REACTIVE ATTACHMENT DISORDER: A REVIEW FOR DSM-V

Charles H. Zeanah, M.D.

Mary Margaret Gleason, M.D.

Department of Psychiatry and Behavioral Sciences

Tulane University School of Medicine

Correspondence: Charles H. Zeanah, M.D.

1440 Canal Street TB 52

New Orleans, LA 70112

504-988-5402

504-988-4264 (fax)

czeanah@tulane.edu

Reactive attachment disorder (RAD) of infancy and early childhood was first defined as a disorder in the 3rd edition of the *Diagnostic and Statistical Manual of Mental Disorders* [(DSM-III) APA, 1980], and criteria were later revised for DSM-III-R (APA, 1987) and again for DSM-IV (APA, 1994). Still for almost 20 years, the disorder attracted little attention from investigators, so these revisions were made largely in the absence of any pertinent research. In fact, the first study directly addressing the validity of the criteria did not appear until 1998 (Boris et al., 1998). Volkmar (1997) indicated that despite the paucity of systematic studies, the disorder was maintained in DSM-IV (APA, 1994) primarily because it appeared to encompass a unique set of signs and symptoms not explained by other disorders.

There is broad consensus that the disorder results from inadequate caregiving environment and encompasses two clinical patterns, an emotionally withdrawn inhibited type and an indiscriminately social/disinhibited type. Case reports (e,g, Hinshaw, Boris & Zeanah, 1999; Richters & Volkmar, 1994; Zeanah, Mammen & Lieberman, 1993), studies using continuous measures of RAD (Chisholm, 1998; Chisholm et al., 1995; O'Connor & Rutter, 1999; O'Connor & Rutter, 2000; O'Connor et al., 2003; Osterman & Schuengel, 2007; Rutter et al., 2007; Smyke, Dumitrescu, & Zeanah, 2002; Zeanah et al., 2005), and studies using categorical measures of RAD (Boris et al., 2004; Zeanah et al., 2004) all have affirmed that the two types of RAD can be reliably identified in maltreated, institutionalized, and formerly institutionalized children. Research on international adoptees has focused primarily on the indiscriminately social/disinhibited type, but studies of children being reared in institutions and maltreated children have included the emotionally withdrawn/inhibited type, as well. A growing number of studies of children reared in conditions of extreme adversity are available to contribute to an evaluation of the criteria for RAD in young children. Taken as a whole, these studies support the construct validity of RAD, but a number of important questions have arisen

regarding how the disorder is defined.

In order to update earlier reviews of the criteria (Zeanah, 1996; Zeanah & Emde, 1994; Zeanah, 2007), we review research conducted since the DSM-IV criteria (see Table 1) were published in 1994 and make recommendations for modifications in the criteria for DSM-V. Because the criteria in ICD-10 (WHO, 1992) have important similarities and differences to the DSM-IV criteria, we also consider those differences in light of research conducted to date (see Tables 2 and 3). We begin, however, by considering a brief history of the construct of attachment disorders.

HISTORY AND COMPARATIVE NOSOLOGIES

Behaviors similar to those in the DSM-IV (APA, 1994) criteria were evident in descriptive studies of severely deprived young institutionalized children that appeared in the mid- and latter 20th century (Goldfarb, 1945; Levy, 1947; Spitz, 1945; Provence and Lipton, 1962; Wolkind, 1974). There were also studies of the social behavior of maltreated children that informed the criteria (Gaensbauer & Sands, 1979; Gaensbauer & Harmon, 1982; George & Main, 1979).

The most important study informing the criteria, however, was a study by Barbara Tizard and her colleagues of young children being raised in residential nurseries in London (Tizard, 1977). In this study, children were raised in nurseries that had lower caregiver to child ratios than in many previous studies, and the children were kept in mixed aged groups and had adequate books, toys and instruction available. Nevertheless, caregivers were discouraged from forming attachments to the children in their care. As a result, the usual confound of material privation in previous studies of institutionalized children was eliminated, and the variable of most interest, caregiver-child relationships, was isolated for study. The investigators examined children who were abandoned at birth and raised in institutional settings. Of the 26 children who

remained institutionalized for the first four years of their lives, eight were described as emotionally withdrawn and unresponsive to anyone, 10 others were indiscriminately social, attention seeking and clingy with everyone, including unfamiliar adults, and eight of the 26 managed to form preferred attachments to caregivers (Tizard & Rees, 1975). The emotionally withdrawn/inhibited and indiscriminately social/disinhibited attachment phenotypes in the Tizard study were later incorporated into the DSM criteria, which recognized these two basic clinical presentations of RAD.

The first appearance of RAD in diagnostic nosologies was in 1980 in DSM-III (APA, 1980). This early, DSM-III version of the disorder included growth failure and lack of social responsivity as central features. The diagnosis had to have its onset by eight months of age, which is the age at which preferred attachment is usually just beginning to be evident (Boris et al., 1999). Moreover, the diagnosis could not result from a diagnosable medical condition. Gross neglect of the infant's physical and emotional needs had to be evident.

Unlike later DSM definitions, DSM-III did not emphasize the need to evaluate children for autistic disorder or mental retardation. The biggest problem with this approach, however, concerned the overlap with other conditions. Specifically, pertinent behaviors cited in the RAD criteria included poor tone, weak cry, excessive sleep, lack of interest in the environment, and weak rooting and grasping when feeding. Thus, this approach to RAD confounded it with what used to be called non-organic failure to thrive, and, oddly, it included the requirement that the disorder of attachment have its onset even before the child was developmentally capable of forming an attachment. Although growth failure and disorders of attachment are sometimes both evident in institutionalized or neglected children, there is no evidence of a direct link between attachment and failure to thrive (Chatoor et al., 1998). In fact, most children with reactive attachment disorder are not failing to thrive, and most children with failure to

thrive do not meet criteria for reactive attachment disorder (Boris & Zeanah, 2009). There are children, of course, who will exhibit both conditions and warrant both diagnoses, however.

The link between failure to thrive and RAD was dropped in the revised third edition of the DSM (DSM-III-R), and the age of onset was changed to the first 5 years of life. The two subtypes of the disorder, emotionally withdrawn/inhibited and indiscriminately social/disinhibited, which were derived from the Tizard findings (Tizard & Rees, 1975), were introduced with DSM-III-R and have persisted in DSM-IV-TR (see Table 1) and in ICD-10. Text included with the DSM-IV-TR also emphasized the importance of differentiating children with RAD from those with pervasive developmental disorders, mental retardation, or other developmental delays.

There is general convergence between the DSM-IV-TR and the ICD-10 criteria for RAD (see Tables 1-3). Common features include aberrant social behavior that is cross contextual, pathogenic care as the etiologic factor, and the two clinical subtypes of indiscriminately social and emotionally withdrawn. In fact, ICD-10 divides the subtypes into two distinct disorders, reactive attachment disorder (RAD), similar to the emotionally withdrawn/inhibited type of RAD (see Table 2) and disinhibited attachment disorder (DAD), similar to the indiscriminately social disinhibited type of RAD (see Table 3). An important question for DSM-V is whether the two clinical types are best described as a single disorder with two subtypes or as two distinct disorders.

An alternative approach from both DSM-V and ICD-10 was derived from developmental research on selective attachment. This alternative approach first appeared in the Research Diagnostic Criteria-Preschool Age (AACAP, 2002) and later in Diagnostic Classification: 0-3R (Zero to Three, 2005). This alternative approach focused more explicitly on the absence of focused attachment behaviors in particular, as opposed to aberrant social behaviors more generally. It also introduced a mixed type,

sharing features of both emotionally withdrawn/inhibited and indiscriminately social/disinhibited types (see Table 4). More of the research to date has focused on the alternative approach than on the DSM-IV-TR approach. Before reviewing that research, we first consider the DSM-IV criteria.

CRITIQUE OF THE DSM-IV DEFINITION OF RAD

Despite broad agreement about the two distinctive subtypes of RAD, a number of criticisms of the DSM-IV conceptualization of RAD have been enumerated. Highlighting these areas of controversy begins to form the basis for considering revisions to these criteria.

A significant criticism of DSM-IV criteria for RAD is that the phenotype it defines is insufficiently informed by development research on attachment (Zeanah, 1996). An important challenge in defining RAD is the very ubiquity of attachment in young children. Under species typical rearing conditions, virtually all children form selected attachments to their caregivers in the latter part of the first year of life. A substantial body of evidence indicates that the quality of attachment relationships, measurable as early as 12 months of age, predict subsequent psychosocial adaptations (Thompson, 2008). Secure, insecure, and disorganized attachments may be measured both continuously (e.g., Waters & Deane, 1985) and categorically (Ainsworth et al., 1978; Main & Solomon, 1990), and hundreds of studies have been conducted considering patterns of attachment as risk and protective factors for young children. Secure attachment functions as a protective factor, and disorganized attachment as a risk factor, but these relationships are much stronger within high risk groups (DeKlyen & Greenberg, 2008; Green & Goldwyn, 2002; Zeanah, Keyes & Settles, 2003). Many have emphasized the distinction between classifications of attachment and disorders of attachment (AACAP, 2005; O'Connor & Zeanah, 2003; Sroufe, 1997; Zeanah et al., 1993; Zeanah & Emde, 1994),

although some have suggested that RAD represents an extreme form of disorganized attachment classifications (Green, 2003) or that disorganized attachment ought to be considered an attachment disorder (van IJzendoorn & Bakersman-Kranenberg, 2002). There are very good reasons why it ought not be considered equivalent to a disorder, which we consider somewhat later.

Of course, children with many types of psychopathology also may have disturbances in their attachment relationships related to their symptomatology. Thus, an important question is when attachment is the primary clinical problem that impairs the child beyond interactions with the attachment figure, in which case it comprises an attachment disorder, and when attachment is merely one of a number of developmental domains that is compromised in association with some other type of psychopathology.

The DSM-IV A Criterion

The DSM-IV A criterion, requiring "markedly disturbed and developmentally inappropriate and social relatedness" has been criticized as too focused on aberrant social behaviors and not specifically enough focused on aberrant attachment behaviors. That is, how the young child seeks comfort, support, nurturance and protection from a preferred attachment figure in times of fear, distress, fatigue, etc., ought to be the more specific focus of the criterion (O'Connor & Zeanah, 2003; Zeanah, 1996). Arguably, this has had the effect of blurring the distinctive features of attachment disorders, raising the possibility of overlap with autistic spectrum disorders and reducing the face validity of the disorder.

