fit to a prototype for each of the four attachment patterns. Final interview ratings were based on an average of the two coders' ratings. Thus, each participant received a profile of ratings on the four attachment patterns. The highest of the four ratings was also used to define a best fitting categorization for each method.

For each combination of methods, correlations were computed between the continuous ratings of corresponding attachment patterns (see Table 2.1). For both samples, each of the associations between corresponding peer and family interview ratings was significant. In addition, the associations between corresponding ratings were stronger than those between noncorresponding ratings, and none of the noncorresponding ratings were significantly positively associated with each other (not shown in the table), suggesting both convergent and discriminant validity. Associations between corresponding ratings on the peer interview and self-report measure were also significant, and the pattern of correlations again suggested both convergent and discriminant validity. In contrast, associations between corresponding ratings on the family interview and self-report measure were weaker and more variable. In both samples, security and dismissing ratings were positively correlated. However, corresponding fearful ratings were associated only in Sample 1, and preoccupied ratings were not significantly correlated in either sample. In the two other studies we are aware of that included the Relationship Questionnaire and Family Attachment Interview, the obtained associations between corresponding ratings were stronger. In a sample of assaultive men, correlations between self-report and family interview measures ranged from .22 (for the fearful) to .55 (for the preoccupied) (Saunders, 1992). Similarly, in a sample of women undergoing treatment for breast



**TABLE 2.1.** Correlations between Corresponding Attachment Ratings across Methods

	Secure	Fearful	Preoccupied	Dismissing
<u>Peer interview and family interview</u>				
Sample 1 <sup>a</sup>	.39**	.29*	.66**	.41**
Sample 2 <sup>b</sup>	.37**	.46**	.42**	.35**
<u>Peer interview and self-report measure</u>				
Sample 1	.27*	.45**	.24*	.36**
Sample 2	.36**	.37**	.35**	.29**
<u>Family interview and self-report measure</u>				
Sample 1	.25*	.35**	.19	.33**
Sample 2	.23	.00	.08	.17*

Note. Sex was partialled out of the Sample 2 correlations to avoid bias (see Gonzalez & Griffin, 1997).

<sup>a</sup>n = 67; <sup>b</sup>n = 134.

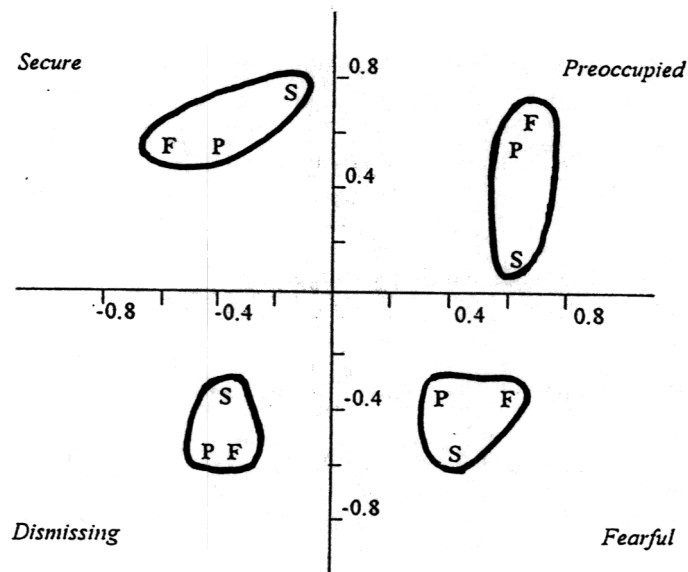
\*p < .05; \*\*p < .01.

cancer, correlations ranged from .22 (for the preoccupied) to .42 (for the fearful) (Bellg, 1995).

Because of inadequate power, it was not possible to test the correspondence between classifications derived from the three different methods, but there was sufficient power to compare the secure and insecure categories across methods. With one exception, the proportion of agreement for the secure-insecure distinction ranged from .63 to .68 and a significant chi-square indicated that the categorizations across methods were not independent. However, the proportion of agreement between the family interview and self-report measure in Sample 2 was .57, which is only marginally significant ( $p = .07$ ).

