PSYCHIATRIA ET NEUROLOGIA JAPONICA

＊This English manuscript is a translation of a paper originally published in Psychiatria et Neurologia Japonica, Vol.126, No.4, pp. 263-271. This manuscript was translated by the Japanese Society of Psychiatry and Neurology with the assistance of machine translation and was published with the author's confirmation and permission. If you wish to cite this paper, please use the original paper as the reference.

Special Feature Article

Assessment of Attachment in Very Young Children and Interventions for Parents as the Entry to Disturbances in Attachment Relationships

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Psychiatria et Neurologia Japonica 126: 263-271, 2024

Abstract

In this paper, I review literature on the theme, especially for infants who are experiencing adversities, and address two related issues.

The definition of attachment has been clarified. Infants and young children who experience adversities, especially abuse and neglect, have two specific psychopathologies: attachment and trauma. Attachment can also be conceptualized as a spectrum according to the degree of security (i.e., adaptiveness), and attachment problems can be categorized into insecure attachment, especially disorganized/disoriented type of attachment, and attachment-related disorders in decreasing order of adaptiveness. Structured assessment of attachment and attachment problems include the Strange Situation Procedure for assessing children's attachment, Working Model of the Child Interview, and Adult Attachment Interview on parent's representation of attachment. For infants experiencing adversities, assessment of the presence or absence of trauma and its responses (including post-traumatic stress disorder) are necessary along with assessment of attachment.

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The attachment relationship has characteristics of "relationship specificity". The interventions are different for cases separated from the home and at home, and attachment-based interventions are mainly through the entry of parents to improve attachment relationships. Many attachment-based programs have been developed with demonstrated therapeutic efficacy. in Europe and the United States, and some have been imported into Japan. Almost all also include approaches to traumatic responses.

Two issues are discussed. The first one regards advancement of the ability to distinguish between attachment disturbances and attachment-related disorders, proposing the concept: disturbances of attachment spectrum. The second is the suggestion of one of the psychopathological paths whereby attachment-trauma problems in very young children progress from developmental trauma disorder to complex post-traumatic stress disorder.

Keywords: attachment disturbance, assessment, attachment-based interventions

Introduction

Abuse and neglect, which are among the most common forms of adverse childhood experiences, are considered to be particularly significant for the reasons outlined below. First, cases involving preschool-aged children account for a relatively high proportion of all child abuse and neglect cases. According to data published by the Ministry of Health, Labour and Welfare,[23] the rate among all cases handled by child guidance centers as abuse or neglect was approximately 46% in fiscal year 2018 and 45% in fiscal year 2019. Second, according to the above statistics, infants aged 0 accounted for 47.5% of all deaths resulting from abuse or neglect in fiscal year 2019, while children aged 3 or younger accounted for 77.0%. This is why support in cases of infant and toddler abuse or neglect, requires urgent intervention and support given both the volume and severity of cases. Third, there is a preventive perspective. Findings indicate that adverse experiences such as abuse or neglect occurring at an earlier age have more negative structural and functional effects on the brain than those occurring later,[15)35)] and have more severe negative effects on social and emotional development.[20)27)40)] These circumstances and evidence indicate that adverse experiences in infancy and early childhood, particularly abuse or neglect, are critical issues concerning

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mental health in Japan. Furthermore, since specific psychopathologies of abused or neglected infants and toddlers involve both attachment- and trauma-related pathology,[13)18)] it is also essential to assess attachment, the presence or absence of trauma, and post-traumatic reactions and their pathologies in these infants and toddlers.

The purpose of this paper was to compile information under the theme of "Assessment of Infant and Toddler Attachment and Support for Caregivers" to contribute to the practice of professionals involved in clinical work related to child abuse. First, I summarized key literature on attachment disturbance in infants and toddlers exposed to adversity, and briefly reviewed trauma-related issues using a similar approach. I then focused on the following two points. First, I examined the distinction between "attachment disturbance" and attachment-related disorders, and proposed the concept of an "attachment disturbance spectrum." I considered that this proposal may be useful in clinical practice, particularly regarding "attachment disturbance," which is a source of significant confusion on assessing cases of infant and toddler abuse or neglect. Second, I examined how attachment and trauma pathologies coexist during infancy and early childhood, as well as the subsequent trajectory of developmental pathology.

