

The development of secure attachment in babies and young children: a review of research

by Richard Meier

This briefing explores the research evidence on the role of parents and other carers in the development of secure attachment in babies and young children. It begins with an introduction to research on attachment and cortisol regulation, presents evidence relating to specific aspects of the carer's behaviour and attitude, and concludes by summarising some of the implications of this knowledge for parenting practice and childcare.

Search strategy

Rather than attempt to exhaustively review the vast, multi-disciplinary literature relevant to this subject, the author searched a number of health databases (British Nursing Index, Cumulative Index to Nursing and Allied Health Literature, International Bibliography of the Social Sciences, Ovid MEDLINE, and PsycINFO) using the following keywords: 'caregiver', 'attachment', 'psychological', 'reflective function' and 'mentalization', and then used a more stepwise strategy (beginning with some key texts, including *Affect Regulation, Mentalization and the Development of the Self* by Peter Fonagy¹ and *Why Love Matters* by Sue Gerhardt,²) and following up other references not found elsewhere.

Attachment

John Bowlby's theory of attachment proposes that human beings have a universal need to form close emotional bonds with those who care for them.³ The quality of this bond, or attachment, depends to a large extent on the kind and quality of care which babies receive. Bowlby proposed that as a consequence of this early relation-

ship, babies develop certain expectations regarding the availability of others, and about their own self-worth; these expectations (or 'internal working models' as he called them) have a profound influence on social development.⁴

Indeed, since he developed the theory in the 1960s, research has demonstrated not only that the style of attachment which we develop as babies remains largely unchanged throughout life⁵ but also that it is a good predictor of how well or otherwise people will function socially and in the world of work.⁶⁻⁹ It is thought that around 35% of people develop an insecure attachment as a child and that this affects them for the rest of the life to a greater or lesser extent.¹⁰ They may be more likely to form unstable and unsupportive relationships, find emotional closeness difficult to achieve or maintain, struggle to draw on potentially supportive social relationships, suffer from low self-esteem and break down under stress.⁹ These immediate and long-term effects demonstrate why understanding which factors influence the quality of babies' attachment is so important.

What are the different styles of attachment?

Babies who develop what is called a 'secure attachment' to their early carers are those who have built up an expectation of a carer who is sensitive to their feelings and reactions; such a carer will be neither over-arousing nor too remote, and will be someone who can help the baby get itself back on an emotional keel following an upset or period of excitement. During the 1970s, the researcher Mary Ainsworth devised a method to test how securely attached or

otherwise babies were to their carers.¹¹ This test, called the Strange Situation, consists of a number of separations from, and reunions with, their carer and a stranger.

Babies are generally considered to respond to this test situation in one of four ways. 'Securely attached' babies readily explore the situation whilst their carer is present, but are anxious when the stranger is present. They are distressed when their carer is absent, and quickly try to make contact with her afterwards. Once they have done this, they are reassured by this renewed contact, and then resume their exploration of the situation.¹ The other three ways of responding to the Strange Situation are all considered to be styles of 'insecure attachment'.

Babies with an *anxious/avoidant* style seem to be made less anxious by a separation from their carer than securely attached babies. They may not try to get near to their carer when she returns, and even may not prefer her over the stranger.¹ Babies with an *anxious/resistant* style play less and explore the situation to a lesser extent than securely attached babies; highly distressed by the separation, it is as though their anger and anxiety prevent them from being comforted when the carer comes back and tries to soothe them.¹ Finally, those with a *disorganised/disorientated* style display rather undirected behaviour, such as 'freezing, hand-clapping, head-banging',¹ and seem to want to get away from the situation even when the carer has returned.

