

# Nurturing Natures

Attachment and Children's Emotional, Sociocultural and Brain Development



**SAMPLE  
CHAPTER**

GRAHAM MUSIC

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# **Introduction: the blind men and the elephant**

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This is a book about how a human baby, that tiny bundle of biological inheritances, develops into a psychological, emotional, and social being. I describe many of the increasingly rigorous yet exciting research findings of recent years. This is a big and complex subject, and our understanding of how people develop from infancy into adulthood, and how early beginnings affect later functioning, has grown beyond all measure. Although there is so much written on the subject, this is mainly scattered in a vast array of scholarly books, chapters, and journal articles, and hopefully much of this research is distilled here into a digestible form that can provide a sound knowledge base, and also a jumping off point for further exploration.

### **Nature and nurture**

The question of the relative importance of nature or nurture is a theme that runs throughout this book. Whether people arrive with ready-formed personalities, or are more influenced by the experiences they have, has been hotly debated as far back as the Ancient Greeks. In the post-war period many argued that humans are 'blank slates' who could be moulded by parental and other influences (Pinker, 2002). An opposing view, increasingly made by those who argue that genetic influences are primary, is that parents have little influence on children's development (Harris, 2009). Both views are too simplistic and we now know that neither nature nor nurture is dominant. Children are all born with different **temperaments** and genetic endowments, and if 100 children are subjected to similar influences then each will respond in different ways. Yet we will still see common patterns emerge. For example, children reared in poor-quality orphanages who receive little human contact are less likely than most to develop good language skills, to build secure attachments to adults, or to have a strong understanding of the minds and emotions of others.

Throughout this book I keep in the foreground the fact that humans always develop within a context. The psychoanalyst Donald Winnicott (1996) famously stated that 'there is no such thing as a baby', by which he meant that we can only ever understand a baby in relation to the minds and behaviours of those around it. Similarly systemic thinkers have long argued that an individual is only understandable in relation to his or her context (Bateson, 1972). I try to bear in mind the way human development needs to be understood from a bioecological perspective (Bronfenbrenner, 2004), taking account of how individuals are always influenced by their biological inheritance, but also by the various systems they are nested in, whether the micro-systems around the child such as family, school or neighbourhood, or larger societal macro-systems.

We are increasingly aware of the complexity of contexts and the non-linear ways in which development takes place. From the moment of sexual intercourse, and indeed before, there are trains of influences. At conception there is straight away a genetic inheritance from both parties. The newly conceived foetus carries all kinds of biological predispositions but is interacting with its environment, and influencing and being influenced by it, always in a bidirectional way. Depending on one's culture the developing foetus will hear and remember different sounds *in utero*, will imbibe different smells, and be subject to different rhythms. Some foetuses share the womb with a twin, which again is a different experience to most foetuses. If the mother's state of

mind is highly anxious then stress hormones cross the placenta and affect the unborn baby. Genetic inheritances combined with prenatal influences might lead some babies to be very fragile and hard to sooth at birth, and others to be more robust or calm. Parents too can be more or less fragile, and live in more or less stable or supportive environments, and the meeting of each mother–baby pair results in unique relationship patterns and potentials.

This book will examine what makes personality development understandable and even predictable. So much can influence later outcomes. Are there older siblings in place who affect an infant’s development? Is the baby raised in a culture where there are constantly many adults around, like in some hunter–gatherer societies, or at home with an isolated, inexperienced, and unhappy mother? Is this baby born into a culture that believes that infants should be carried all the time, or one that believes that babies should be placed at the end of the garden in a pram? Is the baby long awaited and desired, or the result of an accident? If the mother is not very confident then is there an experienced father, or friend or grandparent around? Are the parents relatively affluent, or on the poverty line, and do they live in a prosperous area or in inner city ghetto where violence is rife?

In recent years our understanding of such trajectories has increased hugely. However trajectories rarely follow a linear path where X always causes Y, and research these days often follows a more ‘fuzzy’ logic (Kosko, 1993). One can no longer straightforwardly ask, for example, if childcare is a good thing for young children. We have to ask what kind of childcare (whether nurseries, nannies or childminders), of what quality, for what kind of children, from which kinds of background, at what age, and also whether a form of childcare affects either cognitive or emotional development. Each factor added into the equation adds further complexity but aids more accurate understanding.

In terms of nature and nurture we will see that genes are important but that experiences turn genetic potentials on or off. To take one example, one of two variants of a particular gene predisposes people to be more novelty seeking and increases the likelihood of a child developing **attention-deficit hyperactivity disorder (ADHD)** (Belsky, Bakermans-Kranenburg, & van IJzendoorn, 2007a). Thus biological inheritance is extremely influential, but it does not hold all the cards. If one has this variant of the gene and receives insensitive rather than sensitive parenting then one is much more likely to develop ADHD than if one receives sensitive parenting. Genetic inheritance increases the likelihood of ADHD but the form of parenting determines whether particular genetic potentials become a reality. We will see how experience and genes interact to produce very specific results.