The alternative criteria from RDC-PA (AACAP, 2003) and DC: 0-3R (Zero to Three, 2005), in contrast, have refocused the emphasis on attachment behaviors (Table 3). Three studies have compared the diagnostic reliability the DSM-IV and the alternative criteria sets head to head. First, Boris et al. (1998) used a retrospective chart review of 48 consecutive clinical cases (mean age = 24 months) referred to an outpatient

clinic that was a primary referral source for the state child protective services (accounting for 79% of cases in this study) to compare DSM-IV and alternative criteria (similar to those in Table 4). They found substantially greater interrater agreement using alternative criteria rather than DSM-IV criteria, both for emotionally withdrawn/inhibited RAD (kappa of 0.70 vs. 0.46) and for indiscriminately social/disinhibited RAD (kappa of 0.81 vs. 0.36).

In another study, Boris and colleagues (Boris et al., 2004) used structured interviews and a structured clinic observation procedure to diagnose attachment disorders in three groups of young children: those in foster care, in a homeless shelter, and enrolled in Head Start. They compared DSM, ICD and alternative criteria for attachment disorders and reported adequate kappas (0.62-0.74) across pairs of raters and different sets of criteria. As expected, the homeless children and foster care children showed more attachment disturbances than those in Head Start, but the numbers of children meeting the diagnostic threshold was small, especially for the DSM criteria.

Zeanah and colleagues (2004) interviewed clinicians treating maltreated children in foster care using a structured interview designed to assess signs of attachment disorder in the children. Three raters applied diagnostic criteria for RAD defined by DSM-IV and for RAD and DAD defined by ICD-10 to the interview responses in order to determine which children met criteria for the diagnoses. There was more than adequate interrater agreement for DSM-IV criteria for RAD and for ICD-10 criteria.

Taken together, these findings suggest some evidence for the reliability of the DSM criteria sets, but the findings that the alternative criteria were more reliable and more sensitive raise concerns about the DSM criteria, especially whether Criterion A's focus on social behaviors rather than attachment behaviors reduces the specificity of the criterion. These concerns are especially apparent when one assesses the descriptors

used to define the subtypes of emotionally withdrawn/inhibited and indiscriminately social/disinhibited.

Emotionally withdrawn/inhibited subtype

The emotionally withdrawn/inhibited type is defined by terms such as "excessively inhibited," "hypervigilant," or "highly ambivalent and contradictory responses (e.g., the child may respond to the caregiver with a mixture of approach, avoidance, and resistance to comforting or may exhibit frozen watchfulness)." "Excessively inhibited" is in keeping with most of the empirical descriptions of these children's behaviors (Smyke et al., 2002; Tizard & Rees, 1975; Zeanah et al., 2005). On the other hand, "hypervigilance" and "frozen watchfulness" are derived from the trauma literature and are associated with high levels of fearful behavior following a traumatic event (Stafford et al., 2003). Frozen watchfulness, in fact, has been described as a relationship specific response of a young child confronted by an abusive caregiver rather than as a cross situationally expressed sign of attachment disorders (Zeanah et al., 1993).

Additionally, "mixtures of approach and avoidance" are compatible with behaviors in the Strange Situation Procedure (Ainsworth et al., 1978) comprising disorganized attachments. It is quite clear that disorganized attachment is not synonymous with RAD (Zeanah, 2007; Zeanah & Smyke, 2008; Zeanah et al., 2005). Although some children with emotionally withdrawn/inhibited RAD do have disorganized attachments, others have no attachment whatsoever. Further, emotionally withdrawn/inhibited RAD is exceptionally rare—even among young children being raised in institutions (Gleason et al., submitted a)--whereas 15% of low risk children typically display disorganized attachment classifications in the Strange Situation Procedure (van IJzendoorn, Schuengel & Bakersman-Kranenberg, 1999). Further, "mixtures of approach and avoidance" are unnecessarily vague descriptors because the behaviors are not anchored to any contexts nor differentiated from normal behaviors. "Resistance to

comforting" is known to be associated with RAD, but without clearer language, it also needs to be placed within context and differentiated from typical behavior. Thus, much of the language describing signs of the emotionally withdrawn/inhibited form of RAD seems not to be specific to the disorder and should be more clearly defined.

Indiscriminately social/disinhibited subtype

Similar concerns apply to the vagueness of the descriptors of indiscriminate behavior (O'Connor & Zeanah, 2003; Zeanah, 1996). The phrase "diffuse attachments" implies that in contrast to the emotionally withdrawn/inhibited type of RAD, the indiscriminately social/disinhibited type intends to describe children who lack selectivity in terms of caregivers to whom they direct attachment behaviors. But to illustrate "marked inability to exhibit appropriate attachments," the DSM-IV criterion includes both "excessive familiarity with relative strangers" (which does not describe attachment behaviors) and "lack of selectivity in choice of attachment figures" (which does describe attachment behaviors) (see Table 1).

In fact, most studies of the disorder have focused far more on the tendency to approach, interact with and go off with strangers rather than on attachment behaviors *per se* when studying indiscriminate behavior (Bruce, Tarullo & Gunnar, 2009; Chisholm, 1998; Chisholm et al., 1995; O'Connor & Rutter, 2000; Pears et al., 2009; Rutter et al., 2007; Smyke et al., 2002; Zeanah et al, 2005). Further, Zeanah et al. (2002) showed that the internal consistency of a measure of indiscriminate behavior actually decreased when lack of selective attachment was included, suggesting that lack of selective attachment is not a part of indiscriminately social RAD. Though indiscriminate behavior is measured somewhat differently in different investigations, Zeanah et al. (2002) also showed that the three most commonly used parent report measures of indiscriminate behavior were largely convergent (Zeanah et al., 2002). A behavioral measure of indiscriminate behavior also substantially converged with a parent report measure in

studying children with a history of institutional rearing (Gleason et al., submitted b). On balance, there is a reasonable consensus about clinically problematic indiscriminate behavior and how to measure it, but this consensus is not well captured by the DSM-IV Criterion A descriptors.

DSM-IV Criterion B

As written, the B criterion seems to imply that the socially deviant behaviors in Criterion A could be confused for developmental delays in affected children. In fact, there is no evidence that any of the behaviors described in Criterion A reflect developmental delays. Although Criterion B does not explicitly exclude young children with developmental delays or mental retardation from a diagnosis of RAD, this is a potential unintended consequence of its inclusion. In fact, it is well documented that conditions of neglect and material and social privation are likely to increase the risk for both cognitive delays and RAD. Nevertheless, there is no reason to expect confusion about the clinical picture of deviant social behavior with a child with delayed social development.

A more meaningful criterion might restrict the diagnosis to children who are cognitively capable of forming attachments, that is, those who have reached a cognitive age of 9 months. RAD attempts to identify children who possess the cognitive capacity to form attachments but who live in extreme conditions that limit their opportunity to form attachments. Attachments form in typically developing children at 7-9 months of age when stranger wariness and separation protest appear. This is not a diagnosis that should be made before the child is developmentally expected to have formed selected attachments. Thus, a minimum cognitive age of 9 months for making the diagnosis should be included.

Presence of Pervasive Developmental Disorders (PDD) is considered an exclusionary condition for diagnosing RAD, and it may be that these two disorders

cannot co-occur. The exclusionary criterion is designed to distinguish between aberrant social behavior induced by severe neglect and deprivation versus that induced by intrinsic central nervous system abnormalities such as autistic spectrum disorders (Zeanah, 1996). On the other hand, this criterion may pose a problem insofar as PDD or "quasi-autistic" behavior seems to be induced by institutional rearing in some circumstances. Rutter et al. (1999) described a small number of children who met criteria for autism soon after placement in adoptive homes but who improved over the two subsequent years and no longer met criteria thereafter (e.g., Rutter et al., 1999). The implication is that it may not be necessary to exclude a diagnosis of attachment disorder among children who exhibit autistic-like behavior immediately following institutional deprivation. Unfortunately, there are insufficient data to date that have addressed whether RAD and PDD can co-occur or whether it is reasonable to have PDD exclude RAD (O'Connor & Zeanah, 2003). It is worth noting that pervasive developmental disorder does not preclude the development of secure attachment behaviors (Rutgers et al., 2004).

DSM-IV Criteria C and D

Although reactive attachment disorder typically occurs in the context of grossly neglectful or clearly inadequate care, the critical elements of pathogenic care and their relation to the onset of the disorder are less than fully clear. For example, three studies have indicated that psychiatric history among mothers is related to RAD in their offspring, but without a clear mechanism being identified (Boris, 2004; Lyons Ruth et al., 2009; Zeanah et al. 2004). The pathogenic care criterion intends to limit the diagnosis to children whose adverse experiences have caused abnormalities in their attachment behaviors. It has been criticized because it may be difficult to determine whether maltreatment has occurred in young children who are preverbal or barely verbal and unable to describe their experiences (O'Connor & Zeanah, 2003; Zeanah, 1996; Zeanah

& Smyke, 2008). In fact, one recent study ignored the pathogenic care criterion in clinic referred children on the grounds that it the history was hard to verify, although the majority of those children had a history of maltreatment (Minnis et al., 2009).

Although severe parenting deficiencies or abnormalities seem to be necessary factors for emotionally withdrawn/inhibited RAD to develop, they are clearly not sufficient. Only minority of young children who are abused and neglected develop attachment disorders (Boris et al., 2004; Zeanah et al., 2004) and even among institutionalized children, most do not develop attachment disorders (Gleason et al., submitted a, b; Smyke et al., 2002).

Individual differences in caregiving quality among institutionalized children have been related to signs of the emotionally withdrawn/inhibited type but not to the indiscriminately social/disinhibited type of RAD (Gleason et al., submitted a, b). Thus, even when adverse caregiving conditions are identified, a remaining challenge is in determining when low quality care constitutes “pathogenic” care.

An important reason for retaining Criteria C and D is that indiscriminate behavior has been described anecdotally in Williams syndrome (Dykens, 2003) and in fetal alcohol syndrome (Streissguth, Barr, Kogan & Bookstein, 1997), though it has not been carefully studied in either. It will be important to know details about the postnatal rearing environment of young children diagnosed with fetal alcohol syndrome who exhibit indiscriminate behavior before concluding that the prenatal exposure accounts for the indiscriminate behavior. The presence of indiscriminate behavior with Williams Syndrome is more illuminating because in many of these children, there is no history of pathogenic care. Tager Flusberg and colleagues (personal communication, Jun 10, 2007) assessed a small number of children diagnosed with Williams Syndrome who had no history of pathogenic care. Their levels of indiscriminate behavior were even higher than Romanian children living in institutions. The presence of indiscriminate behavior in

children with known biological abnormalities and no evidence of neglect suggests that maintaining the pathogenic care criterion is justifiable, although more specific indicators of environmental contributors to the disorder would be useful.

