

## Chapter 5

# How Are Individual Differences in Attachment Measured?

In this chapter we review how social and personality psychologists measure individual differences in adult attachment patterns. We begin with an overview of the history of measurement in this area of research. As we will show, the ways in which theorists conceptualize attachment styles have evolved across time and, not surprisingly, the ways in which researchers have gone about assessing individual differences have evolved as well. Further, we discuss a variety of issues that are relevant to understanding how contemporary assessment systems are used for representing individual differences. Along the way we will address a few challenging theoretical issues (eg, Are the major dimensions underlying attachment orthogonal? Are they sufficient for capturing individual differences in attachment organization?) and provide some practical recommendations on how to best represent individuals within modern two-dimensional systems. Finally, we address one of the most salient questions for researchers new to the area: What is the best way to assess adult attachment styles? We review some of the most commonly used and well-validated self-report measures for assessing adult attachment. But, as we explain, the kinds of questions that researchers ask will dictate the kinds of measures they should use. There is not a “one size fits all” approach to measuring adult attachment. We hope this chapter will serve as a useful guide on how to measure attachment across diverse research contexts, while explaining how those measurements can be mapped to a common theoretical framework.

### HOW HAS THE MEASUREMENT OF ADULT ATTACHMENT EVOLVED OVER THE DECADES?

When Hazan and Shaver (1987) began their seminal work on adult attachment, they adopted Ainsworth’s three-category typology of attachment patterns in infancy (Ainsworth, Blehar, Waters, & Wall, 1978) as a framework for organizing individual differences in the ways adults think, feel, and behave in romantic relationships (see chapter: What Is Attachment Theory?). In their initial studies, Hazan and Shaver (1987) developed brief multisentence descriptions of the three proposed attachment types, avoidant, secure, and anxious-resistant (Table 1.1). Respondents were asked to think back across their history of

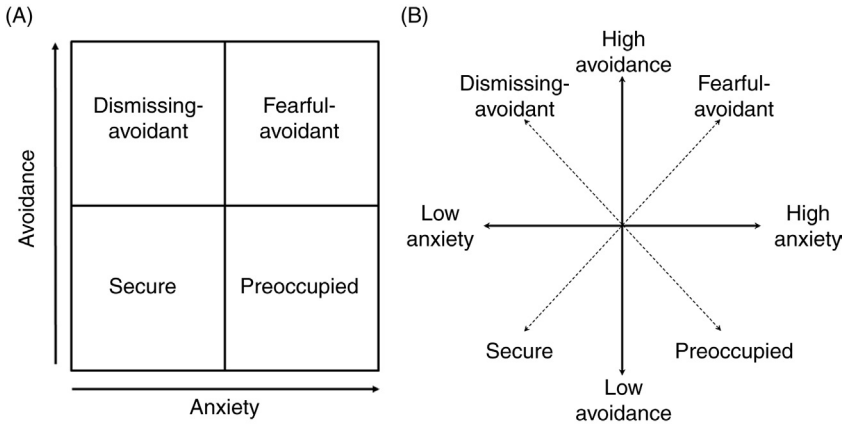
romantic relationships and indicate which of the three descriptions best captured the way they *generally* think, behave, and feel in romantic relationships. Because participants were asked to make one choice among these three options, this measure is often referred to as a *forced choice measure*.

These descriptions were designed to capture adult analogues to the kinds of psychological dynamics described by Ainsworth and her colleagues based on their research on infants in the strange situation procedure (see chapter 1: What Is Attachment Theory?). For example, the first paragraph captures the kinds of thoughts and feelings that might characterize the adult form of avoidant attachment. This description targets feelings of insecurity, the use of strategies to create emotional distance from close others, and a reluctance to open up to and depend on others. The second paragraph describes secure attachment. Embedded in this description is the secure person's belief that other people are likely to be supportive and responsive. The third paragraph captures the adult analogue of the anxious-resistant infant. It describes a person who is insecure regarding whether or not close others will be available, accessible, and responsive. Moreover, it captures the inherent conflict of anxious-ambivalent children, the desire to be loved and comforted, coupled with the inability to feel adequately loved as well as the frustration and anger that might stem from this conflict.

In their initial studies, Hazan and Shaver (1987) found that people's self-reported romantic attachment pattern was related to a number of theoretically relevant variables, including beliefs about love and relationships (working models of romantic relationships) and recollections of early experiences with parents. For example, people endorsing the secure description were more likely to report warm relationships with their parents and higher levels of happiness and trust in their romantic relationships. People endorsing the avoidant description perceived their mothers as cool and rejecting and, in their romantic relationships, reported a fear of intimacy, difficulty in accepting their partners, and a general belief that romantic love does not last. Anxious-ambivalent adults also reported conflicted relationships with parents and were more likely to report feelings of obsession and jealousy in romantic relationships.

### **Bartholomew's Four Category Model**

In the early 1990s Bartholomew published several important papers that challenged researchers to reconsider the three-category model of individual differences in adult attachment (Bartholomew, 1990; see also Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994a). Drawing upon some of Bowlby's writings, Bartholomew argued that people hold separate representational models of themselves (model of self) and their social world (model of others), models that have distinct consequences for the way attachment behavior is organized. As discussed in chapter: What Are Attachment Working Models?, the *model of others* reflects the expectations, beliefs, and strategies that people have concerning close others in general, and attachment figures in particular.



**FIGURE 5.1** Theoretical models of individual differences in adult attachment. (A) Illustrates the four-category model proposed by Bartholomew and Horowitz (1991). (B) Illustrates the two-dimensional extension of that model in which the four attachment patterns are viewed as regions in a two-dimensional space. Various authors refer to the horizontal dimension as attachment-related anxiety or model of self and the vertical dimension as attachment-related avoidance or model of others.

Individuals with a positive model of others view attachment figures as trustworthy, reliable, and dependable. Individuals with a negative model of others lack confidence in people’s trustworthiness and dependability. The *model of self* reflects the valence of people’s views of themselves. People with a positive self-model see themselves as competent, autonomous, and worthy of love. People with a negative self-model lack confidence, harbor self-doubts, and are vulnerable to psychological distress.

Bartholomew argued that when these two kinds of representational models are crossed with valence (ie, the positivity or negativity of model of self and model of others), it is possible to derive four, rather than three, major attachment patterns (Fig. 5.1A). She borrowed names for the four patterns from a mixture of Ainsworth’s, Hazan and Shaver’s, and Main, Kaplan, and Cassidy’s (1985) typologies, calling the positive-positive group “secure,” the negative-positive group “preoccupied,” the positive-negative group “dismissing,” and the negative-negative group “fearful.” Following Hazan and Shaver’s lead, Bartholomew (Bartholomew & Horowitz, 1991) developed the Relationship Questionnaire (RQ), a short instrument containing descriptions of each of the four theoretical types. As with Hazan and Shaver’s forced choice measure, respondents are asked to read each description and select the one that best captures the way they approach close relationships (Table 5.1).

The Bartholomew system is similar to Hazan and Shaver’s in several respects. For example, both systems contain a secure group as well as an anxious group (preoccupied). The key difference is that the avoidant group from Hazan and Shaver’s system is split into two distinct groups in the Bartholomew system.