This paper originated from the following academic context. At the 117th Annual Meeting of the Japanese Society of Psychiatry and Neurology, during the symposium entitled: "How Should We Conduct Intervention with the Co-occurrence of Attachment and Trauma Pathology?," the author had the opportunity to present on the theme: "Assessment of Attachment and Trauma in Infants and Toddlers and Support for Parents and Children: The Nature of Co-occurring Pathology in Early Childhood." This paper summarizes part of that presentation. At the symposium, presentations and discussions were conducted in accordance with the aforementioned theme, focusing on children who had experienced childhood adversity, particularly those who also had experienced trauma. Consequently, this paper also summarizes infants and toddlers exposed to adversity under: "I. Summary of Literature and Discussions," incorporating the issue of trauma into this section. Furthermore, as the second theme of this discussion, I addressed both attachment and trauma pathologies. I did so because I consider that this analysis may provide useful perspectives on the comorbid psychopathology of attachment and

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trauma, from childhood through to adulthood, for infants and toddlers who have experienced abuse or neglect.

Due to space limitations, this paper briefly introduces the theoretical frameworks for assessment and support, as well as provide a list of assessment methods and support programs, but will not describe detailed assessment methods, perspectives, or support approaches. I encourage readers to investigate these details in the relevant literature.

Incidentally, in this paper, "*Aichaku*" and "attachment" are treated as synonymous, and the term "attachment" is used consistently throughout.

I. Summary of Literature and Discussions

1. Assessment of attachment in infancy and early childhood

1) Definition of attachment

The term "attachment" is used by experts primarily in four distinct senses.[4)24)51)] The first refers to "attachment behavior," and the second indicates the "emotional connection/bond between two people (attachment bond)."

The third usage refers to one of several systems, behavioral control systems, which regulate infant behavior; neurologically, these are systems located in the brain. This usage is the core concept employed by attachment specialists, beginning with Bowlby, J. (1907/1990).[1)10)19)] The attachment behavioral control system is activated by triggers such as pain, fear, separation from caregivers, or unfamiliar people and places, driving the infant toward two goals. One is an external goal: approaching the attachment figure (such as a parent). The other goal is internal: to gain a sense of safety and security. A responsive attachment figure (driven by the caregiving behavioral control system) approaches the infant and provides comfort. The infant makes contact with the caregivers (being held) and gains a sense of security; the attachment behavioral control system within the infant then deactivates, allowing the infant to gradually move away from the caregivers and explore the external world (activation of the exploration system).

The fourth usage is "attachment relationship." This has gained greater emphasis in recent years due to reasons such as the critical importance of the relationship with caregivers for the infant's mental health and its utility in intervention applications.[3)4)36)39)] An attachment relationship refers to one specific domain within the diverse range of relationships between infants and caregivers; it denotes the domain in which caregivers provide psychological acceptance, emotional responsiveness,

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and protection when infants seek comfort.

The literature cited above consistently identifies four elements that constitute an attachment relationship. These four elements are: how the infant represents him/herself and the caregivers (i.e., the infant's internal working model) and behaves (attachment behavior) when the attachment behavior control system is activated (these two elements are collectively considered to constitute the infant's attachment), and how the caregivers represent the child's behavior (the caregivers' internal working model) and behave (caregiving behavior). van IJzendoorn, M.H. et al. proposed a representative conceptual model based on extensive empirical research.[44] Aoki[4] modified van IJzendoorn et al.'s model to propose a conceptualization that can be applied to intervention techniques, particularly from a clinical perspective. In Aoki's[4] model, the attachment relationship is considered to be influenced by three interacting elements: the caregiver's representation of attachment (internal working model), parenting sensitivity (primarily the caregiver's behavior when the child's attachment is activated), and the child's attachment (Figure 1).[4][44] It is considered that conceptualizing the attachment relationship makes it clearer which elements clinicians should directly address when providing intervention support to improve the attachment relationship.[3][4][36][39] For example, this involves choosing whether to apply psychotherapy to the caregivers' attachment representation or provide behavioral therapy guidance regarding sensitivity.