VALIDATING THE ALTERNATIVE CRITERIA FOR RAD

Most of the research on RAD has been conducted using continuous and categorical assessments of the RDC-PA (AACAP, 2003) alternative criteria in maltreated children and currently or formerly institutionalized children. In this approach (see Table 3), core features of the emotionally withdrawn/inhibited type of RAD include absence of a preferred attachment figure, patterns of behavior in which the child fails to seek and respond to comforting when distressed, reduced social and emotional reciprocity, and disturbances of emotion regulation, including reduced positive affect and unexplained fearfulness or irritability. Core behavioral features of indiscriminately social/disinhibited RAD in this approach include inappropriate approach of unfamiliar adults and lack of wariness of strangers, and even a willingness to wander off with strangers. There is also a lack of appropriate physical boundaries, and so children may interact with adult strangers at close distance (experienced by the adult as intrusive) and may even actively seek physical contact (O'Connor, 2002; O'Connor & Zeanah, 2003; Zeanah et al., 2002). These behaviors are reported in many studies and comprise a coherent set of objectively defined signs of disorder. The same kinds of behaviors are implied by DSM-IV, but the language used in DSM-IV, "indiscriminate sociability with marked inability to exhibit appropriate selective attachments" is less specific and somewhat vague.

Internal and External Validity

Internal Validity

Several findings suggest that the internal validity of the alternative types of emotionally withdrawn/inhibited RAD and indiscriminately social/disinhibited RAD is

reasonably strong. First, the criteria for both types of RAD show acceptable-strong inter-rater and test-retest reliability in young children who have experienced adverse caregiving (Boris et al., 1998; Boris et al., 2004; Bruce & Gunnar, 2009; Chisholm, 1998; Gleason et al., submitted a, b; O'Connor & Rutter, 2000; Oosterman & Schuengel, 2007; Pears et al., 2009; Rutter et al., 2007; Smyke et al., 2002; Zeanah et al., 2004; Zeanah et al., 2005). Second, a factor analysis of the items comprising the alternative criteria largely replicated the two clinical subtypes in a sample of maltreated children in foster care. The two factor solution included a factor that included all three signs of indiscriminate behavior and another factor that included four of the five emotionally withdrawn/inhibited signs (Oosterman & Schuengel, 2007). Third, among institutionalized young children who were followed longitudinally, signs of emotionally withdrawn/inhibited and indiscriminately social/disinhibited RAD were internally consistent across four years (Gleason et al., submitted a, b).

External Validity

Recent research with the alternative criteria have compared signs of RAD in different types of caregiving environments including children living in institutions, children who spent their earliest years in institutions, children who were maltreated and placed in foster care, among others. Children who have experienced adverse, neglectful caregiving environments have indeed demonstrated clear increased risk for RAD compared to children who are raised in low risk environments (Boris et al., 2004; Bruce & Gunnar, 2009; Chisholm, 1998; Gleason et al., submitted a, b; O'Connor & Rutter, 2000; Pears et al., 2009; Rutter et al., 2007; Smyke et al., 2002; Zeanah et al., 2005). This implies that a threshold of adversity in the caregiving environment is necessary for RAD to appear.

Two studies have demonstrated increasing signs of RAD associated with decreasing quality in caregiving environments. In the first, children in foster care and

those in homeless shelters had higher rates of RAD than children in the comparison group of Head Start attendees (Boris et al., 2004). In the second study, two groups of young children living in an institution were compared. Those children living on a special unit that restricted the number of caregivers each child encountered in a day had significantly fewer signs of both types of RAD than young children living on a standard unit in the same institution. Thus, although ratios of caregivers to children remained high (1 to12 or higher), reducing the number per child was associated with fewer signs of both types of RAD (Smyke et al., 2002).

To date, the most detailed study of the caregiving environment in children with signs of RAD was conducted Lyons Ruth and colleagues (2009). They determined that indiscriminate behavior was present among family reared, high-risk infants only if they had been maltreated or if their mothers had had psychiatric hospitalizations. They found that mothers' disrupted emotional interactions with the infant mediated the relationship between caregiving adversity and indiscriminate behavior.

In children adopted out of institutions into middle class families, researchers have found little evidence of emotionally withdrawn/inhibited RAD. However, a substantial minority of children of those children demonstrate indiscriminate behavior (Chisholm, 1998; O'Connor et al., 2003). These studies have demonstrated that signs of indiscriminate behavior are linearly related to length of time in institutional care (O'Connor & Rutter, 2000; O'Connor et al., 2003; Rutter et al., 2007). A randomized controlled trial of foster care as an alternative to institutional care in Romania found similar results to the adoption studies. That is, investigators found significant reductions in signs of emotionally withdrawn/inhibited RAD but no reduction in signs of the indiscriminately social/disinhibited RAD for children placed in foster care (Smyke at al., submitted). This suggests that emotionally withdrawn/inhibited RAD diminishes or disappears once the child is placed in a more normative caregiving environment. In

contrast, the evidence about the indiscriminately social/disinhibited type suggests that it is more persistent.

Of course, all institutionalized children and maltreated children share some prenatal risk factors and postnatal social neglect, and yet, only a minority develops RAD. Among institutionalized children in Romania, Zeanah and colleagues (2005) showed that individual differences in quality of caregiving were related to individual differences in signs of the emotionally withdrawn/inhibited type of RAD, even after controlling for other child and environmental characteristics. On the other hand, there was no relationship between caregiving quality and indiscriminate behavior. Other intra-individual vulnerability factors may subsequently be identified that clarify who does and does not develop RAD given various risk factors.

Summary of Internal and External Validity of Alternative Criteria

Taken together, results of these studies have indicated that the alternative criteria for RAD may be reliably identified in young children using both categorical and continuous approaches. Further, as expected, signs of RAD and prevalence of RAD are greater in young children who have experienced more severe deprivation. Also, children who have experienced caregiving adversity but are now living in better caregiving environments show fewer signs of RAD, although improvement is more evident in the emotionally withdrawn/inhibited than the indiscriminately social subtype.

Construct Validity

RAD and Measures of Selective Attachment

A central construct with which RAD must be compared is selective attachment to caregivers. Typically, selective attachments are measured by attachment classifications in the Strange Situation Procedure. As predicted, in the Bucharest Early Intervention Project (Zeanah et al., 2003), nearly all of the young children living in institutions who were “unclassified” in the Strange Situation Procedure because they demonstrated no

attachment behaviors were rated as having elevated signs of emotionally withdrawn/inhibited RAD (Zeanah et al., 2005).

Research relating indiscriminately social/disinhibited RAD to selective attachment has yielded a more complicated picture. In the Bucharest Early Intervention Project, security of attachment at 42 months was moderately and inversely associated with signs of indiscriminately social/disinhibited RAD (Gleason et al., submitted b). On the other hand, there were securely attached children with high levels of indiscriminate behavior. When attachment classifications were dichotomized into typical (secure, avoidant, or ambivalent) vs. atypical (disorganized, controlling, or insecure-other), atypical attachment was also moderately associated with higher level of signs of indiscriminately social/disinhibited RAD. These findings are similar to reports that focused on children adopted out of Romanian institutions. Marcovitch and colleagues (Marcovitch et al., 1997) reported that almost half of 3-5 year old adoptees from Romanian institutions who were securely attached to their mothers also exhibited indiscriminate behavior with the stranger, but none of the securely attached control children did so. Chisholm and colleagues (Chisholm et al., 1995; Chisholm, 1998) reported some children rated as securely attached also had high levels of indiscriminate behavior. In a later follow-up, Chisholm (1998) higher rates of indiscriminate behavior in children classified as insecure. In the O'Connor et al. (2003) study, although there was an association between the insecure-other and indiscriminate behavior, there were also securely attached children who also had high levels of indiscriminate behavior.

On the other hand, in a study of currently institutionalized children, Zeanah and colleagues (2002) found that children 11-68 months who had a "favorite" caregiver did not have lower rates of indiscriminate behavior than their peers without an identified preferred caregiver. In assessments of children 12-31 months old living in institutions, indiscriminate behavior was not associated with the degree of attachment demonstrated

in the Strange Situation (Zeanah et al., 2005). Most recently, in a study of children 6-7 years old who had been adopted out of institutions, Bruce & Gunnar (2009) did not find an association between indiscriminate behaviors and attachment-related behaviors. In contrast, Lyons-Ruth et al. (2009) in a high risk sample found increasing levels of indiscriminate behavior (coded from behavior towards the stranger in the Strange Situation Procedure) in secure, insecure organized and disorganized attachment. Even so, they found that some securely attached children also exhibited high levels of indiscriminate behavior.

To summarize, children with selective attachments do not appear to exhibit signs of emotionally withdrawn/inhibited RAD. Children with this type of RAD exhibit few or minimal behaviors suggesting that they have formed selective attachments to anyone. In contrast, children with indiscriminate behavior may or may not have selective attachments. For children with more extreme or aberrant forms of attachment, such as disorganized or insecure-other, the prevalence of indiscriminately social/disinhibited attachment is increased, though attachment disorders and attachment classifications are clearly distinct phenomema.

Convergent Validity

Investigations have demonstrated convergence for both types of RAD using different assessment approaches (Gleason et al., submitted a, b). In 54-month-old children with a history of institutional rearing, a structured interview designed to assess continuous signs of RAD (Smyke et al., 2002) was compared to the PAPA, a structured psychiatric interview designed to yield a categorical diagnosis of RAD (Egger et al., 2006). These two different interviews yielded moderate convergence for both types of RAD. Zeanah et al. (2002) also demonstrated substantial convergence among three different measures of caregiver reports of indiscriminate behavior, indicating that different investigators appear to be assessing the same construct. All of these results,

however, involve the same caregiver reporting on the same child in different interviews, thus qualifying the broad agreement.

Stronger evidence is provided by convergence between caregiver reports and behavior coded in observational procedures. In the Bucharest Early Intervention Project, Zeanah et al. (2005) rated the degree to which the child had developed an attachment to a caregiver during interaction with the caregiver in the Strange Situation Procedure. As predicted, in children 12-31 months of age, more signs of RAD emotionally withdrawn/inhibited were inversely correlated with the degree to which a child had developed an attachment. Regarding the indiscriminately social/disinhibited type, Gleason and colleagues (submitted b) demonstrated substantial levels of agreement between an interview measure of indiscriminate behavior and an observational procedure designed to assess a young child's willingness to "go off" with a stranger. Thus, interview measures of alternative criteria of RAD have been validated using observational procedures.