**TABLE 5.1** Bartholomew's Four Attachment Types

\_\_\_ It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me. (*Secure*)

\_\_\_ I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others. (*Fearful*, or *Fearful-avoidant*)

\_\_\_ I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them. (*Preoccupied*)

\_\_\_ I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me. (*Dismissing*, or *Dismissing-avoidant*)

The first kind of avoidance, *fearful-avoidance*, captures the vulnerable, insecure form of avoidance reflected in the Hazan and Shaver avoidant category. Fearful individuals, theoretically, are avoidant of intimacy because they fear being hurt by someone they love. The second kind of avoidance, *dismissing-avoidance*, is not represented in the Hazan and Shaver system. These kinds of individuals avoid intimacy, not because they consciously fear being hurt, but because they consciously value independence and autonomy.

### The Evolution of Measurement Systems

By the mid-1990s, there seemed to be consensus in the social-personality literature that the four-category model was better suited for capturing individual differences than the original three-category model. But there was still some lingering concern over whether it was ideal to classify people with respect to attachment style or whether it was more appropriate to scale people with respect to one or more dimensions. The classification system was potentially valuable because it provided a parallel to the infant attachment literature that had also focused on assigning infants to one or more attachment categories. In addition, classification systems were also being used by developmental and clinical psychologists who were studying attachment in adulthood using the Adult Attachment Interview (AAI, see further). Moreover, from a methodological point of view, the analysis of types was made easier by the statistical training of many social psychologists who were accustomed to analyzing categorical data.

Nonetheless, a number of limitations began to emerge with the categorical system. For one, the classifications were not highly stable. Baldwin and Fehr (1995) observed that the test-retest stability of the three-type categorical measure was only 70% (equivalent to a Pearson  $r$  of approximately 0.40). Some

researchers began to wonder if some of that instability was due to attempting to assign people to categories who might, in fact, be somewhere near the boundaries in a dimensional space (see chapter: *How Stable Are Attachment Styles in Adulthood?* for an extended discussion of this issue). Second, both categorical systems treated the attachment categories as if they were mutually exclusive. That is, they assumed that a person could only fall into one category. But data from continuous measurements suggested that the categories were not mutually exclusive (eg, Collins & Read, 1990). Finally, the categorical system disregarded within-category variance that, in practice, seemed useful for predicting outcomes.

As a result of these tensions, some researchers began to ask respondents to rate items continuously and to use those ratings as a way to scale people in a multidimensional space (eg, Collins & Read, 1990). Nonetheless, two problems quickly emerged. First, there was no principled reason for moving from categories to continua. Moreover, although some researchers used the ratings to scale people on various dimensions, other researchers used the ratings as a means to obtain more accurate classifications. Second, the number of self-report scales that were being developed was growing without bounds. There were an increasing number of scales that researchers could use, some of which emphasized two dimensions and some of which emphasized seven. To make matters more complicated, each of these measurement systems employed slightly different labels, making the conceptual relations among them ambiguous.

## **Are Attachment Styles Categorical or Continuous?**

Although the gradual move from classifications to ratings was an important step towards improving the measurement of adult attachment, these shifts begged a larger theoretical question: Do people vary categorically or continuously with respect to attachment? This question, sometimes referred to as the “types versus dimensions” question, is a critical one for the study of adult attachment. If people actually vary continuously in attachment organization, but researchers assign people to categories, then potentially important information about the way people differ from one another is lost. This loss can have deleterious effects on research, leading to less reliability and less statistical power and precision.

How can one determine whether variation in an unobservable construct, such as attachment organization, is continuous or categorical? Historically, researchers have relied on clustering techniques to identify groupings in data (eg, Collins & Read, 1990; Feeney, Noller, & Hanrahan, 1994). One of the limitations of clustering techniques, such as cluster analysis or latent profile analysis, however, is that they reveal groupings in data regardless of whether natural groupings actually exist. Fortunately, Meehl and his colleagues (eg, Meehl & Yonce, 1996; Waller & Meehl, 1998) developed a suite of techniques that allow one to uncover the latent structure of a domain and rigorously test taxonic (ie, typological) assumptions. Fraley and Waller (1998) adopted two

of Meehl's techniques, MAXCOV and MAMBAC, to address the types versus dimensions question in the study of adult attachment. They administered Griffin and Bartholomew's (1994b) 30-item RSQ to a sample of over 600 undergraduates. Their taxometric analyses of the data provided no evidence for a categorical model of attachment. Instead, their results were more consistent with what would be expected if individual differences in attachment were continuously distributed. More recent work by Fraley and his colleagues (eg, Fraley, Hudson, Heffernan, & Segal, 2015) corroborates the dimensionality of individual differences across a number of relational domains (eg, attachment in general, attachment with parents, attachment with romantic partners).

The taxometric results reported by Fraley and his colleagues suggested that dimensional systems might be more appropriate than categorical ones for conceptualizing and assessing individual differences in attachment. The move from categorical to continuous measurement systems, however, raised a number of questions, such as: What is the best dimensional system for conceptualizing variation in adult attachment? We elaborate on these issues further.

## **What Are the Fundamental Dimensions Underlying Adult Attachment?**

In the 1990s a number of investigators began creating multi-item inventories of adult attachment, inventories that could be used to produce continuous attachment scores. Although each of these instruments was rooted in Bowlby and Ainsworth's attachment theory, the designers of these instruments emphasized different constructs and used different methods of test development. Some researchers simply decomposed the items contained in the original Hazan and Shaver paragraphs. For example, Collins's (Collins & Read, 1990) Adult Attachment Scale (AAS) and Simpson's (Simpson, 1990; Simpson, Rholes, & Phillips, 1996) Adult Attachment Questionnaire (AAQ), which are still in widespread use today, were developed by taking the individual sentence fragments in the original Hazan and Shaver descriptions and creating 18 distinct items, each of which was rated on a continuous scale. Based on psychometric analyses of the items, Collins (Collins & Read, 1990) derived three composites: close, depend, and anxiety, while Simpson (Simpson 1990; Simpson et al., 1996) derived two dimensions: attachment anxiety and attachment avoidance. Feeney et al. (1994) took a different approach to generating continuous measures of attachment. Rather than extracting fragments and phrases from the Hazan and Shaver or Bartholomew prototypes, they developed new items designed to capture some of the common themes in attachment theory, such as trust, dependence, and self-reliance. The measure became known as the Attachment Style Questionnaire (Feeney et al., 1994). A factor analysis of responses to their items uncovered five factors: self-confidence, discomfort with closeness, need for approval, preoccupation with relationships, and the belief that relationships are of secondary importance (see also Karantzas, Feeney, & Wilkinson, 2010). Brennan and Shaver

(1995) followed a similar approach, generating a large pool of items which they then factor analyzed. Brennan and Shaver (1995) reported seven factors: ambivalence, anxious clinging to partners, jealousy and fear of abandonment, frustration with partners, proximity-seeking, self-reliance, and trust.

By the mid to late 1990s, researchers new to the field were likely to be overwhelmed by the vast number of self-report instruments in the literature. To address this problem, Brennan, Clark, and Shaver (1998) gathered all of the self-report measures of adult attachment known at the time and administered the nonredundant items to 1086 undergraduates. Factor analyses of the responses revealed two major factors. Based on the content of the items loading on these factors, Brennan and her colleagues labeled them attachment-related *anxiety* and attachment-related *avoidance*. The anxiety factor was defined by items such as “I worry that my partner won’t want to stay with me” and “I don’t think my partner loves me.” The avoidance factor was defined by items such as “I am uncomfortable depending on others” and, at the opposite end, “I turn to my partner for assurance.”

