

# Continuity and Change in the Measurement of Infant Attachment: Comment on Fraley and Spieker (2003)

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R.C. Fraley and S.J. Spieker (2003) refocused attention on the important question of continuous versus categorical measurement of infant attachment. This commentary begins with a brief response to Fraley and Spieker's position. Next, it highlights the usefulness of the categorical approach by reviewing some of the major advances in the field that have been fostered by a categorical approach. These include the identification of the disorganized attachment group, the development of the concept of conditional behavioral strategies, the creation of systems for coding attachment beyond infancy, and a greater understanding of cross-generational associations. The author then makes several propositions for future research that are necessary for clarifying how best to measure infant attachment.

Attachment theory was born from John Bowlby's insistence that a field must be willing to break from past traditions and be open to new ideas. The theory was enriched from the start by Bowlby's integration of a wide variety of disciplines and his willingness to discard aspects of psychoanalytic and social learning theories (Bowlby, 1969/1982). This insistence also characterized Mary Ainsworth, who had the bold idea that the observation of mothers and infants in the home was worthy of scientific study (Ainsworth, 1967). Substantial advances again occurred when Mary Main, along with Donna Weston and Judith Solomon, questioned the wisdom of overlooking brief, but reliably apparent, anomalous behaviors in the Strange Situation procedure, thereby identifying what came to be known as the disorganized/disoriented attachment group (Main & Solomon, 1986; Main & Weston, 1981). The field's remarkable generativity has resulted from this openness to the incorporation of new ideas.

In their article "Are Infant Attachment Patterns Continuously or Categorically Distributed?: A Taxometric Analysis of Strange Situation Behavior," Fraley and Spieker (2003) refocused attention on an issue that requires openness to different perspectives: the question of whether it is best to characterize individual differences in Strange Situation behavior with categories or with dimensions. Ainsworth and her colleagues (Ainsworth, Blehar, Waters, & Wall, 1978) initially considered this important question, and others have considered it as well. Some researchers have created unidimensional scales of security versus insecurity using ad hoc scaling methods to address particular research questions, and others have proposed the use of multiple dimensions (e.g., Bretherton, Ridgeway, & Cassidy, 1990; Connell & Goldsmith, 1982; Main, Kaplan,

& Cassidy, 1985; Richters, Waters, & Vaughn, 1988). Fraley and Spieker have now raised similar concerns and made similar arguments—this time with the use of newer statistical procedures and a uniquely large data set ( $n = 1,139$ ).

Fraley and Spieker (2003) proposed that a dimensional approach will advance the study of attachment. Surely, dimensional measurement has some well-known advantages over categorical measurement. As Fraley and Spieker pointed out, dimensional measurement can be particularly useful to attachment researchers given core interests in examining attachment stability and predictability. My experiences as an attachment researcher lead me to believe that some of the phenomena underlying classifications may well be continuously distributed and that the categories may succeed in part because they tap these underlying dimensions. There is evidence that the study of adult attachments within romantic relationships is better served by dimensional measures than by categorical ones (e.g., Brennan, Clark, & Shaver, 1998). Yet much should be considered before researchers decide that this is similarly the case when examining the organization of a child's attachment to a particular caregiver. In this article, I briefly comment on Fraley and Spieker's study, I consider the usefulness of the categorical approach, and I make suggestions for future work.

## Fraley and Spieker's (2003) Study

Fraley and Spieker (2003) concluded from their analyses that "it is difficult to justify the sole use of categorical models in attachment research" (p. 402)—a strong statement from a single study. One must consider what is used as the basis for the analyses. The approach that Fraley and Spieker used includes only four infant behavior scales: proximity seeking, contact maintaining, resistance, and avoidance. Although these scales are central to classification, many important dimensions are ignored: affect, distance interaction, search, interaction with the stranger, exploration, wariness, and passivity. Context and timing beyond those incorporated in the scales are also ignored. Thus, all that can truly be said from the data presented here is that when only the scales used here are included in the analyses, little indication emerges of a categorical distribution. One cannot predict what taxometric analyses would

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look like if all the factors that coders typically use were included. I share Fraley and Spieker's view that the unused dimensions are probably less central than the four used in their study. Yet the question remains: Might they be sufficiently important that their inclusion would demonstrate a categorical distribution of attachment?

