

Special Section

A Developmental Psychopathology Perspective on Emotional Availability Research

SPECIAL SECTION EDITORIAL

Emotional availability: Concept, research, and window on developmental psychopathology

ZEYNEP BIRINGEN^a AND M. ANN EASTERBROOKS^b

^aColorado State University; and ^bTufts University

Abstract

The construct of emotional availability (EA) refers to the capacity of a dyad to share an emotional connection and to enjoy a mutually fulfilling and healthy relationship. The EA Scales were designed to assess multiple components of a relationship from the perspective of both partners. The four caregiver components include sensitivity, structuring, nonintrusiveness, and nonhostility; two scales measure the child's responsiveness to the caregiver and involvement of the caregiver. We describe the EA construct and introduce the papers in this issue, focusing on the contributions of this Special Section to a developmental psychopathology framework.

The construct of emotional availability (EA) refers to the capacity of a dyad to share an emotional connection and to enjoy a mutually fulfilling and healthy relationship. Mahler, Pine, and Bergman (1975) first used the term EA to describe a mother's supportive attitude and presence in the context of infant/toddler explorations away from her. Healthy mother-child relationships allow exploration and autonomy, at the same time recognizing the importance of physical contact and emotional "refueling." Other theorists (e.g., Emde, 1980; Sorce & Emde, 1981) recognized the importance of EA including not merely physical presence, but also emotional signaling and receiving. For Emde (1980, 1983, 2000), EA in a parent-child relationship refers to the adult's "receptive presence" to the child's emotional signals. Further, it connotes a type of presence and availability that has a great deal in common with the way a psychotherapist "is there" for a patient. Emde and Easterbrooks (1985) stated that EA is an affective barometer of the relationship between a parent and a young child and emphasized affective attunement to a broad spectrum of negative and positive emotions as an important aspect of EA. According to Emde (1980, p. 80),

Emotional availability, then, refers to an individual's emotional responsiveness and "attunement" to another's needs and goals; key

to the construct is the acceptance of a wide range of emotions rather than responsiveness solely to distress.

Emotional expression, of both negative emotions (such as distress, anger, sadness, and disgust) and positive emotions (such as interest, satisfaction, joy, and surprise), provides the parent with information about the child's feelings and needs (Emde, 1980, p. 97):

Crying, for example, gives a message of "come change something," a message that is species-wide and peremptory, while smiling gives a species-wide message something like "keep it up, I like it."

Origin of the Concept

Certainly, the construct EA has a great deal in common with ethological attachment theory, and much in the conceptualization and operationalization of EA is derived from research. Bowlby (1969/1980, 1973) and Ainsworth (Ainsworth, Blehar, Waters, & Wall, 1978) utilized the concept of *sensitivity* to describe the clarity with which the mother perceives her child's signals and communications and to the way in which she responds to them. Sensitivity as a concept has become the centerpiece in attachment research (van IJzendoorn, 1995).

Another major influence on the conceptualization of EA comes from systemic theories (e.g., Guttman, 1991), which recognize the importance of seeing relationships as units, rather than as individual qualities. One member of the family

Address correspondence and reprint requests to: Zeynep Biringen, Family and Developmental Studies Program, Colorado State University, 413 Behavioral Sciences, Fort Collins, CO 80523; E-mail: zeynep.biringen@colostate.edu.

is viewed as so profoundly affecting another family member's behaviors and emotional responsiveness that those in a family unit are viewed as inhabiting the same "emotional skin." This systemic perspective particularly underscores the importance of all family members as being interwoven into a whole that cannot be explained by looking at the parts, namely, the individuals. This view is also reminiscent of the transactional perspective (Sameroff & Fiese, 2000), emphasizing both the child's contribution to the interaction and the dynamic change in the system over time.

In addition to being inspired by prior theories, EA theory modifies both attachment and family systemic perspectives. Attachment and EA differ somewhat in their relative emphases. Most notably, the EA system focuses more on positive (as well as negative) emotions when compared to the attachment framework. There are also differences in the contexts in which attachment and EA can be observed. Attachment behavior is elicited and coded in the context of stress and fear. EA can be coded across a broader range of contexts. Specifically, although attachment behavior is most clearly highlighted in the context of a laboratory-based separation–reunion paradigm (e.g., the Strange Situation procedure or its variants for older children), EA can be assessed in multiple contexts, including unstructured play, or structured situations at home or in the laboratory. The attachment behavioral system is elicited in contexts that arouse stress and fear (Ainsworth et al., 1978). In contrast, the measurement of EA gives a privileged place not only to stress and distress contexts but also to pleasurable and peak positive experiences, and it thereby underscores the full range of contexts and emotions available for human interaction. Hence, if we were to depict a Venn diagram, attachment would be a component of the larger EA construct. The measurement of attachment takes into account primarily the behavior of one individual (that of the child) in inferring the relationship with the attachment figure. Similarly, the traditional views of maternal sensitivity focus on the individual characteristics of the adult in the relationship—and only implicitly in the dyadic relationship—so that an individual caregiver might appear to be sensitive without considering the child's behavior. In addition, "behavioral responsiveness" is the core ingredient in the plethora of sensitivity measures in the field, so much so that some coding schemes are based on frequency counts of this facet (van IJzendoorn, 1995). In many conceptualizations of sensitivity the accent is on "behavioral" sensitivity; there is no specific depiction of "emotional" responsiveness (Bretherton, 2000), and behavioral responsiveness may be at variance with emotional responsiveness.

