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## DIAGNOSTIC USE OF CRITTENDEN'S ATTACHMENT MEASURES IN FAMILY COURT IS NOT BEYOND A REASONABLE DOUBT

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**ABSTRACT:** We express serious doubt and cautioning regarding Spieker and Crittenden's (2010) claim that attachment measures associated with the dynamic-maturational model of attachment and adaptation (DMM; Crittenden, 2016) can be used for court decision-making. We demonstrate, using Crittenden's and coworkers' (e.g., Spieker & Crittenden, 2010) own data, that such measures have (a) insufficient reliability for use in individual diagnosis and (b) cannot retrodict maltreatment with sufficient sensitivity or specificity for court use. Just as atypical forms of attachment are sometimes observed among children reared adequately, typical (secure or mildly insecure) forms of attachment are sometimes observed among maltreated children and among children of caregivers struggling with psychopathology or socioeconomic adversity. The stakes are high, so it is imperative that court decisions accord with the rule of law. Certainty beyond a reasonable doubt is required, and DMM measures *do not* meet that requirement.

**Keywords:** attachment, dynamic maturational model, maltreatment, child protection, court

**RESUMEN:** Expresamos serias dudas y precauciones acerca del planteamiento de Spieker y Crittenden de que las medidas de afectividad asociadas con el Modelo Dinámico-Madurativo (DMM) pueden ser usadas para tomar decisiones en los tribunales. Demostramos, usando la propia información de Crittenden y sus colaboradores, que tales medidas tienen (1) insuficiente confiabilidad para el uso en diagnósticos individuales y que ellas (2) no pueden explicar acciones pasadas de maltrato con suficiente sensibilidad o especificidad para uso en los tribunales. Así como las formas atípicas de afectividad son algunas veces observadas en niños criados adecuadamente, formas típicas de afectividad (seguras o levemente inseguras) son algunas veces observadas en niños maltratados y en niños que están bajo cuidado de individuos que luchan con sicopatologías o adversidades socioeconómicas. Hay mucho en juego, de manera que es imperativo que las decisiones de los tribunales estén en consonancia con la regla de la ley. Se requiere de certeza más allá de la duda razonable y las medidas de DMM *no* llenan ese requisito.

**Palabras claves:** afectividad, Modelo Dinámico-Madurativo, maltrato, protección del niño, tribunal

**RÉSUMÉ:** Nous exprimons des doutes sérieux et mettons en garde pour ce qui concerne la revendication de Spieker et Crittenden selon laquelle les mesures d'attachement liées au Modèle Maturational Dynamique des relations d'attachement (*Dynamic Maturational Model*, en anglais, soit DMM) peut être utilisé dans les tribunaux pour parvenir à des décisions. Nous démontrons, en utilisant les propres données de Crittenden et de ses collègues, que de telles mesures présentent (1) une fiabilité insuffisante pour l'utilisation d'un diagnostic individuel et qu'elles ne peuvent pas rétro-estimer les mauvais traitements avec une sensibilité suffisante et une spécificité suffisante pour l'utilisation dans un tribunal. De la même manière dont les formes atypiques de l'attachement sont quelquefois observées chez des enfants élevés de manière adéquate, des formes typiques (sécures ou légèrement

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insécures) d'attachement sont quelquefois observées chez des enfants maltraités et chez des enfants dont les personnes qui en prennent soin font preuve de psychopathologie ou d'adversité socioéconomique. Les enjeux sont élevés et donc il est impératif que les décisions d'un tribunal s'accordent avec la loi. La certitude hors de tout doute raisonnable est exigée aux Etats-Unis, et les mesures DMM ne remplissent pas cette exigence.