In addition to convergence among measures designed to assess RAD, there also has been attention to developmental and clinical constructs believed to be associated with both the emotionally withdrawn/inhibited and the indiscriminately social/disinhibited RAD. In the Bucharest Early Intervention Project, investigators predicted an association between signs of emotionally withdrawn/inhibited RAD and the constructs of depressed mood and of social relatedness, which share some phenotypic elements. This association was found to be moderate across 4 assessments through 54 months of age (Gleason et al., submitted a). Simiilarly, as predicted, signs of indiscriminate/ disinhibited RAD were inversely associated with caregiver ratings of empathy, social relatedness, and social competence, although the magnitude of the associations was more modest (Gleason et al., submitted b).

Discriminant Validity

Discriminant validity also has been examined in recent research. Several studies have identified modest to moderate correlations between signs of RAD and internalizing and externalizing behavior problems (Smyke et al., 2002; O'Connor et al., 2003; Zeanah et al, 2002). Still, there have been limited attempts to assess discriminant validity with regard to specific disorders.

Because the emotionally withdrawn/inhibited RAD involves primarily internalizing signs, it should be quite distinct from externalizing behavior problems. In the Bucharest Early Intervention Project, as predicted, there were no significant associations between concurrent signs of emotionally withdrawn/inhibited RAD and the externalizing scale of the Infant Toddler Social Emotional Assessment (Carter et al., 2003) at any of 3 ages of assessment. There was also no association between signs of emotionally withdrawn/ inhibited RAD or externalizing psychiatric signs at 54 months (Gleason et al., submitted a). These findings suggest that signs of emotionally withdrawn/inhibited RAD are distinct responses to caregiving adversity.

Conditions of deprivation give rise to both RAD and cognitive and language delays, and therefore we expect all of these conditions to be more likely among institutionalized children. Nevertheless, if they are distinct, associations should be no more than moderate in magnitude. In the Bucharest Early Intervention Project, we found signs of emotionally withdrawn/inhibited RAD to be moderately associated with lower cognitive status in young children 42 months and younger and not associated with IQ at 54 months. In addition, there was no association between signs of RAD and expressive or receptive language level. Thus, although signs of emotionally withdrawn/inhibited RAD are associated with some markers of psychiatric and developmental problems, the overall pattern of findings supports the discriminant validity of the disorder.

Indiscriminate/disinhibited RAD should be distinguishable from externalizing behavior problems. Findings on this question, however, have been mixed. Among

institutionalized children, Zeanah et al. (2002) found no relationships between caregiver reports of indiscriminately social/disinhibited behavior and global ratings of aggression. Similarly, in the Bucharest Early Intervention Project, there was no association between indiscriminately social/disinhibited RAD and aggressive behaviors (Zeanah et al., 2005; Gleason et al., submitted b).

On the other hand, previously institutionalized children and maltreated children in foster care have been shown to have associations between signs of indiscriminately social/disinhibited RAD and inattention/hyperactivity. At 42 and 54 months signs of indiscriminate/disinhibited RAD also were associated with measures of activity and impulsivity, based on the impulsivity characteristic of each. Also, one study of preschool children (Pears et al., 2009) and another of 6-7 year olds (Bruce & Gunnar, 2009) have found moderate negative associations between inhibitory control and indiscriminate behavior. Using the Strange Situation Procedure to code indiscriminate behavior, Lyons Ruth et al. (2009) reported that 18 months olds who were highly indiscriminate at 18 months were rated by kindergarten teachers as hyperactive, over and above the contributions of avoidant or disorganized attachments to mothers. Others have reported moderate correlations between signs of disinhibited attachment and inattention/ overactivity (Kreppner et al., 2006; Rutter et al., 2007), though it is clear from these findings that ADHD and RAD indiscriminately social/disinhibited type are not the same disorders. For example, in the Bucharest Early Intervention Project, only 4 of the 20 children who met criteria for ADHD also met criteria for indiscriminately social/ disinhibited RAD and only 4 of the 16 children who met criteria for indiscriminately social/disinhibited RAD also met criteria for ADHD (Gleason et al., submitted b).

Thus, although indiscriminately social/disinhibited RAD is distinguishable from aggression, it does not appear to be entirely distinct from inhibitory control and inattention/overactivity. Still, the overlap with those constructs is far from complete.

Predictive Validity

Stability of Signs of RAD

In the Bucharest Early Intervention Project, a randomized controlled trial of foster care as an alternative to institutional care, children were assessed for RAD at baseline (mean of 22 months) and again at 30, 42 and 54 months of age (Zeanah et al., 2003). There was at least moderate stability of the level of signs of emotionally withdrawn/ inhibited RAD between each time point in the study for children randomized to care as usual for all comparisons except between 30 and 54 months. For those children who remained in institutional care throughout the study, the associations were even stronger (Gleason et al., submitted a). These are the only longitudinal data available to date on the emotionally withdrawn/inhibited type of RAD.

There are more available data regarding indiscriminate behavior, however. The longest longitudinal study of indiscriminate behavior to date is that from Tizard and colleagues (Tizard & Rees, 1975; Tizard & Hodges, 1978; Hodges & Tizard, 1989). They reported significant stability in "over-friendly" and attention seeking behavior from age 4 to 8 years in formerly institutionalized children, and noted that once established, over-friendly behavior was especially resistant to change. At age 16, indiscriminate behavior with caregivers was less evident but was evident with peers. Relations with peers were conflicted and superficial, and they were likely to name a recent acquaintance as a close friend (Hodges & Tizard, 1989). In the Bucharest Early Intervention Project, signs of indiscriminately social/disinhibited RAD were moderately stable from 2.5 to 4.5 years for children abandoned at birth and then placed in institutions (Gleason et al., submitted b). By 4.5 years, about half of these children were still living in institutional settings. Among this continually institutionalized group, stability was slightly higher. For children who are adopted out of institutions, signs of indiscriminately social/disinhibited RAD show at least modest stability even years after

adoption (Chisholm, 1998). In the English and Romanian Adoption Study, for example, there was modest stability in signs of indiscriminately social/disinhibited RAD from six to eleven years of age (Rutter et al., 2007).

Functional Impairment and RAD

A number of longitudinal studies of children raised in institutions, many of whom have signs of RAD, have implicitly described functional impairment years later, particularly with regard to interpersonal relationships (Chisholm, 1998; Hodges & Tizard, 1989; Rutter et al., 2007). The most direct evidence on this point comes from the Bucharest Early Intervention Project, in which signs of emotionally withdrawn/inhibited RAD were associated with concurrently assessed lack of social competence at 30 and 42 months and with functional impairment at 54 months. Signs of emotionally withdrawn RAD at each age predicted future functional impairment in the children randomized to continued institutional care, especially in the children who remained institutionalized through 54 months of age (Gleason et al., submitted a). Similarly, signs of indiscriminately social/disinhibited RAD were concurrently associated with lack of competence at 30 and 42 months and with functional impairment at 54 months. Signs of indiscriminately social/disinhibited RAD at 42 months predicted impairment at 54 months, but signs at 22 months and 30 months did not (Gleason et al., submitted b).

In summary, not only are both types of RAD moderately stable over time, they also are associated with functional impairment. These associations demonstrate that signs of RAD as assessed by the alternative criteria are neither transient nor clinically unimportant conditions.

SPECIAL ISSUES

Mixed Type of RAD

Despite their phenomenological distinctiveness of the two subtypes of RAD, there is some evidence suggesting that they may co-occur. Specifically, one study of institutionalized children and one study of maltreated children in foster care found moderate intercorrelations between the two types (Smyke et al., 2002; Zeanah et al., 2004). In these same studies, cluster analyses suggested a mixed type of RAD, with features of both the emotionally withdrawn/inhibited type and the indiscriminately social types. This evidence led to the inclusion of a mixed type of RAD in the RDC-PA criteria (AACAP, 2003) that was also included in the DC: 0-3 (Zero To Three, 2005) criteria.

On the other hand, there has never been a case report of a child with features of both the emotionally withdrawn/inhibited and the indiscriminately social/disinhibited phenotypes. More importantly, on closer inspection of the data, and a review of videotaped interactions of children and caregivers, it became clear that the items most often used to code indiscriminate behavior (i.e., lack of reticence with strangers, failure to check back with caregivers in unfamiliar settings, and willingness to "go off" with a stranger) also may be applied to children with the emotionally withdrawn/inhibited type of RAD. The distinction is the passivity that characterizes their lack of reticence, not checking back and willingness to go off with strangers. Instead of actively seeking engagement and interaction with unfamiliar adults, as characterizes children with the indiscriminately social/disinhibited type, there is among children with the emotionally withdrawn/inhibited type a passive acquiescence that could lead to endorsement of these items. At this time, there are insufficient validity data to support the mixed type of RAD.

Attachment Disorder in School-Aged Children

Despite considerable interest, there have been few studies of attachment disordered behavior in school aged children. In fact, there is no gold standard for assessing security of attachment in middle childhood. Studies to date have assessed

attachment in school aged children include by coding separation/reunion behavior (Cassidy & Main, 1988), use of interviews (Steele & Steele, 2005), story stem completion of narratives (e.g., Page & Bretherton, 2001; Green et al., 2000; Goldwyn, et al., 2000), and other similar methods (Kerns & Richardson, 2005; Wright et al., 1995). There is no gold standard in middle childhood comparable to the Strange Situation Procedure in early childhood, however. Unless specified, the research reviewed earlier about RAD concerned children less than 6 years old. Here, we turn to what has been learned from studies of RAD in middle childhood.

Only a few investigations of the emotionally withdrawn/inhibited RAD subtype in school aged children have been conducted. Neither longitudinal study of children adopted out of Romanian institutions has reported any signs of emotionally withdrawn/inhibited RAD in the adopted children (Chisholm, 1998; O'Connor & Rutter, 2000; O'Connor et al., 2003). In the Bucharest Early Intervention Project, in which institutionalized young children were contrasted with children in foster care, signs of emotionally withdrawn/inhibited RAD were higher in the care as usual than in the foster care group even at 6 years after placement in foster care occurred. (Smyke et al., submitted).