The Brennan report was a breakthrough for at least three reasons. First, the analyses that Brennan and her colleagues reported revealed that diverse measures of adult attachment were essentially tapping two fundamental domains, dimensions that are typically referred to as attachment anxiety and attachment avoidance in contemporary research (see chapter: What Are Attachment Working Models?). Second, Brennan and her colleagues showed how measures originally developed with different objectives could be mapped onto a common dimensional framework. This has allowed subsequent scholars to interpret the findings of studies based on different measures within the same two-dimensional system. Finally, Brennan and her colleagues used their data to produce a new questionnaire, the Experiences in Close Relationships (ECR) inventory, a 36-item questionnaire based on the items that best tapped the dimensions of anxiety and avoidance. In their original report, Brennan et al. (1998) showed that the 18 items for each subscale hung together well (alphas > 0.90) and the scales predicted a number of theoretically relevant outcomes, such as the enjoyment of touch, sexual preferences, and emotions experienced in an intimate context. The ECR, along with its derivatives (eg, the ECR-R; Fraley, Waller, & Brennan, 2000), are currently the most commonly used self-report measures of adult attachment and are commonly recommended for use as the primary self-report instruments for assessing adult attachment patterns according to the two-dimensional conceptualization of attachment.

## What Do Attachment Anxiety and Avoidance Represent Theoretically?

Although Brennan and her colleagues’ analyses indicated that two major factors underlie individual differences in adult romantic attachment, they did not offer an interpretation of the factors that was rooted in a specific model of how

the attachment system operates. In fact, there have been several distinct ways of conceptualizing these two factors over the years. Some researchers have favored a “model of self and model of others” interpretation, as put forward by Griffin and Bartholomew (1994a) (eg, Carnelley, Pietromonaco, & Jaffe, 1994; Klohnen & John, 1998). Within this framework, individual differences are conceptualized as differences in the valence (ie, the positivity vs. negativity) of the models people hold of themselves and others. Accordingly, many researchers in this tradition have attempted to examine the content of the beliefs that people hold (eg, Baldwin, Fehr, Keedian, Seidel, & Thomson, 1993; Collins, 1996; Klohnen & John, 1998).

Fraley and Shaver (2000) outlined several limitations of conceptualizing the dimensions within the model of self and others framework. First, the manifest content of the items typically used to assess variation in attachment, both in the ECR and in Bartholomew’s original prototype descriptions, is more consistent with a conceptualization that focuses on sensitivity to rejection and strategies for regulating affect. Second, the models of self and others interpretation requires that preoccupied individuals hold positive views of others, views of others as available, responsive, attentive, etc. This characterization is at odds with the empirical literature, which suggests that highly preoccupied individuals are often angry, jealous, and prone to feel that partners are insensitive to their needs (eg, Collins, 1996; Simpson et al., 1996).

As an alternative to the models of self and others interpretation, Fraley and Shaver (2000) put forward an *affective-motivational framework* (see also Fraley & Shaver, 1998; Fraley & Spieker, 2003). From this perspective, the two dimensions can be conceptualized as reflecting variability in the functioning of two fundamental subsystems or components of the attachment behavioral system. One component of the system involves monitoring and appraising events for their relevance to attachment-related goals, such as the attachment figure’s physical or psychological proximity, availability, and responsiveness. When the system detects a discrepancy between the current set-goal for sensitivity and proximity and the perceived behavior of the attachment figure, the individual feels anxious and becomes increasingly vigilant to attachment-related cues. Variation in people’s threshold for detecting threats to security or cues of rejection corresponds to individual differences in what Brennan et al. (1998) call *attachment-related anxiety*. The second component is responsible for regulation of attachment behavior with respect to attachment-related goals. For example, to regulate attachment-related anxiety, people can orient their behavior towards the attachment figure (ie, seeking contact or support) or withdraw and attempt to handle the threat alone. Variation in this behavioral-motivational component is responsible for individual differences in what Brennan et al. (1998) called *attachment-related avoidance* and, in many respects, reflects whether the person is willing or unwilling to rely on another individual as a safe haven and secure base.

One of the advantages of this framework is that it allows Bartholomew’s four theoretical “types” to be conceptualized as linear combinations of the two



dimensions of anxiety and avoidance. For example, security and dismissing-avoidance are characteristic of people who have high thresholds for detecting cues of rejection. Preoccupation and fearful-avoidance are characteristic of individuals with low thresholds for detecting such cues, making concerns about love-worthiness and rejection particularly salient. Security and preoccupation characterize people who wish to be close and intimate with their partners. Dismissing-avoidance and fearful-avoidance characterize people who try to deny the importance of close relationships or force themselves not to become vulnerable to them (Fig. 5.1B).

Another advantage of this framework is that it has the potential to be clinically useful. Although it is typically easier to classify a client into one of several distinct categories (eg, secure, dismissing, preoccupied, fearful) than to scale him or her with respect to two or more dimensions (especially given that clinicians are often trained to make categorical diagnoses), it can be much easier to study change in personality organization when the fine-grained distinctions that are available in a dimensional system are made. It is possible, for example, for a client to exhibit gradual gains in security across therapy that would be evident in the use of dimensional measures. However, if clinicians were using classification systems across sessions, those changes might go undetected.

Finally, the fact that the two-dimensional system distinguishes between attachment-related insecurities and the motivational strategies people use to regulate their thoughts and feelings (ie, as reflected in attachment avoidance), enables researchers to make a distinction between different attachment dynamics. It is possible that an individual is relatively secure in the knowledge that his or her partner is available and responsive if needed (ie, he is low in attachment-related anxiety), but that he characteristically relies upon distancing strategies in the relationship (ie, he is high on the avoidance dimension).

We should be clear that the motivational perspective on the dimensions does not claim that people do not hold models of others and the self that vary in valence. Instead, the claim is that commonly used self-report measures appear to be better suited for tapping appraisals and strategies that reflect different ways in which the attachment system may function across individuals. In this sense, they represent a broad-band perspective on individual differences in attachment style. If researchers are interested in assessing models of self and others per se, it might be advisable to use assessment tools that assess self-esteem and confidence (model of self) or general evaluations of the trustworthiness and responsiveness of others. Moreover, if one is interested in assessing the fine-grained aspects of the way in which attachment functions, a tool that highlights specific facets of attachment might be ideal (see further).

## Summary

Self-report measures of adult attachment have evolved considerably over the past 30 years. Since landmark article by Hazan and Shaver (1987), the field has

moved from classifying people with respect to three categories to scaling people with respect to two dimensions. Although the dimensional system captures the same attachment patterns as the original categorical systems, it allows these patterns to be represented with a greater degree of specificity and fidelity than is possible with classificatory systems. Factor analyses of self-report items indicate that two key dimensions underlie attachment patterns. The first, attachment-related anxiety, captures the extent to which people are insecure about their partner's availability, love, and responsiveness. The second, attachment-related avoidance, captures the strategies that people use for regulating attachment-related behavior, thought, and affect: Some people are comfortable opening up to others in intimate contexts, depending on others, and allowing others to depend on them; other people, in contrast, are more reserved and cautious, guarding themselves and their emotions. We suggest that these two dimensions reflect variation in the basic functioning of the attachment system and that framing them as such can help guide research and theory.