**Mots clés:** Attachement, Modèle Maturational Dynamique, Maltraitance, Protection de l'Enfance, Tribunal

**ZUSAMMENFASSUNG:** Wir äußern ernsthafte Zweifel und warnen vor der Behauptung von Spieker und Crittenden, dass die Erfassung der Bindung im Zusammenhang mit dem Dynamischen Reifungs-Modell (Dynamic-Maturational Model, DMM) für gerichtliche Entscheidungen herangezogen werden können. Wir zeigen unter Verwendung der eigenen Daten von Crittenden und ihren Mitarbeitern, dass solche Messungen (1) für Einzeldiagnosen nicht ausreichend zuverlässig sind und dass sie (2) Misshandlungen retrospektiv nicht mit ausreichender Sensitivität oder Spezifität für den Gerichtsgebrauch erkennen können. So wie atypische Bindungsformen manchmal bei adäquat erzogenen Kindern beobachtet werden, so werden typische (sichere oder leicht unsichere) Bindungsformen manchmal bei misshandelten Kindern und bei Kindern von Bezugspersonen beobachtet, die mit einer Psychopathologie oder sozio-ökonomischen Widrigkeiten zu kämpfen haben. Es steht viel auf dem Spiel, daher ist es unerlässlich, dass die Gerichtsentscheidungen mit dem Grundsatz der Rechtsstaatlichkeit übereinstimmen. Gewissheit ist zweifellos erforderlich und die DMM-Messungen erfüllen diese Anforderung nicht.

**Stichwörter:** Bindung, Dynamisches Reifungsmodell, Misshandlung, Kinderschutz, Gericht

抄録: 私たちは、Dynamic-Maturational Model (DMM) によるアタッチメント測定が裁判所の意思決定に使用できるという Spieker & Crittenden の主張に深い疑念を持ち警告を発する。Crittenden と同僚自身のデータを用いたこのような測定は (1) 個々の診断で使用するには信頼性が低く、(2) 虐待を推定する裁判での使用に耐えうる十分な感度や特異性をもたないことを実証する。ちょうどアタッチメントの非典型例適切に育てられた子供たちに時々観察されるように、典型的 (安定型あるいは軽度不安定型) アタッチメントが虐待を受けた子どもや精神病理や社会経済的苦境に苦しむ養育者の子どもに時折観察される。

この観点は重要であり、法廷の決定は法律のルールに従うことが不可欠である。合理的な疑いを越えた確実性が要求され、DMM測定はその要件を満たさない。

**キーワード:** アタッチメント, 動的相互作用モデル, 虐待, 児童保護, 裁判所

摘要: 我們嚴重懷疑 Spieker & Crittenden 聲稱與動態成熟模型 (DMM) 相關的依附測量, 可用於法院決策。我們以 Crittenden 和同事之數據證明, 這些措施 (1) 用於個體診斷的可靠性不足, 並且 (2) 不能以足夠的敏感性或特異性來反駁法院虐待案件。正如在正常的環境養育的兒童中, 有時會觀察到非典型的依附形式, 有時會在受虐待的兒童和在精神病理學或社會經濟逆境中掙扎的照顧者之兒童中, 觀察到典型的 (安全的或輕度不安全的) 依附形式。法院判決必須符合法治, 因此風險很高。需要超出合理懷疑的確定性, DMM測量不符合該要求。

**關鍵詞:** 依附, 動態成熟模型, 虐待, 兒童保護, 法庭

**ملخص:** نقدم في هذه الدراسة بعض التساؤلات فيما يتعلق بادعاء سبايكر و كريتيندن بأن مقاييس التعلق المرتبطة بنموذج النضج الديناميكي (DMM) يمكن استخدامها في صنع القرار في المحكمة. كما نوضح، باستخدام البيانات الخاصة بكريتيندين وزملاءه، أن هذه المقاييس لها (1) موثوقية غير كافية للاستخدام في التشخيص الفردي وانها (2) لا يمكن أن تتنبأ بسوء المعاملة بحساسية والتحديد الكافي لاستخدام المحكمة. وكما أن أنماط التعلق الغير نمطية يتم ملاحظتها أحيانا عند الأطفال الذين يتم تربيتهم بشكل ملائم نجد أيضا ان الأنماط النموذجية توجد بين الأطفال الذين يتعرضون لسوء المعاملة وبين أطفال مقدمي الرعاية الذين يعانون من الأمراض النفسية أو الشدائد الاجتماعية والاقتصادية. هذا يعني أن المخاطر عالية لذلك يتحتم ان تتفق قرارات المحاكم مع سيادة القانون ويتطلب ذلك نسبة من اليقين بما يتخطى مستوى الشك المعقول، ومقاييس DMM لا تفي بهذا المطلب.