### Usefulness of the Categorical Approach

Fraley and Spieker (2003) noted that they "have attempted to demonstrate ways in which the exclusive use of categorical models in the study of attachment may actually hinder the advancement of developmental science" (p. 402). The authors made a compelling case for their position and provided examples of ways in which this may be true. They described, for instance, how the use of categories may lead to an underestimation of stability. Surely every researcher examining attachment stability has observed a child who, with stability across two time points, rests on the border between the avoidant and secure groups; and every researcher has seen this stability not captured when the child was classified avoidant at one time and secure at the other. In such situations, use of a dimensional approach may indeed capture stability unrecognized by a classification system. Yet there may be ways in which a dimensional approach can also have limited usefulness in assisting researchers in recognizing stability. An infant can show quite different amounts of proximity, contact, and avoidance over time and still be coded secure (albeit in different subgroups) at both times (Ainsworth et al., 1978). The situation is even more problematic when assessing stability from infancy to childhood. One cannot assume that the behavioral dimensions have the same meaning later in childhood that they had in infancy. Physical proximity can be replaced by language yet have the same underlying function of maintaining proximity. Certain forms of proximity seeking in infancy can reflect security but in later childhood can reflect insecurity. Presence or absence within and across age periods is not as important as quality, context, and timing (Main & Cassidy, 1988; Wartner, Grossmann, Fremmer-Bombik, & Suess, 1994).

If the use of a dimensional approach were to be met with a corresponding reduction of interest in the classificatory system, one would have to consider the ways in which this reduction would, in turn, hinder the advancement of developmental science. Fraley and Spieker (2003) did not call for abandoning the classificatory system, which they referred to as "valuable and highly influential" (p. 387). Understandably, a focus on this value was outside the scope of their article. I join others (e.g., Brennan & Shaver, 1995) who have noted that the typological approach has helped the field advance in ways that a dimensional approach might not have. In this section, I describe briefly some of the major advances in the field that were fostered by a typological approach.

### Identification of the Disorganized Attachment Group

It is difficult to imagine that identification of the disorganized attachment group was not greatly facilitated by a typological approach given that this identification grew from a recognition that the behavior of a few babies did not fit the existing classificatory guidelines (i.e., the organization of attachment behavior could not be considered secure, nor did the behavior fit avoidance or resis-

tance; Main & Solomon, 1986). Children in this group do not differ from other children along the behavioral dimensions used in Fraley and Spieker's (2003) study (e.g., proximity seeking, avoidance); they do differ from others in their capacity to exhibit an organized behavioral response to separation and reunion in the Strange Situation. Thus, focusing on the organized patterns into which most children in most cultures can be readily placed made it apparent that children who did not fit these patterns should be examined. This identification has been central to research with high-risk and clinical populations and to the prediction of psychopathology (Lyons-Ruth & Jacobvitz, 1999; Solomon & George, 1999; van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). Furthermore, a typological approach has contributed to the understanding of the various forms of disorganization (e.g., controlling behavior, caregiving behavior, D/secure vs. D/insecure; Main & Cassidy, 1988).

### Development of the Concept of Conditional Behavioral Strategies

Main's (1990) notion of conditional behavioral strategies, which has played a key role in advancing attachment theory and research, is rooted in a typological approach. Main proposed that infants have evolved to recognize individual variations in caregiving environments and to develop a "strategy," a nonconscious plan, to tailor the output of the attachment behavioral system in response to their particular caregiving environment. Main proposed two distinct categories of insecure attachment strategies. One of these strategies entails a *minimizing* of the output of the attachment system: In this case, a baby who has typically been rejected for expressions of attachment behavior will at times suppress approach behavior and cry as little as possible. The other strategy entails *maximizing*: The baby of an inconsistently responsive mother, faced with an even slightly threatening situation, will exaggerate its fear and cry as much and as loudly as possible in order to attract the mother's somewhat unpredictable attention. Given this focus, what an infant tries to do (i.e., minimize or maximize) rather than how he or she tries to do it becomes of central interest. The very notion of strategies has as its core the idea that the infant will use whatever means possible (including manipulation of attention, memory, cognition, feelings, behavior) as part of his or her strategy (Main et al., 1985). To the extent that an investigator is faced with the integration of an unknown number of unspecified behaviors, with infinite variations and combinations, attention to the categorical distinctions of minimizing and maximizing can be very useful in attempts to understand behaviors, patterns, and connections that would otherwise be difficult to comprehend.

### Creation of Systems for Coding Attachment Beyond Infancy

The development of systems for coding attachment beyond infancy is rooted in consideration of the categorical organization of attachment patterns. It was a focus on the underlying organization of attachment and a consideration of the child's strategies for relating to the parent that led to a recognition that similar strategies can be evident at different periods even in the face of remarkable

change (Cassidy, Marvin, & the MacArthur Attachment Working Group, 1992; Main & Cassidy, 1988).

### *Greater Understanding of Cross-Generational Associations*

Understanding of connections between the attachment patterns of parents and those of children has emerged from a typological approach. In fact, the classification system of the Adult Attachment Interview (AAI) was developed through attending to matches of parental narrative characteristics with infant attachment patterns (Hesse, 1999; Main & Goldwyn, 1998). Note, however, that Hesse (1999) drew attention to the use of AAI scale scores in relation to Strange Situation scale scores.