Finally, factor analyses were performed to examine the convergence of the three measures. Figures 2.2 and 2.3 show the results of principal components factor analyses with varimax rotation of the intercorrelations of the three sets of attachment ratings (with axes rotated to facilitate interpretation). The two factors accounted for 48% of the variance in Sample 1 and 41% of the variance in Sample 2. As can be seen in the figures, the three methods exhibit substantial convergence; the three measures of a particular attachment pattern are always closer to each other than to measures of different patterns. (See Griffin & Bartholomew, 1994, for similar results based on confirmatory factor analyses of different methods of assessing the two dimensions underlying Bartholomew's model.)

The findings indicate a moderate degree of convergence across the three approaches. As might be expected, the correlational results were weakest when both the method (interview vs. self-report) and the content domain (family history vs. current close relationships) differed. The con-

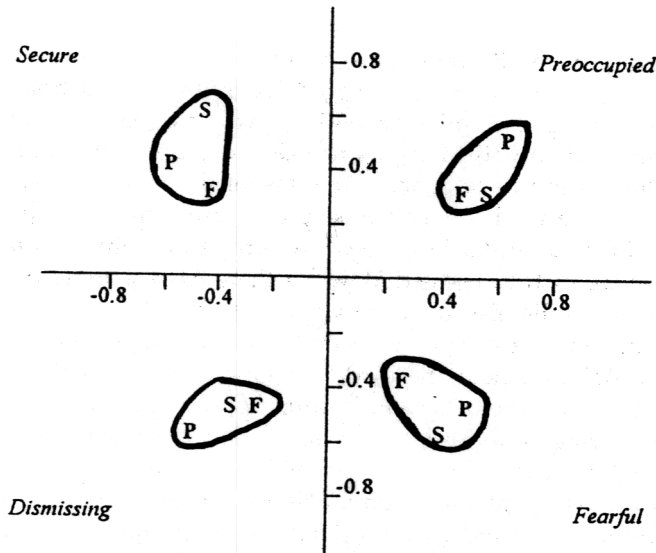


**FIGURE 2.2.** Factor analysis of Relationship Questionnaire, Peer Attachment Interview, and Family Attachment Interview ratings: Sample 1. P = peer interview; F = family interview; S = self-report.

vergence was greater when both measures were based on interviews or when both measures had to do with the peer relationship domain. The results of the factor analyses also indicate convergence. In sum, when parallel conceptualizations of attachment patterns are used, there is a moderate degree of convergence between interview and self-report measures, and across the family and peer domains. This conclusion agrees with findings obtained by Bellg (1995), O'Hearn and Davis (1997), and Saunders (1992). But it would be easy to miss the convergence if one compared different conceptualizations of attachment (such as three vs. four categories, or systematically differing definitions of avoidance) or relied on insufficiently powerful statistical tests.

### **ANCHORING BARTHOLOMEW'S MEASURES IN THE TWO TRADITIONS OF ADULT ATTACHMENT RESEARCH**

The findings reported in the previous section are relevant to bridging the gap between the two adult attachment subcultures only to the extent that Bartholomew's measures are empirically related to the AAI, on the one side, and Hazan and Shaver's romantic attachment measure, on the other side.



**FIGURE 2.3.** Factor analysis of Relationship Questionnaire, Peer Attachment Interview, and Family Attachment Interview ratings: Sample 2. P = peer interview; F = family interview; S = self-report.

### A Comparison of the AAI and Bartholomew's Interview Coding System

Mardi Horowitz and a group of colleagues at the University of California, San Francisco, gave us access to clinical interviews with 30 bereaved women that had been coded, by well-trained coders, using the AAI and Bartholomew's scoring systems. The interviews focused on the participants' relationship with the deceased and their responses to the loss; they were coded by independent sets of AAI and Bartholomew coders. Both coding systems contain the secure, preoccupied, and dismissing categories. The AAI usually includes an "unresolved loss and trauma" (U) category as well, but in the bereavement study it could not be used because the interviewees were all mourning a loss that had occurred within the previous year. As explained earlier, Bartholomew's coding system includes a fourth, "fearful," category not included in the AAI.