**الكلمات الرئيسية:** التعلق; نموذج النضج الديناميكي; سوء المعاملة; حماية الطفل; المحكمة

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In Spieker and Crittenden's (this issue) article, "Can Attachment Inform Decision-Making in Child Protection and Forensic Settings?" they take issue with our consensus statement on the misuse of attachment measures in family court procedures and other child-protection and forensic settings (Granqvist et al., 2017). They argue that the attachment measures developed according to the dynamic-maturational model of attachment and adaptation (DMM; Crittenden, 2016) would better fit the diagnostic requirements of reliability and validity. We disagree, and

argue that the same weaknesses leading to our skepticism about the use of attachment research measures to discover individual child maltreatment cases or to settle court issues about individual children are most certainly inherent to the DMM measures as well.

#### NO TENDER PREY

Spieker and Crittenden (this issue) acknowledge that we were right to recognize that assessments of attachment disorganization (Main & Solomon, 1990) have insufficient sensitivity and specificity

as indicators of maltreatment. To reiterate, we pointed to such limitations because we had seen serious misapplications that do real harm to developing children (for erroneous child removals, see Granqvist, 2016). Because the consensus statement's signatories had invested in theory, research, and clinical applications relating to disorganized attachment, we felt it was ethically imperative to attend to those misapplications, and to direct applications toward evidence-based work.

In their response, Spieker and Crittenden turn our arguments upside down, effectively exploiting our acknowledged limitations of the disorganized classification system for their own purposes. They argue that the DMM measures do not have the same limitations, for example, "DMM classifications . . . can be used in a case-specific manner in . . . forensic settings" (p. 625). In doing so, they prey on the conscientiousness that gave rise to our consensus statement, instead promoting their own measures to practitioners in child-protection and forensic settings, despite their severe limitations. Our consensus statement is no tender prey, however, and we strongly advise against its use for promoting another approach that is more than likely to repeat past mistakes.

#### INSUFFICIENT INTERRATER RELIABILITY FOR USE IN INDIVIDUAL DIAGNOSIS

Spieker and Crittenden declare that "DMM theory continues to evolve" (that it's "ever-emergent;" p. 628). What actually does this mean? In practice, it means that researchers and clinicians who undertake training in the DMM measures are likely called upon to re-train whenever such "emergent" changes take place. This also means that any of the psychometric data are called into question: Which version of the measure is it based upon—the first set of emergent tenets and terms or the second, third, or 10th iteration? DMM measures clearly do continuously change, much to their own detriment in terms of being a series of sound and psychometrically robust measures. The DMM circumplex classification system of adult attachment, for example, is now up to some 24 subcategories altogether (see S&C's [this issue] Figure 3), including 14 atypical ones, somewhat loosely organized along two dimensions and placed in five main categories—indeed a shower of colorful confetti (Bakermans-Kranenburg & van IJzendoorn, 2009). No wonder that it is hard to become a reliable coder.

We argue that the interrater reliability of the DMM measures is insufficient for correct diagnoses of individual cases. A case of a child appearing in a court procedure can be easily misdiagnosed using DMM attachment assessments such as the Preschool Assessment of Attachment (PAA; Crittenden, 1992–2017). Spieker and Crittenden (2010), the two authors of the current call for using the DMM measures in court procedures, were the principal investigators of the largest study to date using the PAA. They assessed 306 children with the PAA, and established interrater reliability on all cases. A more precise reliability estimate is not available in the literature on DMM measures. They reported an interrater reliability of 59% across the six main DMM attachment categories. This might be hardly sufficient for the purpose of research in large sam-

ples, but is totally unjustified to be used in court decisions about individual cases with high stakes such as being placed out-of-home.