## WHERE IS SECURITY IN THE TWO-DIMENSIONAL FRAMEWORK?

A common misconception is that widely used measures, such as the ECR (Brennan et al., 1998), do not capture security *per se*. One reason for this misconception is that the dimensions are labeled in the "insecure" direction: anxiety and avoidance. Thus, at a glance, it might seem as if security is missing. Another reason for the misconception is that the older categorical models made the various attachment patterns seem as if they were different "things." But as research using continuous measures has demonstrated, the various theoretical patterns are not independent of one another. When people rate the extent to which Bartholomew's four prototypes describe them, ratings of security tend to be negatively correlated with ratings of fearful-avoidance (eg, Fraley & Davis, 1997).

With that as context, it should be clear that security, as it is defined in the Bartholomew and Horowitz (1991) model (see also Griffin & Bartholomew, 1994a), is a combination of the two dimensions that Brennan and her colleagues referred to as anxiety and avoidance. That is, a prototypically secure individual is someone who does not worry about the availability and responsiveness of his or her attachment figures (low anxiety) and is comfortable using others as a secure base (low avoidance). Put in algebraic terms, the security dimension is a 45-degree rotation of the anxiety and avoidance dimensions (Fig. 9.1B). Security anchors one end of this axis, and fearful-avoidance anchors the opposite end.

Sometimes researchers are simply interested in variation in security rather than making a nuanced distinction among multiple dimensions. When this is the case, combining the dimensions of anxiety and avoidance provides a measure of security versus insecurity. Or, more precisely, it provides a measure of security versus fearful avoidance. It is not necessary in these cases to abandon the two-dimensional framework in search of a measure that more explicitly assesses attachment security versus insecurity.

Although the various prototypes are not independent of one another in the two-dimensional system, in this book we often discuss empirical research for security separately from research on anxiety and avoidance. Sometimes we do this out of necessity: The original research findings were based on measures that treated these constructs as if they are unrelated to one another. But sometimes we do it for the convenience of the reader. That is, sometimes it is easier to appreciate the implications of the findings when they can be framed with respect to the psychology of security as well as with respect to the psychology of insecurity. Conceptually, however, it is important to remember that security is the conceptual opposite of fearful-avoidance within the two-dimensional system and, similarly, dismissing-avoidance is the conceptual opposite of preoccupied attachment within that system. As a result, the findings we summarize are not always independent. When we write that highly secure people tend to be more satisfied in their close relationships (eg, chapter: What Are the Effects of Context on Attachment?), that naturally entails that fearful people are not highly satisfied in their relationships, if attachment styles were assessed using dimensional measures.

## HOW SHOULD THE ATTACHMENT DIMENSIONS BE USED IN RESEARCH?

Let us assume that a researcher is interested in a relatively basic question, such as: What is the association between attachment style and depressive symptoms? Moreover, let's assume that we have a continuous measure of depressive symptoms. (In other words, we are not classifying people as clinically depressed based on a threshold.)

The categorical approach to this problem is straightforward: One would compute the mean and variance of depressive symptoms within each attachment group and then compare those means across the groups to see if one or more groups scores higher than the others.

The dimensional approach to this problem is also straightforward, but might be less familiar to researchers who are more accustomed to analyzing mean differences. One can model, using multiple regression, the variation in depressive symptoms as a linear combination of anxiety and avoidance. Doing so provides estimates of how depressive symptoms vary as a function of both avoidance and anxiety.

To illustrate more concretely, let's assume that anxiety and avoidance are measured on scales ranging from 1 to 7. But, to make the example easier to discuss, let us assume that both anxiety and avoidance have been standardized, such that their means are both 0.00 and their standard deviations (*SDs*) are 1.00. We will not assume the symptom measure is standardized. Thus, the intercept in this regression equation will give us an estimate of the mean number of symptoms for people who have average levels of anxiety and avoidance (ie, the intercept represents the expected value of *y* when the predictors equal 0.00).

Let us assume that we found that the estimate for the intercept was 1.50 and the estimates of the unstandardized regression weight for avoidance and anxiety were 0.20 and 0.40, respectively. What would this mean? First, the intercept

would indicate that the average person in the sample reported 1.50 depressive symptoms. Because we have standardized anxiety and avoidance, the typical person in the sample has a value of 0 on both of these dimensions. Thus, the intercept, which is defined as the expected value of  $y$  for someone who has values of 0 for each predictor, can be interpreted as a mean. Second, these results would indicate that people who are more avoidant in their attachment orientation are more likely to exhibit depressive symptoms. Specifically, for each 1-unit increase on the standardized avoidance scale, we expect a corresponding 0.20 increase in depressive symptoms. Third, these results would indicate that people who are more anxious in their attachment orientation are more likely than those who are not to exhibit depressive symptoms. Specifically, for each 1-unit increase in anxiety, we expect an increase by almost half (0.40) of a depressive symptom. A common way of graphically depicting the results from this model is shown in Fig. 5.2A. This figure illustrates that symptom levels increase as attachment anxiety and avoidance increase.

This particular formulation emphasizes the two dimensions in particular. However, it is also possible to interpret these findings with respect to Bartholomew's prototypes. Although we previously argued that attachment styles do not represent natural kinds and that people should not be classified with respect to their attachment styles, it can sometimes be helpful to think about the attachment styles as multivariate patterns or configurations in a two-dimensional space (see Griffin & Bartholomew, 1994b). Importantly, this can be done without actually treating them as categories or assigning people to types.

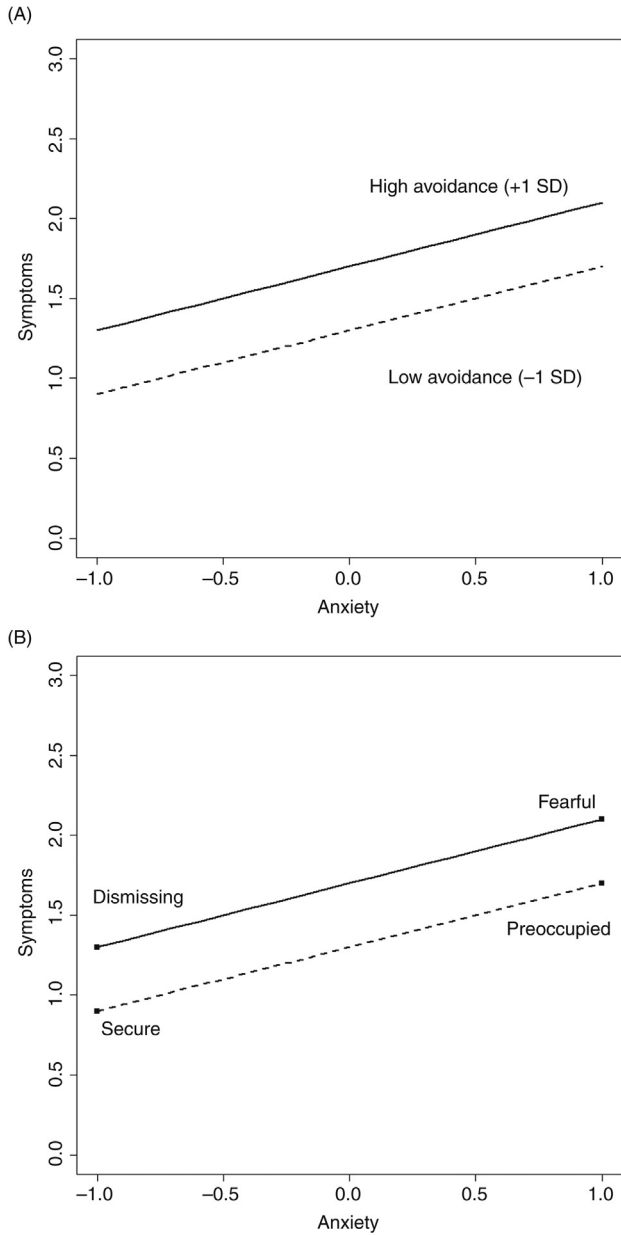
How can these configural patterns be recovered in a multiple regression context? Recall that a person who is relatively secure is low in both anxiety and avoidance. What does "low" mean? One way that researchers often think about this is to define "low" as being 1 *SD* below the mean on a variable of interest. Thus, a prototypical secure person would be 1 *SD* below the mean on avoidance and 1 *SD* below the mean on anxiety (ie,  $-1$  *SD* avoidance,  $-1$  *SD* anxiety). Relatedly a relatively preoccupied person would be high in anxiety and low in avoidance (ie,  $-1$  *SD* avoidance,  $+1$  *SD* anxiety).