In essence, secure attachment is when a baby or young child has a sense of felt security in the presence of the person who

cares for them, and so does not show any 'attachment behaviour' at all. This means he or she can explore and play without anxiety (anxiety, or stress, being what triggers the attachment system). By extension therefore, when babies interact with their carers by, for example, avoiding the mother, being aggressive towards themselves (such as pulling their own hair, head-banging, or 'freezing') and being aggressive towards their mother, then these behaviours are generally now deemed to be indicative of the insecurity of the bond between them.¹²

The function of these kinds of attachment behaviours, whether they are successful or not, is to achieve or maintain a sense of security. For example, a baby with an avoidant attachment style can be seen as trying to keep the carer nearby in light of his or her experience that signals of distress may cause the carer to reject them. Equally, babies with a resistant attachment style can be seen as trying to maintain the attention of carers who are only intermittently responsive.⁹ The difficulty for children who develop an insecure attachment however is that their behaviour may often lead to problems when relating to other people and when faced with challenging situations in later life.

Stress and cortisol regulation

Over recent years, neuroscientific research has contributed much to the study of infant and child mental health. The discovery of 'sensitive periods' during infancy – periods of particular brain 'plasticity' when experience can shape the physical make-up of the brain – has led to widespread agreement that early experience affects emotional development. Equally, the identification of the carer's role in regulating stress hormone levels in babies and young children has led to some high-profile and contentious policy debates about early child-rearing practices and childcare provision.

Cortisol and the HPA-axis

During stressful experiences, the hypothalamus-pituitary-adrenal axis (HPA-axis) system releases cortisol from the adrenal gland. Cortisol – which is involved in metabolism and the maintenance of blood sugar levels – is a steroid hormone designed to mobilise bodily resources in the face of immediate physical danger; in times of stress, it enhances an organism's ability to

adapt and respond to situations.¹³

Having the capacity to respond automatically to danger is vital in order to be able to deal with situations of real threat; however, research has shown that having chronically high cortisol levels can damage brain tissue. The parts of the brain which can be affected by this include the areas involved in regulating HPA activity, in planning, organizing, problem solving (the medial prefrontal cortex) and selective attention (the frontal brain regions), and in the formation and storage of memory (the hippocampus). Indeed, sustained high levels of cortisol are thought to cause cells in the hippocampus to die¹⁴ and increased levels of cortisol in the postnatal period are thought to cause cells to die in the limbic centre (a system in the brain which includes the hippocampus).¹⁵ In light of such evidence, it has been suggested that one of the functions of the attachment relationship is to protect the developing brain from the toxic effects of excessive levels of cortisol during infancy.¹⁶ Since the first two years of life are the period of greatest and most plastic brain growth, the potentially harmful effects on growing brain cells of elevated levels of cortisol is extremely concerning.

Healthy newborn babies respond to stress by producing high levels of cortisol.¹⁷ However, when they are cared for sensitively and responsively, this high degree of responsivity lessens and, by the age of one, stressful situations are much less likely to provoke such high increases in cortisol.¹⁷ This is thought to happen as a result of children coming to expect that their appeals (crying, seeking physical closeness etc.) will result in their carers helping them.¹⁷ It is also worth noting that studies of rats have found that physical handling has been found to increase the density of cortisol receptors in the brain and lower the levels of cortisol in the bloodstream.¹⁸ Such findings may provide evidence for the effectiveness of practices such as skin-to-skin care and baby massage.

Similarly, studies have shown that securely attached children do not release high levels of cortisol when they are stressed, whereas insecurely attached children do.^{16,19,13} It is not surprising therefore that research has shown that even moderately less sensitive and responsive care results in babies having increased cortisol levels, a finding which is especially relevant

'for children who are temperamentally vulnerable, including children who tend to get easily angered and frustrated as well as those who tend to be fearful and anxious'¹⁷ A number of studies also demonstrate that neglected and/or abused children develop altered (and often *lowered*) levels of cortisol and stress responsivity.¹⁷

Separate research on cortisol dysfunction has shown that children who had an anxious or stressed mother when they were babies are more likely to respond to stressful situations with increased cortisol levels¹³ and that the cortisol levels of children whose mothers were depressed when they (the children) were babies are significantly affected.¹³

Understanding behaviour in terms of mental states

Since sensitive and responsive care has been shown to result in securer attachment, identifying the particular features of such care has become a major area of study.

