

Baby Bonds

Parenting, attachment and a secure base for children

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Improving social mobility
through education



CONTENTS

FOREWORD	3
EXECUTIVE SUMMARY	4
RECOMMENDATIONS	6
1. INTRODUCTION	7
2. WHAT IS ATTACHMENT?	9
2.1 Types of attachment & prevalence.....	9
3. HOW DOES SECURE ATTACHMENT DEVELOP?	11
3.1 Psychosocial pathways.....	11
3.2 Biological and neurological pathways.....	11
3.4 Attachment to whom?.....	12
4. WHY DOES ATTACHMENT MATTER?	13
4.1 Attachment disorders.....	13
4.2 Social and emotional development.....	13
4.3 Cognitive and language development.....	14
4.4 Attachment as a protective factor.....	15
4.5 Health outcomes.....	15
4.6 Longer-term effects of attachment.....	15
5. WHAT ARE THE RISK FACTORS FOR INSECURE ATTACHMENT?	17
5.1 Poverty.....	17
5.2 Mental health.....	17
5.3 Young parenting.....	18
5.4 Disabilities.....	18
5.5 Low-quality early childcare.....	18
6. HOW CAN POLICY PROMOTE SECURE ATTACHMENT?	20
6.1 Reducing risk factors.....	20
6.2 Intervening early.....	21
6.3 The Family-Nurse Partnership.....	23
6.4 The Incredible Years – Training for Babies, Toddlers and Parents.....	23
6.5 Circle of Security.....	24
6.6 Child-Parent Psychotherapy (CPP).....	24
6.7 Minding the Baby.....	25
6.8 Reflective Parenting (Piloted by Parents Early Education Partnership (PEEP)).....	25
6.9 The Oxford Parent Infant Project (OXPIP).....	25
6.10 Policy mix, costs and delivery.....	26
7. CONCLUSIONS	28
AKNOWLEDGEMENTS	29
APPENDIX 1	30
APPENDIX 2	32
REFERENCES	33

FOREWORD

Improving social mobility through education is the goal of the Sutton Trust. Whilst we may be better known for our focus on access to university or the professions, we know that the educational divide emerges in the lives of children from the very start.

In previous research commissioned by the Sutton Trust, Jane Waldfogel and Liz Washbrook identified an 11 month gap in cognitive development between those children from the lowest and those from middle income families at the start of school. This was shown in starker terms in 2012 at our social mobility summit as a 19 month gap between the least and the most advantaged children. Parenting style (such as sensitivity of parent-child interactions and rules about bedtimes) and the home environment (factors like parental reading and trips to museums and galleries) were shown to contribute up to half of the cognitive gap.

In recent years the Sutton Trust has focused on narrowing this gap. We have been supporting the home learning environment and parents as the first teachers and prioritising children's cognitive outcomes. Earlier this year, our report Sound Foundations highlighted the importance of well trained staff implementing free nursery places for more disadvantaged two year-olds. Through a joint initiative with Impetus-PEF, we are currently investing in organisations operating in the early years which aim to narrow the gap in school readiness. We take the Early Years Foundation stage definition of school readiness - communication and language, physical development and personal, social and emotional development. To underpin this work, we wanted to gain a better understanding of the inter relation between social, emotional and cognitive development of the child and the broader impact of the parent child relationship from the start.

This important new report from Sophie Moullin, Professor Jane Waldfogel and Dr Liz Washbrook uses a literature review to identify clearly the fundamental role of the parent not only as the first teacher but as the first caregiver and provider of love and security. This bond is known as attachment. It is the quality of this attachment that supports the child's social and emotional development which in turn relates to both their cognitive development and ultimately their life chances. There is increasing recognition of the importance of fostering resilience or character "grit", this report traces the roots of these characteristics to secure attachment in early childhood. However, the report identifies that as many as 40 per cent of children lack secure bonds, and there is particular concern for the 15 per cent who actively resist their parent. We welcome recent improvements in parental leave. However, as the report recommends, we would like to see more support for good parenting and attachment by health visitors and children's centres, with evidence-based interventions for those identified as higher risk.

I am very grateful to the team for this excellent report. As we increasingly focus on the significance of non-cognitive (soft skills) and their impact on social mobility, this report emphasises that it is crucial that if we want to break the cycle of disadvantage we must focus attention on where it all starts, from birth with the relationship between the parent and the child.

Conor Ryan,
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EXECUTIVE SUMMARY

1. The bond that children develop with their parents, particularly as a babies and toddlers, is fundamental to their flourishing.

Mothers and fathers help their children develop secure attachment by caring for them in a way that is warm, sensitive and consistent. When parents tune into and respond to their needs, cries or distress and are a dependable source of comfort, children learn how to manage their own feelings and behaviour, and develop confidence and self-reliance. With the right early parenting, children develop a secure attachment to their mothers and fathers, a base from which they can thrive.

2. Children without secure parental bonds are more likely to have behaviour and literacy problems.

Children with insecure attachment are at risk of the most prominent impediments to education and upward social mobility in the UK: behavioural problems, poor literacy, and leaving school without further education, employment or training. Behaviour problems are a particular concern for the UK where the gap in such problems between the most disadvantaged children and their peers is larger than in Australia, Canada or the US. The international research suggests that:

- Insecurely attached children are at a higher risk of **externalising problems**, characterised by aggression, defiance, and, or hyperactivity.
- Insecurely attached children, on average, have poorer **language development**, and weaker **executive function**, skills associated with working memory and cognitive flexibility.
- Insecurely attached children are less **resilient** to poverty, family instability, and parental stress and depression.

3. Boys growing up in poverty are two and a half times less likely to display behaviour problems at school if they have secure attachments with parents in the early years. Those without strong bonds may be more likely to be NEET, and less likely to be socially mobile and get good jobs in later life.

Among boys who lived under the poverty threshold at some point between 18 months and five years, those with secure attachments at 18 months were two and a half times as likely as others to show positive adjustment – a lack of behavioural problems or below-average social skills – five and a half years later. The teenagers whom teachers rated as less confident and resilient, and more likely to be bullied or bully **at school**, were those who had insecure attachments in early childhood. Amongst children growing up in poverty, poor parent care and insecure attachment before age four strongly predicted failure to complete school. Neither IQ nor exam results improved on this prediction. Upward **social mobility** is also linked to attachment; men with insecure attachments were less likely to overcome educational disadvantage and reach higher-grade civil service jobs.

4. Many children do not have secure attachments. Around 1 in 4 children avoid their parents when they are upset, because they ignore their needs. A further 15 per cent resist their parents because they cause them distress.

While the majority of children are securely attached, 40 per cent are insecurely attached. This is split into the 25 per cent of children who learn to avoid their parent when they are distressed, because the parent regularly ignores their emotional needs (**avoidant** attachment) and the highest risk 15 per cent of children, rising to 25 per cent in disadvantaged cohorts who learn to resist the parent, because the parent often amplifies their distress or responds unpredictably (**disorganised** or resistant attachment).

- 5. The strongest predictor for children being insecurely attached is having a parent who is not securely attached themselves.**

Parents who are living in poverty, have poor mental health or are young are also more likely to struggle with parenting and have insecurely attached children.

RECOMMENDATIONS

By better supporting new parents through existing services and evidence-informed use of new programmes, we could promote secure attachment, and provide a surer basis for education and social mobility.

Anti-poverty policies, income and work-family support focused on families with young children help support parenting and attachment. They need to be complemented by effective universal services, including antenatal health care, health visiting and Children's Centres, as well as early interventions for higher risk families.

1. Children's Centres should do more to improve parenting, especially for the under-threes.

The Government is investing in more early childhood education and care for the under-threes, the subject of the recent Sutton Trust report *Sound Foundations*. In addition to ensuring good quality early years provision, more should be done to promote positive parenting and attachment in Children's Centres. In general, effective programmes start when children are six months or younger, focus clearly on parent behaviours, use video feedback, and involve fathers.

2. Health visitors and other health services should play a stronger role in supporting attachment and parenting.

As the government increases the number of health visitors, their training and services should include supporting early parenting and attachment. Antenatal and postnatal health services should join forces with health visitors and Children's Centres, and engage and refer those families in need of additional support.

3. Local authorities and health services should enhance home visiting and parenting programmes for higher risk families, through the government's early intervention and troubled families agendas.

The Government is investing more in early intervention, particularly through the Early Intervention Foundation and its work with troubled families. These initiatives are welcome, but should be extended where they can help to improve parenting and support more secure attachment, from birth if not pregnancy.

- For the **25 per cent of parents at moderate risk of developing problems, insecure attachment a range of brief attachment-based interventions may be most appropriate such as Video-interaction Guidance as used by OXPIP; Infant Massage; PEEP's Reflective Parents' programme and the Incredible Years**, all of which have been supported by the Sutton Trust, and can be delivered through Children's Centres. These can cost as little as £500 per family.
- For **the highest-risk 15 per cent**, more intensive interventions such as home visiting programmes Family Nurse Partnership, Minding the Baby and Child-Parent Psychotherapy, may be able to prevent problems and reduce the need for costly for health, education, social and criminal justice services.

1. INTRODUCTION

The idea that parenting matters for early child development is now firmly recognised by policy makers. It is well established that parents' investments influence young children's development, and their chances in life.¹ Parenting is one of the most important drivers of social inequalities in cognitive development before school.² We also know that good parenting and early development can play a protective role for children growing up in otherwise disadvantaged settings.³ But what is good parenting, and how can we promote it from the very start?

We know that parents with more resources can invest more in activities and goods for their children from the start.⁴ Parents with more education expose their children to a much wider vocabulary.⁵ In fact, measures of early parenting such as the 'home-learning environment', which look at the frequency of reading and playing with children and the amount of books and activities children have, have been more strongly associated with children's later wellbeing and attainment than have either family income, parental education or the school environment alone.⁶

A parent, however, is not only the child's first teacher, but also their first caregiver. Mothers and fathers influence children's development not only through the resources they invest in their children, and the linguistic and cognitive stimulation they offer, but also through 'affectional bonds' – the attachment or bond they forge with their children.⁷ The central idea of attachment is that good social and emotional development depends on sensitive and consistent caregiving in infancy and early childhood.⁸ A secure bond or attachment to a parent gives a child a secure base from which to explore, learn, relate to others, and flourish.

By the time they start school, children from low-income families in the UK are already up to a year behind middle-income children in cognitive skills,⁹ while the gap between the poorest and most advantaged tenth of children is as much as 19 months.¹⁰ Disparities in early cognitive development tend to be more profound than those seen in other outcomes.¹¹ And, early cognitive development has a lasting effect on later educational attainment.¹² However, research increasingly suggests that cognitive development also relates strongly to social, emotional and behavioural dimensions: children's school-readiness has as much to do with their social and emotional development,¹³ as their cognitive development.

Amongst recent cohorts, aspects of social and emotional development (including what others call non-cognitive skills and self-regulation) have been found to be increasingly important in explaining disparities in children's educational attainment.¹⁴ Furthermore, poor non-cognitive skills in early childhood have been linked to low educational attainment, a range of risky behaviours, and criminal activity in adolescence in the UK – with particularly strong links for boys, and those from low-income families.¹⁵

Early social and emotional development is a particular concern for the UK, where the gap in

¹ Duncan & Murnane, 2011

² Washbrook & Waldfogel, 2010

³ Gutman & Feinstein, 2007

⁴ Corak, 2013

⁵ Hart and Risley, 2002

⁶ Gutman & Feinstein, 2007; Sylva et al., 2004

⁷ Bowlby, 1979

⁸ Bowlby, 1988; Grossman & Grossman, 2009

⁹ Waldfogel & Washbrook, 2011

¹⁰ Washbrook & Waldfogel, 2012

¹¹ Bradbury et al, 2012; Gregg, et al. 2008

¹² Galindo-Rudea & Vignoles, 2005

¹³ The UK's National Institute for Clinical Excellence (NICE) public health guidance, and Department of Education's Statutory framework for the early years foundation stage, both define good social-emotional development as comprising: '*emotional wellbeing* – this includes being happy and confident and not anxious or depressed; *psychological wellbeing* – this includes the ability to be autonomous, problem-solve, manage emotions, experience empathy, be resilient and attentive; and *social wellbeing* – has good relationships with others and does not have behavioural problems, that is, they are not disruptive, violent or a bully', NICE, 2012.