2) Assessment of attachment and attachment relationships in infants and toddlers who have experienced adversity

Because attachment development is considered one of the foundations of human social and emotional development,[19][24] it is generally regarded as an indispensable assessment in the fields of infant and child psychiatry and health care. Specific psychopathologies observed in infants and toddlers resulting from abuse and neglect, one of the most representative forms of childhood adversity, are considered to be problems of attachment and trauma.[13][18] Therefore, the assessment of "attachment disturbance" is essential when evaluating the infants and toddlers discussed in this paper.[31]

"Attachment disturbance" can be broadly categorized into two types.[4] One is the insecure attachment style, particularly the disorganized/disoriented type (Type D),

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which stems from findings in developmental psychology (so-called attachment research).[4)51)] The other involves attachment-related disorders, which are classified as mental disorders or disorders, and primarily originates from research in child psychiatry and psychology. Type D is considered the least secure attachment style among the insecure types classified by the Strange Situation Procedure (SSP).[1)] In fact, when SSP was administered to abused or neglected infants and their caregivers, approximately 80% of the infants exhibited this Type D pattern.[12)]

However, since this type is classified based on SSP, it is not conceptually a mental disorder.[9)51)] Currently, there are only two officially recognized attachment-related or mental disorders. These two are nearly equivalent disorders listed in ICD-10[47)] and DSM-5.[2)] One is Reactive Attachment Disorder, and the other is Disinhibited Social Engagement Disorder. These two disorders also share the common etiology of severe social and emotional neglect.[2)47)]

First, to assess "problems" in attachment styles, it is necessary to evaluate the disorganized behaviors (hereinafter referred to as "D-behaviors") observed in Type D children in situations where the primary caregivers are present and infant's attachment is activated. This involves assessing behaviors during separation and reunion scenarios, as well as when the child is in a state of distress. SSP is considered the gold standard among structured assessment methods.[1)] However, if the focus is on the attachment relationship, it becomes necessary to assess a wider range of factors. Referring to the models by van IJzendoorn et al.[44)] and Aoki,[4)] it is necessary to observe the parent's behavior (sensitivity) when the child's attachment system is activated,[5)] and it is also desirable to assess the caregivers' representations; specifically, the attachment working model.[5)11)49)50)] The latter can be explored by asking the caregivers about their feelings at that moment (e.g., during a separation-reunion scenario). Semi-structured interviews include Working Model of the Child Interview[49)] and, in van IJzendoorn et al.'s model,[44)] Adult Attachment Interview (AAI).[26)] Additionally, the symptom descriptions in DSM-5[2)] can be utilized to assess attachment-related disorders.

Furthermore, it is clinically important to assess the extent to which attachment has been damaged by adverse experiences.[4)9)31)] Therefore, hypothesizing how Type D attachment disturbance and attachment-related disorders overlap or differ, and how they are positioned in terms of the severity of attachment disturbance, is of marked

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assistance to clinicians.[4)9)] Infants and toddlers with insecure attachments form attachments to specific caregivers, but the stability of these attachments is low. In contrast, both attachment-related disorders are characterized by the absence or underdevelopment of attachment due to marked social neglect.[51)52)] Therefore, Boris, N.W. et al.[9)] hypothesized that attachment-related disorders exhibit lower-level attachment adaptiveness than Type D attachment, and hypothetically arranged the categories of attachment types and related disorders in order of attachment adaptiveness (Figure 2). This hypothesis remains valid even after the extensive longitudinal study (BEIP study) conducted by Zeanah, C. H. et al.[29)] In these studies, for example, many children with reactive attachment disorder lacked attachment to a specific caregiver; consequently, many children were "unclassifiable" within the SSP classification system.[29)]