Why this harsh verdict? It is because it can be demonstrated that a low interrater reliability of 59% leads to an unacceptably low chance of a correct diagnostic decision *even if two trained diagnosticians evaluate the individual case*. One way to prove that there is at most only a 76% chance of a correct classification of the child goes like this: Two diagnosticians reach a consensus in 59% of the cases, and they discuss the disagreements in the other cases. Assume the probability of one diagnostician being right =  $p_r$  and the probability of this diagnostician to convince the other diagnostician being wrong in case of disagreement =  $p_c$ . Logically, there are four possibilities:

- A. Diagnostician 1 is right, Diagnostician 2 is wrong.
- B. Diagnostician 1 is right, Diagnostician 2 is right.
- C. Diagnostician 1 is wrong, Diagnostician 2 is right.
- D. Diagnostician 1 is wrong, Diagnostician 2 is wrong.

The probabilities of these possibilities can be expressed in terms of products of  $p_r$  and  $1 - p_r$ . Consensus occurs in Scenario B, but also in Scenario D when both diagnosticians choose the same incorrect classification, yielding the probability of consensus:

$$1 * p_r * p_r + 1 / (N - 1) * (1 - p_r) * (1 - p_r) = .59.$$

where  $N$  is the number of attachment categories to be chosen from, assuming equal probabilities of all incorrect categories (the most optimistic case).

Because the probability of consensus is found to be 59%, we can solve the equation for  $p_r$  to obtain an upper boundary of  $p_r = 0.76$ , which gives a 76% chance of a correct diagnosis (if  $p_c = 0.5$ ). For individual children and their parents or caregivers, this implies an unacceptably high chance of a wrong diagnosis. *In the long run, court decisions based on expert diagnoses of attachment with a DMM measure will be wrong in one of four cases*. This is certainly not "beyond a reasonable doubt."

#### WHY SECURE ATTACHMENT MAY COEXIST WITH MALTREATMENT AND MATERNAL DEPRESSION

Spieker and Crittenden (this issue) find it difficult to accept that some maltreated children or children of depressed mothers can be securely attached: "Any secure classification of a maltreated child or when the mother is clinically depressed is anomalous" (p. 630). Detecting maltreated, but allegedly secure, children served for Crittenden (see S&C, this issue) as a "basis for proposing new categories and coding guidelines" that can identify "new behavioural markers and self-protective attachment strategies among maltreated children" (p. 630). This is what ultimately yielded some of the DMM's atypical classifications. Because security, according to the DMM, cannot coexist with maltreatment or maternal depression, the attachment categories were redefined (circularly) to be more compatible with the maltreatment status of the child or with

maternal psychopathology. This is indeed dangerous for obvious reasons and goes directly against John Bowlby's (1969) emphatic call to determine actual experience and not just formulate post hoc hypotheses that become clinical sentiments. This circular way of thinking also reveals an essentializing view of psychopathology and risk. First, diagnosis of depression and retrospectively estimated maltreatment is less than 100% reliable and valid. Second, depression is not always debilitating for individuals in their role as caregiver (e.g., traumatized Holocaust survivors demonstrate this protective mechanism; Sagi et al., 2003), and maltreatment may well occur as rare bouts of unmonitored abusive behaviors in caregivers who are otherwise mostly sensitive and responsive. Thus, as illustrated in attachment research using the widely studied ABC+D system (Ainsworth et al., 1978; Main & Solomon, 1990), secure attachment may coexist with maltreatment or maternal depression, perhaps especially among less environmentally susceptible children (Belsky & van IJzendoorn, 2017) for whom there is never a 1:1 correspondence between caregiver psychopathology or maltreatment history and child attachment classification.