¹⁴ Heckman & Rubenstein, 2001

¹⁵ Carneiro, Crawford, & Goodman, 2011

behaviour problems between the most disadvantaged children and the average child is larger than in Australia, Canada or the US.¹⁶ Although American children start school with the largest disparities in vocabulary, children in the UK start school more unequal when it comes to displaying behavioural problems.¹⁷ Understanding the causes of socio-emotional and behavioural problems, and how we can address them, therefore, is important in addressing early inequalities and laying foundations for social mobility. For these reasons, this review focuses on early parenting – sensitivity and warmth for the under-threes – and the related outcome, attachment.

¹⁶ Bradbury et al., 2012

¹⁷ Bradbury et al., 2012

2. WHAT IS ATTACHMENT

Attachment is a specific outcome of early care. Through their relationships with their mothers and fathers, children develop an “internal working model” of social relationships.¹⁸ If an infant experiences her or his parents as a source of warmth and comfort, she or he is more likely to hold a positive self-image and expect positive reactions from others later in life. With a secure attachment, the child has a “secure base” from which to explore, learn and develop independence.¹⁹ Children who have experienced care responsive to their emotional needs since infancy are better able to manage their own feelings and behaviour. Children who are secure in their parents’ love and care feel surer of themselves. And, because they feel secure themselves, securely attached children are better able to relate to others. In this way, attachment is related to socio-emotional skills and resilience.²⁰ In Bowlby, the founder of attachment theory’s words: “the pathway followed by each developing individual and the extent to which he or she becomes resilient to stressful life events is determined to a very significant degree by the pattern of attachment developed during the early years”.²¹ That pattern of attachment, as many empirical studies have since shown, relates very much to early parenting.

What researchers call a child’s attachment style develops in particular through the parent or other caregiver’s response at times when the infant is distressed, for example when the child is ill, physically hurt or emotionally upset.²² From around six months, infants are able to anticipate their parents’ responses to their distress. They adapt their behaviour in turn, finding ways to manage their feelings.

2.1 Types of attachment & prevalence

When a parent, most of the time, responds to a child in a warm, sensitive and responsive way – picking up the child when they cry, and holding and reassuring them – the child feels secure that they can meet their needs. The infant, when distressed, knows what to do and how the parent will respond: the infant can safely express negative emotion, and seek proximity to the caregiver, and can expect to feel better. This is what’s called a *secure attachment*. About 60 per cent of the general population is securely attached.²³

While securely attached children learn through sensitive and responsive care to manage feelings effectively, about 40 per cent do not and are instead “insecurely attached”. There are two main types of insecure attachment (although some researchers distinguish three or four). Some parents consistently respond to their child’s distress in insensitive or ‘rejecting’ ways, such as ignoring or becoming annoyed with them. Experiencing this, as about 25 per cent do,²⁴ infants learn to minimise expressions of their negative emotions and needs, and avoid the parent when distressed, displaying *avoidant attachment*. Other parents are inconsistent and unpredictable; overwhelmed by their own or the child’s needs and emotions, they expect the infant to meet their needs so they respond harshly or amplify the child’s distress. Experiencing this, as about 15 per cent of the infant population do, infants either learn to exaggerate the expression of their emotions in an attempt to engage the parent or caregiver, resisting them, or they simply cannot learn a way to manage their distress and feelings. These children display *disorganised attachment*.

The proportions of children with insecure attachment vary by sample and measures used (see appendix). But, overall, studies tend to find that between a third and a half of children are

¹⁸ Bowlby, 1979

¹⁹ Bowlby, 1988

²⁰ Resilience refers to the capacity to withstand stressors or risks for poor development, or bounce-back from difficult experiences.

²¹ Bowlby, 1988, p. 688

²² Benoit, 2004

²³ Andreassen & West, 2007. Figures of proportions in different attachment categories are from the US Early Childhood Longitudinal Study- Birth Cohort (ECLS-B). This is broadly consistent with figures in the National Institute of Child Health and Development (NICHD)’s Study of Early Child Care and Youth Development, and meta-analysis of studies in North America and Europe (van Ijzendoorn et al, 1999).

²⁴ Andreassen & West, 2007

insecurely attached.²⁵ In very high-risk populations – where families face multiple problems – up to two-thirds of children are insecurely attached. Children who have been abused are nearly always also insecurely attached.²⁶ The rate of disorganised attachment, perhaps the highest-risk category, is 25 per cent among low socio-economic status and teenage parent families, compared to 15 per cent in the general population.²⁷

²⁵ van Ijzendoorn, Schuengel, & Bakermans-Kranenburg, 1999

²⁶ van Ijzendoorn et al., 1999. Around 90 per cent of children in families where there has been abuse/maltreatment are insecurely attached.

²⁷ van Ijzendoorn et al., 1999

3. HOW DOES SECURE ATTACHMENT DEVELOP

Secure attachment develops through sensitive and responsive parenting in the first years of life. We know from experimental studies of policy programmes that parenting plays a causal role in attachment: an improvement in parental sensitivity is necessary for an improvement in attachment security.²⁸ The central role of parenting is rooted in both social psychology and human biology, and has been confirmed in research, in disciplines ranging from medicine, neuroscience and psychology to anthropology and economics. There is general agreement that there is an interaction between the psychosocial and the biological or neurological processes that link early parenting experiences to child development.²⁹ Researchers also tend to agree that birth to three is a particularly crucial period of development, with attachment developing in particular from six months.³⁰

3.1 Psychosocial pathways

Simple and often instinctive parenting behaviours, such as holding the baby lovingly and looking at the child with warm, happy smiles are key to the development of attachment. Just by talking to their child, and laughing and playing with them, parents teach children that relationships are enjoyable and fun. As psychotherapist Sue Gerhardt puts it, the idea is to 'get the baby hooked on social interaction itself by making it highly pleasurable'.³¹

By picking up the child's reactions and responding to their cries, and through their tone and body language, the parent builds trust in the child, reassuring them that they are loveable and their needs will be met. Children internalise this experience of warm, responsive care, and uses it to regulate their feelings and guide their behaviour, as they grow, and when parents are not there. This is what attachment theorists call the 'internal working model' of relationships. Later relationships, with other caregivers, peers, teachers, and ultimately partners, can and do change these expectations and behaviours, but they themselves are influenced by the first attachments.³²

3.2 Biological and neurological pathways

The workings of sensitive and responsive parenting and attachment have also been seen at the level of hormonal changes and brain development. Our 'stress response systems' are thought to function somewhat like an immune system: they don't necessarily affect the number of stressful events that are part of life, but rather the reaction to them and ability to recover from them.³³ Babies' biological systems are immature and particularly sensitive; their ability to manage stress develops gradually and takes until around age four to fully emerge. Strong emotional immunity comes from being helped to recover from stress; soothed, held and made to feel safe in these first years.³⁴ In contrast, babies can be flooded with very high levels of the stress hormone, cortisol, if no one is responding to them. Managing stress biologically parallels the psychosocial management of feelings: the secure child is able to tolerate whatever feelings come and find ways of dealing with them before they become overwhelming.

Neuroscientists also point to the importance of early parenting in the development of the infant brain.³⁵ The prefrontal cortex, and specifically the orbitofrontal cortex, in the brain is thought to be especially important in emotional regulation, processing and expressing feelings, reading social cues and behaviour, and working memory, attention and decision making. Almost all of this area develops after birth. In the first year, a baby's brain doubles in weight. Between six and twelve months in particular, there is a burst of brain development

²⁸ Berlin, 2005, p. 300

²⁹ Psychosocial refers to people's psychological development in, and in interaction with, a social context.

³⁰ Benoit, 2004

³¹ Gerhardt, 2004, p. 39

³² Thompson, 2008

³³ Gerhardt, 2004; Shonkoff, 2010

³⁴ Gerhardt, 2004, p. 83

³⁵ Shonkoff & Garner, 2012

when attachment bonds are made.³⁶ Research suggests that ‘toxic’ levels of stress – defined as ‘prolonged activation of stress response in the absence of protective relationships’ – can affect the infant’s developing brain.³⁷ While the first years of brain development are not make-or-break, they have been found to affect the child’s ongoing brain development in important ways, shaping both their social-emotional, and cognitive development.

3.3 Attachment to whom?

The infant’s biological need for survival, and their psychological need for security, both drive attachment. However, there is little in either the social-psychological or biological account to say that a child’s attachment has to be to their birth mother. A child will attach securely to whoever provides sensitive, responsive and consistent care to them. There is nothing gender-specific about who can provide this care.³⁸ Although the majority of studies measure attachment to the mother, research does show attachments can be made with fathers too, and that father-child attachments are also associated with child outcomes.³⁹

Research suggests that when it comes to the risk for behavioural and externalising problems, a secure attachment with one parent can offset the effects of an insecure attachment with another.⁴⁰ Having a secure attachment to two parents doesn’t necessarily bring additional benefits. However, when children have an insecure attachment to both their mother and father, they are at particularly high risk.⁴¹ Studies into drivers of youth crime and risky behaviours have found that attachment to fathers is relatively more important for boys, while attachment to mothers is more important for girls.⁴²

³⁶ Gerhardt, 2004: p.43

³⁷ Shonkoff, 2010

³⁸ Hrdy, 2011

³⁹ Bretherton, 2010; Ramchandani et al., 2013

⁴⁰ Kochanska & Kim, 2013

⁴¹ Kochanska & Kim, 2013

⁴² Hove et al., 2012

4. WHY DOES ATTACHMENT MATTER?

The theory of attachment developed when scientists traced emotional and behavioural problems amongst young people to too little or highly disrupted parental care in early childhood. Initial attachment research looked at exceptional situations such as during the Second World War, when young children were separated from their parents, and the resulting attachment problems or disorders. To this day, some researchers focus on the attachment *disorders* that can result from institutional care, child abuse, neglect or complete separation from a primary caregiver. These are one extreme. But they point to some of the processes by which attachment affects other outcomes and a wider group of children. The broader and more pertinent idea – that the attachment bond acts as a foundation for good social and emotional and wider child development – has been under empirical investigation for 35 years.

4.1 Attachment disorders

Recent studies with orphans who have been institutionalised in Romania support many of the original insights into how such early deprivation can lead to attachment disorders and later mental health problems. Researchers found that an inability to develop a secure attachment with a primary caregiver led to elevated rates of internalising disorders (including anxiety and depression) in children placed in institutions (orphanages), compared to those placed into foster care.⁴³ Furthermore, those children who were placed with a well-supported foster family – crucially, before they turned two – were able not only to prevent the heightened risk of internalising problems found in continuously institutionalised children, but to *reverse* developmental delays resulting from neglect and institutionalisation. Changes in attachment security were found to be the most important benefit of being placed in a foster family.⁴⁴ Relatedly, recent research in the US finds that separating a child from the mother for a week or longer in the first two years of life, controlling for indicators of family instability and baseline characteristics, is associated with aggression at age three and five.⁴⁵

4.2 Social and emotional development

Many who stress the importance of social and emotional skills to success in school and work have traced them to secure attachment in early childhood.⁴⁶ Attachment theory emphasises warmth, closeness and recognition of the infant's bond with - and dependence on - a specific caregiver. Equally important is the idea of a 'secure base' from which children explore and learn resilience and self-reliance – including what some might call positive 'character' traits. For infants, the attachment bond is made with a specific individual and is reflected in the need to stay close to that individual. However, one of the consequences of secure attachment is the development in the child of a sense of self-confidence, the ability to manage their own emotions, and make other good relationships. Professor Michael Rutter, a leading child psychologist, found that 'infants with secure attachments at twelve and eighteen months are less likely than other infants to show high dependence at four to five years of age. Secure attachments tend to foster autonomy rather than dependency'.⁴⁷

Insecure attachment is associated with a heightened risk for social and behavioural problems in later childhood.⁴⁸ This link is clear even amongst children in poverty. Among boys who lived under the poverty threshold at some point between 18 months and five years, those with secure attachments at 18 months were two and a half times as likely as others to show positive adjustment – a lack of behavioural problems and above average social skills – five and a half years later.⁴⁹

⁴³ McLaughlin, Zeanah, Fox, & Nelson, 2012

⁴⁴ McLaughlin, Zeanah, Fox, & Nelson, 2012

⁴⁵ Howard, Martin, Berlin, & Brooks-Gunn, 2011

⁴⁶ Tough, 2012

⁴⁷ Rutter, 1994, p.114

⁴⁸ Belsky & Fearon, 2002

⁴⁹ Owens & Shaw, 2003

Meta-analyses – which combine the results of multiple studies – suggest that insecure attachment leads to increased risk for both internalising (anxiety, withdrawal and sadness) and externalising (aggression, defiance, hyperactivity) socio-emotional problems. Disorganised attachment is most strongly associated with externalising problems, and avoidant attachment with internalising problems. Please see Appendix 2 for details on the size of the effects of attachment on each of the key outcomes discussed below.