3) Other essential assessments regarding psychopathology in infants and toddlers

Since the specific psychopathologies of abused and neglected infants and toddlers lie in attachment and trauma,[13)18)] assessment of their psychopathology and disorders based on the presence or absence of trauma and post-traumatic reactions, which primarily refer to a range of symptoms from acute stress reactions occurring after trauma to post-traumatic stress disorder (PTSD), is also essential. Following numerous studies,[32)] the inclusion of diagnostic criteria for PTSD in children aged 6 or younger in DSM-5 in 2013 established a consensus that PTSD can be officially identified in infancy and early childhood.[2)]

The core concept of trauma in infancy and early childhood, as described in DSM-5, is "an event in which the person experiences or witnesses a threat to their own or another's physical integrity, such as an actual or threatened death or serious injury, or learns that primary caregivers are in mortal danger"[2)]; post-traumatic reactions refer to those listed under PTSD symptoms in the diagnostic criteria.

Epidemiological studies on childhood PTSD are still insufficient. However, reports on epidemiology in Western countries indicate that the prevalence of PTSD among infants and young children in at-risk groups reaches approximately 25–50%.[32)33)] Furthermore, a growing body of research indicates that children who experienced emotional neglect at an earlier age and for a longer duration, as well as those who experienced abuse or neglect at an earlier age and for a longer period and subsequently developed PTSD, exhibit greater functional and

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organic brain damage.[14)15)] Taking these findings together, for infants and toddlers with adverse experiences, it is essential to assess the presence of trauma and post-traumatic reactions in parallel with attachment evaluations.[31)] DSM-5[2)] provides clear descriptions of symptoms that aid in this assessment.

2. Attachment-based interventions and support

Based on the findings presented in Section 1, infants and toddlers who have developed "attachment disturbance" due to adverse experiences require attachment-based support.[3)] Below, I summarize the literature in the following order: foundational findings for support; the general framework of support that varies by treatment; conceptualization of interventions and support; a list of several attachment-based support approaches; and responses to post-traumatic reactions.

In infancy and early childhood, relationship specificity is prominent in interpersonal relationships.[5)25)45)50)] Relationship specificity refers to the notion that attachment relationships with different caregivers develop independently.[5)50)] Attachment relationships are one example of this; the type of attachment an infant or toddler forms with their mother does not necessarily match the type formed with their father.[5)25)45)50)] Consequently, support should aim to improve problematic attachment relationships or foster the development of stable new attachments.[3)] Individual therapy for infants and toddlers (e.g., weekly play therapy) is generally considered less effective.[5)44)] It is inferred that a stable, once-weekly relationship with a therapist does not influence the attachment relationship with the caregivers (relationship specificity), and has an extremely limited impact on supporting the infant's or toddler's development.[5)]

When abuse or neglect is identified, the choice of intervention is between in-home support or separation from the family. If in-home support is chosen, it is expected that "attachment relationship problems" have already arisen between the abuser and abused infant or toddler, and as previously noted, more than 80% of these infants and toddlers are likely to exhibit Type D attachment.[12)] Therefore, interventions aimed at improving the attachment relationship with caregivers are implemented. A list of these interventions is provided below. If separation occurs, it is necessary to provide infants and toddlers, who are currently in the process of forming attachments, with a responsive attachment figure (alternative caregiver).[51)52)] This role is fulfilled by foster parents or facility staff. It is

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considered that infants and toddlers in the period of relationship specificity form new attachments to substitute caregivers.[31] To facilitate this formation, foster parent support is necessary,[28][29] and there is also evidence that attachment-based programs in facilities are effective.[6] When reunification is attempted, as in the home setting, it is desirable to implement interventions aimed at improving the attachment relationship between the abuser and infant or toddler.