The conceptualization and operationalization of EA via the EA Scales (Biringen, 2000, 2004; Biringen & Robinson, 1991; Biringen, Robinson, & Emde, 1998) incorporates a dyadic or relational perspective to interactions, emphasizing that any aspect of the adult's behavior is dependent upon that of the particular relationship with a particular child. Thus, a dyadic cyclic environment is explicit, with each partner dynamically influencing the other. Although the EA

Scales distinguish the adult dimensions from the child dimensions, the EA of both adult and child are viewed from within the relationship. This dyadic imperative means that EA of one partner can only be meaningfully assessed and interpreted when the other's complementary interactional behavior is taken into account.

One assumption of the EA construct is the dyadic, cyclic nature of the interactions. Another tenet is that the same individual may experience and express different levels of EA in different relationships, further reinforcing the relational rather than individual or traitlike view of this concept. This perspective is reminiscent of systems theory, yet focuses on the dyad rather than the whole family as the emotional unit, and asserts the importance of looking at one relationship at a time, in a multifaceted way. The transactional view (Sameroff & Fiese, 2000) captures the child's contribution to the interaction, and the dynamic interplay between partners in an interaction. This conceptualization of EA was developed as a theoretical concept by integrating these approaches and clearly operationalizing the concept into a multifaceted measurement system.

The dyadic perspective of the EA construct underscores the significance of the child in the creation of a positive relationship. Often, the literature concerning early mother–child interaction downplays that the baby's (or child's) positive emotional expressions are just as satisfying to the adult caregiver as they are to the child. When the baby or child is "emotionally available" and responsive to the adult, this lets the adult know how he or she is feeling, provides the adult feedback, and communicates that the adult is needed and appreciated. In good enough circumstances, the child's expressiveness enables an exchange that is varied, interesting, and dynamic, and consequently satisfying. In a certain sense, this emotional exchange confirms that the adult caregiver is loved and that the child is developing a healthy relationship with the caregiver.

Operationalizing the Concept: The EA Scales

The original version of the EA Scales was published in 1987 (Biringen, 1987). The EA assessment system (Biringen, 2000, 2004; Biringen & Robinson, 1991; Biringen et al., 1998) was initially created by repeated viewings of relatively brief videotaped interactions followed by checking of attachment indicators for the same relationship, and then a modification of the scoring system based on this external validity index. The feedback loop to theory has been in step with the continued development of the assessment system. EA refers to a dyad's capacity for emotional connection and the extent to which the connection is genuinely affectively positive and healthy and the extent to which the dyad can accommodate and downregulate negative affect (Barone & Biringen, 2007; Biringen, 2000, 2004; Biringen & Easterbrooks, 2008; Biringen & Robinson, 1991; Biringen et al., 1998; Easterbrooks & Biringen, 2000, 2005, 2009; Emde, 1980; Emde & Easterbrooks, 1985). The coding of EA is multimodal: facial, vocal, and physical signals and displays of positive and negative emo-

tion are compelling qualities of relationships. Thus, in the EA framework, the “emotional range” (the said and the unsaid, the negative as well as the positive) forms a background for our understanding of relationships and pervades both clinical practice and relationships-based research.

The term EA is not a general reference to good *parental* qualities but a well-defined multifaceted perspective and scientifically rigorous assessment of *dyadic or relational* capacity for mutual emotional awareness, perception, experience, and expression (Biringen, 2005). EA is operationalized as comprising four adult components (sensitivity, structuring, nonintrusiveness, nonhostility) and two child components (responsiveness, involvement) that describe global relational quality. Each of the six dimensions is scored on Likert-type scales.

Adult sensitivity

Adult sensitivity highlights appropriate and positive, affective exchanges. It also includes clear and accurate perceptions of emotions, as well as responsiveness; the ability to handle conflictual situations (given its life span rather than solely infancy focus); and awareness of timing. It differs from the attachment operationalization of sensitivity in that it is dyadic and emphasizes the quality of emotional exchanges, including the positive emotions. The high-end scores on the EA Scales represent optimal sensitivity; the midpoint is “apparent sensitivity,” that is, warmth but without attunement to emotional cues or what is in the best interests of the child; slightly lower scores represent emotional detachment; and the lowest scale point represents bizarre, highly problematic, and bizarre interactions or lack of interactions.