To illustrate how these configurations can be examined in our regression example, we can find the expected number of symptoms for a prototypically secure individual by plugging the values of  $-1$  and  $-1$  for avoidance and anxiety respectively into the regression equation.

$$\begin{aligned} \text{Expected symptoms} &= 1.50 + 0.20 \times (\text{avoidance}) + 0.40 \times (\text{anxiety}) \\ &= 1.50 + 0.20 \times (-1) + 0.40 \times (-1) \\ &= 0.90 \end{aligned}$$

Thus, a prototypically secure person (ie, someone who is 1 *SD* below the mean on both attachment dimensions) has an expected value of 0.90 symptoms.

If we wish, we can do this for each of the theoretical prototypes. For example, to find the expected number of symptoms for someone who is preoccupied,



**FIGURE 5.2** Visually summarizing regression results, using the two-dimensional model. (A) The first panel illustrates a common way of graphing regression results when there are two predictors; the first is often shown on the *x*-axis and the second is often shown by plotting separate regression lines at 1 *SD* above and 1 *SD* below the mean. (B) The second panel illustrates the ways in which configural information about the attachment prototypes can be represented in the same fashion, but based on the same multiple regression model rather than a categorical one.

we would plug the values  $-1$  and  $+1$  respectively into avoidance and anxiety. (Keep in mind that the prototypical preoccupied person is low in avoidance and high in anxiety; Fig. 5.2.) Doing so yields:

$$\begin{aligned}\text{Expected symptoms} &= 1.50 + 0.20 \times (\text{avoidance}) + 0.40 \times (\text{anxiety}) \\ &= 1.50 + 0.20 \times (-1) + 0.40 \times (1) \\ &= 1.70\end{aligned}$$

When we perform all the calculations, we see that prototypically secure people have the fewest number of symptoms (0.90) and that fearful people have the most (2.10). Prototypically preoccupied (1.70) and dismissing (1.30) individuals fall somewhere in between these two extremes. This way of framing the findings is illustrated in Fig. 5.2B. Notice that the graph looks the same as the previous one, but we have annotated it to denote where the configurations lie in the regression space. Because both avoidance and anxiety were positively related to symptom levels, this graph shows that the highest reported symptoms exist among those who are prototypically fearfully avoidant (1 *SD* above the mean on both anxiety and avoidance).

Notice that this interpretation, although it may have a different flavor to it than the two-dimensional one, is summarizing the *same* information. Although we prefer the two-dimensional interpretation, we believe it is important to highlight the fact that the dimensional approach is flexible enough to accommodate both dimensional conceptualizations of individual differences in attachment functioning and the four-prototypes approach. It is important to keep in mind, however, that the prototype approach does not involve four “things.” The relevant information is fully contained in the pattern of associations captured by the coefficients for the two dimensions.

## SHOULD INTERACTIONS BETWEEN THE DIMENSIONS BE TESTED? ARE THEY NECESSARY?

One common misconception is that it is necessary to test the interaction between the attachment dimensions to truly capture something like security (eg, Shorey, 2010). But, according to the two-dimensional model, each theoretical prototype is an additive combination of anxiety and avoidance (Fig. 9.1B). For example, a prototypically secure person does not worry that his or her attachment figures will be unavailable or inaccessible (ie, he or she is low in anxiety). And such a person is comfortable opening up to others, depending on them, and using others as a secure base (ie, he or she is low in avoidance). The additive combination of the two dimensions fully defines the construct.<sup>1</sup>

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1. To be clear, we are not suggesting that the two dimensions capture the full range of the construct. One could further refine the assessment of security by assessing additional factors. The point is that there is no further permutation of the two dimensions (eg, their product, their cubic) that contains additional information about the construct itself.

That said, sometimes there are reasons to believe that the *association* between an outcome of interest and the dimensions might be nonadditive. To illustrate, we consider an example from the study of attachment and bereavement where researchers have debated whether the dismissing-avoidant (ie, high avoidance, low anxiety) pattern is associated with poor outcomes (eg, Fraley & Bonanno, 2004). Some writers have hypothesized that the kinds of deactivating strategies that dismissing individuals use may operate to conceal latent vulnerabilities (see chapter: What Are Attachment Working Models?). If this is correct, then we might find that, when confronted with a major life stressor, such as the loss of a loved one, dismissing individuals will experience symptoms of depression that are more comparable to those of insecure people than secure people.

Notice, however, that there is no way to test this specific prediction in a standard additive model. If we were to estimate the regression coefficients in an additive model for avoidance and anxiety and find that both dimensions predict depressive symptoms, such a finding would indicate that dismissing individuals have higher symptoms than prototypically secure people, but not as high as prototypically preoccupied people.

To be more precise, there is no way to draw an axis through the two-dimensional space that equates symptom levels for prototypically dismissing people with other insecure styles. To test this prediction, we would have to add an interaction term to the equation to model both additive and nonadditive combinations of the two dimensions:  $\text{Outcome} = B_0 + B_1 \times \text{Anxiety} + B_2 \times \text{Avoidance} + B_3 \times \text{Anxiety} \times \text{Avoidance}$ . The hypothesis implies that  $B_1$  will be positive,  $B_2$  will be positive, and  $B_3$  will be negative.

To illustrate how this works, it is helpful to substitute different values of anxiety and avoidance into the equation to see how the predicted number of depressive symptoms changes. For simplicity, let's assume that the values of  $B_1$ ,  $B_2$ , and  $B_3$  are +1, +1, and -1, respectively. Let's also assume the intercept,  $B_0$ , is 5. This implies that, for a person who is average with respect to attachment-related anxiety and avoidance, his or her expected symptom levels are 5. Because a prototypical dismissing individual is high on avoidance and low on anxiety, we can substitute a value of +1 for avoidance and -1 for anxiety into the equation. Doing so yields:

$$\begin{aligned} \text{Outcome} &= B_0 + B_1 \times \text{Anxiety} + B_2 \times \text{Avoidance} + B_3 \times \text{Anxiety} \\ &\quad \times \text{Avoidance} \\ &= 5 + B_1 \times (-1) + B_2 \times (+1) + B_3 \times (-1) \times (+1) \\ &= 6 \end{aligned}$$

Thus, the predicted number of depressive symptoms is 6, on average, for someone who is relatively dismissing. We can plug in the values for the other prototypical attachment patterns too. For example, a relatively secure person is low on both dimensions. Substituting a -1 into avoidance and a -1 into anxiety yields the following:

$$\begin{aligned}
 \text{Outcome} &= B_0 + B_1 \times \text{Anxiety} + B_2 \times \text{Avoidance} + B_3 \times \text{Anxiety} \\
 &\quad \times \text{Avoidance} \\
 &= 5 + B_1 \times (-1) + B_2 \times (-1) + B_3 \times (-1) \times (-1) \\
 &= 2
 \end{aligned}$$

If we substitute the values for the other prototypes, we find that the inclusion of the interaction term leads secure people to have the lowest number of symptoms (2) and all of the other insecure prototypes (preoccupied, fearful, and dismissing) to have predicted values of 6.