A chi-square analysis indicated that the classifications obtained from the two systems (three AAI categories and four Bartholomew categories) were significantly related,  $\chi^2(6) = 24.80, p < .001$ . Perhaps a more appropriate test of the association between the two measures is one that leaves out the seven interviewees who were classified as fearful in Bartholomew's system. When that analysis was performed, the association was again significant,  $\chi^2(4) = 23.93, p < .0001$ , and the proportion of agreement was .78. Of seven people judged preoccupied by the AAI

coders, all seven were also judged preoccupied by the Bartholomew coders. Of eight people judged dismissing by the AAI coders, seven were judged dismissing by the Bartholomew coders. Of eight people judged secure by the AAI coders, four were judged secure by the Bartholomew coders, three were judged dismissing, and one was judged preoccupied. All five disagreements involved the secure category and were mainly a result of the different secure-category base rates for the two sets of coders. The AAI coders more readily labeled people secure. The seven people who were coded fearful in Bartholomew's system (and omitted from the  $3 \times 3$  analysis) were distributed as follows in the AAI system: four were preoccupied, one was dismissing, and two were secure.

As a more powerful test of the association, we conducted analyses of variance (ANOVAs) in which the AAI categories served as the independent variable and the four continuous prototype ratings from Bartholomew's scoring system served as dependent variables. (See Table 2.2.) The ANOVA for the secure rating was significant,  $F(2,27) = 5.29$ ,  $p < .05$ , and a follow-up planned comparison indicated that the secure AAI group differed significantly from both insecure groups,  $t(27) = 2.96$ ,  $p < .01$ . For the preoccupied rating,  $F(2,27) = 12.60$ ,  $p < .0001$ ; the preoccupied AAI group's rating scale mean was significantly greater than the secure and dismissing means  $t(27) = 4.74$ ,  $p < .001$ . For the dismissing rating,  $F(2,27) = 11.45$ ,  $p < .001$ ; the dismissing AAI group's rating scale mean was significantly greater than the secure and preoccupied means  $t(27) = 4.53$ ,  $p < .001$ . For the fearful rating, the ANOVA was not significant,  $F(2,27) = 1.12$ , *ns*), as could be expected given that the AAI scoring system does not include a fearful category.

Considering that the interview being coded was not primarily an attachment interview (i.e., it was not highly similar to either the AAI or Bartholomew's interviews), that the sample size was small, and that many of the interviewees were still quite upset about their loss, the degree of correspondence between the two classification systems is impressive. The results suggest that strong evidence for convergence (to the extent that the coding systems are parallel) would be obtained from a study of a larger, more representative sample based on appropriate attachment interviews.

**TABLE 2.2.** Means on Bartholomew's Four Prototype Ratings across AAI Categories

Bartholomew prototype ratings	AAI categories		
	Autonomous ( <i>n</i> = 10)	Enmeshed ( <i>n</i> = 11)	Dismissing ( <i>n</i> = 9)
Secure	4.29	2.45	3.11
Preoccupied	3.40	5.36	2.22
Dismissing	3.20	2.18	5.67
Fearful	3.10	4.00	2.67

### **A Comparison of Hazan and Shaver's and Bartholomew's Self-Report Measures**

In a self-report study of 840 college students, Brennan, Shaver, and Tobey (1991) included both Hazan and Shaver's (1987, 1990) romantic attachment questionnaire and Bartholomew's (Bartholomew & Horowitz, 1991) relationship questionnaire. Participants placed themselves into one of Hazan and Shaver's three categories (secure, anxious, and avoidant) and rated how self-descriptive each of the three prototypes was. They also placed themselves into one of Bartholomew's four categories (secure, preoccupied, fearful, and dismissing) and rated how self-descriptive each of the four prototypes was.

A chi-square analysis indicated that the classifications obtained from the two systems (three Hazan-Shaver categories and four Bartholomew categories) were significantly related,  $\chi^2(6) = 370.31, p < .001$ . Of the people who classified themselves as secure on Bartholomew's measure, 82% were secure on the Hazan-Shaver measure. Of those who classified themselves as preoccupied on Bartholomew's measure, 57% were anxious-ambivalent (the conceptually parallel category) on the Hazan-Shaver measure. Of those who classified themselves as fearful on Bartholomew's measure, 61% called themselves avoidant on the Hazan-Shaver measure. Of those who classified themselves as dismissing on Bartholomew's measure, 43% called themselves avoidant on the Hazan-Shaver measure and 45% called themselves secure. As suggested earlier, there is no category on the Hazan-Shaver measure that is strongly parallel to dismissing, so most dismissing subjects are forced to choose fearful, which acknowledges their avoidant tendencies, or secure, which emphasizes their autonomy and self-esteem.