Adult structuring

Adult structuring refers to the extent to which the adult adequately guides the child’s play and sets limits as needed, and takes into account autonomy-fostering behaviors to guide the child. Optimal structuring refers to consistent, but not excessive, indications and suggestions (keeping in mind that supporting the child’s autonomy is an important aspect of structuring). The midpoint scale score represents a mismatch in structuring in the dyad, such that there may be too much structuring that the child cannot absorb, and hence, a limitation on autonomy. The lower end scores represent lack of structuring in interactions, noting that having lots of interaction is not the same as providing high-quality structuring for a child in the way an “older and wiser” person (Bowlby, 1969/1980) should structure and guide interactions of those younger or in need of assistance.

Adult nonintrusiveness

Adult nonintrusiveness refers to qualities such as the absence of overdirection, overstimulation, interference, or overprotection, and hence, is another way to encourage or discourage

age-appropriate autonomy while maintaining connection within a relationship. Naturally, this dimension is dependent on the child’s level of development. For instance, if the adult does not give a well-developing toddler the chance to run up and down the stairs (provided this is culturally appropriate and safe) this could be regarded as overprotective, and thus intrusive behavior. The same parental behavior, however, would not be overprotective and intrusive when the child is younger or when the circumstances dictate parental protection. The dyadic focus also is evident in that the parent cannot be intrusive unless the child responds in a fashion that indicates such. The high-end scores, like all EA dimensions, represent optimal EA, in this case representing a connected, nonintrusive presence. The midpoint scores represent benign intrusiveness or overprotectiveness, whereas the low end signifies behavior that may indicate actual physical intrusions that are not necessary or not in the best interests of the child.

Adult nonhostility

Adult nonhostility characterizes behavior that ranges from the absence of hostile responses, to concealed/covertly hostile behavior, to openly hostile responses. The most hostile adult is openly exhibiting his or her hostility to the child in facial expressions and voice, including making demeaning comments. Hidden or covert hostility includes slightly raising one’s voice and showing impatience or boredom during the interaction. Hostility does not necessarily need to be directed to the child. One also has to take into account dissatisfaction, impatience, anger, or other concealed or open forms of hostility that may be present in the background of the interaction. This quality is potentially the least dyadic and most traitlike of the EA dimensions, but again, it is assessed in the context of the observed relationship. The high (positive) end signifies a lack of any hostile qualities in face, voice, or bodily actions. The midpoint indicates covert hostility, and the low end scores represent overtly hostile behaviors, emotions, or statements.

Child responsiveness to the adult

Child responsiveness to the adult is reflected in the child’s behavioral and emotional responsiveness. In addition to positive qualities such as “compliance” or “obedience,” this aspect of EA is the child’s best expression of healthy EA toward the other. Child responsiveness reflects the child’s eagerness to respond to the bids of the relational partner without the anxious quality of “compulsive responsiveness.” The high end refers to the ability to be connected in an age-appropriate way and is reminiscent of a child’s “secure base behavior” or “attachment–exploration balance” (Ainsworth et al., 1978), ideas emanating from attachment work. The midpoint scores refer to behavior that is overly connected, with a tendency to be oversolicitous to parental bids to the exclusion of appropriate child autonomy. The lower end refers to either “underresponsiveness” or “overresponsiveness” that may/may not reflect a bizarre or traumatized quality in the child’s

behavior. The child responsiveness scale (in combination with child involvement) has been a good way to protect against “social desirability bias” in this system, as it is next to impossible for a child to be genuinely and appropriately emotionally available without an emotionally available dyadic partner, provided the dyad has a shared history.

Child involvement of the adult

Child involvement of the adult refers to the child’s ability to engage the parent and the child’s interest in including the adult in the interaction. This quality is a good index of “initiative.” That is, the high-end scores reflect the child’s ability and interest in taking initiative in the relationship. The mid-point refers to overinvolving qualities, such as negative attention seeking, creation of distress or crisis scenarios, or inability to tolerate physical or emotional distance from the adult. A child may receive a low score on involvement because of passivity or lack of interest in the relationship. Again, just as is the case for child responsiveness, “overinvolvement” and “underinvolvement” can be noted. The reader should note that beginning with the third edition (Biringen et al., 1998), the overresponsiveness and overinvolvement have been placed low in the metric, whereas in earlier editions, this aspect of the system was placed as high on these two scales (although still viewed as nonoptimal or over the cliff).

Note that both child scales are also dyadic; for example, if a mother simultaneously extends one hand to each of her twins, and one twin holds back while the other moves away, one twin may be seen as more emotionally responsive and the other less emotionally responsive to the same maternal initiative on the basis of a single episode. Of course, dyadic EA is scored based on more than a single episode, but this example was given to illustrate that the same maternal initiative can have quite a different response. As another example, a generally sensitive mother may seem more muted in her animation and affective presence if her child with a serious chronic illness seems to respond to her in a muted way. Conversely, after a psychosocial intervention, the relationship may “come to life” if the same child smiles and giggles more, even though the mother’s actual behaviors barely change between the two sessions. What is gained by using a dyadic system is that EA provides relationship language, but this relationship language is not identical for the mother and child, and hence, it is also a way to provide both the voice for the single actors as well as the tone of the relationship.