A meta-analytic study which combined the results of 69 previous studies found a substantial and significant overall effect of insecure attachment on externalising problems.⁵⁰ Notably the effect was much larger in studies where the behaviour problems were directly observed by researchers or diagnosed by clinicians (rather than being rated by parents or teachers). This effect of insecure attachment on externalising problems was larger for boys than girls, and when attachment was disorganised (as opposed to avoidant or resistant). Perhaps surprisingly, this detrimental effect was only slightly smaller for high socio-economic status families than it was for families of low socio-economic status. This suggests that attachment insecurity is a risk factor for these kinds of behaviour problems even among more middle-class families.

The association between attachment and internalising problems is not as strong as that with externalising problems, but is still significant.⁵¹ A separate meta-analysis found that, after accounting for other factors, there was a small but significant association between insecure-avoidant attachment and internalising problems.⁵²

4.3 Cognitive and language development

Increasingly, cognitive and non-cognitive developments are understood as mutually reinforcing processes.⁵³ Recent evidence on attachment supports this. Attachment theory, focused on social and emotional development, did not originally predict that attachment would affect cognitive development; and meta-analyses have shown that the direct and independent effects of attachment on cognitive development are generally small.⁵⁴ Despite this, two of the most prominent factors explaining early socio-economic status gaps in child development – literacy and executive function – have each been associated with attachment.

Large-scale reviews have shown that attachment is associated with children's early language development.⁵⁵ Such studies have shown that insecure-avoidant attachment is associated with poorer language skills at age three, even after accounting for other risks like poverty, minority ethnicity, single parenthood, social support, and maternal depression or stress – although the detrimental effect of poor attachment is particularly strong for children exposed to more of these risks.⁵⁶ The development of early literacy and secure attachment appear to work hand in hand.⁵⁷ It is thought attachment may help cognitive and language aspects of early development, because secure parents are better 'teachers', and secure children more receptive, motivated 'students'.⁵⁸

Another way in which attachment can influence later success in school, and indeed elsewhere in life, is through executive function. Executive function refers to three important functions of the developing brain: working memory, mental flexibility and self-control. A recent study found that the sensitivity of mothers' and fathers' interactions with their children and the children's attachment security between ages one and two were associated with children's executive function at three years of age.⁵⁹ Children who had sensitive interactions and secure attachments with their parents did better on tasks involving working memory and cognitive

⁵⁰ Fearon, Bakermans-Kranenburg, Van IJzendoorn, Lapsley, & Roisman, 2010

⁵¹ Kok et al., 2013

⁵² Groh, Roisman, van IJzendoorn, Bakermans-Kranenburg, & Fearon, 2012

⁵³ Carneiro, Crawford, & Goodman, 2011; Gilliom & Shaw, 2004

⁵⁴ van IJzendoorn, Dijkstra, & Bus, 1995

⁵⁵ van IJzendoorn et al., 1995; Thompson, 2008

⁵⁶ Belsky & Fearon, 2002a

⁵⁷ Murray & Yingling, 2000

⁵⁸ van IJzendoorn et al., 1995

⁵⁹ Bernier, Carlson, Deschênes, & Matte-Gagné, 2012

flexibility. While attachment did not affect impulse control, its effect on 'conflict executive function' or cognitive flexibility (being able to adjust one's thinking in response to demands and new information) was substantial, and held up even after controlling for the child's prior measured executive function, language ability, family socio-economic status – and other components of parenting.⁶⁰ In fact, in this small sample of 62 families, early parenting and attachment security together explained more than twice as much of the variation in cognitive flexibility (18 per cent) than did socio-economic status and verbal ability together (8 per cent).

4.4 Attachment as a protective factor

In addition to directly improving children's development, secure attachment also appears to protect them against certain risks in early childhood, including low-income, maternal depression, parenting stress, lack of social support, experience of single parenting, lack of maternal psychological support, and ethnic minority status.⁶¹ A study by researchers at University College London and Birkbeck University showed that, for children with insecure-avoidant attachment, these risks had a substantial effect on expressive language and behaviour problems at age three. However, for securely attached children, these problems had no significant effect.

4.5 Health outcomes

Attachment has also been linked to some health outcomes for children. Children who were insecurely attached at age two were more likely to be obese before they started school (at age four and a half), controlling for other factors such as parent interaction, parenting behaviours around obesity, maternal body mass index and socio-demographic factors.⁶² Maternal insensitivity assessed at six months has also been associated with higher obesity rates at ages 11 or 12, while early attachment insecurity has been linked to a higher obesity risk in adolescence.⁶³ Insecure attachment, it is thought, leads to unhealthy responses to stress, including overeating. Obesity in childhood has, in turn, been associated with behavioural problems, and poorer reading and maths test scores in school.⁶⁴

4.6 Longer-term effects of attachment

Parenting, as attachment thinkers were among the first to point out, is a dynamic, ongoing process, which is interactive with the child. While attachment is particularly important to preschool child development, studies find secure and insecure attachment classifications are stable 77 per cent of the time, with attachment styles lasting into adolescence.⁶⁵ So, while ongoing parenting and life experiences can improve or worsen social and emotional development, an early secure attachment appears to have a lasting positive effect on children's outcomes.⁶⁶

Attachment, since it has first been researched, has been associated with youth crime and offending, or 'juvenile delinquency'. Recent meta-analysis across 74 studies finds a small average effect of attachment on delinquency (0.18).⁶⁷ The association is particularly strong for those offending at younger ages, and is likely allied to the development of externalizing and behavioural problems. Interestingly, while attachment has been linked to youth crime for both boys and girls, attachment to fathers seems to be particularly important for boys, and attachment to mothers for girls.

Throughout childhood, research shows that children's attachment relationship with their parents shapes their relationships with their peers and teachers, which can have important

⁶⁰ Bernier et al., 2012

⁶¹ Belsky & Fearon, 2002a, 2002b

⁶² Anderson & Whitaker, 2011

⁶³ Wu, Dixon, Dalton, Tudiver, & Liu, 2010; Anderson, Gooze, Lemeshow, & Whitaker, 2012

⁶⁴ for a review, see Story, Kaphingst, & French, 2006

⁶⁵ Hamilton, 2000

⁶⁶ Berlin, Cassidy, & Appleyard, 2008

⁶⁷ Hoeve et al., 2012

effects on educational outcomes.⁶⁸ The effect of attachment appears to be cumulative: teachers reported that boys with disorganised insecure attachment, and from more high-risk families, had more behavioural problems in their primary school years. A longitudinal study of low-income children born in Minnesota in the mid-1970s found that early attachment was a significant predictor of later success in secondary school. In detailed observation, teachers and student counsellors both rated those children who had had secure attachments as more self-confident, curious, having better relationships with peers, and better able to deal with setbacks.⁶⁹ The securely attached children were also less likely either to bully or be bullied at school. Perhaps because social and emotional development remains important throughout childhood, one US study of children born into poverty found that the quality of early parent care and attachment, measured at age three and a half predicted with 77 per cent accuracy whether or not they later graduated high school. Including measures of IQ or test scores added nothing to the strength of this prediction.⁷⁰ Parenting before children turned four was a powerful predictor of this important educational milestone, second only to behaviour problems measured at age 12. Not graduating high school in the US is a marker of low skills, strongly linked to poor employment and other prospects in adulthood – equivalent to not being in education, employment or training (NEET) in the UK.

Upward social mobility has also been traced to secure attachment. Researchers using the English Whitehall II study found that men in mid-life who had secure attachment styles as adults were more likely to overcome the disadvantage of a lower level of educational attainment and progress up the ladder of Civil Service grades.⁷¹ As parent's social class was not related to adult attachment styles, secure attachment appears to be a source of resilience for those from lower socio-economic status backgrounds.⁷²

The legacy of early attachment can also be seen across generations. Attachment in early childhood has also been seen to effect adult partnerships and parenting.⁷³ Such long-term associations show the importance of getting good early parenting and attachment right, and understanding its roots.

⁶⁸ Marcus & Sanders-Reio, 2000; van Lier et al., 2012; O'Connor, Collins, Supplee, 2012

⁶⁹ Tough, 2012; Egeland, Sroufe, Carlson, & Collins, 2005

⁷⁰ Egeland, Sroufe, Carlson, & Collins, 2005: p.210-211

⁷¹ Bartley, Head, & Stansfeld, 2007

⁷² Bartley et al., 2007

⁷³ Grossman & Grossman, 2009; Thomsson, 2000; Grossmann & Waters, 2005

5. WHAT ARE THE RISK FACTORS FOR INSECURE ATTACHMENT?

Children whose parents had an insecure attachment to their own parents are most likely to experience insecure attachment or bonding. Parents' perceptions of their own childhood attachments predict their children's classification 75 per cent of the time.⁷⁴ Contextual factors also matter. Essentially, when parents themselves face insecurity – whether economic or emotional – they can find it harder to provide the parenting needed for secure attachment. As a professor of infant mental health, Alicia Lieberman, has put it, 'when you are bombarded with poverty, uncertainty, and fear, it takes a superhuman quality to provide the conditions for secure attachment'.⁷⁵

The social, psychological, medical and public health literature identifies a number of factors that threaten sensitive parenting and secure attachment for infants and toddlers: poverty, maternal mental health, disabilities, young parenting and poor quality childcare stand out. Many studies measure the mothers' risk factors. However, there is evidence that when fathers are positively involved, and the relationship between the mother and father is good, it can buffer the effect of the mother's risks.⁷⁶

5.1 Poverty

Poverty makes parenting harder. In a recent nationally representative US birth cohort, the odds of insecure attachment at age two were double in families below twice the poverty line, relative to families with incomes above this cut-off.⁷⁷ Researchers in England found that adults who, retrospectively, reported material deprivation in their childhood were more likely to also report less warmth from their mothers and fathers, and were less likely to have secure attachment styles as adults.⁷⁸

It is thought poverty does not affect attachment directly but rather indirectly through the high levels of stress it creates for children and their parents.⁷⁹ Infants and pre-school age children, and their parents, may be particularly vulnerable to the stress of poverty. Parents in poverty are more likely to be depressed, and experience family instability, poor health and poorer quality services. All this will affect their ability to provide good early parenting. It is estimated that parenting explains about 40 per cent of the total effect of poverty on young children's externalising and internalising problems in the UK.⁸⁰

Although poverty is clearly linked to poorer parenting, and therefore insecure attachment, their relationship with socio-economic status more broadly is less clear. In the UK, one study found that parents' education, but not their income, is associated with parental warmth and sensitivity.⁸¹ Mothers of six month olds with the lowest education levels report that they cuddle and read to their babies less often than mothers with more education, but even by 18 months, these levels have converged (Gutman & Feinstein, 2007). In another study, attachment style, surveyed in adulthood, did not vary significantly by social class (Bartley, Head, & Stansfeld, 2007).

5.2 Mental health

Children are at increased risk for insecure attachment and externalising problems when their mothers are depressed, particularly if their depression is persistent.⁸² This effect of the depression does not merely reflect the correlation between poverty and depression.⁸³ Depression makes it harder to be responsive and sensitive as a parent, and is often a

⁷⁴ Steele, Steele, & Fonagy, 1996

⁷⁵ cited in Tough, 2012: p.38

⁷⁶ Mesman, van IJzendoorn, & Bakermans-Kranenburg, 2012; Ramchandani et al. 2013.

⁷⁷ Halle et al., 2009

⁷⁸ Stansfeld, Head, Bartley, & Fonagy, 2008

⁷⁹ Yueng, Linver, & Brooks-Gunn, 2002

⁸⁰ Kiernan & Huerta, 2008

⁸¹ Gutman, Brown, & Akerman, 2009

⁸² Mensah & Kiernan, 2010; Diener, Nievar, Wright, 2003

⁸³ Kiernan & Huerta, 2008; Teti, Gelfand, Messinger, & Isabella, 1995

response to other issues the family faces.⁸⁴ Around one in ten new mothers, it is estimated, experience depression.