Stern, D.N. conceptualized several "entry points" for treatment to improve the attachment relationship (Figure 1).[38] These include the caregiver's working model (attachment representation), caregiver's parenting behavior, infant–caregiver interactions, and infant's working model. As previously noted, individual therapy for infants uses the infant's working model as the "entry point," but this approach has the lowest efficacy.[5][44] Representation-oriented parent-infant psychotherapy is an approach that uses the caregivers' working model as its sole entry point.[38] This psychotherapy is sometimes applied to mild cases of abuse.[5][38] However, in Western countries, the target population for this intervention is often low-risk: middle-class families with few developmental risk factors for the infant and beyond (typically without abuse or neglect and economically stable), and it is considered less effective for the high-risk population addressed in this paper (a group with many developmental risk factors for the infant and beyond, typically involving frequent abuse and neglect and often economically disadvantaged).[38] This is because caregivers need to be relatively adept at verbalizing their emotional states (a prerequisite for psychological therapy).[5][38] Consequently, attachment-based interventions for high-risk patients often use the caregivers' parenting behaviors or interactions as the "entry point" for treatment, while also incorporating the caregivers' attachment representations.[5][38] Treatments for which a certain degree of evidence has been demonstrated include the following:

The *Handbook of Attachment-Based Interventions*, edited by Steele, H., et al.,[37] introduces 21 programs developed in Western countries that have a certain degree of evidence. This reflects both the importance of attachment-based approaches and proliferation of programs resulting from local teams in Western countries exercising their autonomy to develop unique programs. Examples of such programs include: the "Circle of Security" parenting program,[21][46] Video-Feedback Intervention to Promote Positive Parenting (VFI-SD22),[17][22] Attachment

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and Biobehavioral Catch-Up (ABC),[16] Child-Parent Psychotherapy,[41] and Minding the Baby (MTB).[34]

These interventions involve applying and developing a variety of techniques to improve attachment relationships. For example, these include psychoeducational approaches (all programs), modeling (demonstrating more adaptive parenting methods, such as in Child-Parent Psychotherapy), live parenting guidance (all programs), and a psychoanalytic approach to the mother's attachment working model (Child-Parent Psychotherapy).

Many of these require formal training (lectures and supervision) and "authorization" to implement. In Japan, for example, the "Circle of Security" parenting program was implemented by Kitagawa et al.,[21] and partial training is also available. Kondo[22] imported and implemented VFI-SD. However, the overall dissemination of attachment-based programs in Japan is still insufficient.

Although the intervention programs mentioned above are attachment-based, some also incorporate approaches to trauma pathology. Examples include Child-Parent Psychotherapy[41] and MTB.[34] As previously noted, since the specific psychopathologies resulting from abuse and neglect, which represent high-risk groups, are the pathologies of attachment and trauma, it is a natural progression to simultaneously address the improvement of trauma-related pathologies.

II. Discussion

The following discussion focuses on two main points. First, I examined the distinction between "attachment disturbance" and attachment-related disorders and proposed the concept of an "attachment disturbance spectrum." I believe that this proposal would be useful in clinical practice, particularly regarding attachment disturbance, which is a source of significant confusion in the assessment of infant and child abuse and neglect. Second, against the backdrop of the theme: "How should we conduct intervention in the comorbid psychopathology of attachment and trauma?," I examined the ways in which attachment and trauma pathologies coexist and the subsequent trajectories of developmental pathology. This is because I believed that an understanding of clinical practice regarding abused or neglected infants and toddlers could offer useful perspectives on the co-occurrence of attachment and trauma pathologies from child- through to adulthood.

1. Distinguishing between "attachment disturbance" and attachment-related

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disorders, the attachment disturbance spectrum

When a child exhibits attachment difficulties, it is common to label them as having an "attachment disorder." As previously noted, "attachment disturbance" and attachment-related disorders are not synonymous. To avoid this confusion, it is considered meaningful to conceptualize an "attachment disturbance spectrum" from the perspective of attachment adaptiveness, taking into account the stability and adaptiveness of attachment.[7] Infants and toddlers who experience adversity of varying degrees and nature come to exhibit diverse forms of "attachment disturbance." The "attachment disturbance spectrum" proposed here represents a continuum of decreasing attachment adaptiveness in the following order: avoidant, resistant, Type D, and attachment-related disorders. Only secure attachment is excluded from the "attachment disturbance spectrum." It should be noted that, unlike "autism spectrum disorder," which includes the term "spectrum," the "attachment disturbance spectrum" is not a disorder. Attachment-related disorders fall within the most severe category of non-adaptiveness on this spectrum. By adopting this spectrum concept, clinicians and support providers can assess the degree and nature of attachment disturbance when they arise, making it easier to develop intervention plans. For example, in cases of avoidant or resistant attachment within the insecure category, a plan might involve monitoring and follow-up along with necessary support. Type D may necessitate a more detailed assessment and, in some cases, urgent intervention. If a diagnosis of an attachment-related disorder is made, the most severe problem, unformed or underdeveloped attachment, is assumed, and immediate protective separation from the family is recommended.[51)52)]