Because participants in the Brennan et al. (1991) study rated all seven prototypes from the two self-report measures, it was possible to conduct correlational as well as categorical analyses. The correlations for the parallel ratings (secure with secure, etc.) were all highly significant and ranged from .46 (for fearful with avoidant) to .55 (for the two secure ratings). In each case, these correlations were higher than any of the correlations among nonparallel ratings. The dismissing rating was not strongly correlated with any of the Hazan-Shaver ratings, but its correlation with the avoidant rating—the most logical quasi-parallel category—was a highly significant .23. When the seven ratings were submitted to factor analysis, two clear factors emerged. On the first factor, the two secure ratings loaded positively (.78 and .79), the avoidant and fearful ratings loaded negatively (-.77 and -.68), and the other ratings loaded below .35. On the second factor, the anxious-ambivalent and preoccupied ratings loaded positively (.84 and .77), the dismissing rating loaded negatively (-.52), and the other ratings loaded below .20. These factors confirm the convergence between the two measures, and they correspond

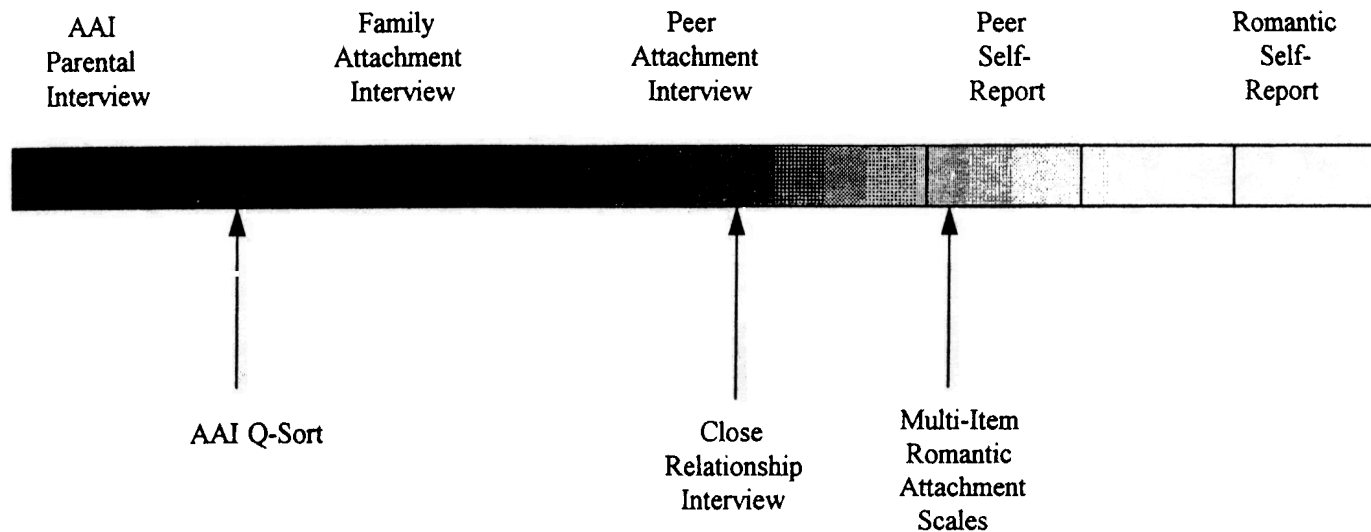
clearly to the diagonals of Bartholomew's two-dimensional classification scheme shown in Figure 2.1.

### **THE ARRAY OF MEASURES FROM THE AAI TO HAZAN AND SHAVER'S QUESTIONNAIRE**

Our findings indicate that when appropriate comparisons are drawn, one finds considerable evidence for convergence across various measures of adult attachment. The convergence is greatest when similar techniques are used within the same domain—for example, when two self-report measures of peer attachment are used. The convergence is also substantial when the same domain is examined with two conceptually parallel methods—for example, when attachment to peers is measured with Bartholomew's interview and with self-report measures. The least convergence occurs in exactly the situation that other researchers have been inclined to study, where an interview measure in the family domain (e.g., the AAI) is compared with a self-report measure in the peer or romantic domain (e.g., the Hazan–Shaver questionnaire). Even in the latter case, however, there is evidence of modest convergence when conceptually parallel attachment patterns are assessed in the two domains.