Other psychological risk factors for insecure attachment include a group of problems that psychologists call 'unresolved states of mind' – issues to do with how parents were parented themselves. These have been linked in particular to disorganised attachment.⁸⁵

Babies appear to be particularly sensitive to mother's stress and depression. One study of 570 families found that four-and-a-half year olds living with highly stressed mothers had high cortisol levels, but only if their mothers had also been under stress or depressed when they were infants.⁸⁶

5.3 Young parenting

Young mothers and fathers are less likely to have the emotional or economic security to provide the conditions for sensitive and responsive parenting and secure attachment.⁸⁷ Many young mothers experience higher degrees of stress related to parenting, and tend to be less responsive and more detached with their infants than older mothers. These effects are seen above and beyond the effects of other factors correlated with young parenthood, such as race/ethnicity, education, family structure and income.⁸⁸

5.4 Disabilities

Parents whose children experience medical complications or disabilities in infancy may need additional support to develop secure attachments with them. Very premature and very low birth weight babies are more likely to have disorganised attachment style than those born full-term.⁸⁹ For these children, developmental delay and distressing cries predict disorganised attachment, but, unlike for full-term, normal birth weight babies, sensitive care does not.⁹⁰ Amongst premature babies, infants whose mothers can see their child within three hours are more securely attached than those whose mothers can not.⁹¹

For children with disabilities, forming a secure attachment may be harder even if their parents are able, despite the additional stresses of a disabled child, to provide sensitive care. Children with autism spectrum disorder are less likely to have secure attachment styles - even though they are just as likely to receive sensitive care.⁹² Indeed, research finds parents of children with learning or language disabilities or autism are more likely to show warm parenting, even though they have less social support.⁹³

5.5 Low-quality early childcare

In the 1990s, a team of researchers in the US launched a major longitudinal study to assess the effects of early childcare on children's attachment. The results of the NICHD Study of Early Child Care and Youth Development showed that early non-parental childcare in general did not affect children's attachment. However, for children who are already at risk by virtue of not having received sensitive maternal care, *low-quality* early childcare did elevate the risk of insecure attachment at age 15 months and also led to heightened risk of risky behaviour and externalising problems as late as adolescence.⁹⁴ These findings are relevant to the UK, given that many children attend poor quality care, and that children from low-income families are more likely to do so.⁹⁵

⁸⁴ Diener et al., 2003

⁸⁵ Madigan et al., 2006

⁸⁶ Essex, et al, 2002

⁸⁷ Flaherty & Sadler, 2011

⁸⁸ Berlin, Brady-Smith, & Brooks-Gunn, 2002

⁸⁹ Wolke, Eryigit-Madzwamuse, & Gutbrod, 2013

⁹⁰ Wolke et al., 2013

⁹¹ Mehler et al., 2010

⁹² van Ijzendoorn et al., 2007

⁹³ Rutgers et al., 2007

⁹⁴ NICHD, 1997; Belsky & Pluess, 2011

⁹⁵ Gambaro, Stewart, & Waldfogel, 2013

Using data from the NICHD Study of Early Child Care and Youth Development, researchers also examined the role of *maternal employment* and found that maternal employment, net of the quality of alternate care, did not increase the risk of insecure attachment.⁹⁶

Breastfeeding has been linked to positive emotional, as well as health and cognitive outcomes for children.⁹⁷ Although no direct link to attachment has been found, mothers who breastfeed show greater sensitivity with their infants at three months than those who bottle-feed.⁹⁸

⁹⁶ Brooks-Gunn, Han, & Waldfogel, 2010

⁹⁷ Anderson, Johnstone, & Remley, 1999; Sacker, Kelly, Iacovou, Cable, & Bartley, 2013; Bono & Rabe, 2012

⁹⁸ Britton, Britton, & Gronwaldt, 2006; Jansen, Weerth, & Riksenwalraven, 2008

6. HOW CAN POLICY PROMOTE SECURE ATTACHMENT?

Good early parenting, as the long-term benefits of secure attachment show, is very important for children. It is because of this that policy interventions that support parents in the earliest years are a preventative investment. Policy can promote secure attachment in two broad ways: it can reduce the risk factors for poor early parenting and insecure attachment, and it can intervene early to address parenting and attachment issues. In both cases, much can be gained from integrating an understanding of attachment and parenting, and the particular needs of babies and toddlers, into existing policies and services. In a recent review, Nobel Laureate economist James Heckman concluded that “[t]he common feature of successful interventions across all stages of the life cycle through adulthood is that they promote attachment and provide a secure base for exploration and learning for the child. Successful interventions emulate the mentoring environments offered by successful families”.⁹⁹

6.1 Reducing risk factors

Given all we know about the factors that threaten good early parenting and secure attachment (see section 5), it is clear that a broad range of policies for families with young children could help prevent insecure attachment. Such policies are a “win-win” – they are likely to benefit children and families’ health and broader wellbeing, and help to improve early parenting and attachment.

Much existing policy in the UK already supports the conditions for good parenting and secure attachment. Anti-poverty efforts focused on families with children, and in particular families with infants and toddlers, are likely to reduce stress and improve parenting and child development. The same is true of work-family support. The extension of maternity leave, from 18 weeks to up to a full year, with the first nine months paid, gives mothers a longer period of time at home with their new-born children and has increased the average leave taken by new mothers to 39 weeks.¹⁰⁰ Together with the Infant Feeding initiative in the first Sure Start centres, and the expansion of UNICEF UK’s Baby Friendly Initiative, these changes in maternity leave may help explain the increased breastfeeding rates seen from 2000.¹⁰¹ Paternity leave is also relevant; research shows that even a short period of leave is associated with greater subsequent paternal involvement with the baby.¹⁰² The right for parents to request part-time or flexible hours is also commendable, since it gives families with young children additional flexibility and options in balancing work and family responsibilities.¹⁰³

The expansion in the number of health visitors, a Conservative Party manifesto commitment in 2010, also creates opportunities to engage new parents and their babies, and provide new services from them. More generally, integrating an understanding of attachment and how it is promoted within the health visitor role and training, and in ante- and post-natal primary health services, would have direct social, emotional, developmental and health benefits. For example, the guidance should be clearly in favour of enabling parents to make early close contact with their babies, even if they are premature and faced with medical complications, and in encouraging behaviours that can help mothers bond with their child, especially if they are unable to breastfeed. Universal health services also provide a vital opportunity to engage with families, particularly the more disadvantaged, and assess their needs and risks, through measures such as integrating screening for maternal depression, and appropriate referral, as standard into GP and health visitor practice, and expanding access to treatment, including psychological therapies.

Services can also reduce isolation and boost social support for new families. So there is also a role for services such as Children Centre’s and Parent and baby groups. Some group programmes explicitly focus on involving fathers and supporting new parent’s relationships,

⁹⁹ Heckman & Kautz, 2013

¹⁰⁰ Stewart, 2013

¹⁰¹ Stewart, 2013. UNICEF’s Baby Friendly Initiative accredits health providers meeting standards of good practice in promoting breastfeeding. The Infant Feeding Initiative funded a range of projects to support breastfeeding in the community through Sure Start Local Programmes between 1999 and 2002.

¹⁰² Neponmyaschy & Waldfogel, 2007; Tanaka & Waldfogel, 2007

¹⁰³ Waldfogel, 2010

such as the 'Baby Father Initiative', run by children's charity Barnardo's, which trains those working in early years services to work successfully with fathers.

Finally, there is a role for early childhood education and care policy. Childcare, when it is high quality, can both promote child development and be a support for families. But when childcare is unaffordable, poor quality, or inaccessible, then it can cause additional stress for families and children. Young children need good quality, sensitive interaction in childcare as well as from their parents: a major study of childcare in the UK for the Sutton Trust (Sound Foundations) found that children do better in settings where they also receive warm, responsive and individualised care.¹⁰⁴

6.2 Intervening early

A number of educational and therapeutic programmes aim to promote good socio-emotional development, as well as parenting and attachment security directly. A review of 70 experimental studies, largely in the US, found that in general interventions can effectively promote both sensitive parenting and secure attachment.¹⁰⁵ Notably, whether interventions are effective does not depend on the kinds of families they worked with, including their socio-economic status or the presence of multiple risk factors, including teen parenting.¹⁰⁶ The most effective interventions start when infants are six months old, and focus clearly on the parent's behaviours, using video feedback – or Video Interactive Guidance – where appropriate. Furthermore, the three interventions that involved fathers were all more effective than those that focused solely on mothers.

Another key finding in the evaluation literature is that skilled and supported staff building relationships with the parents is necessary for success.¹⁰⁷ For example, the results of a Parent-Child Communication Coaching Programme, which was added on to Early Head Start (a home-visiting and childcare programme for low-income and high-risk parents of children under three in the US), had disappointing, non-significant, effects; engaging and retaining parents in this programmes was a particular problem.¹⁰⁸

Below we discuss the evidence on five specific programmes that have been found to improve socio-emotional and behavioural development, and/or parent-child interaction and attachment. These include the Family-Nurse Partnership, The Incredible Years Baby/Toddler-Parent Training and three other programmes that have an explicit focus on attachment security for children under three: Circle of Security, Minding the Baby, Child-Parent Psychotherapy. In addition, we discuss two promising programmes developed in the UK: PEEP Reflective Parenting Programme delivered by Parents Early Education Partnership (PEEP) and the Oxford Parent Infant Project (OXPIP). Table 1 summarises the programmes, their evaluations, benefits and costs.

The Impetus-PEF partnership, which works with the Sutton Trust, supports a social enterprise delivering the Family Nurse Partnership in Derby, England – Ripplez - and OXPIP. The Sutton Trust has also supported PEEP and the Incredible Years.

¹⁰⁴ Sylva et al., 2004; Mathers et al., 2014

¹⁰⁵ Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003

¹⁰⁶ Bakermans-Kranenburg et al., 2003

¹⁰⁷ Berlin, 2005

¹⁰⁸ Spieker, Nelson, DeKlyen, & Staerkel, 2005

Table 1: Programmes promoting parenting, attachment and socio-emotional development for under-threes

	(i) Model (ii) Practitioners (iii) Timing	Evaluation	Benefits	Costs (approx.)
Family-Nurse Partnership*	Intense One-to-One home-visiting relationship building with first time teenage mothers Nurses From early pregnancy to age 2.	Randomised Control Trial (Memphis, US) with low-income, first-time, young mothers. 15-year follow up. Currently being trialled in the UK.	FNP children had better emotional development at age 4, amongst other positive, lasting gains.	£3,000 per family, per year
Circle of Security	Parent education, therapy and peer support. In small groups of 5-7. Therapists Weekly 75-minute sessions over 20 weeks.	Pre-test/Post-test, 65 parents recruited through Head Start and Early Head Start, federal programmes for low-income families in the US.	The number of children securely attached rose from 20% to 54% after treatment. Number with highest risk (disorganised) attachment fell from 60% to 25%.	£1,200 for training, per head
Minding the Baby	Home-visiting, supports reflective parenting Specialist social workers and nurses working together From the third trimester of pregnancy, weekly until age 1, fortnightly until age 2.	A Randomised Control Trial (RCT) in Connecticut, US is underway. An independent RCT in the UK with 320 first-time mothers under 25 begins in Spring 2014.	RCTs still underway. Early US findings show improved reflective functioning and more secure attachment.	Not yet available
Child-Parent Psychotherapy	Psychotherapy and parenting educational Therapists Sessions over 10 to 12 months	RCT with high-risk families in New York State, US.	At age 2, 61% formed a secure attachment, compared to 2% of the control in the control group of standard community services	£1,900 a head for training
Incredible Years*	Social-learning model/ uses video, role-play, peer support. Masters-level group leaders, and parenting practitioners 8-10 sessions for babies under 1 and toddlers 1-3.	Parent Training for 4-8 year olds has undergone multiple Randomised Control Trails in the US.	Benefits for other programmes include improved positive affect, emotional regulation and behaviour	£850 for the programme materials
Parents Early Education Partnership (PEEP)*	Home-visiting and group sessions, based on reflective functioning for first time parents Level-3 qualified parenting practitioners One pre-natal home visit, 3 group sessions and 4 post-natal group sessions.	An evaluation by Warwick Medical School is taking place (2014). It is a controlled realist evaluation with 25 families and 25 in the control.	The aim is to impact on secure attachment through increased parental reflective functioning.	£450 to train a practitioner; £450 per family for 8 sessions
Oxford Parent Infant Project (OXPIP)*	(i) One-to-One support, video-feedback. (ii) Therapists (iii) Average of 10 sessions, from conception to age 2.	Small, internal pre-test, post-test evaluation in Oxford, UK	The proportion of infants that were rated 'adapted' or 'well adapted' rose from 3% to 29% after the intervention.	£800 per family on average. £4,000 a head for training.

* Programme supported by the Sutton Trust and Impetus-PEF partnership.