As mentioned earlier, interventions and support for this spectrum of attachment disturbance should ideally include attachment-based treatment. In such treatments, the child is often not treated as the "entry point" for intervention; instead, elements closer to caregivers, such as the caregivers' attachment representation, parenting behaviors, and interactions between the caregiver and child, are frequently used as the "entry point." Consequently, in infancy and early childhood, attachment-based interventions tend to have a strong emphasis on "caregiver support."

2. How attachment and trauma pathologies coexist and the subsequent trajectory of developmental pathology

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As summarized above, specific psychopathologies of abuse and neglect in infancy and early childhood are attachment and trauma pathologies.[13)18)] It is likely that these two pathologies occur simultaneously. Severe physical abuse is one such example. Furthermore, these events often occur repeatedly over a long period. This gives rise to the trauma-attachment issue that has long been debated even in the context of infancy and early childhood.[30)]

These pathologies may, through development, progress, at least in part, into developmental trauma disorder or complex PTSD. This is because, first, developmental trauma disorder, which is not yet listed in ICD or DSM, is currently understood to encompass the pathology of children with a history of multiple adverse experiences, including abuse, and is considered to involve issues of trauma and attachment.[42)43)] Second, complex PTSD, which is included in ICD-11,[48)] is a syndrome following long-term repetitive trauma (particularly interpersonal trauma),[48)] and the pathology of PTSD and failure to form a secure attachment style are considered central to its pathology.[8)] In the future, it is likely that attachment and trauma issues in infancy and early childhood will be identified as the origin of developmental trauma disorder in children with severe complex pathologies and complex PTSD in adults.[7)] By positing this trajectory of developmental psychopathology, it may become possible to more accurately grasp the pathology of individuals who have experienced multiple long-term adversities and provide more effective treatment. Therefore, research and discussion are expected regarding trauma-attachment issues in infancy and early childhood, addressing numerous questions including the origins and structure of the pathology, as well as its positioning as a type of mental disorder.

Conclusion

I have summarized assessment, treatment, support, and approaches from the perspective of infant and toddler psychopathology, particularly attachment. This paper emphasizes the necessity of early intervention for children exposed to adverse experiences and experiencing attachment difficulties. This is because these children likely already exhibit psychopathology at that stage, and their subsequent social and emotional development is likely to be significantly compromised.

Furthermore, the families primarily addressed in this paper are high-risk families. An attachment-based approach is considered one component of multidimensional, comprehensive

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support provided by multiple agencies. In Japan, support resources are still insufficiently developed. Consequently, it is considered that these approaches are currently being implemented inadequately. In Japan as well, numerous initiatives and research efforts are needed regarding the assessment of attachment (and attachment disturbance), support for these issues, and identification, assessment, and support for comorbid trauma issues.

Editor's Note: This special feature article is based on the symposium held at the 117th Annual Meeting of the Japanese Society of Psychiatry and Neurology, with Masaki Kodaira (AIIKU Clinic, Maternal and Child Health Center) as the representative.

There are no conflicts of interest to disclose in relation to this paper.