#### DMM MEASURES CANNOT RELIABLY RETRODICT MALTREATMENT

Spieker and Crittenden (this issue) claim that the "Strange Situation - and other DMM assessments of attachment - can contribute to . . . court decision-making" (p. 630). If maltreatment is (allegedly) identified via the DMM, then the court—following child-protective legislation—would more or less have to rule for child removal. We doubt that court-decision making, thus informed, would be in compliance with the rule of law, where people are considered innocent until *proven* guilty. What if there is another cause for the child's "self-protective" (potentially secure) strategy than maltreatment? We have learned the hard way in developmental science that any behavioral outcome can have multiple causes or be brought to fruition via multiple pathways ("equifinality;" e.g., Cicchetti & Rogosch, 1996). Notably, however, custody workers and courts have many cases to attend to, with limited time and resources. Therefore, they are unlikely to ponder other potential causes beyond maltreatment, including, for instance, accumulating daily stressors for parents related to job or housing insecurity (cf. Cyr, Euser, Bakermans-Kranenburg, & van IJzendoorn, 2010) as a possible catalyst for child disorganized and other atypical behaviors.

So, how well does the evidence support a close association between maltreatment and a child's atypical attachment classification, at the case-specific level? Spieker and Crittenden (2010) cite evidence especially from Crittenden, Claussen, and Kozłowska (2007), but also from Crittenden (1992). The evidence from these studies for DMM's usefulness for courts, however, remains limited and subject to cautionary notes, as stated also by Spieker and Crittenden. We agree with Spieker and Crittenden that because the samples were small and "Crittenden supervised . . . classifications" (p. 635), the studies require larger scale replications. When we combine various small studies, the aggregate sample comprises substantial numbers of maltreated ( $n = 187$ ) and "ade-

quately reared," typical, or normative ( $n = 124$ ) children (Crittenden 1987, 1992; Crittenden et al., 2007; Crittenden & Heller, 2017; Crittenden, Robson, & Tooby, 2015; Shah, Fonagy, & Strathearn, 2010). In the typical group, there were 25% children (31/124) with an atypical DMM attachment classification. Of course, some of the children from typical or normative families may have been maltreated, but they were explicitly chosen to be comparisons for children of abusive or otherwise disturbed parents. If this 25% is extrapolated to the population level, it suggests that there will be numerous children with an atypical DMM classification who are reared adequately, thus implying a too-high risk for false positives. In fact, considering that it is *much* more common to be reared adequately than to be maltreated, we estimate that—in absolute numbers—there should be more atypically attached children among those reared adequately than among those maltreated in the general population. This shows, as is expectable, that the specificity of the DMM to identify maltreatment is far from perfect; the presence of maltreatment cannot be inferred from atypical DMM classifications. Second, despite Spieker and Crittenden's efforts to remove the possibility of secure attachment among maltreated children, there were still secure and multiple insecure-but-normative dyads in their maltreatment group (total = 30/187, or 16%). Thus, sensitivity of the DMM measures to identify maltreatment also is far from satisfactory and the rate of false negatives substantial; maltreated children can be secure and mildly insecure even on a DMM measure.

#### COURT DECISIONS SHOULD BE EXECUTED BEYOND A REASONABLE DOUBT

We appreciate Spieker and Crittenden's (2010) attention to non-matching cases and the need for replication, and their general acknowledgment that "gaps in both theory and assessment remain" (p. 636). What we do not understand, however, is why they nonetheless jump to the conclusion that the DMM measures can now be used for court decision-making, as advocated also by the International Association for the Study of Attachment (an organization founded and co-chaired by Crittenden herself). Considering the stakes, multiple and much larger studies, preferably conducted by independent teams and subsequently meta-analyzed, are required to establish reliable and valid specificity and sensitivity statistics. Until such data have been established, we deem it scholarly and ethically irresponsible to promote the DMM measures for court use where, according to the rule of law, certainty beyond a reasonable doubt is required.