Additional Considerations

Nonverbal communication

Each of the EA dimensions is comprised of nonverbal and verbal indicators. The verbal behavior (especially adult to child) is very important and can convey emotions, and hence, may be language specific. However, our sense is that 80% to 90% of EA is actually nonverbal communication. Although

the dimensions may differ somewhat on the prominence of nonverbal communication, that EA is coded reliably with native coders from many different cultures (with little and sometimes no translation; e.g., Salo et al., 2009) suggests that EA may have a basis in facial expressions, eye contact, gestures, postures, and tone of voice indicative of emotional connection. Although these nonverbal cues may be supplemented by verbal exchange, when there is a mismatch in channels of communication, EA is compromised.

Life span construct

EA is relevant across the life span, and although there are different versions of the EA Scales for the early and middle childhood years, the components remain the same. The main reason for creating the EA Scales was to have a system for understanding global relational quality across a broad developmental spectrum.

Issues of context and time

Any real-world context is feasible for assessing EA. Parents are asked to “interact as they normally do” in a free or semi-structured situation. The instructions allow for interpretation and the parents interact in a nonprescriptive context. The more time available for the interaction to unfold, the better idea we have of the global relational quality, in both its positive and potentially less positive aspects (Biringen et al., 2005). A minimum of 20 min is recommended to arrive at a reliable and valid rating. However, meaningful assessments of EA that are related to other theoretically predicted constructs (such as attachment or affect regulation in the Still Face procedure) have been evident in very short interactions (even 3–5 min), but mostly under stressful situations (Easterbrooks, Biesecker, & Lyons-Ruth, 2000; Kogan & Carter, 1996).

Window on Developmental Psychopathology

What is the promise of the EA construct for understanding development and psychopathology? We address each of the key foci of the developmental psychopathology framework, as elucidated by Cicchetti and Toth (2009).

Processes underlying the interrelation between adaptive and maladaptive development over the life course

Because the EA Scales can be applied broadly, to both a wide developmental age range and a variety of contexts, and are reliability used in both typically and atypically developing children and caregivers, there is promise that they can help us learn about developmental processes of the genesis of maladaptive patterns as well as patterns of adaptation or resilience in the face of difficulty. Although developed for all caregiver–child relationships, EA was first measured in typically developing infants and young children and their caregivers

within low-risk caregiving contexts, in cross-sectional or short-term longitudinal studies. These early studies established the reliability and construct validity of the EA scales (e.g., Biringen et al., 1995; Kogan & Carter, 1996; Robinson, Little, & Biringen, 1993; Zimmerman & McDonald, 1995). Relatively quickly, others applied the system in a myriad of at-risk contexts in the United States (e.g., Swanson, Beckwith, & Howard, 2000), as well as in different cultures (e.g., Aviezer, Sagi, Joels, & Ziv, 1999, in Israel; Ziv, Aviezer, Gini, Sagi, & Koren-Karie, 2000, in Israel; Oyen, Landy, Hilburn-Cobb, 2000, in Canada), suggesting the applicability of the measurement system across a broad developmental and cultural spectrum.

The EA Scales offer the promise of seamless developmental measurement of relational quality over time. Thus far, EA has been empirically validated among dyads with children ages 0–14 years. Life span measurement is key to being able to make predictions from EA to later risk indicators (or the reverse), and it remains for future research to explicate the interrelations between EA (or emotional unavailability) and adaptive as well as maladaptive development over the life span. Several papers in this volume make contributions in this regard by utilizing longitudinal methodology with at-risk groups, and one employs an intergenerational design.

Incorporating cultural context into study designs and treatment initiatives

Cultural applicability is also another important tenet of developmental psychopathology as a discipline (Cicchetti, 1993; Cicchetti & Toth, 2009). The EA system has demonstrated broad applicability in different cultural contexts (Easterbrooks & Biringen, 2009). The ability to use this measurement across contexts that can be selected according to cultural applicability is a strength.

It is not surprising that EA, generally defined as an “emotional connection,” has been predictive of child and parent outcomes in almost all the cultures in which it is utilized (Easterbrooks & Biringen, 2009). Because the six qualities assessed by the EA Scales (sensitivity, structuring, nonintrusiveness, nonhostility, child responsiveness, and child involvement) capture the affective tone of a dyadic relationship under any set of contexts or circumstances, the lens is not only on separation and reunion situations but also on everyday life. The emphasis is on contexts of stress as well as contexts of pleasure, and everything in between. The underpinnings of adaptive development may lie just as much in the ability to have fun and express joy with a trusted figure as being able to regulate and cope with stress in relation to that person. It is not surprising that emotional connection spans all cultures, but we need to better understand the “meaning” of different aspects of EA in different cultures. It is interesting that although treatment initiatives using EA are underway in a myriad of cultural contexts, this is perhaps the least emphasized area in EA research and is an area that is “ripe” for investigation.