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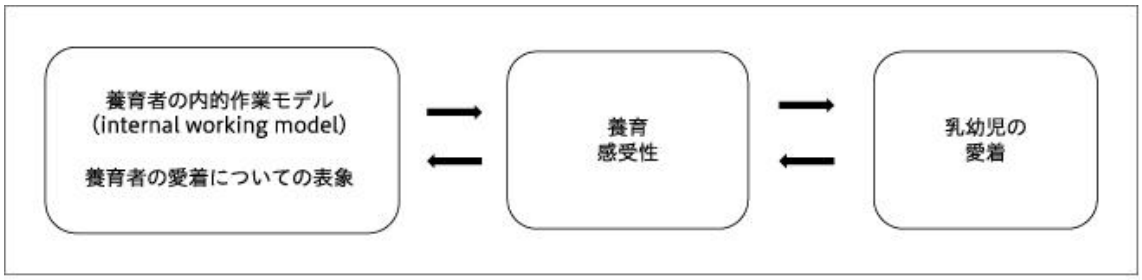

図1　子どもの愛着の3つの要素

愛着関係は，3つの要素が互いに影響しあっているシステムであると考えられる．3つの要素とは，養育者の愛着についての表象すなわち内的作業モデル，養育感受性，乳幼児の愛着である．
（文献4より）

Figure 1: Three elements of child attachment
Attachment relationships are considered to be a system in which three elements interact with one another. These three elements are: the internal working model—caregiver's representation of attachment; the internal working model—caregiver's sensitivity; and infant's attachment.
(From Reference 4)

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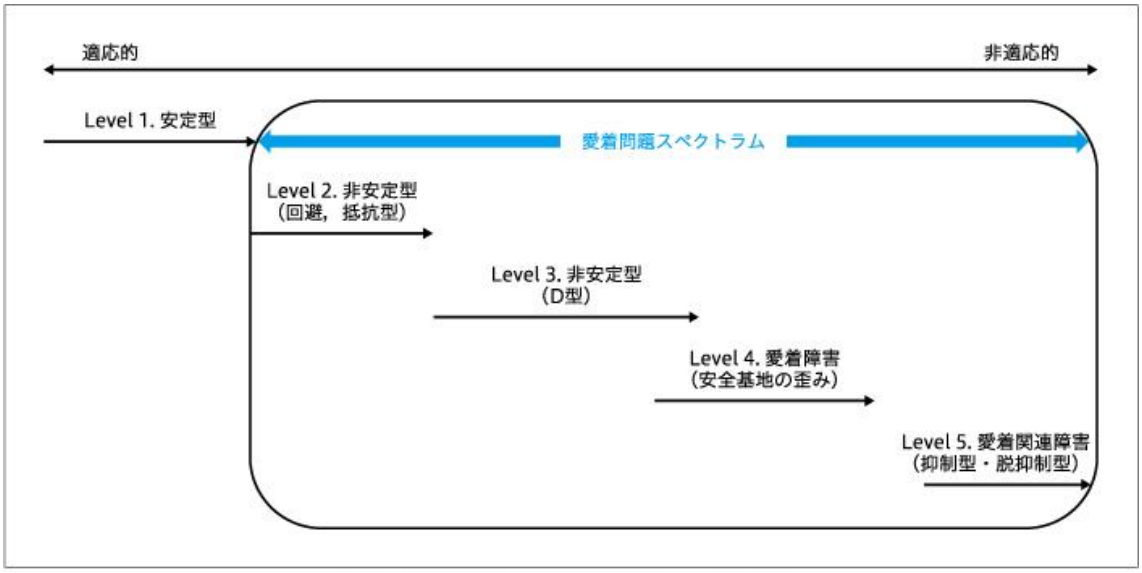

図 2　愛着の適応度と愛着問題スペクトラム

愛着の範疇分け（型と障害）が，愛着の適応レベルを仮説として並べられた．本論では非安定型より非適応的なレベルの連続体を「愛着問題スペクトラム」と提案する．
（文献 9 より）

Figure 2: Attachment adaptiveness and the attachment disturbance spectrum
Classifications of attachment (types and disorders) have been arranged according to a hypothetical hierarchy of attachment adaptation levels. In this paper, I propose a continuum of levels that are more maladaptive than the insecure types, termed the "attachment disturbance spectrum."
(From Reference 9)

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