Research in this field has, over the past two decades, led to a growing consensus that the mental attitude, or psychological availability, of the carer plays a key role in the development of secure attachment.

For example, researchers at the Anna Freud – University College London Parent-Child Project investigated the relationship between a parent's capacity for understanding mental states and their baby's attachment style. By using the adult attachment interview (an hour-long interview during which participants are asked questions about their experiences with parents, significant losses and trauma and, if relevant, experiences with their own children), researchers discovered that those adults who were best able to reflect upon their own experiences in a coherent way, and who could best understand the motivations guiding their parents', and their own, behaviour, were the most likely to have babies who were securely attached.¹² This finding is corroborated by the results of a study of mother-baby pairs which, the authors conclude, support 'the hypothesis that mothers who lack a coherent state of mind with regard to their own attachment experiences have difficulty responding sensitively to the needs of their children.'²⁰

In the Anna Freud study mentioned above, the capacity to reflect upon experience in a coherent way was related to how

the baby behaved in the Strange Situation Test, and also to secure attachment. In light of these results, the researchers put forward the view that 'attachment security in infancy is based on parental sensitivity to, and understanding of, the infant's mental world'.¹² 'The caregiver', they elaborate, 'who manifests this capacity [to think about behaviour in terms of psychological rather than physical determinants] at its maximum will be able to respect the child's vulnerable emerging psychological world and reduce to a minimum the occasions on which the child needs to make recourse to the primitive defensive behaviour characteristic of insecure attachment'.¹²

A decade later, Koren-Karie et al. explored the concepts outlined by the authors of the Anna Freud study. 'The authors', they write, 'speculated that mothers of secure infants rely on a non-defensive, reflective thought process when responding to their children. On the basis of such thought processes, these mothers take their infants' inner worlds into account and interpret their signals in an open manner. This interpretation presumably leads to sensitive and appropriate parental responses, which in turn enable the child to organize his or her feelings in a coherent and effective manner – as is typical of the securely attached infant.'²¹ And the findings of their own study, of 129 mothers of 12-month-old babies, show that 'mothers classified as positively insightful... were more likely to have securely attached children than were mothers not classified as positively insightful'.²¹

Mentalization and reflective function

The terms 'mentalization' and 'reflective function' refer to the capacity to see behaviour (one's own, or others') in terms of intentions, desires, beliefs and emotions; these concepts therefore include the capacity, outlined above, to reflect upon experience in a coherent way. A number of factors have been shown to have an impact on the degree to which a child will come to understand behaviour in psychological (or 'mentalistic') terms: these include the quality of parental control (for example, when parents are authoritarian or authoritative),²²⁻²⁴ the manner in which parents talk about emotions,²⁵⁻²⁷ what parents believe about parenting,^{28,23,24} and the degree to which negative emotions are tolerated and spoken

about in the family.²⁹

Many studies suggest that mothers who consider their child's thoughts and feelings are more likely to have children who are securely attached and have a greater capacity for mentalization.^{26,30-35} Equally, research has shown the more that mothers use comments that demonstrate they are attending to what the baby may be *thinking* (as opposed to *doing*) when playing and interacting with their 6 month old babies, the more likely their babies are to be securely attached at 12 months;³⁶ and the more that mothers do this, the greater their babies' mentalizing capacity is at 45 and 48 months.²⁶

There are numerous ways in which a carer's inability to take on the perspective of the baby she is caring for can manifest itself. For example, mothers who are depressed tend to be less responsive and more passive than women who are not depressed. This is thought to explain why babies of depressed mothers develop a depressed way of interacting with depressed and non-depressed people alike.³⁷ Mothers who are pre-occupied with past relationships – often their relationship with their own parents – can be relatively intrusive with their baby, showing a tendency to override, and therefore ignore, a young child's own coping strategy, a factor which is associated with increased levels of cortisol and with insecure attachment.¹⁹ Mothers who find it difficult to provide a basic, acceptable level of care can often handle their babies in an abrupt and resentful manner, something which has been shown to be more likely to result in an avoidant or disorganised insecure attachment in the baby.³⁸

Marking

Having identified the psychological availability of the carer as a major factor in optimal development in babies, researchers have focused in more detail on aspects of both positive and negative interaction between carers and babies. One concept which has gained currency in development research is that of 'marking'.