Scientific discoveries must be translated into practical applications

Another key tenet of the developmental psychopathology framework is that research should be translated into clinical work and other practice arenas, and that the needs of the practice community should be taken into account in research and evaluation (Cicchetti & Toth, 2009). In this light, clinicians working with their patients, and early care professionals working in childcare settings, are utilizing the EA concept and measurement tools to understand as well as evaluate early relationships. For example, the EA concept and measurement is being used in conjunction with the Adult Attachment Interview for treatment planning (Flykt et al., in press), in formal evaluations of custody and social service cases (Biringen & Allender, 2011), as well as in the context of interventions in childcare settings (Biringen et al., 2012). Incorporating EA into clinical work with individual patients is reminiscent of Emde’s (1980) introduction of this concept to the therapeutic literature. There are now editions of the EA to assess couple relationships and to examine the interventionist’s EA with the patient/client. Although coverage of clinical or practice applications is beyond the scope of this collection of research papers, we are optimistic that the programmatic research described in this collection will inform the applied work conducted in practice settings.

Theory and empirical research on basic biological and psychological developmental processes must be increasingly used to inform prevention and intervention initiatives

A focus on evidence-based preventive and intervention programs is at the heart of a developmental psychopathology framework. EA not only has been friendly to the prevention and intervention focus of this discipline, the move to use EA to evaluate varied evidence-based programming is a goal for the future and one of the least emphasized areas in the EA literature, and hence, one of the emphases of this Special Section.

A multiple levels of analysis approach and an interdisciplinary perspective

Cicchetti and Toth’s (2009) call for interdisciplinary work, with multiple levels of analysis, is becoming realized, as investigators are especially studying biological indicators that may proceed or accompany variations in EA. The measurement of EA as a flexible, dynamic, and dimensional assessment of relationships across the life course is part of this approach; this aspect of such interdisciplinary investigation is at an early stage, but one represented in this Special Section.

The Papers in This Collection

Building on well over 100 extant publications on the EA Scales, this collection of papers both supports theoretical

assumptions about the genesis of EA and its role in children's development and expands the knowledge base about EA into new territory. The studies investigate new issues pertaining to EA, including a first look at the biological underpinnings of EA in the classic context of infant distress. As such, Killeen and Teti's (2012) interdisciplinary research elucidates brain mechanisms associated with EA. The authors examine EA in mother–infant interactions, mothers' reports of depressive and anxious symptoms, and mothers' prefrontal EEG recordings in the context of emotional stimuli from their 6-month-old infants. This study yields important findings related to “online” empathy in an attachment-relevant context (that of infant distress), with the suggestion for preventive interventions for mothers who may not show the expected online responsiveness.

Other papers in this collection examine EA in the contexts of nonbiological caregivers, specifically professionals in center-based childcare and foster and adoptive parents. Examining EA among these important nonbiological caregivers is a critical issue with respect to the developmental psychopathology framework. Although adoption and foster care are not created through an experimental or quasiexperimental design, nonetheless they are perhaps among the most powerful interventions offered to children living in high-risk environments. Childcare providers or early care teachers, too, are increasingly viewed as readying children for school or as having the potential to mitigate challenging home environments (Hamre & Pianta, 2001). The paper by Biringen et al. (2012) reports the results of an intervention study wherein child care professionals caring for infants and toddlers received EA training and also assumed the role of interventionists in enhancing children's attachment security (as measured by the Attachment Q-Sort; Waters & Deane, 1985) and EA. To our knowledge, this is the first study to use EA and attachment principles to train child care professionals.

The next two papers focus on internationally adopted children adopted into (a) the United States and (b) The Netherlands. The paper by Garvin, Tarullo, van Ryzin, and Gunnar (2012) reports on a study of internationally adopted children who were cared for either in institutions or foster care prior to adoption, who were compared with nonadopted children from 18 to 36 months of age. The study examined EA, child emotional understanding, initiation of joint attention, and indiscriminate friendliness, as scored from a parent attachment interview. Little is known about whether postadoption parenting can moderate or lessen the relations between early experiences and children's adjustment and whether EA in the post-adoptive home might lessen some of the features of disinhibited attachment often seen in the children adopted from the most deprived circumstances. This study points to the potential of even small enhancements in competent parenting to have a substantial effect on internationally adopted children's positive adaptation, especially in areas that are suggestive of reactive attachment disorder.

The paper by van den Dries, Juffer, van IJzendoorn, Bakermans-Kranenburg, and Alink (2012) on this topic involves

children adopted into The Netherlands from China, and examines, during the second year of life, attachment (including disorganized attachment) and indiscriminate friendliness, and two aspects of EA (maternal sensitivity and child responsiveness). In both of these adoption studies, some of the children were adopted from institutions and others were adopted from foster homes. Taken together, these investigations will help us understand the differential effects of preadoptive experiences, and will address the hypothesis that foster homes may provide more appropriate caregiving experiences than is seen in orphanages. The van den Dries et al. (2012) study also examines the link between EA in a free play context and disorganized attachment, as assessed in the Strange Situation. The linkage of EA and disorganized attachment allows some comparison with the findings of Easterbrooks, Bureau, and Lyons-Ruth (2012), where EA and disorganized attachment behavior were measured in middle childhood in a reunion context, thereby addressing an important issue about contexts of observation and disorganized attachment.