Thus, including an interaction term in this example enables one to model the possibility that the dimensions combine in nonadditive ways to influence the outcomes of interest. In this particular model, relatively secure people exhibit few postloss symptoms of depression, whereas people who are more insecure exhibit a greater number of symptoms. Importantly, this holds true for dismissing people too, whose symptom levels are comparable to those of prototypically preoccupied and fearful people rather than secure people.

We close this section with a cautionary note. Namely, sometimes researchers conjecture that one particular prototype should score higher than the others. For example, researchers might propose that being relatively anxious about the availability and accessibility of one's partner (anxiety) *combined with* the tendency to avoid opening up to and depending on others (avoidance) may lead to a relatively high rate of relationship conflict. This reasoning suggests that fearfully avoidant people will experience conflict at much greater rates than other people.

On the surface, this reasoning might seem to require an interaction term to account for the particular combination of anxiety and avoidance effects postulated and to explain why that particular combination leads fearful people to report the highest rates of conflict. But it doesn't. The notion that the two dimensions "combine" to produce outcomes is implicit in the simple additive model. That is, the assumption that an outcome is a function of both anxiety and avoidance is a natural part of a basic additive model. It is rarely the case that researchers need to further postulate that the way in which the dimensions combine is nonadditive in order to capture the notion that both dimensions are relevant to understanding certain outcomes.

A simple additive model can also lead to the prediction that the combination of the two dimensions produces the greatest (or least) degree of conflict. As we saw in our example regarding depressive symptoms previously, there was a clear rank-ordering among the theoretical prototypes (eg, Fig. 5.2B). One prototype was at highest risk for depression because the dimensions were combining—in additive ways—to produce that outcome.

One reason we believe researchers get confused on this point is because they sometimes theorize at the level of the prototypes rather than the two dimensions themselves. Although we appreciate the appeal of doing so, one potential cost of thinking about the prototypes is that doing so does not always make clear how



the component parts of those prototypes combine to lead to specific outcomes. Thinking about the dimensions first helps to make these issues clearer.

To summarize, there were three main points we made in this section. First, the prototypical attachment styles are additive combinations of the two dimensions. Therefore, it is defensible to model outcomes of interest as an additive combination of anxiety and avoidance; there is no need in many circumstances to include an interaction term. Second, there are situations, however, where specific theoretical predictions may entail an interaction term. Adding it in those situations is not only useful, but necessary. Third, researchers sometimes confuse the idea that the dimensions combine to produce outcomes with the idea that they combine in nonadditive ways. The dimensions can combine in additive ways to produce a range of conceptually rich outcomes. Nonadditivity should only be conjectured if there is absolutely no way to accommodate the theoretical expectations on the basis of an additive combination of the dimensions.

## **ARE THERE MORE THAN TWO DIMENSIONS?**

It is almost certainly the case that there are more than two dimensions that are needed to fully capture the kinds of individual differences that exist in adult attachment. The challenge is that, the more fine-grained the assessment system is, the more difficult it becomes to use it efficiently. In our opinion, the two-dimensional model represents a useful middle ground. On the one hand, it is sufficiently complex that it enables distinctions between different forms of avoidance to be made (eg, fearful and dismissing avoidance). Moreover, it acknowledges that security is not a unidimensional phenomenon. On the other hand, the two-dimensional system is not too complex. As a result, it is a relatively easy system for generating and testing hypotheses, graphing results, and examining psychological processes in multidimensional ways.

Some researchers have recommended assessing more than two dimensions. For example, Brennan and Shaver (1995) highlighted seven dimensions that might be useful: ambivalence, anxious clinging to partners, jealous and fear of abandonment, frustration with partners, proximity-seeking, self-reliance, and trust. People who are ambivalent in their relationships are also more likely to report jealousy, fear of abandonment, and frustration with their partners, for example. Karantzas et al. (2010) extended the work of Feeney and colleagues (Alexander, Feeney, Hohaus, & Noller, 2001; Feeney et al., 1994; Fossati et al., 2003a) to also identify seven dimensions of adult attachment. In contrast to Brennan and Shaver (1995), Karantzas et al. (2010) identified the five factors that underpinned Feeney et al.'s multidimensional measure of attachment (confidence, relationships as secondary, discomfort with closeness, preoccupation with relationships, and need for approval), but also uncovered the two primary dimensions: attachment anxiety and attachment avoidance. Karantzas and colleagues suggest that while the broad dimensions provide a more than adequate assessment of attachment, the facet dimensions are likely to be

important in counselling and clinical contexts where the efficacy of therapy is in part a function of the therapist's capacity to identify the specific cause of maladaptive interpersonal functioning. For example, while an individual may present with issues of attachment anxiety in session, a practitioner's ability to establish whether the anxiety is rooted in the preoccupation with relationships or in a relentless need for approval will likely result in working on different issues in therapy.

Our general recommendation is that, unless researchers are targeting highly specific aspects of attachment functioning, they focus on the two dimensions commonly studied in attachment research. If they are attempting to zoom in on a specific aspect regarding the way in which the attachment system functions, there may be value in assessing something else in addition to the two dimensions (eg, Karantzas et al., 2010).

## ARE THE DIMENSIONS ORTHOGONAL? OR ARE THEY CORRELATED WITH ONE ANOTHER?

Many writers conceptualize and describe the two attachment dimensions as orthogonal (ie, statistically independent). Unfortunately, it is not always clear whether writers do this for convenience (eg, as we have done via the graphs in Fig. 5.2B) or because they are making a theoretical claim about the statistical relationship between the two dimensions.

One reason for the confusion, we suspect, is that, when Bowlby wrote about models of self and others (see chapter: What Are Attachment Working Models?), the language he used might have implied statistical independence. Specifically, he wrote "logically these variables [representations of self and others] are independent" (Bowlby, 1973, p. 204). In our view, what Bowlby meant was that representations of the self and others were *distinct* constructs, that is, they are separable and should not be conflated with one another. We do not think that he was making the statistical claim that they are orthogonal to one another. The fact that he also wrote of the way in which they can be confounded in practice (Bowlby, 1973) seems like a clear indication that orthogonality is not a part of the core theory.

Empirically, the two dimensions tend to be correlated. Cameron, Finnegan, and Morry (2012) conducted a meta-analysis designed to examine the association between anxiety and avoidance. They found that the correlation between the two dimensions tends to be higher with the ECR-R ( $r = 0.41$ ) than the ECR ( $r = 0.15$ ). In addition, Cameron and her colleagues found that the two dimensions tend to correlate more highly in samples of people involved in committed relationships. Samples of older individuals also show stronger associations between the dimensions than younger samples.

Although we believe that the association between the dimensions is not a problem for the theory, it can create problems in practice. If both dimensions correlate with an outcome of interest, it isn't immediately clear whether the

association is due to the unique contribution of each dimension or whether one of the dimensions is driving the association and the other is correlated with the outcome simply by virtue of its association with the other dimension.