Minnis and colleagues have conducted a series of cross sectional studies relying on combinations of parent report, standardized observation and structured psychiatric interviews identifying RAD in school aged children (Millward et al., 2006; Minnis et al., 2002; 2007; 2009). These studies have suggested that the disorder may be reliably identified in school age children. Nevertheless, the measures they used to identify emotionally withdrawn/inhibited RAD were cross sectional and have unknown relationship to measures used to assess RAD in early childhood. Also, these investigators did not require pathogenic care and did not always distinguish between indiscriminate and emotionally withdrawn subtypes in reporting findings. For all of these

reasons, it is not clear that the phenotype being described is the same as the one described in early childhood, since they differ in important respects (Table 6). Such a comparison is warranted given that Minnis et al. (2007) reported high heritability of inhibited and disinhibited types of RAD in a large twin study using a parent questionnaire.

Indiscriminate behavior, on the other hand, has been described and studied in several different populations of children longitudinally from early to middle childhood, defined in reasonably similar terms. Tizard and Hodges (1978) studied 8 year old children with a history of institutional rearing. They focused on overfriendly behavior and poor peer relations among 8 year olds. Smyke et al. (submitted) studied the indiscriminately social/disinhibited RAD subtype in the Bucharest Early Intervention Project defining it using the same alternative criteria as at 30, 42 and 54 months of age. Bruce & Gunnar (2009) compared two groups of 6-7 adopted children, those with histories of foster care and those with a history of institutional care and compared them both with a non-adopted group. They found moderate convergence between a parent report measure of indiscriminate behavior (the same measure as the English and Romanian Adoptees Study) and a behavioral measure of what they called disinhibited social behavior. Further, disinhibited social behavior was moderately inversely correlated with inhibitory control.

The most careful and intentional examination of the indiscriminately social/disinhibited RAD phenotype in school age children to date was provided by the English and Romanian Adoptees Study Team (Rutter et al., 2007). They used a combination of parent report on an examiner based interview when children were 6 and 11 years old and interactions with an unfamiliar adult. The parent interview was coded at both ages for: definite lack of differentiation among adults with respect to the child's social response to them (lack of evidence of selective attachment behaviors), clear

indication that the child would readily go off with a stranger, and definite lack of checking back with the parent in anxiety-provoking situations. They also coded behavior with a stranger (examiner) at age 6 years in a series of tasks. Behaviors considered disinhibited included things such as the child touching the stranger repeatedly, holding the stranger's hand, staying exceptionally close to the stranger or cuddling into the stranger. At age 11, the child's behavior with a stranger (examiner) was coded for 8 behaviors. Factor analysis suggested that two internally consistent composites best summarized the data: a violation of boundaries composite and a physical contact composite. They found significant convergence in these measures of indiscriminately social/disinhibited RAD suggesting a cohesive construct across middle childhood.

PROPOSED CRITERIA FOR DSM-V

One Disorder or Two

Based on the data summarized in Table 5, the evidence suggests that RAD is best conceptualized as two distinct disorders rather than as two subtypes of a single disorder. This is the approach in ICD-10 (see Table 2), and, as reviewed above, the evidence accumulated since then seems to support the view that these two clinical syndromes exhibit many more differences than similarities (Rutter, Kreppner & Sonuga Barke, 2009; Zeanah & Smyke, 2008). The original rationale was that the phenotypes described one form of lack of attachment in which attachment behaviors were inhibited and not expressed at all and another form of lack of attachment in which attachment behaviors were disinhibited and expressed non-selectively. As a result, it would be reasonable to group these two syndromes together, as part of a broader class of conditions involving perturbations in infancy or preschool parent-child relationships. However, the disinhibited type of syndrome clearly differs substantially from the inhibited type. Moreover, we now know that the disinhibited type occurs in children who lack

attachments, in children who have attachments, and even in children who have secure attachments. Further, on closer inspection, it is not necessarily attachment behaviors that are disinhibited but rather social engagement or affiliative behaviors that are expressed non-selectively. Children adopted internationally may turn selectively to their adoptive parents for comfort, support, nurturance and protection and still show lack of reticence around strangers and struggle to conform with social boundary norms. Other than their close connection to pathogenic care, which we understand only in a limited way, the two disorders differ in most other important ways, including phenotypic characteristics, correlates, course and response to intervention. As Rutter et al. (2009) noted, "both are associated with sufficient problems in functioning to consider them as disorders, but the meaning of the disorder is quite different in the two cases." As a result, it might be advisable to list the two syndromes as separate entities altogether.

Reactive Attachment Disorder

The proposed changes in Criterion A (Table 7) are to more clearly focus the disturbance on absent or aberrant attachment behaviors more specifically rather than on social behaviors more generally. Though some have suggested that social impairment (Green, 2003) or social communication (Minnis et al., 2006) is the core of this disorder, it is likely that absence of a selective attachment necessarily impairs social functioning, and the social behaviors improve markedly once the child is in a more favorable environment (Smyke et al., submitted). More important, making attachment the core of the disorders is supported by the validity data on the alternative criteria reviewed above which were derived from investigations of multiple samples of currently and formerly institutionalized children, children in foster care, and children in impoverished groups at risk for aberrant parenting behavior.

Another significant change is the inclusion of Criterion B, which describes the documented social and emotional disturbances in children with RAD. Separating these

out from the A criterion restricts the diagnosis to those children who have both these disturbances, which are highlighted in the DSM-V criterion A and the absence of an attachment figure, which are implied but not spelled out in the DSM-IV Criterion A.

Criterion C is virtually identical to the DSM-IV Criterion B. The broad similarities of children who are socially and emotionally unresponsive in the two disorders raises concern about diagnostic confusion, although the ICD-10 has a clear description of how RAD can be distinguished from ASD (see Table 2). There are no obvious reasons why a child could not be co-morbid for both ASD and RAD, but the absence of data on the question and the concern about mistaking the former for the latter leads us to recommend that the Criterion be retained.

Criterion D has been retained but revised. Practically, it poses challenges for the clinician. Pathogenic care is not always disclosed and cannot always be clearly identified in clinical assessments or evaluations because young children cannot describe their own experiences and caregivers may be implicated in pathogenic care. Retaining Criterion D precludes making the diagnosis of RAD in children whose maltreatment is not known to the clinician. On the other hand, there are no case reports of young children exhibiting the RAD phenotype without at least a reasonable inference of serious caregiving adversity. The revisions are intended to describe in a bit more detail what is known about the types of care that seem to predispose to RAD. They remain less specific than is desirable, but this is a particularly challenging area of investigation, and the data to date are limited. Criterion E is unchanged from Criterion D in DSM-IV.

Criterion F has been added to ensure that an attachment disorder is not diagnosed in children who are developmentally incapable of demonstrating a focused attachment. Stranger wariness and separation protest in addition to selective comfort seeking are behavioral indicators of selective attachment, typically emerging between 7 and 9 months of age. Criterion B ought to differentiate between children with RAD and

typically developing children less than 9 months of age, but the inclusion of Criterion F provides additional insurance in cases with some ambiguity.

Disinhibited Social Engagement Disorder

As indicated, the indiscriminately social/disinhibited RAD phenotype is now described as a distinct disorder (Table 8). The new name is intended to describe the core of the disorder, which is less about diffuse or disinhibited attachment behaviors and more about unmodulated and indiscriminate social behavior, especially initial approaches to and interaction with unfamiliar adults.

Criterion A focuses the disorder more on aberrant social behavior rather than on disordered attachment behavior. The justification for this change is supported by the validity data on the alternative criteria reviewed above, and the items comprising the criterion are empirically derived from investigations of the construct.

Criterion B is new and presumed to be necessary from several lines of evidence suggesting co-occurrence of ADHD signs and the social impulsivity that characterizes the indiscriminately social/disinhibited phenotype. It appears that one may have ADHD with socially indiscriminate behavior, and one may have socially indiscriminate behavior without ADHD, but there are often moderately strong correlations between the two symptom profiles. Thus, rather than make ADHD a rule out for Disinhibited Social Engagement Disorder, it seems more useful to direct attention to its distinction from ADHD.

Pathogenic care is retained in Criterion C as in DSM-IV for the important reason that children with adequate caregiving but Chromosome 7 deletion demonstrate phenotypically similar behavior to those with Disinhibited Social Engagement Disorder. It is described exactly as in RAD (see Table 7) because there is no evidence to date that one or another of the types of pathogenic care are more or less likely to lead to RAD or

to Disinhibited Social Engagement Disorder. Criterion D is retained from DSM-IV for the same reasons.

Given the data reviewed about indiscriminate behavior in middle childhood, it is reasonable to ask if there should be a developmental subtype of Disinhibited Social Engagement Disorder for middle childhood.

CONCLUSIONS

Reactive attachment disorder has been subjected to more systematic research in the past 10 years than in the 20 years that followed its original description in DSM-III (APA, 1980). Several conclusions may be drawn from results of that research.

1) First, the two subtypes of RAD described in DSM-IV (APA, 1994) occur but are exceedingly rare.
2) These two types are reliably identifiable in populations of at risk children far more commonly than in low risk children.
3) The DSM-IV criteria have been less well studied than an alternative set of criteria. The latter have demonstrated convergent, discriminant and predictive validity in studies of different populations of children conducted by different investigative teams.
4) The evidence favors two distinct disorders rather than two subtypes of the same disorder, and revisions in the criteria based on empirical findings are reflected in Tables 7 and 8.

To return to the question we posed originally concerning when attachment may be disordered as opposed to an associated feature of another disorder, we have a suggested answer. That is, an attachment disorder is warranted when a child who is developmentally capable of forming attachments, does not because of an aberrant caregiving environment. What was formerly called reactive attachment disorder,

disinhibited type in DSM-IV-TR (APA, 1999) and disinhibited attachment disorder in ICD-10 (WHO, 1992) does not appear to reflect disordered attachment but rather a deviant tendency to violate culturally sanctioned social boundaries in interactions with others. Both of these disorders have been much more carefully studied and characterized in early childhood, but a small body of evidence suggests the persistence of signs of disinhibited social engagement disorder into middle childhood and adolescence.

REFERENCES

AACAP Task Force on Research Diagnostic Criteria: Infancy and Preschool Age (2003). Research diagnostic criteria for infants and preschool children: the process and empirical support. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42, 1504-1512.

AACAP Work Group on Quality Issues (N.W. Boris and C.H. Zeanah, principal authors) (2005). Practice parameters for the assessment and treatment of children and adolescents with reactive attachment disorder of infancy and early childhood. *Journal of the American Academy of Child and Adolescent Psychiatry, 44,*

Ainsworth, M.D.S., Blehar, M.S., Waters, E., & Wall, S. (1978), *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ, Erlbaum.

American Psychiatric Association (1980), *Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III)*. Washington, DC: American Psychiatric Association.