This Special Section brings together a collection of papers on children developing in high-risk environments, a conspicuous lacuna in the EA literature. The first study focuses on a high-risk, low-income group of mothers (Easterbrooks et al., 2012). The second focuses on mothers and children exposed to violence (Timmer, Thompson, Culver, Urquiza, & Altenhofen, 2012). The third focuses on mothers with a history of either aggression or withdrawal (Stack et al., 2012). Some of these papers adopt a longitudinal framework. These papers underscore an important tenet of the developmental psychopathology framework, namely, how some relationships are faring well and others in trouble, in the context of high-risk conditions.

The study by Easterbrooks et al. (2012) demonstrates the associations between disorganized attachment and aspects of maternal EA during middle childhood (age 7), extending the evidence for EA-attachment linkages already established in infancy and early childhood. Further, this paper demonstrates coherence across developmental epochs, as maternal behavior in infancy predicted later EA. The study also features a new system for measuring disorganized attachment beyond infancy, the Middle Childhood Disorganization and Control scales (Bureau, Easterbrooks, Killen, & Lyons-Ruth, 2006), and includes two measures of early maternal behavior, the Atypical Maternal Behavior Instrument for Assessment and Classification system and the Home Observation of Maternal Interaction Rating Scales. The study results indicated coherence in maternal behavior from infancy to childhood despite these different coding systems. The relation between EA and disorganized attachment behavior during middle childhood (both assessed in a brief reunion episode) is of particular interest, especially in light of the van den Dries et al. (2012) paper. This study also found associations between EA and children's developmental functioning outside of the mother–child relationship (behavior problems in school, child depressive symptoms).

The study by Timmer et al. (2012) focuses on two forms of family violence (physical abusiveness and intimate partner

violence) and explores how children fare in environments in which they are exposed to only physical abusiveness or where they are exposed to dual violence. These authors present data that suggest the importance of turning a keen eye to surprising findings (in this case the children looked to be showing better EA than did their mothers) and examining whether children from dual-violence environments show overresponsive or underresponsive interactive styles.

The paper by Stack et al. (2012) describes a study utilizing a longitudinal intergenerational design, whereby mothers' histories of aggression or withdrawal in their childhoods are examined in relation to their EA with their children. The first of two studies reported in the Stack et al. (2012) paper examines EA during preschool and middle childhood, whereas their second study examines a different sample of children tested at five time points between infancy and early childhood, giving us the chance to understand EA in relationships across a wide age spectrum. Given that most intergenerational studies of the impact of childhood histories on parenting focus solely on attachment experiences, this study is a refreshing look at how a history of externalized hostility and internalized hostility can impact mother-child relationships. More clearly than any other study we know about, Stack et al. (2012) highlight the crucial role of an EA quality that has received little attention in the literature: maternal hostility. This is a less-studied aspect of EA than is maternal sensitivity, and yet it includes indicators of frightening and atypical maternal behavior that could be quite useful for a multifaceted understanding of parenting that is relevant for developmental psychopathology.

Maternal sensitivity has long been the centerpiece of attachment research, mainly because sensitive responsiveness across the first year of life has been thought of as the best predictor of a secure infant attachment (Ainsworth, et al., 1978; Bakermans-Kranenburg, van IJzendoorn, & Juffer (2003). Although the papers in the current collection also highlight the importance of this bedrock concept, the studies under-

score that other dimensions of parenting also are significant predictors and bear a theoretical linkage with relevant outcomes (e.g., the relation between a mother's childhood history of aggression or withdrawal and observed hostility during mother-child interactions; Stack et al., 2012). Further, Garvin et al. (2012) indicate that mothers of postinstitutionalized children were lower in structuring and nonintrusiveness (i.e., higher in intrusiveness) than were mothers of nonadopted children, whereas sensitivity was not different between the two groups. The Biringen et al. (2012) paper on child care interventions highlights the importance of caregiver structuring and how that is the first caregiver quality improved through EA trainings with the professional caregivers; the paper reports that improvements in child responsiveness as well as attachment security were also documented.

Typically, attachment has been viewed as more difficult to change and sensitivity easier to change. Yet, in the context of childcare, which is a multiple caregiver context, it was really structuring, child EA, and child attachment security that showed change as a result of the intervention. Further, van den Dries et al. (2012) also found that child responsiveness (not sensitivity) improved in the postadoptive environment, in particular, for those with a history of foster care rather than institutional care. These findings underscore the importance of using all of the EA dimensions, rather than only the sensitivity measure (van IJzendoorn et al., 2007).

Taken together, the papers in this collection extend the literature regarding EA, providing support for the concept and its operationalization via the EA Scales. The studies reported include new types of caregivers (center-based caregivers, foster, and adoptive parents) and provide new data on the usefulness of EA dimensions in addition to maternal sensitivity (e.g., maternal hostility, child responsiveness). The work provides new data linking EA and psychophysiological indicators of functioning, explores the EA-disorganized attachment link during infancy and middle childhood, and suggests the efficacy of developing interventions based on EA principles.