Researchers who have compared AAI classifications with Hazan–Shaver classifications have generally ignored Bartholomew's discovery that the "avoidant" categories embodied in these two measures are fundamentally different. The results discussed in the present chapter indicate that Bartholomew's fearful category, as assessed by interview, has no parallel in the AAI classification system, although the corresponding dismissing categories converge well. The dismissing category, in turn, has no clear parallel in the Hazan–Shaver classification system, although that system's avoidant category converges fairly well with Bartholomew's fearful category. Thus, direct comparisons between the AAI and the Hazan–Shaver measure are misleading.

We propose that the different measures of adult attachment—at least those discussed in this chapter—can be systematically arrayed along a rough continuum, ranging, let us say, from the left to the right (see Figure 2.4). On the left end is the AAI, an interview procedure that assesses attachment issues in the family domain and places people into three major and two secondary categories not organized by any particular dimensional scheme. In the next position is Bartholomew's Family Attachment Interview, which also assesses attachment issues in the family domain but rates people on four attachment prototypes defined in terms of two dimensions. In the next position to the right would be Bartholomew's Peer Attachment Interview, which assesses attachment in the peer domain in a way that is conceptually parallel to her family interview ratings. In the next position would be her self-report measure, which conceptually par-



**FIGURE 2.4.** Hypothetical continuum of adult attachment measures. The examples range, on top of the horizontal band, from the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985) through Bartholomew's three measures (Family Attachment Interview, Peer Attachment Interview, and Peer Self-Report, all conceptualized in terms of two dimensions; Bartholomew & Horowitz, 1991) to Hazan and Shaver's (1987, 1990) Romantic Self-Report measure. Underneath the horizontal band are hypothesized locations of other adult attachment measures. The AAI Q-Sort (Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993) uses the AAI interview format but codes the interviews in terms of two dimensions similar to a 45-degree rotation of Bartholomew's two dimensions. The Close Relationship Interview (CRI; Crowell, 1990) was designed to be similar to the AAI in format and coding emphases, but it focuses on romantic/marital relationships. There are several multi-item romantic attachment scales based on phrases and concepts mentioned in Hazan and Shaver's and Bartholomew's measures (e.g., Collins & Read, 1990; Feeney, Noller, & Hanrahan, 1994; Simpson, 1990; Simpson, Rholes, & Nelligan, 1992); all of these reduce to two dimensions similar to those postulated by Bartholomew (1990; see Brennan, Clark, & Shaver, Chapter 3, this volume).

allels her interviews. And in the rightmost position would be Hazan and Shaver's measure, which places people into three peer/romantic categories that can be located in Bartholomew's two-dimensional conceptual space.

Other adult attachment measures can be placed along the same continuum. For example, Kobak, Cole, Ferenz-Gillies, Fleming, and Gamble (1993) have devised a two-dimensional Q-sort scoring system for the AAI. Coders characterize a particular interview using a large number of statements based on the AAI scoring system, and then the Q-sort results (averaged across coders) are summarized in terms of a secure-insecure dimension and a deactivating-hyperactivating dimension. These dimensions are very similar conceptually to the diagonals of Figure 2.1 (see also Shaver & Hazan, 1993), with the secure-insecure dimension being similar to the secure-fearful diagonal and the deactivating-hyperactivating dimension being similar to the dismissing-preoccupied diagonal. Because the Kobak et al. measure is based on the AAI but is scored in terms of dimensions similar to Bartholomew's, we would expect it to fall between those two measures on our proposed continuum.

A second pair of examples are the multi-item questionnaire measures devised by Collins and Read (1990) and Simpson et al. (1992). These were created by breaking Hazan and Shaver's three prototypes into 13-18 separate phrases that could be scored as Likert items. When factor analyzed, the items formed two major dimensions that correlated quite highly with Bartholomew's two dimensions (Griffin & Bartholomew, 1994). These measures, we suspect, fall along the continuum between Bartholomew's self-report measure, which is conceptually based on two dimensions, and the Hazan-Shaver measure from which most of the items were drawn. Future self-report dimensional measures may better capture Bartholomew's dismissing style, in which case they may fall somewhere on the continuum between her peer interview and her simple self-report measure. (Both of us are currently testing such dimensional measures, so we have anticipated their location with an additional upward arrow in Figure 2.4.) A third example is the Close Relationship Interview (CRI; Crowell, 1990), which was designed for studies of married couples and is closely related to the AAI in theoretical conception, coding procedures, and ultimate classifications. Because it was based so closely on the AAI and is scored categorically rather than dimensionally, romantic/marital relationships, it is also related to self-report attachment scales (e.g., Treboux, 1997). Thus, we have placed it near the center of our hypothetical continuum and marked it with a third upward arrow in Figure 2.4.