#### REFERENCES

- Ainsworth, M.D.S., Blehar, M.C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation*. Hillsdale, NJ: Erlbaum.
- Bakermans-Kranenburg, M.J., & van IJzendoorn, M.H. (2009). *The first 10,000 Adult Attachment Interviews: Distributions of adult*

- attachment representations in clinical and non-clinical groups. *Attachment & Human Development*, 11, 223–263.
- Belsky, J., & van IJzendoorn, M.H. (2017). Genetic differential susceptibility to the effects of parenting. *Current Opinion in Psychology*, 15, 125–130.
- Bowlby J. (1969). *Attachment* (1st ed.). London: Penguin.
- Cicchetti, D., & Rogosch, F.A. (1996). Equifinality and multifinality in developmental psychopathology. *Development and Psychopathology*, 8, 597–600.
- Crittenden, P., Robson, K., & Tooby, A. (2015). Validation of the School-age Assessment of Attachment in a short-term longitudinal study. *Clinical Child Psychology and Psychiatry*, 20, 348–365.
- Crittenden, P.M. (1987). Non-organic failure-to-thrive: Deprivation or distortion? *Infant Mental Health Journal*, 8, 51–64.
- Crittenden, P.M. (1992). Children's strategies for coping with adverse home environments: An interpretation using attachment theory. *Child Abuse & Neglect*, 16, 329–343.
- Crittenden, P.M. (1992–2017). *Preschool assessment of attachment*. Unpublished manual, Family Relations Institute, Miami.
- Crittenden, P.M. (2016). *Raising parents: Attachment, representation, and treatment* (2nd ed.). London: Routledge.
- Crittenden, P.M., Claussen, A.H., & Kozłowska, K. (2007). Choosing a valid assessment of attachment for clinical use: A comparative study. *Australian & New Zealand Journal of Family Therapy*, 28, 78–87.
- Crittenden, P.M., & Heller, M.B. (2017). The roots of chronic post-traumatic stress disorder: Childhood trauma, information processing, and self-protective strategies. *Chronic Stress*, 1. <https://doi.org/10.1177/2470547016682965>
- Cyr, C., Euser, E.M., Bakermans-Kranenburg, M.J., & van IJzendoorn, M.H. (2010). Attachment security and disorganization in maltreating and high-risk families: A series of meta-analyses. *Development & Psychopathology*, 22, 87–108.
- Granqvist, P. (2016). Observations of disorganized behaviours yield no magic wand: Response to Shemmings. *Attachment & Human Development*, 18, 529–533.
- Granqvist, P., Sroufe, L.A., Dozier, M., Hesse, E., Steele, M., van IJzendoorn, M. et al. (2017). Disorganized attachment in infancy: Review of the phenomenon and its implications for clinicians and policy-makers. *Attachment & Human Development*, 19, 534–558.
- Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganised/disoriented during the Ainsworth Strange Situation. In M.T. Greenberg, D. Cicchetti, & E.M. Cummings (Eds.), *Attachment in the preschool years* (pp. 121–160). Chicago: University of Chicago Press.
- Sagi, A., van IJzendoorn, M.H., Grossmann, K.E., Joels, T., Grossmann, K., Scharf, M. et al. (2003). Child survivors - but not their children - suffer from traumatic Holocaust experiences. *American Journal of Psychiatry*, 160, 1086–1092.
- Shah, P.E., Fonagy, P., & Strathearn, L. (2010). Is attachment transmitted across generations? The plot thickens. *Clinical Child Psychology and Psychiatry*, 15, 329–345.
- Spieker, S., & Crittenden, P.M. (2010). Comparing two attachment classification methods applied to preschool strange situations. *Clinical Child Psychology and Psychiatry*, 15, 97–120.
- Spieker, S., & Crittenden, P.M. (this issue). Can attachment inform decision-making in child protection and forensic settings. *Infant Mental Health Journal*