American Psychiatric Association (1987). *Diagnostic and Statistical Manual of Mental Disorders, Third Edition--Revised (DSM-III-R)*. Washington, DC: American Psychiatric Association.

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*. Washington, DC: American Psychiatric Association.

Boris, N.W., Aoki, Y. & Zeanah, C.H. (1999). The development of infant-parent attachment: Considerations for assessment. *Infants and Young Children*, *11*, 1-10.

Boris, N.W., Hinshaw-Fuselier, S.S., Smyke, A.T., Scheeringa, M.S., Heller, S.S., Zeanah, C.H. (2004). Comparing criteria for attachment disorders: Establishing

reliability and validity in high-risk samples. *Journal of the American Academy of Child and Adolescent Psychiatry,* 43, 568-577.

Boris, N. & Zeanah, C.H. (2009). Reactive attachment disorder. In B. Kaplan, V. Sadock & P. Ruiz (Eds.), *Kaplan and Sadock's comprehensive textbook of psychiatry* (pp. 3636-3641). Philadelphia, Williams & Wilkins.

Boris, N.W., Zeanah, C.H., Larrieu, J.A., Scheeringa, M.S. & Heller, S.S. (1998), Attachment disorders in infancy and early childhood: A preliminary investigation of diagnostic criteria. *American Journal of Psychiatry*, *155*, 295-297.

Bruce J, Tarullo AR, Gunnar MR. (2009). Disinhibited social behavior among internationally adopted children. *Development and Psychopathology, 21*, 157-171.

Chatoor, I., Ganiban, J., Colin, V., Plummer, N., Harmon, R.J. (1998). Attachment and feeding problems: a reexamination of nonorganic failure to thrive and attachment insecurity. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*, 1217-1224.

Chisholm, K. (1998), A three year follow-up of attachment and indiscriminate friendliness in children adopted from Romanian orphanages. *Child Development*, *69*, 1092-1106.

Chisholm, K., Carter, M.C., Ames, E.W. & Morison, S.J. (1995), Attachment security and indiscriminately friendly behavior in children adopted from Romanian orphanages. *Development and Psychopathology*, *7*, 283-294.

DeKlyen, M. & Greenberg, M.T. (2008), Attachment and psychopathology in childhood. In: Cassidy J, Shaver P, (Eds.), *Handbook of Attachment, 2nd Edition (*pp 637-665), New York, NY, Guilford Press.

Dykens, E.M. (2003). Anxiety, fears, and phobias in persons with Williams syndrome. *Developmental Neuropsychology, 23*, 291-316.

Egger, H.L., Erkanli, A., Keeler, G., Potts, E., Walter, B., Angold, A. (2006). Test-retest reliability of the preschool age psychiatric assessment (PAPA). *Journal of the American Academy of Child and Adolescent Psychiatry, 45*, 538-549.

Gaensbauer, T.J. & Harmon, R.J. (1982). Attachment in abused/neglected and premature infants. In Emde, R.N. & Harmon, R.J. (Eds.). *The development of attachment and affiliative systems* (pp. 263-288). New York, Plenum Press.

Gaensbauer, T.J. & Sands, M. (1979). Distorted affective communications in abused/neglected infants and their potential impact on caregivers. *Journal of the American Academy of Child and Adolescent Psychiatry*, *18*, 236-250.

George, M. & Main, M. (1979). Social behavior in maltreated children: Approach, avoidance and aggression. *Child Development*, *50*, 306-318.

Gleason, M.M., Drury, S.S., Smyke, A.T., Egger, H.L., Fox, N.A., Nelson, C.A. & Zeanah, C.H. (submitted a). The validity of evidence-derived criteria for reactive attachment disorder: I Emotionally withdrawn/inhibited type.

Gleason, M.M., Fox, N.A., Drury, S.S., Smyke, A.T., Egger, H.L., Nelson, C.A. & Zeanah, C.H. (submitted b). The validity of evidence-derived criteria for reactive attachment disorder II: Indiscriminate/disinhibited type.

Goldfarb, W. (1945). Effects of psychological deprivation in infancy. *American Journal of Psychiatry*, *102*, 18-33.

Goldwyn, R., Stanley, C., Smith, V., & Green, J. (2000). The Manchester child attachment story task: Relationship with parental AAI, SAT and child behavior. *Attachment and Human Development*, *2*, 71-74.

Green, J. (2003). Are attachment disorders best seen as social impairment disorders? *Attachment and Human Development*, *5*, 259-264.

Green, J. & Goldwyn, R. (2002). Attachment disorganization and psychopathology: New findings in attachment research and their potential implications for developmental

psychopathology in childhood. *Journal of Child Psychology and Psychiatry*, *43*, 835-846.

Green, J., Stanley, C., Smith, V. & Goldwyn, R. (2000). A new method of evaluating attachment representations in young school-age children: the Manchester Child Attachment Story Task. *Attachment and Human Development*, *2*, 48-70.

Hinshaw-Fuselier, S., Boris, N.W. & Zeanah, C.H. (1999), Reactive attachment disorder in maltreated twins. *Infant Mental Health Journal*, *20*, 42-59.

Hodges J, Tizard B. (1989). Social and family relationships of ex-institutional adolescents. *Journal of Child Psychology and Psychiatry, 30*, 77-97.

Kerns, K.A. & Richardson, R.A. (Eds.) (2005). *Attachment in middle childhood*. New York, Guilford Press.

Levy, R.J. (1947). Effects of institutional care vs. boarding home care on a group of infants. *Journal of Personality*, *15*, 233-241.

Lyons-Ruth K, Bureau J-Fo, Riley CD, Atlas-Corbett AF (2009). Socially indiscriminate attachment behavior in the strange situation: Convergent and discriminant validity in relation to caregiving risk, later behavior problems, and attachment insecurity. *Development and Psychopathology, 21*, 355-367.

Main, M. & Cassidy, J. (1988). Categories of response to reunion with the parent at age 6: Predictable from infant attachment classifications and stable over a 1-month period. *Developmental Psychology*, *24*, 1-12.

Main M. & Solomon, J. (1990). Parents unresolved traumatic experiences are related to infant disorganized attachment status: Is frightening and/or frightened parental behavior the linking mechanism? In: M.T. Greenburg, D. Cicchetti & E.M. Cummings (Eds.), *Attachment in the preschool years,* (pp. 161-182), Chicago, University of Chicago Press.

Markovitch, S., Goldberg, S., Gold, A., Washington, J., Wasson, C., Krekewich, K. and Handley-Berry, M. (1997). Determinants of behavioural problems in Romanian children adopted in Ontario. *International Journal of Behavioral Development, 20,* 17-31.

Millward, R., Kennedy, E., Towlson, K., & Minnis, H. (2006). Reactive attachment disorder in looked after children. *Emotional and Behavioural Difficulties*, *11*, 273–279.

Minnis H, Marwick H, Arthur J, McLaughlin A. (2006). Reactive attachment disorder-- A theoretical model beyond attachment. *European Child & Adolescent Psychiatry.* 15, 336.

Minnis, H., Rabe-Hesketh, S., & Wolkind, S. (2002). Development of a brief, clinically relevant, scale for measuring attachment disorders. *International Journal of Methods in Psychiatric Research*, *11*, 90–98.

Minnis, H., Reekie, J., Young, D., O'Connor, T., Ronald, A., Gray, A., et al. (2007). Genetic, environmental and gender influences on attachment disorder behaviours. *British Journal of Psychiatry*, *190*, 495.

Minnis, H., Green, J., O'Connor, T.G., Liew, A., Glaser, D., Taylor, E., Follan, M., Young,, D., Barnes, D., Gillberg, C. & Pelosi, A. Arthur,J., Burston,A., Connolly,B. & Sadiq, F.E. (2009). An exploratory study of the association between reactive attachment disorder and attachment narratives in early school-age children. *Journal of Child Psychology and Psychiatry*.

O'Connor, T.G. (2002), Attachment disorders in infancy and childhood. In: Rutter, M., Taylor, E., (Eds.), *Child and Adolescent Psychiatry: Modern Approaches*, fourth edition, (pp. 776-792), Blackwell Scientific publications.

O'Connor T.G., Bredenkamp, D. & Rutter, M. (1999), Attachment disturbances and disorders in children exposed to early severe deprivation. *Infant Mental Health Journal*, *20*, 10-29.

O'Connor, T.G., Marvin, R.S., Rutter, M., Olrick, J.T., Britner, P.A. (2003), Child-parent attachment following early institutional deprivation. *Development and Psychopathology*, *15*, 19-38.

O'Connor, T.G. & Rutter, M. (2000), Attachment disorder behavior following early severe deprivation: extension and longitudinal follow-up. *Journal of the American Academy of Child and Adolescent Psychiatry*, *39*, 703-712.

O'Connor, T.G. & Zeanah, C.H. (2003), Assessment strategies and treatment approaches. *Attachment and Human Development*, *5*, 223-244.

Oosterman, M. & Schuengel, C. (2007). Autonomic reactivity of children to separation and reunion with foster parents. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 1196-1203.

Page, T. & Bretherton, I. (2001). Mother- and father-child attachment themes in the story completions of pre-schoolers from post-divorce families: do they predict relationships with peers and teachers? *Attachment and Human Development*, *3*, 1-29.

Pears, K.C., Bruce, J., Fisher, P.A. (2009). Indiscriminate friendliness in maltreated foster children. *Child Maltreatment, 14,* 1-12.

Provence, S. & Lipton, R.C. (1962). *Infants in institutions*. New York, International Universities Press.

Richters, M.M., Volkmar, F.R. (1994). Reactive attachment disorder of infancy or early childhood. *Journal of the American Academy of Child and Adolescent Psychiatry, 33*, 328-330.Rutter M, Colvert E, Kreppner J, et al. (2007). Early adolescent

outcomes for institutionally-deprived and non-deprived adoptees. I: Disinhibited attachment. *Journal of Child Psychology and Psychiatry, 48*, 17-30.

Rutgers A.H., Bakermans-Kranenburg M.J., Ijzendoorn, M.H., Berckelaer-Onnes, I.A. (2004). Autism and attachment: A meta-analytic review. *Journal of Child Psychology and Psychiatry, 45*, 1123-1134.

Rutter M, Kreppner J, Sonuga-Barke E. (2009). Emanuel Miller Lecture: Attachment insecurity, disinhibited attachment, and attachment disorders: where do research findings leave the concepts? *Journal of Child Psychology and Psychiatry, 50*, 529-543.