When the two measures are correlated with one another, it is important to statistically control them both when modeling the outcomes of interest. The examples discussed previously using multiple regression illustrated how to do this. Specifically, when one conducts a multiple regression analysis and includes both anxiety and avoidance in the model simultaneously, one can estimate the association between each attachment dimension and the outcome while controlling for the fact that the two dimensions are related to one another. This provides one means for identifying the unique correlates of each dimension.

## ARE SELF-REPORTS AND INTERVIEWS INTERCHANGEABLE WITH ONE ANOTHER?

This chapter has focused on self-report measures of adult attachment for at least two reasons. First, self-report measures are the most commonly used measures in the social-personality tradition to the study of adult attachment. Second, work by Hazan and Shaver (1987) that inspired this particular research tradition, used questionnaire methods to assess attachment styles.

We should be clear, however, that there are alternative means for assessing attachment. Bartholomew, in her original work, for example, developed an interview method for assessing adult attachment styles. Although the interview has been extensively used by Bartholomew and some of her colleagues (eg, Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994b; Scharfe & Bartholomew, 1994), it has not been widely adopted in the social-personality tradition.

Similarly, the most common way of assessing individual differences in adult attachment in the developmental tradition is through the use of the Adult Attachment Interview (AAI; Main et al., 1985). The AAI is a semistructured interview that takes approximately 60 min to administer. Participants are asked to describe their early relationships with caregivers and the ways in which these experiences may have shaped their personality development. Those interviews are then transcribed and coded on a number of scales. Each transcript is also classified as autonomous/secure, dismissing, or preoccupied.

Importantly, the AAI is *not* designed to assess the quality of early experiences as inferred from the interview. Instead, the primary construct is the *coherence of discourse*. A person is classified as secure, or autonomous, in the AAI coding system, if he or she is able to characterize his or her early experiences in a coherent manner. In fact, a person can be classified as secure even if he or she describes harsh or neglectful early experiences, if he or she is able to do so in a coherent manner.

Research has shown that attachment classifications based on the AAI and self-reports are weakly related to one another. A meta-analysis reported by

Roisman et al. (2007) showed that self-reported anxious attachment was virtually unrelated to AAI scores and that self-report avoidance was correlated 0.09 with AAI scores. What might explain these discrepancies? There are at least three possibilities. First, the most self-evident explanation is that the two methods rely on fundamentally different methods of assessment: interviews versus self-reports. Although this difference does not fully explain the discrepancy between the methods, research on assessment has shown that different methods for assessing similar constructs rarely converge as strongly as researchers expect (Roberts, Harms, Smith, Wood, & Webb, 2006). Even if the AAI and self-reports were assessing the same constructs, we would not necessarily expect them to converge highly.

Second, the two assessment systems conceptualize security in different ways. In the social-personality tradition, a secure person is conceptualized as someone who is confident in the availability and responsiveness of close others and, importantly, is comfortable opening up to them, depending on them, and using them as a secure base and safe haven. In the AAI, a secure person is conceptualized as someone who can describe his or her early attachment experiences in a coherent manner. Such an individual is able to support his or her descriptions of attachment figures through credible episodic examples and does not become confused or overwhelmed in the process. Although we believe that, conceptually, the kinds of concepts targeted by the AAI and self-reports are logically related, they are not necessarily the same. This conceptual lack of convergence likely helps explain part of the empirical divergence between the methods.

Third, the AAI, although it is often regarded as a measure of generalized attachment representations, specifically probes people about their early attachment experiences with their primary caregivers. It does not, for example, target attachment in romantic relationships, which is what social-psychological measures often target. This is an important point because, when the assessment method is held constant, self-reports of attachment with mothers, fathers, and romantic partners do not converge strongly. For example, Fraley, Heffernan, Vicary, and Brumbaugh (2011) found that people who were relatively secure in their current relationship with their mother were more likely to be secure in their relationship with their romantic partner, but the correlation was between 0.10 and 0.20. In some respects, then, the maximum expected correlation between the AAI and self-reports should be in this range simply due to the fact that these two methods typically target different relational domains.

What is the convergence between the AAI and self-reports when the self-reports specifically target parental attachment rather than romantic attachment? Haydon, Roisman, Marks, and Fraley (2011) examined this issue by administering the AAI and the ECR-RS to a sample of 230 young adults. They used continuous measures of attachment organization for the AAI, focusing on dismissing attachment and preoccupied attachment. They found that the AAI dismissing scale was correlated 0.16 with self-reported avoidance with mother (but only 0.08 with self-reported avoidance with romantic partner). Haydon et al. (2011) also examined

continuous measures of the quality of people's experiences with their parents, what are sometimes referred to as the "experience" scales of the AAI in contrast to the "states of mind" scales that are more relevant for attachment classifications. They also found that the correlations between the experience scales of the AAI and the self-reports were markedly higher. AAI mother experience scales correlated 0.24 to 0.30 with self-reported avoidance and anxiety with mothers and the AAI father experience scales correlated 0.41 and 0.22 with the self-reported avoidance and anxiety scales with fathers.

What are the implications of these findings? We believe they suggest that the self-reports and the AAI converge reasonably well when (1) the AAI is scaled for experience and (2) there is specificity in the target being evaluated (ie, parental relationships vs. romantic relationships). It is important to note, however, that the experience scales are not considered relevant for the primary AAI classifications. Specifically, coders are instructed to base their classifications on the coherence of discourse independently of whether people are describing positive or negative experiences with their primary caregivers. Although people who describe positive experiences are more likely to be secure/autonomous in the AAI (eg, Haydon et al., 2011), those experiences are not the primary focus of the assessment and are less central to the meaning of security in the context of the AAI.

To summarize, social psychologists and developmental psychologists tend to rely upon different methods of assessing individual differences. The focus of this book is on the social-personality tradition and, as a result, we have emphasized in this chapter how those differences are assessed. Nonetheless, the convergence, or lack thereof, between these different measures is of theoretical interest. Research shows that there is, at best, a weak association between these alternative measures of attachment. We have argued that this lack of convergence stems from three sources: (1) the use of patently different methods, (2) an emphasis on different constructs, and (3) an emphasis on different relational domains.

## **WHAT ARE SOME OF THE RECOMMENDED SELF-REPORT MEASURES OF ATTACHMENT?**

There are several self-report measures of attachment styles that are in widespread use today. All of these measures exhibit decent psychometric properties and the scores can be easily mapped onto the two-dimensional system described previously. We do not believe that one of these measures is generally better than the others. However, they are likely to be useful for different purposes. We encourage people who are considering assessing attachment to consider one of these measures.

### **Experiences in Close Relationships (ECR)**

The most commonly used measure, the ECR, contains 36 items, 18 of which are designed to assess attachment-related avoidance and 18 of which are

designed to assess attachment-related anxiety (Brennan et al., 1998). The measure is largely construed as a general measure of romantic attachment styles in adults. By “general” we mean that the measure doesn’t target a specific romantic relationship, but instead asks people to consider their experience in intimate relationships more generally. Scores on the two ECR scales tend to be highly reliable (alphas  $> 0.90$ ). Moreover, the ECR has been used extensively in empirical research since its publication. Wei and her colleagues created a shorter version of the ECR, the ECR-S, that contains 12 items (Wei, Russell, Mallinckrodt, & Vogel, 2007).