6.3 The Family-Nurse Partnership

At the heart of the widely cited Family-Nurse Partnership (FNP in the UK; Nurse-Family Partnership or NFP in the US) is the relationship between nurse and mother. The programme works with low-income, young first-time mothers and addresses a range of needs from pregnancy, including a component focused on building sensitive parental care. David Olds developed the programme based on the theories of attachment and self-efficacy – the idea that a parent's behaviour reflects what they feel able to achieve. Changing parent's behaviour, so they can provide more sensitive care and build secure attachments with their babies, requires enhancing their ability to alter their behaviour and make positive decisions, which in turn requires supporting parents in a relationship. Indeed, attachment relationships are thought to be an important factor behind the long-term developmental benefits of the programme.

Impacts have been demonstrated in randomised control trials, including in a fifteen-year follow-up study. The trial in Memphis, USA, for example, alongside a wider range of positive outcomes for the mother and child, found that children had better emotional development at age four.¹⁰⁹ Where NFP was trialled without trained nurses these positive effects were not seen. The implication is that services aiming to change parenting behaviour require a high degree of continuity of committed, supported and skilled staff, with the time and skills to develop relationships with the families.

The UK government recently doubled the number of Family Nurse Partnership places being trialled, aiming to reach 16,000 new mothers by 2015. After promising evaluations of the implementation, including one that found that mothers on the programme reported warm parenting, a randomised control trial for the UK will report in 2014. However, the service is still reaching only a small proportion of even those most disadvantaged young families that we know would benefit from it.

6.4 The Incredible Years – Training for Babies, Toddlers and Parents

The Incredible Years programme is founded on a social learning model of development. The model, allied with attachment models, sees improving parents' confidence, competence and coping strategies – including those related to their own relationships and feelings – as the best way to build good parent-child relationships and children's school readiness. Led by trained parenting practitioners, who may have backgrounds in social work, psychology, education or nursing, the programme uses role-play, video, and group support and emphasizes building a therapeutic relationship between parents and staff. Group leaders must have a Masters-level qualification.

Incredible Years programmes have been developed specifically for parents of babies and toddlers, drawing on attachment theory. In between eight and ten sessions, the programme helps parents of babies under the age of one to observe and pick up on their baby's signals, respond to crying and build security. It also helps parents build supportive networks and find times for themselves to renew energy for parenting. For toddlers age one to three, it uses child-directed play and what it calls 'emotion coaching' – helping children express their feelings, build their emotional vocabulary and manage separations and reunions – while boosting development. It also gives parents 'calm-down strategies' and methods of positive self-talk to build their confidence in managing toddlers.

The Incredible Year's 'parent training' approach has been trialled with children aged between four and eight in the US, and is now provided around the world, including through Sure Start Children's Centres in Wales. Although studies of parent training haven't measures attachment for under threes specifically, independent replications in the UK, in three randomised control trials, have shown that parent training can be used to successfully prevent (as well as treat) related social and behavioural problems.¹¹⁰ Long-term benefits included reduced health

¹⁰⁹ Olds, 2005, p. 240

¹¹⁰ Bywater et al., 2009; Scott, 2003

services and social services use.

6.5 Circle of Security

Circle of Security is a 20-week group-based parent education intervention, based on attachment theory and elements of psychotherapy. The intervention, which works with small groups of five to seven parents in a series of 75-minute sessions, has both educational and therapeutic components. Led by a therapist, the intervention aims to provide a non-judgmental space for parents to talk about their difficulties and frustrations with their child and to reflect on how their own history affects their current caregiving behaviour. The intervention also helps parents develop the capacity to pick up on and respond to often subtle verbal and nonverbal cues that young children use to signal their internal states and needs. An important element of the Circle of Security intervention is video-feedback for the parent based on their interaction with the child to help them respond more sensitively to their child. This is part of an individual treatment plan that helps parents focus on one key issue to work on.

The Circle of Security intervention was developed with a sample of 65 parents who were participants in Head Start and Early Head Start services in the US, all below the poverty line and, relative to other Head-Start families, of medium levels of risk.¹¹¹ A pre-test/post-test longitudinal design found that the proportion of children securely attached rose from 20 to 54 per cent after the programme, while the proportion of children in the highest-risk attachment classifications (disorganised and insecure-other) fell from 60 per cent before intervention, to 25 per cent after the intervention.¹¹² Indeed, after intervention, the distribution of attachment classifications was very similar to those found in low-income, but otherwise low-risk samples.¹¹³ While this is a small-scale and non-experimental study, the fact that 70 per cent of participants moved from disorganised to secure classifications suggests a clear positive effect. Furthermore, 12 of the 13 children that were securely attached before the intervention remained securely attached. This rate of stability is higher than that found without interventions, implying the intervention also shored-up parenting for families under stress.¹¹⁴

6.6 Child-Parent Psychotherapy (CPP)

Child–parent psychotherapy, used by the US Mount Hope Family Centre group in New York State, focuses on changing the quality of attachment between mothers and children from birth.¹¹⁵ Professional therapists meet with both the parent and child weekly for 10 to 12 months to build positive parent-child interactions using play, geared to the child's developmental level. Research shows this intervention builds the parent's sense of competency, while strengthening the child's sense of security and attachment.

In one high-risk sample of families with histories of child maltreatment, only one of 137 infants studied demonstrated secure attachment at the outset, and 90 per cent had disorganised attachment, the highest risk for later behavioural problems. Even in this very high-risk group, early intervention with children aged one was effective in supporting parents to develop secure attachments with their children. Both infant-parent psychotherapy and psycho-educational parenting improved attachment security, while regular services in the community did not.¹¹⁶ While only two per cent of children in the control group formed a secure attachment by age two, 61 per cent of those in the treatment group, who received a weekly session of parent-child psychotherapy for one year, formed a strong bond. These rates of secure attachment were comparable to those found amongst children of non-depressed parents.¹¹⁷

Variations to Child-Parent Psychotherapy include Parent-Infant Psychotherapy and Infant-led

¹¹¹ Hoffman, Marvin, Cooper, & Powell, 2006

¹¹² Hoffman et al., 2006

¹¹³ van Ijzendoorn et al., 1999

¹¹⁴ Hoffman et al., 2006

¹¹⁵ Toth, Rogosch, Manly, & Cicchetti, 2006

¹¹⁶ Cicchetti, Rogosch, & Toth, 2006

¹¹⁷ Barlow et al. 2010

Psychotherapy (Wait, Watch and Wonder). Both of these have been found, in Randomized Control Trails, to improve parent-infant interaction and attachment security, six months after the programmes finished.¹¹⁸

6.7 Minding the Baby

Developed by researchers at Yale University, the Minding the Baby programme introduced a new focus in home visiting on what's called 'reflective parenting', the ability of the parent to understand their baby's behaviour in terms of the underlying needs, thoughts and emotions of the infant. The programme begins in late pregnancy (the final trimester) and offers home visits with the Minding the Baby team – this comprises a nurse practitioner and a social worker (who has been specially trained in infant mental health) who work as a pair with the family. The home visits are weekly until the child's first birthday, then fortnightly until their second. Both the nurse and social worker provide the mother with developmental guidance, crisis help, parenting support and practical support. The home visitors aim to help the mother to provide more sensitive and responsive care, by continuously voicing the baby's emotions and intentions, and making the mother more aware of her child's development.¹¹⁹

A randomised clinical trial of this intervention is still underway in the US, but preliminary evidence shows the intervention is having a positive effect on the babies and families, including increased reflective functioning in parents, and more secure attachment between the mother and child.¹²⁰ From spring 2014, the NSPCC are hoping to recruit 320 families for the programme in three sites in the UK. The mothers targeted are all under the age of 25, and may be experiencing poverty, mental health problems or homelessness. Pasco Fearon, Professor of developmental and clinical psychology at University College London, is leading an independent RCT of the programme. The pilot programme aims not only to improve attachment security, but also to support infant health and development and to prevent child abuse and neglect (NSPCC, 2011).

6.8 Peep Reflective Parenting Programme (Piloted by Parents Early Education Partnership (PEEP))

PEEP in partnership with Professor Jane Barlow of Warwick Medical school, has developed, piloted and is now training practitioners to deliver 'The PEEP Reflective Parenting programme'. The programme starts during pregnancy and focuses explicitly on developing secure attachment and parent's ability to tune into their baby's feelings and respond sensitively. This programme starts with four sessions in the third trimester of pregnancy (the first is a home visit, the rest are group sessions). This is followed by four small group sessions, starting as soon as feasible after the birth of the babies. This programme also aims to develop supportive relationships between parents attending the groups, and help the new family make links with the local community and other services; the programme is manualised and supported by a two day training programme, practitioner resources and an independent evaluation of this model is in progress.

6.9 The Oxford Parent Infant Project (OXPIP)

OXPIP therapists work with babies and their parents from conception to when children are age two. Mothers or fathers can refer themselves, or are referred by General Practitioners, Children's Centres, health visitors, midwives or social services. OXPIP's therapists help parents tune into their babies' signals, and interact with them positively. Video feedback is used to build on good parenting practices. OXPIP also cross-trains therapists to become parent-infant therapists, enabling them to work 'one-to-two', with the parent, baby and relationship between the two.

Therapists assessed parents' and infants' functioning on a 10-point scale, the Parent Infant Relationship Global Assessment Scale (PIRGAS). In a small sample, the therapists found that

¹¹⁸ Cohen et al., 2002; Barlow et al., 2010

¹¹⁹ Slade, Slader, & Mayes, 2007

¹²⁰ Slade, Slader, & Mayes, 2007; Yale Nursing Matters, 2010

on average, parenting had, on average, improved two levels between the beginning and end of the therapy.¹²¹ Those parents with the lowest initial functioning had improved the most. The proportion of infants who were 'adapted' or 'well adapted' rose from three to 29 per cent over the course of the intervention.¹²² OXPIP's internal evaluation also found that while about two-thirds of mothers and fathers were at least moderately depressed, and a similar share were anxious, these rates had dropped to less than a quarter at the end of the therapy.

6.10 Policy mix, costs and delivery

There is a balance to be struck between reducing risk factors for families, and intervening more directly in parenting. David Olds, who developed the Family-Nurse Partnership programme in the US in the late 1970s, notes that programmes with clear objectives, procedures, and priorities focused on parenting are important, but so too are the primary services that reduce pressures on families with young children.¹²³ Many of the US attachment-based programmes support families already displaying signs of insecure attachment and associated problems – a 'tertiary' level of prevention. There is, however, a big opportunity to provide specific preventative services at a 'secondary' prevention level, that is, for a broader group of families who are at elevated risk for parenting and attachment problems but before problems arise. The challenges of attachment and parenting babies and toddlers are not confined to low-income or high-risk parents. OXPIP, for example, reports benefits even for relatively low-risk families; while PEEP finds small group programmes work best when parents come from a range of backgrounds.

Although all interventions for babies and toddlers can be considered early intervention, in general the earlier services are able to engage with families, even during pregnancy, the greater the preventative effect. The timing and targeting of interventions also has cost implications. The main cost for parenting programmes lies in the professional's time; the costs of additional training or materials in specific models are generally low. For example, The Incredible Year's Babies and Toddler programme materials, training and certification cost just \$1,345 (£840) for a centre and group leader.¹²⁴ For Mind the Baby Circle of Security, intensive training costs approximately \$2,000 (£1,200) per participant.¹²⁵ The training for up to 30 participants for Child-Parent Psychotherapy costs roughly \$3,000 (£1,890).¹²⁶ For PEEP, which provides sessions in groups of 8, the cost works out about £450 per family. Delivering OXPIP on average costs only £800 per family – ten one-to-one sessions at £80 a session. Higher need groups of parents, because of contextual risk or because intervention is coming later, may require more highly skilled professionals.

The programme interventions highlighted here would involve minimal fixed costs, especially when delivered through existing service infrastructure, such as Children's Centres, antenatal, maternal and child health services. For example, the average cost of PEEP programmes are 30 per cent lower without venue or administrative overheads, costing as little as £310 per family. The All-Party Parliamentary Group for Sure Start, a committee of MPs from all parties in the UK, recently recommended that Children's Centres be used as an access point for these services, from pregnancy or birth registration, and increase efforts to support parent's engagement in their children's learning.¹²⁷ Similarly, the National Children's Bureau recommends re-focusing Children's Centres on the under twos and a greater use of evidence-based programmes, alongside better monitoring of outcomes for children and families.¹²⁸ Our findings focused on attachment second these recommendations.