### *Future Directions*

Fraley and Spieker (2003) conveyed a “hope that researchers will begin to consider and explore the potential benefits of dimensional models of attachment organization” (p. 402). I join them in calling for greater attention to this issue, and to this end I make several propositions.

First, it is important to consider what is required to demonstrate the usefulness of a dimensional approach. Change in a field can be difficult, especially when the field has been productive and when the proposed change carries with it limitations. Although there may be advantages to using a dimensional approach, are there also disadvantages? Would the advantages outweigh the disadvantages? There is, of course, a need for empirical evidence that a dimensional model performs as well as or better than a categorical model. (Unfortunately, the data presented in Fraley and Spieker’s [2003] Discussion section are not compelling; although the authors stated that “overall . . . the continuous model of individual differences had stronger associations with these theoretically relevant variables than did the categorical model” [p. 402], the amount of variance explained was, in fact, virtually identical.)

Second, Fraley and Spieker’s (2003) study was unable to provide information about the disorganized/disoriented attachment group. Future work will be needed to determine whether disorganization is categorically or continuously distributed and how best to integrate the measurement of disorganization with the measurement of other attachment behavior.

Third, one of the topics of greatest interest to developmental attachment researchers has been the connection between parental behavior and child attachment. Although a continuous dimension of security may relate to the extent to which the child views the parent as providing a secure base, there are various ways in which a parent who fails to provide a secure base may do so. Data from several studies support the idea that these variations map onto theoretically predicted patterns of child attachment (Ainsworth et al., 1978; Belsky, Rovine, & Taylor, 1984; Isabella, Belsky, & von Eye, 1989; Smith & Pederson, 1988). It will be important to demonstrate that a dimensional approach is useful in such studies.

Fourth, greater attention to the precise specifications of the Strange Situation behavioral dimensions that best capture individual differences in attachment variability is essential for improvement of both classificatory and dimensional approaches.

Fifth, given that both dimensional and categorical approaches can be helpful, it will be important to consider, from both theo-

retical and methodological perspectives, the circumstances when each might best be used. Moreover, when a decision is made to use continuous dimensions, much remains to be considered. The individual use of Ainsworth’s behavioral scale scores can be useful.<sup>1</sup> At times, the construction of a unidimensional scale of security versus insecurity might be most useful, and researchers must consider which of the many different ways of constructing such a scale is best. Similarly, when a multidimensional scale is called for, researchers must consider which is best. I agree with Fraley and Spieker’s (2003) suggestion that a dimensional system should possess (a) a focus on the organization of behavior, (b) a capacity to reflect the classic Ainsworth patterns, and (c) a grounding in the behavioral indicators typically used in previous attachment research. Fraley and Spieker proposed one type of multidimensional scaling method; there are others. A critical review of what kinds of dimensional measures have been used, combined with a theoretical discussion of ways of assessing what method is most useful in what circumstances, would be a useful contribution to the field.

Sixth, within the context of giving principal consideration to accurate measurement, it is important not to overlook entirely the intuitive clinical appeal of the classificatory approach. Bowlby and Ainsworth were clinicians, and clinical observations underlie much initial thinking about attachment and continue to make contributions to the extension of the theory. Moreover, a typological approach may facilitate the study of developmental psychopathology. Greater discussion is needed of ways to analyze data continuously while nonetheless incorporating a categorical perspective into consideration of findings.

Finally, Fraley and Spieker’s (2003) caveat about “the sole use of categorical models in attachment research” (p. 402) should be taken to apply to the field of attachment research—that is, across studies—and not as an advisory that every study should contain dimensional analyses.

### *Summary*

I have argued that the major advances in the field of attachment have grown from the use of a typological approach rather than in spite of it and that the limitations that have accompanied this approach have been outweighed by the advantages. Yet simply because the categorical approach has been useful in the past does not mean its sole use will continue to be the most useful approach; it is important to remain open to the ways in which dimensions are useful. Elsewhere, in relation to adult romantic attachment, Fraley has stated, “Even if the types themselves were responsible for advancing the field, in the beginning, they have the potential to cripple the field in the long run” (Fraley & Waller, 1998, p. 105). The data presented here about infant attachment do not warrant a conclusion that although a classificatory approach has been useful in the past, it is now time to move on and abandon this approach—and it is important to note that Fraley and Spieker (2003) did not make such a suggestion. True growth will come with an openness

<sup>1</sup> Main and Goldwyn (1984, 1998), for instance, reported that infant avoidance in the Strange Situation predicted, across 5 years, the mother’s later idealization of her own mother in the AAI, as well as the mother’s own experiences of childhood rejection and lack of recall for memories of childhood; infant Strange Situation resistance predicted the mother’s later anger at her own mother in the AAI.

to using both approaches, when appropriate, following the research questions of a specific study. Fraley and Spieker's article serves as a helpful step in refocusing attention on this important issue.

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