In general, we predict that adult attachment measures that lie near each other on the continuum will relate to each other more strongly than those that lie further apart. The AAI and the Hazan-Shaver measures should be most weakly related because they lie at opposite ends of the continuum. At the very least, a researcher wanting to detect the underly-



ing connection between the constructs assessed by these measures would need a high degree of statistical power.

### **THEORETICAL AND METHODOLOGICAL IMPLICATIONS**

The results suggest both (1) that there may be a single representational system or set of core relational tendencies underlying responses to the various attachment measures (Griffin & Bartholomew, 1994), and (2) that an individual's domain-specific attachment patterns can be substantially different (Collins & Read, 1994). This interpretation of the results is compatible with the idea, central to attachment theory (e.g., Bowlby, 1988), that adult attachment orientations have their roots in childhood experiences with important attachment figures. Bowlby wrote about "developmental pathways" along which children and adults travel, being moved toward and away from attachment security by events such as the death of important attachment figures, supportive treatment by a therapist, and the quality of a marital relationship. As a person moves along these increasingly differentiated pathways, it is quite possible for internal working models of relationships with parents to diverge from working models of romantic relationships; the person may feel and act one way in one kind of relationship and a different way in another.

If a researcher wished to tap the deepest, most general representation of attachment, it would probably be wise to combine measures to form latent attachment variables (e.g., Griffin & Bartholomew, 1994). Otherwise, the choice of measures should be dependent upon the researcher's conceptualization of attachment. For example, if a researcher wanted to measure individual differences in the quality of romantic attachments, it would be wise to use either a highly reliable (probably multi-item measure) of that specific construct or a latent-variable combination of conceptually compatible but methodologically different measures (e.g., a romantic attachment interview and a reliable self-report romantic attachment questionnaire). In general, except when exploring, or searching for, the most distant possible connections within the attachment domain, attachment measures should be chosen according to the domain of interest. It would not be optimally promising to try to predict, say, the attachment orientation of a parent's infant or the quality of parent-child interaction from the parent's attachment classification on a measure of romantic attachment (nevertheless, see Rholes, Simpson, & Blakely, 1995), nor would it be optimally powerful to predict outcomes of a romantic relationship from a family attachment interview.

The findings presented in this chapter do not address the differential predictive or external validity of various measures of attachment. In order to compare predictive validity, it would be necessary to include multiple

methods (such as an interview focusing on childhood relationships and a self-report measure of romantic attachment) and multiple relevant outcomes (such as observations of parenting behaviors and marital communication) in one study. We expect that such studies would indicate stronger relationships between attachment and outcome variables within domain than across domain, and no relationship across domain when the overlapping variance of the attachment measures is controlled for. In other words, we would expect attachment in the family domain to predict outcomes in the marital domain only to the extent that the former had developmentally contributed to the formation of romantic attachment patterns. There is also a continuing need for studies that actually track the divergence of domain-specific developmental pathways over time.

In conclusion, measures of adult attachment differ in terms of *domain* (family, peer, or romantic relationships), *method* (interview, Q-sort, or self-report), *dimensionality* (categories, prototype ratings, or dimensions), and categorization systems. Despite such differences, the measures converge to varying degrees, especially when reliability and statistical power are sufficiently high. Each of the currently used measures is associated with a sizable body of empirical findings inspired by and compatible with Bowlby and Ainsworth's attachment theory. The different measures lie along a continuum of domains, methods, and degree of dimensionalization. When we step back from the details of specific measures and measure-specific findings, the results produced by attachment researchers are all compatible with the possibility that various forms of adult attachment arise from a continuous but branching tree of attachment experiences, beginning in infancy and developing throughout the life course.

### ACKNOWLEDGMENTS

Preparation of this chapter was supported by a Social Science and Humanities Research Council of Canada research grant to Kim Bartholomew and a MacArthur Foundation Grant to Mardi Horowitz. We are grateful to Elaine Scharfe for her help in the collection and coding of the data.

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