Within England, local authorities' children's centres and maternal and child health services may need to better join forces to support parenting and attachment behaviours from pregnancy to age three. Local authorities combined 'Early Intervention' budgets are an

¹²¹ Spencer et al., 2012

¹²² Impetus-PEF, 2013

¹²³ Olds, 2005

¹²⁴ "The Incredible Years", 2013

¹²⁵ "Circle of Security International", 2013

¹²⁶ "Child-Parent Psychotherapy", 2013

¹²⁷ APPSSG, 2013

¹²⁸ NCB, 2013

appropriate source of public funding for programmes to support parents, but we also know that involving health services is important to the effectiveness of parenting programmes. In fact, an inter-disciplinary expert panel in the UK recommended that the focus of perinatal health services should be on the parent-infant relationship.¹²⁹ Again, our findings would reinforce this recommendation.

¹²⁹ Barlow et al., 2010

7. CONCLUSIONS

Our review has shown how secure attachment in the first three years could serve as a 'secure base' for children's later development and life chances, and hence social mobility. Fundamental to children's socio-emotional development, early attachment has wide and lasting consequences, including for other priority outcomes like cognitive, language development and educational attainment and retention. Promoting secure attachment should therefore be a focus for policy and services for families with children under age three.

The overwhelming finding in our review is that warm, sensitive, and responsive care, from both mothers and fathers, builds secure attachment. It is also clear, however, that economically or emotionally insecure parents will find it harder to provide this. Policy in the UK has already addressed some of the factors that threaten good early parenting and secure attachments, but more can be done. In particular, there is a group of families whose children are at-risk for insecure attachment, but not (yet) indicating problem development, who could benefit from increased service engagement and 'parent-training'. In addition, early interventions with very high-risk or troubled families with children under age three, can promote secure attachment and development, especially when skilled practitioners support parents and model sensitive and responsive care. For both national and local policy makers, this would represent a sound preventative investment.

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Measuring attachment

Measures of attachment are in effect a way of measuring the quality of early parenting. The warmth, sensitivity, responsiveness, and consistency of parenting over the first years of a child's life are hard to capture in surveys. In addition, parenting is a dynamic, interactive process over time, something that any 'snapshot' measure taken at one point in time will find hard to capture. Measures of attachment, however, can capture the effects of this parenting – in terms of how the toddler behaves in relation to the parent. While measures of the parent's sensitivity do not correspond directly to measures of the child's attachment security, they are closely related. Attachment is usually measured after the critical period for attachment formation; measures can pick up whether secure attachment has formed, but not necessarily the parenting behaviour (or other factors) that might lead to it. When researchers combine measures of parenting with attachment, they are better able to predict later outcomes for children.

Attachment security can be measured through observation or through survey. In general, observation methods can assess attachment in terms of the four categorical types, while survey methods tend to produce a continuous scale of attachment security.

Observation

One of the first methods developed to test attachment empirically was the 'Strange Situation'. This is an experimental procedure in which the child is observed playing for 20 minutes while the parent and a stranger enter and leave the room in sequence. Four categories of behaviours are observed and coded: (1) separation anxiety: the unease the infant shows when left by the parent (2) the infant's willingness to explore, (3) stranger anxiety: the infant's response to the presence of a stranger, and (4) reunion behaviour: the way the parent was greeted on return.

These classify the child's attachment style into one of the four categories of style described above: secure, or the three insecure styles: avoidant, resistant, and disorganised. The breakdown of these categories could be relevant for policy, for example the disorganised attachment style is particularly problematic in development of behavioural problems, and offending behaviour; while only avoidant styles are linked to depressive symptoms.

It is thought that when attachment is measured through observation (such as the Strange Situation) rather than surveys, studies tend to show a stronger link between attachment and later outcomes. The Strange Situation can be adapted to children at different ages, but is most effective with toddlers between 18 and 24 months of age. The Strange Situation procedure has limitations, particularly in assessing older children, or in assessing multiple attachments; and the laboratory-like procedure can intimidate families and lack ecological validity, or 'real-world' authenticity. However, the attachment classifications from it are reliable over time, and are seen to most closely capture the concept of attachment. The main drawback on this method is the skilled coders, expense and time required to administer at scale, which certainly makes it hard to use as a form of screening within services.

Another observation measure, the Attachment Q-Sort, is scored over one or more two to three hour home visits. With a set of 90 items, observers sort children's secure-base behaviour and its correlates into attachment styles. This measure does not highlight types of insecure attachment, such as disorganised attachment, and is even more labour-intensive than the Strange Situation. Nonetheless, the observation has been found in meta-analysis to be an effective measure of attachment, strongly related to measures of parental sensitivity.¹³⁰

Alternative observation-based instruments have been developed that can be used by practitioners or clinicians relatively quickly and at low-cost. One of these, used by OXPIP in the UK, is PIRGAS, the Parent-Infant Relationship Global Assessment Scale. This 10-point

¹³⁰ van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004

classification measures parent-infant relationship from grossly impaired to well adapted, by looking at interactions and behaviours. This is not a standardised instrument but is research-based and has been used to diagnose infant mental health and developmental disorders.¹³¹

Surveys

Survey measures of attachment usually give data on attachment security along a continuum, or a simply secure or insecure, rather than in the four original categories. This has benefits in terms of simplicity, and some find that continuum of attachment better captures differences in attachment behaviours than categories.¹³² The Condon Maternal Attachment Questionnaire contains 19-questions about the mother's feelings towards the child (rather than her or the child's behaviours). Unlike the observation measures of behaviour, this takes just five minutes to complete, and so could be administered at scale or as part of wider surveys.¹³³ The full 19-question questionnaire is taken 20-25 weeks after the birth is internally consistent as a scale (it has a Cronbach's alpha of 0.66), and is replicable. The UK's Millennium Cohort Study first wave, with babies aged nine months, selected just six questions from this longer questionnaire, on the dimension of 'absence of hostility', which is less internally consistent as a scale (the Cronbach's alpha is only 0.44). A number of other self-report surveys are limited, in that their internal consistency drops off by the time children are six months – the time the earliest attachments develop.¹³⁴

The wider drawback of survey measures is that they based on subjective self-reports. New parents may report their own or their child's behaviours and feelings in way they think is socially desirable or expected, and so may not be as useful, for example, in picking up socio-economic and ethnic differences. Surveys of childcare workers or nursery teachers can limit the impact of these potential biases, but do not eliminate them.

¹³¹ Zero to Three, 2005

¹³² Fraley & Spieker, 2003

¹³³ Condon & Corkindale, 1998

¹³⁴ van Bussel, Spitz, & Demyttenaere, 2010

APPENDIX 2

Estimates of the effects of attachment on key outcomes in childhood

Outcome	Ages outcome measured	Effect size of association with attachment ¹	Observations (N) (and number of studies, k)	Studies
Externalising problems	6-12	0.31 ⁺ (0.34 with disorganised, 0.58 using clinical diagnoses of problems)	N=5,947, k=69	Fearon et al., 2010
Internalising problems	2-17	0.15 ⁺ – (0.17 in insecure-avoidant)	N=4,614, k=42	Groh et al., 2012
Language development	1-2	0.28 ⁺ (with insecure-avoidant).	N=303, k=32	IJzendoorn, Dijkstra, & Bus, 1995 Belsky & Fearon, 2002.
Executive Function	1-2	0.18	N=62	Bernier et al., 2012
Cognitive development (I.Q.)	1-10	0.09 ⁺	N=514, k=12	IJzendoorn et al., 1995
Obesity	4-5	0.26	N=6656	Anderson & Whitaker, 2011

¹ All statistically significant ($p < 0.05$) results, with appropriate controls, on selected outcomes for children. Specific types of attachment noted where relevant. Effect sizes indicate the size of the effect of attachment on a given outcome, expressed as a percentage of the standard deviation in that outcome. Effect sizes are **not** directly comparable across studies, as they reflect different measures, and different ages of development.

* Average association from meta-analysis.

REFERENCES

- Anderson, S. E., & Whitaker, R. C. (2011). Attachment security and obesity in US preschool-aged children. *Archives of Pediatrics & Adolescent Medicine*, 165(3), 235-42. doi:10.1001/archpediatrics.2010.292
- Andreassen, C., & West, J. (2007). Measuring socioemotional functioning in a national birth cohort study. *Infant Mental Health Journal*, 28(6), 627-646. doi:10.1002/imhj.20157
- Anderson, J. W., Johnstone, B. M., & Remley, D. T. (1999). Breast-feeding and cognitive development: A meta-analysis. *Am J Clin Nutr*, 70(4), 525-535.
- Anderson, S. E., Gooze, R. A., Lemeshow, S., & Whitaker, R. C. (2012). Quality of early maternal-child relationship and risk of adolescent obesity. *Pediatrics*, 129(1), 132-40. doi:10.1542/peds.2011-0972
- APPGSS (All Party Parliamentary Group on Sure Start), (2013) *1001 Days: The Importance of the conception to age two period*. London: All Party Parliamentary Group on Sure Start.
- Bakermans-Kranenburg, M., van IJzendoorn, M. H. & Juffer, F. (2003). Less is more: Meta-analyses of sensitivity and attachment interventions in early childhood. *Psychological Bulletin*, 129(2):195-215.
- Barlow, J., McMillan, A. S., Kirkpatrick, S., Ghate, D., Barnes, J., & Smith, M. (2010). Health-Led Interventions in the Early Years to Enhance Infant and Maternal Mental Health: A Review of Reviews. *Child and Adolescent Mental Health*, 15(4), 178-185. doi:10.1111/j.1475-3588.2010.00570.x
- Bartley, M., Head, J., & Stansfeld, S. (2007). Is attachment style a source of resilience against health inequalities at work? *Social Science & Medicine* (1982), 64(4), 765-75. doi:10.1016/j.socscimed.2006.09.03
- Belsky, J., & Fearon, R. (2002a). Early attachment security, subsequent maternal sensitivity, and later child development: Does continuity in development depend upon continuity of caregiving? *Attachment and Human Development*, 4, 361-387.
- Belsky, J., & Fearon, R. (2002b). Infant-Mother attachment security, contextual risk, and early development: A moderational analysis. *Development and Psychopathology*, 14, 293-310.
- Belsky, J., Hsieh, K., & Crnic, K. (1998). Mothering, Fathering and infant negativity antecedents of boys' externalizing problems and inhibition at age 3 years: differential susceptibility to rearing experience? *Development and Psychopathology*, 10, 301-19.
- Belsky, K., & Cassidy, J. (1994). Attachment: Theory and Evidence. In M. Rutter, & D. Hay, *Development Through Life* (pp. 373-402). Oxford, UK: Blackwell.
- Belsky, J. & Pluess, M. (2011) Differential susceptibility to long-term effects of quality of childcare on externalizing behavior in adolescence. *International Journal of Behavioral Development* vol. 36 (1) p. 2-10
- Benoit, D. (2004). Infant-parent attachment: Definition, types, antecedents, measurement and outcome. *Paediatrics & Child Health*, 9(8), 541-545.
- Bergman, K., Sarkar, P., Glover, V., & O'Connor, T.G. (2008). Quality of child-parent attachment moderates the impact of antenatal stress on child fearfulness. *Journal of*

Child Psychology and Psychiatry, and Allied Disciplines, 49(10), 1089-98.
doi:10.1111/j.1469-7610.2008.01987.x