Rutter, M., Anderson-Wood, L., Beckett. C., Bredenkamp, D., Castle, J., Groothues, C., Keaveney, L., Lord, C. & O'Connor, T.G. (1999). Quasi-autistic patterns following severe early global privation. *Journal of Child Psychology and Psychiatry*, *40*, 537-549.

Smyke, A.T., Dumitrescu, A., Zeanah, C.H. (2002), Disturbances of attachment in young children: I. The continuum of caretaking casualty. *Journal of the American Academy of Child and Adolescent Psychiatry*, *41*, 972-982.

Spitz, R.R. (1945). Hospitalism: an inquiry into the genesis of psychiatric conditions in early childhood. *Psychoanalytic Study of the Child*, *1*, 54-74.

Sroufe, L.A. (1997). Psychopathology as an outcome of development. *Development and Psychopathology*, *9*, 251-268.

Stafford, B., Zeanah, C.H. & Scheeringa, M. (2003). Exploring psychopathology in early childhood: PTSD and attachment disorders in DC: 0-3 and DSM-IV. *Infant Mental Health Journal, 24*, 398-409.

Streissguth, A., Barr, H., Kogan, J. & Bookstein, F. (1997). Primary and secondary disabilities in Fetal Alcohol Syndrome. In A. Streissguth & J. Kanter (Eds.), *The*

challenge of fetal alcohol syndrome: Overcoming disabilities. Seattle, University of Washington Press.

Thompson, R.A. (2008). Early attachm,ent and later development. In: J. Cassidy & P. Shaver (Eds.), *Handbook of Attachment, 2nd Edition (*pp 348-365), New York, Guilford Press

Tizard, B. (1977). *Adoption: A second chance.* London, Open Books.

Tizard B & Hodges J (1978). The effect of early institutional rearing on the development of eight-year-old children. *Journal of Child Psychology and Psychiatry, 19*, 99-118.

Tizard B. & Rees J (1975). The effect of early institutional rearing on the behaviour problems and affectional relationships of four-year-old children. *Journal of Child Psychology and Psychiatry, 16*, 61-73.

van IJzendoorn, M.H. & Bakersman-Kranenberg, M.J (2002). Disorganized attachments and the dysregulation of negative emotions. In: B. Zuckerman, A. Lieberman, & N.A, Fox (Eds.). *Emotional regulation and developmental health: Infancy and early childhood*. Johnson & Johnson Pediatric Institute, L.L.C.

van IJzendoorn, M.H., Schuengel, C., & Bakersman-Kranenberg, M.J. (1999). Disorganized attachment in early childhood: A meta-analysis of prescursors, concomitants, and sequalae. *Development and Psychopathology*, *11*, 225-249..

Volkmar, F. (1997). Reactive attachment disorder. In Widiger, T.A., Frances, A.J., Pincus, H.A., Ross, R., First, M.B., & Davis, W. (Eds.), *DSM-IV Sourcebook: Volume III* (pp. 255-264), American Psychiatric Association, Washington, D.C..

Waters, E. & Deane, K.E. (1985). Defining and assessing individual differences in attachment relationships: Q-methodology and the organization of behavior in infancy and early childhood. In: I. Bretherton & E. Waters (Eds.), Growing points in attachment theory and research. *Monographs of the Society for Reesrcah in*

Child Development, *50*, (1-2, Serial No. 209), 41-65.

Wright, J.C., Binney, V., & Smith, P.K. (1995). Security of attachment in 8-12-year-olds: a revised version of the Separation Anxiety Test, its psychometric properties and clinical interpretation. Journal of Child Psychology and Psychiatry, *36*, 757-774.

Wolkind, S.N. (1974). The components of the affectionless psychopath in institutionalized children. *Journal of Child Psychology and Psychiatry*, *15*, 215-220.

World Health Organization (1992), *The ICD-10 Classification of Mental and Behavioral Disorders: Clinical Descriptions and Diagnostic Guidelines*. Geneva, World Health Organization.

Zeanah, C.H. (1996). Beyond insecurity: A reconceptualization of attachment disorders in infancy. *Journal of Consulting and Clinical Psychology, 64*, 42-52.

Zeanah, C.H. (2000), Disturbances of attachment in young children adopted from institutions. *Journal of Developmental and Behavioral Pediatrics, 21*, 230-236.

Zeanah CH. (2007). Reactive attachment disorder. In: Narrow, W.E., First, M.B., Regier. D., Sirovatka P.J. (Eds.). *Age and gender considerations in psychiatric diagnosis: A research agenda for the DSM-V*. Arlington, VA, APA Press.

Zeanah, C.H. & Boris, N.W. (2000), Disturbances and disorders of attachment in early childhood. In: *Handbook of infant mental health*, 2nd edition, Zeanah C.H., ed. New York, NY, Guilford Press, pp. 353-368.

Zeanah, C.H., Egger, H., Smyke, A.T., Nelson, C., Fox, N., Marshall, P., & Guthrie, D. (2009). Institutional rearing and psychiatric disorders in Romanian preschool children. *American Journal of Psychiatry, 166*, 777-785.

Zeanah, C.H. & Emde, R.N. (1994). Attachment disorders in infancy. In M. Rutter, L. Hersov, & E. Taylor (Eds.) *Child and adolescent psychiatry: Modern approaches* (pp. 490-504), Oxford, Blackwell.

Zeanah, C.H., Keyes, A. & Settles, L. (2003). Attachment relationship experiences and child psychopathology. Annals of the New York Academy of Sciences, 1008, 1-9.

Zeanah, C.H., Mammen O., Lieberman, A. (1993), Disorders of attachment. In: C. Zeanah (Ed.), *Handbook of infant mental health* (pp. 332-349), New York, NY, Guilford Press.

Zeanah, C.H., Nelson, C.A., Fox, N.A., Smyke, A.T., Marshall, P., Parker, S. & Koga, S. (2003). Designing research to study the effects of institutionalization on brain and behavioral development: The Bucharest early intervention project. *Development and Psychopathology*, *15*, 885-907.

Zeanah, C.H., Scheeringa, M.S., Boris, N.W., Heller, S.S., Smyke, A.T. Trapani, J. (2004). Reactive attachment disorder in maltreated toddlers. *Child Abuse and Neglect: The International Journal*, *28*, 877-888.

Zeanah, C.H. & Smyke, A.T. (2005). Building attachment relationships following maltreatment and severe deprivation. In L. Berlin, Y. Ziv, L. Amaya-Jackson, & M. Greenberg (Eds.) *Enhancing early attachments: Theory, research, intervention and policy* (pp. 195-216), New York, Guilford Press.

Zeanah, C.H. & Smyke, A.T. (2008). Attachment disorders and severe deprivation. In M. Rutter, D. Bishop, D. Pine, S. Scott, J. Stevenson, E. Taylor, & A. Thapar (Eds.), *Rutter's child and adolescent psychiatry*, pp. 906-915. London, Blackwell.

Zeanah, C.H. & Smyke, A.T. (2009). Disorders of attachment. In C.H. Zeanah (Ed.), *Handbook of infant mental health, 3rd Edition,* (pp.421-434). New York, Guilford Press.

Zeanah, C.H., Smyke, A.T. & Dumitrescu, A. (2002), Disturbances of attachment in young children: II. Indiscriminate behavior and institutional care. *Journal of the American Academy of Child and Adolescent Psychiatry*, *41*, 983-989.

Zeanah, C.H., Smyke, A.T., Koga, S., Carlson, E. & the BEIP Core Group (2005). Attachment in institutionalized and community children in Romania. *Child Development, 76*, 1015-1028.

Zero To Three (2005). *Diagnostic classification of mental health and developmental disorders of infancy and early childhood: Revised edition (DC: 0--3R)*. Washington, D.C., Zero To Three Press.

Table 1 DSM-IV-TR Reactive Attachment Disorder of Infancy or Early Childhood

A. Markedly disturbed and developmentally inappropriate social relatedness in most contexts, beginning before 5 years of age, as evidenced by (1) or (2):

(1) Persistent failure to initiate or to respond in a developmentally appropriate fashion to most social interactions, as manifest by excessively inhibited, hypervigilant, or highly ambivalent and contradictory responses (e.g., the child may respond to the caregiver with a mixture of approach, avoidance, and resistance to comforting or may exhibit frozen watchfulness).

(2) Diffuse attachments as manifest by indiscriminate sociability with marked inability to exhibit appropriate selective attachments (e.g., excessive familiarity with relative strangers or lack of selectivity in choice of attachment figures).

B. The disturbance in Criterion A is not accounted for solely by developmental delay (as in mental retardation) and does not meet criteria for a pervasive developmental disorder.

C. Pathogenic care as evidenced by at least one of the following:

(1) Persistent disregard of the child's basic emotional needs for comfort, stimulation, and affection.

(2) Persistent disregard of the child's basic physical needs.

(3) Repeated changes of primary caregiver that prevent formation of stable attachments (e.g., frequent changes in foster care).

D. There is a presumption that the care in Criterion C is responsible for the disturbed behavior in Criterion A (e.g., the disturbances in Criterion A began following the pathogenic care in Criterion C).

Specify type:

Inhibited type: if Criterion A1 predominates in the clinical presentation.

Disinhibited type: if Criterion A2 predominates in the clinical presentation.

From American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders.* 4th ed. Text rev. Washington

Table 2 ICD-10 Reactive Attachment Disorder of Childhood

This disorder, occurring in infants and young children, is characterized by persistent abnormalities in the child's pattern of social relationships, which are associated with emotional disturbance and reactive to changes in environmental circumstances. Fearfulness and hypervigilance that do not respond to comforting are characteristic, poor social interaction with peers is typical, aggression towards the self and others is very frequent, misery is usual, and growth failure occurs in some cases. The syndrome probably occurs as a direct result of severe parental neglect, abuse, or serious mishandling. The existence of this behavioral pattern is well recognized and accepted, but there is continuing uncertainty regarding the diagnostic criteria to be applied, the boundaries of the syndrome, and whether the syndrome constitutes a valid nosological entity. However, the category is included here because of the public health importance of the syndrome, because there is no doubt of its existence, and because the behavioral pattern clearly does not fit the criteria of other diagnostic categories.

The key feature is an abnormal pattern of relationships with caregivers that developed before the age of 5 years, that involves maladaptive features not ordinarily seen in normal children, and that is persistent yet reactive to sufficiently marked changes in patterns of rearing.