References

- Ainsworth, M., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.
- Aviezer, O., Sagi, A., Joels, T., & Ziv, Y. (1999). Emotional availability and attachment representations in Kibbutz infants and their mothers. *Development Psychology*, *35*, 811–821.
- Bakermans-Kranenburg, M., van IJzendoorn, M., & Juffer, F. (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, *129*, 195–215.
- Barone, L., & Biringen, Z. (2007). Le scale per la valutazione della disponibilità emozionale (Emotional Availability Scales—EAS). In L. Barone (Ed.), *Emozioni e sviluppo. Percorsi tipici e atipici*. Rome: Carocci.
- Biringen, Z. (1987). Perceptions of and interactions with one's child. *Dissertation Abstracts International*, *48*(12), 3701B.
- Biringen, Z. (2000). Emotional availability: Conceptualization and research findings. *American Journal of Orthopsychiatry*, *70*, 104–114.
- Biringen, Z. (2004). *Raising a secure child: Creating emotional availability between you and your child*. New York: Perigee/Putnam Press.
- Biringen, Z. (2005). Training and reliability issues with the Emotional Availability Scales. *Infant Mental Health Journal*, *26*, 404–405.
- Biringen, Z., & Allender, T. (2011, July). Using evidence-based assessments to evaluate parent-child relationship quality. *Zero to Three Journal*, *31*, 36–39.
- Biringen, Z., Altenhofen, S., Aberle, J., Baker, M., Brosal, A., Bennett, B., et al. (2012). Emotional availability, attachment, and intervention in center-based child care for infants and toddlers. *Development and Psychopathology*, *24*, 23–34.
- Biringen, Z., Damon, J., Grigg, W., Mone, J., Pipp-Siegel, S., Skillern, S., et al. (2005). Emotional availability: Differential predictions to infant attachment and kindergarten adjustment based on observation time and context. *Infant Mental Health Journal*, *26*, 295–308.
- Biringen, Z., & Easterbrooks, M. A. (2008). Understanding relationships and relationship interventions. *Journal of Early Childhood and Infant Psychology*, *4*, 1–3.
- Biringen, Z., & Robinson, J. (1991). Emotional availability in mother-child interactions: A conceptualization for research. *American Journal of Orthopsychiatry*, *61*, 258–271.
- Biringen, Z., Robinson, J., & Emde, R. (1998). *Emotional Availability Scales* (3rd ed.). Unpublished manuscript. Retrieved from <http://www.emotionalavailability.com>
- Bowlby, J. (1980). *Attachment and loss: Vol. 1. Attachment*. New York: Basic Books. (Original work published 1969)

- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation*. New York: Basic Books.
- Bretherton, I. (2000). Emotional availability: An attachment perspective. *Attachment & Human Development*, 2, 233–241.
- Bureau, J.-F., Easterbrooks, M. A., Killam, S., & Lyons-Ruth, K. (2006). *Middle Childhood Disorganization and Controlling Scales*. Unpublished manuscript, Harvard Medical School.
- Cicchetti, D. (1993). Developmental psychopathology: Reactions, reflections, projections. *Developmental Review*, 13, 471–502.
- Cicchetti, D., & Toth, S. L. (1995). A developmental psychopathology perspective on child abuse and neglect. *Journal of the American Academy of Child & Adolescent Psychiatry*, 34, 541–565.
- Cicchetti, D., & Toth, S.L. (2009). The past achievements and future promises of developmental psychopathology: The coming of age of a discipline. *Journal of Child Psychology and Psychiatry*, 50, 16–25.
- Easterbrooks, M. A., Biesecker, G., & Lyons-Ruth, K. (2000). Infancy predictors of emotional availability in middle childhood: The roles of attachment security and maternal depressive symptomatology. *Attachment and Human Development*, 2, 170–187.
- Easterbrooks, M. A., Bureau, J.-F., & Lyons-Ruth, K. (2012). Developmental correlates and predictors of emotional availability in mother-child interaction: A longitudinal study from infancy to middle childhood. *Development and Psychopathology*, 24, 65–78.
- Easterbrooks, M. A., & Biringen, Z. (2000). Mapping the terrain of emotional availability and attachment. *Attachment and Human Development*, 2, 129–135.
- Easterbrooks, M. A., & Biringen, Z. (2005). The Emotional Availability Scales: Methodological refinements of the construct and clinical implications related to gender and at-risk interactions. *Infant Mental Health Journal*, 26, 291–294.
- Easterbrooks, M. A., & Biringen, Z. (2009). Emotional availability across contexts. *Parenting: Science & Practice*, 9, 179–182.
- Emde, R. N. (1980). Emotional availability: A reciprocal reward system for infants and parents with implications for prevention of psychosocial disorders. In P. M. Taylor (Ed.), *Parent-infant relationships* (pp. 87–115). Orlando, FL: Grune & Stratton.
- Emde, R. N. (1983). The prerepresentational self and its affective core. *Psychoanalytic Study of the Child*, 38, 165–192.
- Emde, R. N. (2000). Next steps in emotional availability research. *Attachment and Human Development*, 2, 242–248.
- Emde, R. N., & Easterbrooks, M. A. (1985). Assessing emotional availability in early development. In W. Frankenburg, R. N. Emde & J. Sullivan (Eds.), *Early identification of children at risk. An international perspective* (pp. 79–101). New York: Plenum Press.
- Garvin, M. C., Tarullo, A. R., Van Ryzin, M., & Gunnar, M. R. (2012). Post-adoption parenting and socioemotional development in postinstitutionalized children. *Development and Psychopathology*, 24, 35–48.
- Guttman, H. A. (1991). Systems theory, cybernetics, and epistemology. In A. S. Gurman & D. P. Kniskern (Eds.), *Handbook of family therapy*. New York: Brunner/Mazel.
- Hamre, B. K., & Pianta, R. C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, 72, 625–638.
- Killeen, L. A., & Teti, D. M. (2012). Mothers' frontal EEG asymmetry in response to infant emotions and mother-infant emotional availability, emotional experience, and internalizing symptoms. *Development and Psychopathology*, 24, 9–21.
- Kogan, N., & Carter, A. (1996). Mother-infant reengagement following the still-face: The role of maternal emotional availability in infant affect regulation. *Infant Behavior and Development*, 19, 359–370.
- Mahler, M., Pine, F., & Bergman, A. (1975). *The psychological birth of the human infant*. New York: Basic.
- Oyen, A., Landy, S., & Hilburn-Cobb, C. (2000). Maternal attachment and sensitivity in an at-risk sample. *Attachment and Human Development*, 2, 203–217.
- Robinson, J., Little, C. & Biringen, Z. (1993). Emotional communication in mother-toddler relationships: Evidence for early gender differentiation. *Merrill-Palmer Quarterly*, 39, 496–517.
- Salo, S., Kivistö, K., Korja, R., Biringen, Z., Tupola, S.-M., & Kiviti-Kallio, S. (2009). Emotional availability, parental self-efficacy beliefs, and child development in caregiver-child relationships with buprenorphine-exposed 3-year-olds. *Parenting: Science & Practice*, 9, 244–259.
- Sameroff, A., & Fiese, B. (2000). Models of development and developmental risk. In C. Zeanah (Ed.), *Handbook of infant mental health* (2nd ed., pp. 3–19). New York: Guilford Press.
- Sorce, J., & Emde, R. N. (1981). Mother's presence is not enough: Effect of emotional availability on infant exploration. *Developmental Psychology*, 17, 737–745.
- Stack, D. M., Serbin, L. A., Girouard, N., Enns, L. N., Bentley, V. M. N. LeDingham, et al. (2012). The quality of the mother-child relationship in high-risk dyads: Application of the Emotional Availability Scales in an intergenerational, longitudinal study. *Development and Psychopathology*, 24, 93–105.
- Swanson, K., Beckwith, L., & Howard, J. (2000). Intrusive caregiving and quality of attachment in prenatally drug-exposed toddlers and their primary caregivers. *Attachment and Human Development*, 2, 130–148.
- Timmer, S. G., Thompson, D., Culver, M. A., Urquiza, A. J., & Altenhofen, S. (2012). Mothers' physical abusiveness in a context of violence: Effects on the mother-child relationship. *Development and Psychopathology*, 24, 79–92.
- van den Dries, L., Juffer, F., van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Alink, L. R. A. (2012). Infants' responsiveness, attachment, and indiscriminate friendliness after international adoption from institutions or foster care in China: Application of Emotional Availability Scales to adoptive families. *Development and Psychopathology*, 24, 49–64.
- van IJzendoorn, M. (1995). Adult attachment representations, parental responsiveness, and infant attachment: A meta-analysis on the predictive validity of the Adult Attachment Interview. *Psychological Bulletin*, 117, 387–401.
- van IJzendoorn, M. H., Rutgers, A. H., Bakermans-Kranenburg, M. J., Swinkels, S. H., van Daalen, E., Dietz, C., et al. (2007). Parental sensitivity and attachment in children with autism spectrum disorder: Comparison with children with mental retardation, with language delays, and with typical development. *Child Development*, 2, 597–608.
- Waters, E., & Deane, K. (1985). Defining and assessing individual differences in attachment relationships: Q-methodology and the organization of behavior in infancy and early childhood. *Monographs of the Society for Research in Child Development*, 50, 41–65.
- Zimmerman, L., & McDonald, L. (1995). Emotional availability in infants' relationships with multiple caregivers. *American Journal of Orthopsychiatry*, 65, 147–152.
- Ziv, Y., Aviezer, O., Gini, M., Sagi, A., & Koren-Karie, N. (2000). Emotional availability in the mother-infant dyad as related to the quality of infant-mother attachment relationship. *Attachment and Human Development*, 2, 149–169.