- Bergman, K., Sarkar, P., Glover, V., & O'Connor, T.,G. (2010). Maternal prenatal cortisol and infant cognitive development: Moderation by infant-mother attachment. *Biological Psychiatry*, 67(11), 1026-32. doi:10.1016/j.biopsych.2010.01.002
- Berlin, L., Cassidy, J., & Appleyard, K. (2008). The Influence of Early Attachments on Other Relationships. In Cassidy, J. & Shaver, P (eds.) *Handbook of Attachment: Theory, Research, Clinical Applications*. New York: Guilford Press.
- Berlin, L. (2005). Interventions to Enhance Early Attachment. In L. Berlin, Y. Ziv, L. Amaya-Jackson, & M. Greenberg, *Enhancing Early Attachments: Theory, Research, Intervention, and Policy* (pp. 3-34). New York : The Guilford Press.
- Berlin, L. J., Brady-Smith, C., & Brooks-Gunn, J. (2002). Links between childbearing age and observed maternal behaviors with 14-month-olds in the early head start research and evaluation project. *Infant Mental Health Journal*, 23(1-2), 104-129. doi:10.1002/imhj.10007
- Bernier, A., Carlson, S. M., Deschânes, M., & Matte-Gagné C. (2012). Social factors in the development of early executive functioning: A closer look at the caregiving environment. *Developmental Science*, 15(1), 12-24. doi:10.1111/j.1467-7687.2011.01093.x
- Blanden, J., Gregg, P., & Macmillan, L. (2007). Accounting for Intergenerational Income Persistence: Noncognitive Skills, Ability and Education. *The Economic Journal*, 117(519), C43–C60. doi:10.1111/j.1468-0297.2007.02034.x
- Bono, E.D. & Rabe, B. (2012) *Breastfeeding and child cognitive outcomes: evidence from a hospital-based breastfeeding support policy*. University of Essex, ISER (Institute for Social and Economic Research) Working Paper 2012-29
- Bowlby, J. (1979). *The Making and Breaking of Affectional Bonds*. London: Routledge.
- Bowlby, J. (1988). *A Secure Base: Clinical Applications of Attachment Theory*. London: Routledge
- Bradbury, B., M. Corak, J. Waldfogel and E. Washbrook. (2012). Inequality in Early Child Outcomes. In J. Ermisch, M. Jäntti, & T. Smeeding (eds) *From Parents to Children: The Intergenerational Transmission of Advantage*. New York: Russell Sage Foundation.
- Brethenton, I. (2010). Fathers in Attachment Theory and Research: A review. *Early Child Development and Care*, 180 (1-2), 9-23.
- Britton, J. R., Britton, H. L., & Gronwaldt, V. (2006). Breastfeeding, sensitivity, and attachment. *Pediatrics*, 118(5), e1436-43. doi:10.1542/peds.2005-2916
- Brooks-Gunn, J., Berlin, L., & Fuligni, A. (2000). Early Childhood Intervention Programs: What about the family? In J. Shonkoff, & J. Meisels, *Handbook of Early Childhood Intervention* (Second ed., pp. 549-577). Cambridge: Cambridge University Press.
- Brooks-Gunn, J., Han, W.-J., & Waldfogel, J. (2010). First-year Maternal Employment and Child Development in the first 7 years. *Monographs of the Society for Research in Child Development*, 75(2), vii–ix. doi:10.1111/j.1540-5834.2010.00562.x
- Bywater, T., Hutchings, J., Daley, D., Whitaker, C., Yeo, S. T., Jones, K., ... Edwards, R. T. (2009). Long-term effectiveness of a parenting intervention for children at risk of

- developing conduct disorder. *The British Journal of Psychiatry: The Journal of Mental Science*, 195(4), 318–24. doi:10.1192/bjp.bp.108.056531
- Carneiro, P., Crawford, C., & Goodman, A. (2011). *The Impact of Early Cognitive and Non-cognitive Skills on Later Outcomes*. Presentation to American Economic Association Conference 2012.
- Cassidy, J. (1994). Emotion Regulation: Influences of attachment relationships . In Fox, N. *The Development of Emotional Regulation* (Vol. 59, pp. 228-249). Monographs of the society for Research in Child Development.
- Child-Parent Psychotherapy. Website. Retrieved September 22, 2013, from <http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=194>
- Cicchetti, D., Rogosch, F. A., & Toth, S. L. (2006). Fostering secure attachment in infants in maltreating families through preventive interventions. *Development and Psychopathology*, 18(3), 623-49.
- Circle of Security International. Website. Retrieved September 22, 2013, from <http://circleofsecurity.net/seminars/intensive-training/>
- Cohen, N.J., Loikasek, M., Muir, E., Muir, R., & Parker, C.J. (2002). Six-month follow-up of two mother-infant psycho-therapies: Convergence of therapeutic outcomes. *Infant Mental Health Journal*, 23, 4361–4380.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159
- Condon, J. T., & Corkindale, C. J. (1998). The assessment of parent-to-infant attachment: Development of a self-report questionnaire instrument. *Journal of Reproductive and Infant Psychology*, 16(1), 57–76. doi:10.1080/02646839808404558
- Conway, A. M., & McDonough, S. C. (2006). Emotional resilience in early childhood: Developmental antecedents and relations to behavior problems. *Annals of the New York Academy of Sciences*, 1094, 272-7. doi:10.1196/annals.1376.033
- Dexter, C. A., Wong, K., Stacks, A. M., Beeghly, M., & Barnett, D. (2013). Parenting and attachment among low-income African American and Caucasian preschoolers. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, doi:10.1037/a0033341
- Diener, M. L., Nievar, M. A., & Wright, C. (2003). Attachment Security Among Mothers and Their Young Children Living in Poverty. *Merrill-Palmer Quarterly*, 49(2), 154–182.
- Drake, K., Belsky, J., & Fearon, R. M. P. (2013). From early attachment to engagement with learning in school: The role of self-regulation and persistence. *Developmental Psychology*, doi:10.1037/a0032779
- Duncan, G. & Murnane, R. (eds.) (2011) *Wither Opportunity? Rising Inequality, Schools and Children's Life Chances*. New York: Russell Sage Foundation
- Egeland, B., Sroufe, A., Carlson, E., & Collins, A. (2005). *The Development of the Person: the Minnesota study of risk and adaptation from birth to adulthood*. New York: Guilford Press.
- Essex M.J., Klein M.H., Cho E., Kalin N.H. (2002) Maternal stress beginning in infancy may sensitize children to later stress exposure: Effects on cortisol and behavior. *Biological Psychiatry*.2:776–784

- Evangelou, M., Brooks, G., & Smith, S. (2007). The Birth to School Study: evidence on the effectiveness of PEEP, an early intervention for children at risk of educational under-achievement. *Oxford Review of Education*, 33(5), 581–609. doi:10.1080/03054980701476477
- Fearon, R. P., Bakermans-Kranenburg, M., van Ijzendoorn, M., H., Lapsley, A., & Roisman, G. I. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. *Child Development*, 81(2), 435-56. doi:10.1111/j.1467-8624.2009.01405.x
- Fearon, P., & Belsky, J. (2011). Infant-mother attachment and the growth of externalizing problems across the primary-school years. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 52(7), 782-91. doi:10.1111/j.1469-7610.2010.02350.x
- Flaherty, S. C., & Sadler, L. S. (2011). A review of attachment theory in the context of adolescent parenting. *Journal of Pediatric Health Care : Official Publication of National Association of Pediatric Nurse Associates & Practitioners*, 25(2), 114-21. doi:10.1016/j.pedhc.2010.02.005
- Fraley, R. C., & Spieker, S. J. (2003). Are infant attachment patterns continuously or categorically distributed? A taxometric analysis of strange situation behavior. *Developmental psychology*, 39(3), 387–404.
- Galindo-Rueda, F. and Vignoles, A. (2005) The declining relative importance of ability in predicting educational attainment. *The Journal of Human Resources*, 40(2). pp. 335-353.
- Gambaro, L., Stewart, K., & Waldfogel, J. (2013). A question of quality: Do children from disadvantaged backgrounds receive lower quality early years education and care in England? Centre for the Analysis of Social Exclusion, London School of Economics
- Gerhardt, S. (2004). *Why Love Matters: How affection shapes a baby's brain*. Hove, Sussex: Brunner-Routledge.
- Gilliom, M., & Shaw, D. (2004). Co-development of externalizing and internalizing problems in early childhood. *Development and Psychopathology*, 16, 313-334.
- Gregg, P. A., Propper, C., & Washbrook, E. V. (2008). *Understanding the Relationship between Parental Income and Multiple Child Outcomes: a decomposition analysis*. Centre for Market and Public Organisation, University of Bristol.
- Groh, A. M., Roisman, G. I., van Ijzendoorn, M. H., Bakermans-Kranenburg, M. J., & Fearon, R. P. (2012). The significance of insecure and disorganized attachment for children's internalizing symptoms: a meta-analytic study. *Child development*, 83(2), 591–610. doi:10.1111/j.1467-8624.2011.01711.x
- Grossman, K., & Grossman, K. (2009). *The Impact of Attachment to Mother and Father and Sensitive Support of Exploration at an Early Age on Children's Psychological Development through Young Adulthood*. Centre of Excellence in Early Childhood Development.
- Grossmann, K., & Waters, E. (2005). *Attachment from Infancy to Adulthood: The major longitudinal studies*. New York: Guildford Press.
- Gutman, L., Brown, J., & Akerman, R. (2009). *Nurturing Parenting Capability: The Early Years*. Institute of Education, University of London. London: Centre for Research on the Wider Benefits of Learning.

- Gutman, L.M. & Feinstein, L. (2007) *Parenting Behaviours and Children's Development from Infancy to Early Childhood: Changes, Continuities, and Contributions*. Centre for Research into the Wider Benefits of Learning. London: Institute of Education Retrieved June 18, 2013, from <http://www.learningbenefits.net/Publications/ResReps/ResRep22.pdf>
- Hamilton, C. E. (2000). Continuity and Discontinuity of Attachment from Infancy through Adolescence. *Child Development*, 71(3), 690–694. doi:10.1111/1467-8624.00177
- Hart, B., & Risley, T. R. (2002). The Early Catastrophe. The 30 Million Word Gap. *American Educator*, 27(1), 4–9.
- Heckman, J. & Kautz, T. (2013) *Fostering and Measuring Skills: Interventions That Improve Character and Cognition*. NBER Working Paper No. 19656
- Hoeve, M., Stams, G. J. J. M., van der Put, C., E., Dubas, J. S., van der Laan, P., H., & Gerris, J. R. M. (2012). A meta-analysis of attachment to parents and delinquency. *Journal of Abnormal Child Psychology*, 40(5), 771-85. doi:10.1007/s10802-011-9608-1
- Hoffman, K. T., Marvin, R. S., Cooper, G., & Powell, B. (2006). Changing toddlers' and preschoolers' attachment classifications: The circle of security intervention. *Journal of Consulting and Clinical Psychology*, 74(6), 1017-26. doi:10.1037/0022-006X.74.6.1017
- Howard, K., Martin, A., Berlin, L. J., & Brooks-Gunn, J. (2011). Early mother-child separation, parenting, and child well-being in Early Head Start families. *Attachment & human development*, 13(1), 5–26. doi:10.1080/14616734.2010.488119
- Hrdy, S. B. (2011). *Mothers and Others: The evolutionary origins of mutual understanding*. Belknap Press.
- Impetus-PEF (2013) OXPIP's Performance Data: Overview and Insights. SlidePack for Discussion.
- Jansen, J., Weerth, C., & Riksenwalraven, J. (2008). Breastfeeding and the mother-infant relationship: A review. *Developmental Review*, 28(4), 503-521. doi:10.1016/j.dr.2008.07.001
- Kiernan, K. E., & Huerta, M. C. (2008). Economic deprivation, maternal depression, parenting and children's cognitive and emotional development in early childhood. *The British Journal of Sociology*, 59(4), 783–806. doi:10.1111/j.1468-4446.2008.00219.x
- Kochanska, G., & Kim, S. (2013). Early attachment organization with both parents and future behavior problems: From infancy to middle childhood. *Child Development*, 84(1), 283-96. doi:10.1111/j.1467-8624.2012.01852.x
- Kok, R., Linting, M., Bakermans-Kranenburg, M., van Ijzendoorn, M., H., Jaddoe, V. W. V., Hofman, A., . . . Tiemeier, H. (2013). Maternal sensitivity and internalizing problems: Evidence from two longitudinal studies in early childhood. *Child Psychiatry and Human Development*, doi:10.1007/s10578-013-0369-7
- Korja, R., Latva, R., & Lehtonen, L. (2012). The effects of preterm birth on mother-infant interaction and attachment during the infant's first two years. *Acta Obstetrica Et Gynecologica Scandinavica*, 91(2), 164-73. doi:10.1111/j.1600-0412.2011.01304.
- Madigan, S., Bakermans-Kranenburg, M., Van Ijzendoorn, M., H., Moran, G., Pederson, D. R., & Benoit, D. (2006). Unresolved states of mind, anomalous parental behavior, and