Young children with this syndrome show strongly contradictory or ambivalent social responses that may be evident at times of partings and reunions. Thus, infants may approach with averted look, gaze strongly away while being held, or respond to caregivers with a mixture of approach, avoidance and resistance to comforting. The emotional disturbances may be evident in apparent misery, a lack of emotional responsiveness, withdrawal reactions such as huddling on the floor, and/or aggressive responses to their own or others' distress. Fearfulness and hypervigilance (sometimes described as "frozen watchfulness") that are unresponsive to comforting occur in some cases. In most cases, children show interest in peer interactions but social play is impeded by negative emotional responses. The attachment disorder may also be accompanied by impaired physical growth (which should be coded according to the appropriate somatic category).

Many normal children show insecurity in the pattern of their selective attachment to one or other parent, but this should not be confused with reactive attachment disorder which differs in several crucial respects. The disorder is characterized by an abnormal type of insecurity shown in markedly contradictory social responses not ordinarily seen in normal children. The

abnormal responses extend across different social situations and are not confined to a dyadic relationship with a particular caregiver; there is lack of response to comforting; and there is associated emotional disturbance in the form of apathy, misery or fearfulness.

Five man features differentiate this condition from pervasive developmental disorders. First, children with a reactive attachment disorder have a normal capacity for social reciprocity and responsiveness, whereas those with a pervasive developmental disorder do not. Second, although the abnormal patterns of social responsiveness in a reactive attachment disorder are initially a general feature of the child's behavior in a variety of situations, they remit to a major degree if the child is placed in a normal rearing environment that provides continuity in responsive caregiving. This does not occur with pervasive developmental disorders. Third, although children with reactive attachment disorders may show impaired language development, they do not exhibit the abnormal qualities of communication characteristic of autism. Fourth, unlike autism, reactive attachment disorder is not associated with persistent and severe cognitive deficits that do not respond appreciably to environmental change. Fifth, persistently restricted, repetitive, and stereotyped patterns of behavior, interests, and activities are not a feature of reactive attachment disorders.

Reactive attachment disorders nearly always arise in relation to grossly inadequate child care. This may take the form of psychological abuse or neglect (as evidenced by harsh punishment, persistent failure to respond to the child's overtures, or grossly inept parenting), or of physical abuse or neglect (as evidenced by persistent disregard of the child's basic physical needs, repeated deliberate injury, or inadequate provision of nutrition). Because there is insufficient knowledge of the consistency of association between inadequate child care and the disorder, the presence of environmental privation and distortion is not a diagnostic requirement. However, there should be caution in making the diagnosis in the absence of evidence of abuse or neglect. Conversely, the diagnosis should not be made automatically on the basis of abuse or neglect: not all abused or neglected children manifest the disorder.

From The ICD-10 Classification of Mental and Behavioral Disorders, WHO, 1992.

Table 3 ICD-10 Disinhibited Attachment Disorder of Childhood

A particular pattern of abnormal social functioning that arises during the first 5 years of life and that, having become established, shows a tendency to persist despite marked changes in environmental circumstances. At age about 2 years it is usually manifest by clinging and diffuse, non-selectively focused attachment behavior. By age 4 years, diffuse attachments remain but clinging tends to be replaced by attention seeking and indiscriminately friendly behavior. In middle and later childhood, individuals may or may not develop selective attachments but attention seeking behavior often persists, and poorly modulated peer interactions are usual; depending on circumstances, there may also be associated or behavioral disturbance. The syndrome has been most clearly identified in children reared in institutions from infancy but it also occurs in other situations; it is thought to be due in part to a persistent failure of opportunity to develop selective attachments as a consequence of extremely frequent changes in caregivers. The conceptual unity of the syndrome depends on the early onset of diffuse attachments, continuing poor social interactions, and lack of situation specificity.
Diagnosis should be based on evidence that the child showed an unusual degree of diffuseness in selective attachments during the first 5 years and this was associated with generally clinging behavior in infancy and/or indiscriminately friendly, attention-seeking behavior in early or middle childhood. Usually there is difficulty in forming close, confiding relationships with peers. There may or may not be associated emotional or behavioral disturbance (depending in part on the child's current circumstances). In most cases there will be a clear history of rearing in the first years that involved marked discontinuities in caregivers or multiple changes in family placements (as with multiple foster family placements).
From The ICD-10 Classification of Mental and Behavioral Disorders, WHO, 1992.

Table 4 Alternative Criteria for Reactive Attachment Disorder of Infancy or Early Childhood (RDC-PA; DC:0-3R)

A. A pattern of markedly disturbed and developmentally inappropriate attachment behaviors in which the child rarely or minimally turns preferentially to a discriminated attachment figure for comfort, support, protection and nurturance. The disorder is manifest as (1), (2), or (3):

(1) An inhibited, emotionally withdrawn pattern in which the child rarely or minimally directs attachment behaviors towards any adult caregivers, as manifest by three of the following:

a) Rarely or minimally seeks comfort when distressed.

b) Rarely or minimally responds to comfort offered when distressed.

c) Limited positive affect and excessive levels of irritability, sadness or fear

d) Reduced or absent social and emotional reciprocity (e.g., reduced affect sharing social referencing, turn-taking and eye contact).

(2) A disinhibited, indiscriminate pattern in which the child directs attachment behavior non-selectively, as manifest by two of the following:

a) Demonstrates overly familiar behavior and reduced or absent reticence around unfamiliar adults.

b) Rarely or minimally checks back with adult caregiver after venturing away even in unfamiliar settings.

c) Willing to go off with an unfamiliar adult with minimal or no hesitation.

(3) A mixed pattern of inhibition and disinhibition characterized by two or more criteria from (1) and (2).

B. Child does not meet the criteria for PDD.

C. Child has a developmental age of at least 9 months.

Table 5. Similarities and Differences Between Two Types of RAD

Type of RAD	**Inhibited/Emotionally Withdrawn**	**Disinhibited/Indiscriminately Social**
Etiology	Linked etiologically to social deprivation and neglect	Linked etiologically to social deprivation and neglect (but also may have biological etiology, e.g., Williams Syndrome)
Maltreated Children	Readily identifiable in maltreated children	Readily identifiable in maltreated children
Children Being Raised in Institutions	Readily identifiable in some young children being raised in institutions	Readily identifiable in some young children being raised in institutions
Children Adopted Out of Institutions	Not identified in studies of young children adopted out of institutions	Readily identifiable in a substantial minority of young children adopted out of institutions
Relationship to Selective Attachment	Present only in children who lack attachments	Present in children with and without selective attachments
Interactions with Adults	Limited interest in interaction and passively acquiescent.	Interested and willing to approach and interact with familiar and unfamiliar adults without distinction
Quality of Caregiving	Related to quality of caregiving	Not related to quality of caregiving
Relationship to internalizing problems	Moderate convergence with depressed mood	No relationship with depressed mood
Relationship to externalizing	No relationship	Moderately associated with measures of

problems		inattention/overactivity; inconsistent relation to aggressive behavior
Response to Intervention	Very responsive to enhanced caregiving	Marginally responsive or not responsive to enhanced caregiving

Adapted from Zeanah and Smyke (2008)

TABLE 6. Contrasts Between Operational Definitions of Emotionally Withdrawn/ Inhibited RAD in Early and Middle Childhood

Early Childhood	**Middle Childhood**
Failure to differentiate among adults and demonstrate a preferred figure	Aggressive to self
Failure to seek comfort selectively when distressed	Has no conscience
Failure to respond to comfort when distressed	Looks frozen with fear
Lack of social and emotional reciprocity	Runs away when approached
Emotion Regulation Difficulties	False affection
	Unpredictable friendliness
Items from the Disturbances of Attachment Interview (Smyke et al., 2002)	Items from the Relationship Problems Questionnaire (Minnis et al., 2007)

Table 7. Proposed DSM-V Criteria for Reactive Attachment Disorder of Infancy or Early Childhood

A. A pattern of markedly disturbed and developmentally inappropriate attachment behaviors, evident before 5 years of age, in which the child rarely or minimally turns preferentially to a discriminated attachment figure for comfort, support, protection and nurturance. The disorder appears as a consistent pattern of inhibited, emotionally withdrawn behavior in which the child rarely or minimally directs attachment behaviors towards any adult caregivers, as manifest by both of the following:

1) Rarely or minimally seeks comfort when distressed.
2) Rarely or minimally responds to comfort offered when distressed.

B. A persistent social and emotional disturbance characterized by at least 2 of the following:

1) Relative lack of social and emotional responsiveness to others.
2) Limited positive affect.
3) Episodes of unexplained irritability, sadness, or fearfulness which are evident during nonthreatening interactions with adult caregivers.

C. Does not meet the criteria for Autistic Spectrum Disorder.

D. Pathogenic care as evidenced by at least one of the following:

1) Persistent disregard of the child's basic emotional needs for comfort, stimulation, and affection (i.e., neglect).
2) Persistent disregard of the child's basic physical needs.
3) Repeated changes of primary caregiver that prevent formation of stable attachments (e.g., frequent changes in foster care).
4) Rearing in unusual settings such as institutions with high child/caregiver ratios that limit opportunities to form selective attachments.

E. There is a presumption that the care in Criterion C is responsible for the disturbed behavior in Criterion A (e.g., the disturbances in Criterion A began following the pathogenic care in Criterion C).

F. The child has a developmental age of at least 9 months.

Table 8 Proposed DSM-V Criteria for Disinhibited Social Engagement Disorder

A. A pattern of behavior in which the child actively approaches and interacts with unfamiliar adults by exhibiting at least 2 of the following:

1) Reduced or absent reticence to approach and interact with unfamiliar adults.

2) Overly familiar behavior (verbal or physical violation of culturally sanctioned social boundaries).

3) Diminished or absent checking back with adult caregiver after venturing away, even in unfamiliar settings.

4) Willingness to go off with an unfamiliar adult with minimal or no hesitation.

B. The behavior in A. is not limited to impulsivity as in ADHD but includes socially disinhibited behavior.

C. Pathogenic care as evidenced by at least one of the following:

1) Persistent failure to meet the child's basic emotional needs for comfort, stimulation, and affection (i.e., neglect)

2) Persistent failure to provide for the child's physical and psychological safety.

3) Persistent harsh punishment or other types of grossly inept parenting.

4) Repeated changes of primary caregiver that limit opportunities to form stable attachments (e.g., frequent changes in foster care).

5) Rearing in unusual settings that limit opportunities to form selective attachments (e.g., institutions with high child to caregiver ratios).

D. There is a presumption that the care in Criterion C is responsible for the disturbed behavior in Criterion A (e.g., the disturbances in Criterion A began following the pathogenic care in Criterion C).

E. The child has a developmental age of at least 9 months.