### **The Experiences in Close Relationships, Revised (ECR-R)**

The ECR-R is a 36-item variant of the ECR that was developed using the same item pool as the ECR, but employing item-selection methods based on a combination of factor analysis and item response theory (IRT) (Fraley et al., 2000). The ECR-R also produces scores for attachment-related anxiety and avoidance (alphas  $> 0.90$ ). The ECR and the ECR-R are largely redundant. The ECR-R was not designed to be an alternative to the ECR per se, but was created as a means to illustrate how IRT methods can be used in scale construction in the field of adult attachment. Despite their similarities, however, scores from the ECR-R dimensions tend to correlate more strongly with one another than scores from the ECR dimensions (see Cameron et al., 2012).

### **Adult Attachment Questionnaire (AAQ)**

The AAQ was developed by Simpson and his colleagues (Simpson, 1990; Simpson, Rholes, & Nelligan, 1992; Simpson et al., 1996). It contains items from the original Hazan and Shaver (1987) paragraphs, but it is commonly used these days to scale people with respect to the two attachment dimensions. The measure consists of 17 items; 9 items measure attachment anxiety while 8 items measure attachment avoidance. Like the ECR and ECR-R, the AAQ is construed as a measure of general romantic attachment styles.

### **Relationship Scales Questionnaire (RSQ)**

The RSQ is similar to the AAQ and uses items from the original Hazan and Shaver (1987) paragraphs and the Bartholomew and Horowitz (1991) paragraphs (Griffin & Bartholomew, 1994a). The measure consists of 30 items; however, only 20 items are used to calculate scores for the four prototypes. The additional 10 items are used to calculate scores that align with Simpson et al.’s (1992) dimensions. Although the RSQ was designed, in part, to produce continuous scores for each of the four prototypes, we caution against that usage given the theoretical multicollinearity among the four prototypes (see Fraley & Waller, 1998). We recommend that researchers who use this measure score it

with respect to the dimensions of anxiety and avoidance. Roisman et al. (2007) evaluated several different ways of scoring the RSQ and concluded that the method that maps onto the Simpson et al. (1992) approach works best. Thus, scores generated with this method of scoring the RSQ should be identical to those generated by the AAQ.

### **Experiences in Close Relationships, Relationship Structures (ECR-RS)**

The ECR-RS is a relatively new measure that was modeled after the ECR and the ECR-R (Fraley et al., 2011a). It was inspired by the finding that, when people are asked to self-report their attachment style with specific targets (eg, their mother, their spouse), those reports do not converge strongly (see chapter 4: What Are Attachment Working Models?). This suggests that there is value in attempting to assess attachment in different relationships in a more targeted manner. The ECR-RS is designed to target people's attachment styles in a variety of different relationships, such as current relationships with mothers, fathers, partners, and friends. The ECR-RS contains nine items that are used to assess attachment styles in each of these four relational domains (six items tap avoidance and three items tap anxiety). More recently, Fraley and his colleagues have also used the items to assess attachment more generally (eg, see Fraley et al., 2015).

### **Attachment Style Questionnaire (ASQ) and Attachment Style Questionnaire-Short Form (ASQ-SF)**

The ASQ (Feeney et al., 1994) and its short form the ASQ-SF (Alexander et al., 2001; Karantzas et al., 2010) are widely used measures of adult attachment by researchers who are after an assessment of attachment that extends beyond the two primary dimensions of attachment anxiety and avoidance. Furthermore, because items do not focus on romantic relationships, the measure is best suited to assessing attachment in adolescents and people with little romantic experience. The ASQ consists of 40 items partitioned into five dimensions (confidence, relationships as secondary, discomfort with closeness, preoccupation with relationships, and need for approval). The ASQ-SF consists of a 29-item subset of the ASQ designed to assess the two primary dimensions of attachment anxiety (13 items) and avoidance (16 items, Alexander et al., 2001). In recent years, Karantzas et al. (2010) have identified that both the ASQ and the ASQ-SF can be used to tap into both the broad attachment dimensions as well as the five facet dimensions originally identified by Feeney et al. (1994).

### **State Adult Attachment Measure (SAAM)**

Recently researchers studying attachment have become interested in how attachment changes within an individual due to social or cognitive context fluctuations (eg, Gillath, Selcuk, & Shaver, 2008). The State Adult Attachment

Measure (SAAM; Gillath, Hart, Nofhle, & Stockdale, 2009) is a 21-item inventory that was specifically developed to assess state-like fluctuations in working models of attachment. Participants are asked to think about their feelings, attitudes, and beliefs in the present moment and then rate how much they agree or disagree with each item using a 7-point scale. Seven of the items assess state attachment avoidance (eg, If someone tried to get close to me, I would try to keep my distance), seven items assess state attachment anxiety (eg, I wish someone would tell me they really love me), and seven items assess state attachment security (eg, I feel loved). The internal consistency for all three subscales tends to be high (alphas > 0.87). The SAAM structure is more similar to the original Hazan and Shaver (1987) attachment style scale and other early measures of adult attachment, having a separate security factor in it. Xu and Shrout (2013) recently assessed the quality of the SAAM and its ability to capture fluctuations in attachment style as compared with the ECR (Brennan et al., 1998). In two longitudinal studies they found that, even with fewer items, the reliability of change for the SAAM was higher than that of the ECR. Trentini, Foschi, Lauriola, and Tambelli (2015) provide further information on construct and incremental validity of the SAAM, and Bosmans, Bowles, Dewitte, De Winter, and Braet (2014) showed that SAAM scores are sensitive to priming effects.

## SUMMARY

Shortly after Hazan and Shaver (1987) introduced attachment theory to social and personality psychologists, there was an explosion of measures developed to assess individual differences in adult attachment. The history of measurement issues in this field has been a bit circuitous, and it may not always be obvious what kinds of theoretical models and measurement instruments modern researchers should be using. Based on our review of the literature, we propose a few broad themes, suggestions, and recommendations that we hope will be useful and that will help provide the foundation for the ideas discussed in the remainder of this book.

First, many researchers who are studying adult attachment styles tend to ground their work in a two-dimensional system, one that has its origins in Bartholomew and Horowitz's (1991) four-prototype model. Although there are subtle differences in the ways in which people describe these dimensions (ie, some people discuss self- and other models, some people discuss anxiety and avoidance), it seems clear that these two dimensions cut across the content domain of most measurement approaches and represent a "common denominator" in attachment research.

Second, there is some nuance that needs to be considered when working with multidimensional measurement systems. It is not always obvious how a concept that people tend to think about categorically, such as security, can be understood and measured within a two-dimensional system. In this chapter we have tried to clarify how security and other attachment prototypes are situated



within a two-dimensional space, how they can be assessed and studied psychometrically, and some important caveats about the difference between additive and nonadditive combinations.

Third, there are many self-report measures available to assess individual differences in adult attachment and it is not always clear how to choose a measure or to evaluate whether researchers have used optimal measures in light of their research questions. For most research purposes, we recommend the ECR (Brennan et al., 1998) or its modern variants (eg, the ECR-R or the ECR-S; Fraley et al., 2000; Wei et al., 2007). However, if researchers are interested in attachment in specific relational contexts (eg, parents, peers), contextualized measures, such as the ECR-RS (Fraley et al., 2011a), might be preferable. Similarly, if one is interested in assessment of the momentary activation of attachment-relevant states, state measures, such as the SAAM (Gillath et al., 2011), are preferable. Finally, if one needs a more nuanced investigation of how different facets of avoidance, for example, might function across contexts, a measure that focuses on the facets of the two dimensions would be preferable (eg, Karantzas et al., 2010).