- disorganized attachment: A review and meta-analysis of a transmission gap. *Attachment & Human Development*, 8(2), 89-111. doi:10.1080/14616730600774458
- Marcus, R. F., & Sanders-Reio, J. (2000). The influence of attachment on school completion. *School Psychology Quarterly*, 16(4), 427-44.
- McLaughlin, K. a., Zeanah, C. H., Fox, N. a., & Nelson, C. a. (2012). Attachment security as a mechanism linking foster care placement to improved mental health outcomes in previously institutionalized children. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 53(1), 46-55. doi:10.1111/j.1469-7610.2011.02437.x
- Mehler, K., Wendrich, D., Kissgen, R., Roth, B., Oberthuer, A., Pillekamp, F., & Kribs, A. (2010). Mothers seeing their VLBW infants within 3 hours after birth are more likely to establish a secure attachment behavior: Evidence of a sensitive period with preterm infants? *Journal of Perinatology*, 31(6), 404-410. doi:10.1038/jp.2010.139
- Mensah, F. K., & Kiernan, K. E. (2010). Parents' mental health and children's cognitive and social development: families in England in the Millennium Cohort Study. *Social Psychiatry and Psychiatric Epidemiology*, 45(11), 1023-35. doi:10.1007/s00127-009-0137-y
- Mesman, J., van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2012). Unequal in Opportunity, Equal in Process: Parental Sensitivity Promotes Positive Child Development in Ethnic Minority Families. *Child Development Perspectives*, 6(3), 239-250. doi:10.1111/j.1750-8606.2011.00223.x
- Murray, A. D., & Yingling, J. L. (2000). Competence in language at 24 months: Relations with attachment security and home stimulation. *The Journal of Genetic Psychology*, 161(2), 133-40. doi:10.1080/00221320009596700
- National Children's Bureau (NCB) (2013) *Partnerships for a Better Start: Perspectives on the role of Children's Centres*. National Children's Bureau Report. Retrieved from: http://www.ncb.org.uk/media/1092182/partnerships_for_a_better_start.pdf
- Nepomnyaschy, L & Waldfogel, J (2007) Paternity leave and fathers' involvement with their young children, *Community, Work & Family*, 10:4, 427-453, DOI: 10.1080/13668800701575077
- NICE (National Institute for Clinical Excellence) (2012). *Social and Emotional Wellbeing: Early Years: Public Health Guidance*. NHS NICE Public Health Guidance 40 Retrieved from: guidance.nice.org.uk/ph40
- NICHHD. (2006). Infant-mother attachment classification: Risk and protection in relation to changing maternal caregiving quality. *Developmental Psychology*, 42(1), 38-58. doi:10.1037/0012-1649.42.1.38
- O'Connor, E., Collins, B. A., & Supplee, L. (2012). Behavior problems in late childhood: The roles of early maternal attachment and teacher-child relationship trajectories. *Attachment & Human Development*, 14(3), 265-88. doi:10.1080/14616734.2012.672280
- Olds, D. (2005). The Nurse-Family Partnership: Foundations in Attachment Theory and Epidemiology. In L. Berlin, Y. A.-J. Ziv, & M. Greenberg, *Enhancing Early Attachments: Theory, Research, Intervention, and Policy* (pp. 217-250). New York : The Guildford Press.

- Owens, E., & Shaw, D. (2003). Poverty and Early Child Adjustment. In S. Luther (Ed.), *Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities* (pp. 267–292). Cambridge University Press.
- Ramchandani, P. G., Domoney, J., Sethna, V., Psychogiou, L., Vlachos, H., & Murray, L. (2013). Do early father-infant interactions predict the onset of externalising behaviours in young children? Findings from a longitudinal cohort study. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *54*(1), 56-64. doi:10.1111/j.1469-7610.2012.02583.x
- Roisman, G. I., Susman, E., Barnett-Walker, K., Booth-LaForce, C., Owen, M. T., Belsky, J., . . . Steinberg, L. (2009). Early family and child-care antecedents of awakening cortisol levels in adolescence. *Child Development*, *80*(3), 907-20. doi:10.1111/j.1467-8624.2009.01305.x
- Rutgers, A. H., van Ijzendoorn, M.,H., Bakermans-Kranenburg, M., Swinkels, S. H. N., van Daalen, E., Dietz, C., . . . van Engeland, H. (2007). Autism, attachment and parenting: A comparison of children with autism spectrum disorder, mental retardation, language disorder, and non-clinical children. *Journal of Abnormal Child Psychology*, *35*(5), 859-70. doi:10.1007/s10802-007-9139-y
- Rutter, M. (1994). Stress Research: Accomplishments and Tasks Ahead. In R. J. Haggerty et al (Eds.), *Stress, Risk and Resilience in Children and Adolescents. Processes, mechanisms and interventions*, (pp.354 -386). Cambridge: Cambridge University Press.
- Sacker, A., Kelly, Y., Iacovou, M., Cable, N., & Bartley, M. (2013). Breast feeding and intergenerational social mobility: what are the mechanisms? *Archives of disease in childhood*, archdischild–2012–303199–. doi:10.1136/archdischild-2012-303199
- Scott, S. (2003). Parenting Programmes: What Works? Some UK evidence. Presentation to University of Oxford.
- Shaw, D. S., & Vondra, J. I. (1995). Infant attachment security and maternal predictors of early behavior problems: A longitudinal study of low-income families. *Journal of Abnormal Child Psychology*, *23*(3), 335-57.
- Shmueli-Goetz, Y., Target, M., Fonagy, P., & Datta, A. (2008). The child attachment interview: A psychometric study of reliability and discriminant validity. *Developmental Psychology*, *44*(4), 939-56. doi:10.1037/0012-1649.44.4.939
- Shonkoff, J. P. (2007). A science-based framework for early childhood policy the importance of viewing the needs of young children in a broad context. *Child Development*, *81*(1), 357-67. doi:10.1111/j.1467-8624.2009.01399.x
- Shonkoff, J. P. (2010). Building a new biodevelopmental framework to guide the future of early childhood policy. *Child Development*, *81*(1), 357–67. doi:10.1111/j.1467-8624.2009.01399.x
- Shonkoff, J. P., & Garner, A. S. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, *129*(1), e232-46. doi:10.1542/peds.2011-2663
- Slade, A., Slader, L., & Mayes, L. (2007). Minding the Baby: Enhancing Parental Reflective Functioning in a Nurse/Mental Health Home Visiting Program. In L. J. . Berlin, Y. Ziv, L. Amaya-Jackson, & M. Greenberg (Eds.), *Enhancing Early Attachments: Theory Research, Intervention, and Policy* (pp. 152–177). New York: The Guilford Press.

- Spencer, J., Tucker, J. Cox, L., Sell, A. (2012) Evaluation Report for OXPIP's clinical work, 1st April 2011 to 31st March 2012: Oxford Parent Infant Project (OXPIP)
- Spieker, S., Nelson, E. M., & Condon, M. (2011). Validity of the TAS-45 as a measure of toddler-parent attachment: Preliminary evidence from early head start families. *Attachment & Human Development*, 13(1), 69-90. doi:10.1080/14616734.2010.488124
- Stansfeld, S., Head, J., Bartley, M., & Fonagy, P. (2008). Social position, early deprivation and the development of attachment. *Social Psychiatry and Psychiatric Epidemiology*, 43(7), 516-26. doi:10.1007/s00127-008-0330-4
- Steele, H., Steele, M., & Fonagy, P. (1996). Associations among attachment classifications of mothers, fathers and their infants. *Child Development*, 67 (2), 541-55.
- Stewart, K. (2013). *Labour's record on the under fives*. Social Policy in a Cold Climate Report, London School of Economics, Center for the Analysis of Social Exclusion
- Story, M., Kaphingst, K. M., & French, S. (2006). The role of schools in obesity prevention. *The Future of Children*, 16(1), 109–42.
- Sylva, K., Melhurish, E., Sammons, P., Siraj-Blatchford, I., & Taggart, B. (2004). *The Effective Provision of Pre-School Education (EPPE): Final report of the pre-school phase*. London: Institute for Education.
- Tanaka, S. & Waldfogel, J (2007) Effects of parental leave and work hours on fathers' involvement with their babies, *Community, Work & Family*, 10:4, 409-426,DOI: 10.1080/13668800701575069
- Teti, D. M., Gelfand, D. M., Messinger, D. S., & Isabella, R. (1995). Maternal depression and the quality of early attachment: An examination of infants, preschoolers, and their mothers. *Developmental Psychology*, 31(3), 364–376. doi:10.1037//0012-1649.31.3.364
- The Incredible Years. (2013). The Parent Toddler Program. Retrieved September 22, 2013, from <http://incredibleyears.com/programs/parent/toddler-curriculum/>
- Thompson, R. (2008). Early Attachment and Later Development: Familiar Questions, New Answers. In P. Cassidy, J. Shaver, *The Handbook of Attachment: Theory, Research, and Clinical Applications* (Vol. Second, pp. 348-365). New York, NY, USA: Guilford Publications.
- Thompson, R. (2000). The Legacy of Early Attachment. *Child Development*, 71 (1), 145-52.
- Toth, S. L., Rogosch, F. A., Manly, J. T., & Cicchetti, D. (2006). The efficacy of toddler-parent psychotherapy to reorganize attachment in the young offspring of mothers with major depressive disorder: A randomized clinical trial. *Journal of Consulting and Clinical Psychology*, 74, 1006-1016.
- Tough, P. (2012). *How Children Succeed: Grit, Curiosity and the Hidden Power of Character*, Mariner Books.
- van Bussel, J. C. H., Spitz, B., & Demyttenaere, K. (2010). Three self-report questionnaires of the early mother-to-infant bond: reliability and validity of the Dutch version of the MPAS, PBQ and MIBS. *Archives of Women's Mental Health*, 13(5), 373–84. doi:10.1007/s00737-009-0140-z

- van IJzendoorn, M.,H., Rutgers, A. H., Bakermans-Kranenburg, M., Swinkels, S. H. N., van Daalen, E., Dietz, C., . . . van Engeland, H. (2007). Parental sensitivity and attachment in children with autism spectrum disorder: Comparison with children with mental retardation, with language delays, and with typical development. *Child Development*, *78*(2), 597-608. doi:10.1111/j.1467-8624.2007.01016.x
- van IJzendoorn, M. H., Vereijken, C. M. J. L., Bakermans-Kranenburg, M. J., & Riksen-Walraven, J. M. (2004). Assessing attachment security with the Attachment Q Sort: meta-analytic evidence for the validity of the observer AQS. *Child Development*, *75*(4), 1188–213. doi:10.1111/j.1467-8624.2004.00733.x
- van IJzendoorn, ,M.H., Schuengel, C., & Bakermans-Kranenburg, M. (1999). Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants, and sequelae. *Development and Psychopathology*, *11*(2), 225-49.
- van IJzendoorn, M. H., Dijkstra, J., & Bus, A. G. (1995). Attachment, Intelligence, and Language: A Meta-analysis. *Social Development*, *4*(2), 115–128. doi:10.1111/j.1467-9507.1995.tb00055.x
- van IJzendoorn, ,M.H., Juffer, F., & Duyvesteyn, M. G. (1995). Breaking the intergenerational cycle of insecure attachment: A review of the effects of attachment-based interventions on maternal sensitivity and infant security. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, *36*(2), 225-48.
- van Lier, P. A. C., Vitaro, F., Barker, E. D., Brendgen, M., Tremblay, R. E., & Boivin, M. (2012). Peer victimization, poor academic achievement, and the link between childhood externalizing and internalizing problems. *Child Development*, *83*(5), 1775–88. doi:10.1111/j.1467-8624.2012.01802.x
- Wolke, D., Eryigit-Madzwamuse, S., & Gutbrod, T. (2013). Very preterm/very low birthweight infants' attachment: Infant and maternal characteristics. *Archives of Disease in Childhood.Fetal and Neonatal Edition*, doi:10.1136/archdischild-2013-303788
- Wu, T., Dixon, W. E., Dalton, W. T., Tudiver, F., & Liu, X. (2010). Joint effects of child temperament and maternal sensitivity on the development of childhood obesity. *Maternal and Child Health Journal*, *15*(4), 469-477. doi:10.1007/s10995-010-0601-z
- Yale Nursing Matters. (2010). Minding the Baby: Program Helps Young Families in Crucial Early Stage of a Baby's Life. *Yale Nursing Matters*, *10*(2), 8–9.
- Yueng, J., Linver, M., & Brooks-Gunn, J. (2002). How money matters for young children's development: Parental investment and family processes. *Child Development* , *73*, 1861-1879.
- Waldfoegel, J. & Washbrook, E. (2011) Income Related Gaps in School Readiness in the U.S. and the U.K. In Erikson, R., Jäntti, M. & Smeeding, T. (eds.). *Persistence, Privilege, and Parenting: The comparative study of intergenerational mobility*. New York: Russell Sage Foundation, pp. 175 - 208
- Waldfoegel, J. & Washbrook, E. (2010). Low Income and Cognitive Development in the UK: A report for the Sutton Trust. London: The Sutton Trust.
- Washbrook, E. & Waldfoegel, J. (2012) Achievement gaps in childhood: A cross-national perspective, Presentation to the Sutton Trust/ Carnegie Corporation Summit on Social Mobility, May 2012

Zero to Three. (2005). Diagnostic classification of mental health and developmental disorders of infancy and early childhood. *The National Child Traumatic Stress Network (NCTSN)*. Retrieved from <http://www.nctsn.org/content/parent-infant-relationship-global-assessment>