A key concept in Gergely and Watson's social biofeedback model of parenting,³⁹ 'marking' refers to when a carer responds to a baby with an emphasised or exaggerated version of the baby's expressed emotional state (perhaps talking in 'babytalk' or 'moth-

erese', as some researchers have called the vocal intonation carers use when speaking to babies). This response will be sufficiently similar to the baby's emotion for the baby to perceive the link between its emotion and the carer's response, but dissimilar enough for the baby to realise that the carer is showing the baby the baby's feelings, rather than the carer's.

The importance of 'marking' therefore is that it provides the baby with information about their state of mind rather than simply a reflection. 'Marked' interaction is more likely to make a baby's own behaviour *meaningful* to them than 'unmarked' behaviour; also, because the carer does not simply respond in kind to the baby's emotion (for example by getting angry that the baby is angry, or being overwhelmed by the baby's own sense of being overwhelmed) the baby experiences the carer as being someone who can *cope*. This links with the psychoanalytic concept of 'containment' (proposed by Wilfred Bion)⁴⁰ whereby the mother mentally 'contains' those emotional states which the baby feels to be intolerable and 'respond[s] in terms of physical care in a manner that acknowledges the child's [or baby's] mental state, yet serves to modulate unmanageable feelings'.⁴¹

One study which investigated the effect of 'marked' behaviour on babies suggests that the mothers who were best able to soothe their babies following an injection were those whose response to the baby's distress included displays of feeling that were 'incompatible with the child's current feeling (smiling, questioning, mocking display, and the like). It is thought that this discrepancy between the carer's and the baby's response ensures that the baby recognises the carer's emotion as similar to, but not identical with, their experience'.⁴² In light of this, it has been suggested experiences of 'marking' trigger a basic sense of trust in the carer 'as a benevolent, cooperative, and reliable source of cultural information'.³⁵

Conclusion

Given the overwhelming weight of evidence demonstrating the negative effects of excessive levels of cortisol in infancy, it is clear that babycare methods which allow babies to experience prolonged periods of stress and anxiety are harmful and unjustifiable.

Thus, ignoring a crying baby, leaving a hungry baby unfed, or failing to attempt to soothe a distressed baby – for more than a few minutes, or allowing this to occur regularly – can all be seen as neglecting the baby's needs, and failing to perform two vital functions: firstly, helping the baby develop the ability to regulate his or her cortisol levels, and secondly, behaving towards the baby in such a way as to encourage the baby to see the carer as a reliable and available source of comfort and understanding. In light of the potentially serious effects on emotional well-being that can ensue from such behaviour, it is important not only that these kinds of interactions are challenged but that the reasons why parents respond to their babies, and their babies' needs in such ways, is understood, and that support is made available to mothers and fathers to help them parent more responsively.

In a similar vein, it is vital that those parenting strategies which involve less than optimal modes of mother/baby interactions (such as leaving a baby alone or crying for long periods, avoiding eye contact and interaction, or inflexible and unresponsive styles of care) are challenged using the robust evidence base which now exists.

It is also worth noting that the wealth of evidence demonstrating the importance of the carer's psychological availability to, and attitude towards, the baby or young child has profound implications for how, as a society, we support those caring for babies and young children. And as economic difficulties, marital conflict and employment stress have all been identified as undermining parents' capacity to be emotionally available to and supportive of their children,⁴³ so the scale of the challenges to safeguard young children is huge and daunting.

An important first step, however, is to raise awareness about the processes at work and the interconnectedness between different parts of the systems involved. The evidence provides a clear and explicit basis for valuing the vital role that parents play in their children's development and well-being.

Those who work with expectant parents and those with babies can pass these positive messages on, as part of their usual work, explaining babies' needs and reinforcing and encouraging those comments

and interactions which are responsive to them.

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