## Multiple perspectives

Partly because of the many perspectives that are now needed to understand human development, this subject reminds me of the ancient Indian fable of the blind men and the elephant. In this, each blind man touched a different part of the elephant’s body, such as the tusk, trunk or leg, and each disagreed about what the elephant was *really* like. One blind man felt the elephant’s leg and insisted that the elephant *is* like a pillar, while another felt its ear and *knew* that the elephant was like a hand fan. The same can

## INTRODUCTION

happen when thinking about children's development. We now understand much more about neuroscience and how different experiences affect brain development. Yet this knowledge is only one small part of the story. Anthropologists and historians can teach us how childrearing varies across cultures and epochs, and other vital perspectives such as attachment theory, developmental and social psychology, mother–infant interaction, psychoanalytic and systemic theory, behavioural and cognitive science, genetics and evolutionary theory, all illuminate other aspects of the mythical elephant.

I also at times cite research on animals such as rats or monkeys. Because something is true of another animal does not mean that it is also true for humans. Typical is the misinterpretation of research about bonding; grey-lag geese might bond with the first creature they see after birth but humans do not. Yet I do quote animal research if I think it illuminates human development, such as that the response to stress in the part of the brain called the **amygdala** is very similar in humans and most mammals (e.g., LeDoux, 1998).

Lack of space stops me describing in detail the various research methods used in the studies I quote. I hope it will become clear how researchers use extraordinary ingenuity to devise experiments, and for those interested in the detail of research methodology I would point to more specialist texts (e.g., Breakwell, Hamond, Fife-Schaw, & Smith, 2006; Coolican, 2009). For example, even though babies cannot speak, researchers can work out what infants prefer, such as that they favour human faces, and we learn this by watching which pictures babies look at most, or by physiological tests such as measuring heart rates. Some kinds of research look at the fine grain of childhood experiences, such as examining the physical response in babies who unexpectedly lose their mother's attention. Much of this is **qualitative**, looking at people's experience, using observation and interpreting meanings. Other research is more 'macro' and **quantitative**, often examining huge samples of data using complex calculations in longitudinal studies, such as to work out the particular effects of earlier experiences, maybe using experimental models or statistical designs.

Some research is in naturalistic settings, such as seeing how language develops in family homes, while other research is undertaken via artificial experiments in laboratories, such as looking at what parts of the brain light up when people are shown alarming pictures. Each form of knowledge can add something extra to the overall picture. We can try to understand particular experiences, such as that most 1-year-olds cry when their mothers leave them on their own. We also need to understand how this links to broader understandings, such as why it is that not all 1-year-olds cry when left. We might find that some babies are born temperamentally prone to cry more than others, but also that some babies become used to being alone and learn not to cry out. From here one can look at samples, say of the non-crying babies, and find out if similar early experiences generally have a similar long-term effect. Each kind of research has its strengths and flaws. Some think that microstudies are too small to generalise from, and others that huge meta-analyses of factors, such as the effect of emotional neglect across different cultures, do not really compare like-for-like phenomena. I have relied heavily on published **peer reviewed** articles, some of which no doubt could be critically 'deconstructed' methodologically, while others might in time be superseded or regarded from different angles. Hopefully on balance the research quoted in this book is meaningful, of use and is as reliable as possible.

Expectations and unconscious biases of researchers can also influence results. A classic example is how experimenters who were told (wrongly) that the rats they were using for experiments were bred to be good with mazes. These rats in supposedly objective tests ended up navigating mazes far better than those whose experimenters were told the opposite (Rosenthal & Fode, 1963). The observer often affects the observed, especially when the observed is alive and sentient. Another early experiment (Rosenthal & Jacobson, 1968) exemplifies this point: teachers were told that the children in their class had been tested and some children were predicted to have a learning spurt. In fact there was no truth to this ascription and the children had been randomly labelled. The labelling had such an effect on the teachers' nonconscious expectations that these particular children showed a huge rise in their achievement levels. Because such subtle biases can creep into research practice, a degree of caution is always sensible.

It is also possible to do research using the wrong assumptions. A good example was early research in America in the 1950s which supposedly 'proved' that having a father present in a boy's life made them more masculine (Leichty, 1978). The evidence seemed to be there. Researchers developed a measure for masculinity and found that sons whose fathers spent time with them had more of these masculine traits. These days boys whose fathers spend more time with them are often more socially skilled and take on less rigid gender roles (Barker, Nascimento, Segundo, & Pulerwitz, 2004). Children of course like to emulate those they love and admire, which in America in the 1950s was often a model of tough masculinity that has less purchase today. The original researchers maybe answered the question as best they could but used the wrong assumptions. Erica Burman (2007) in particular has helpfully urged a critical approach to developmental research and has cautioned against a use of research that has normative and moral assumptions hidden in it. Ideas about what is 'normal' all too often hide cultural and other biases.

It is never helpful to uncritically accept research methodologies and I would always encourage reading with a critical eye. I take it for granted that beliefs about what is true can change over time and that scientists might only be able see one version of reality (Kuhn, 1970), often a culturally dominant one (Feyerabend, 1993). I also agree with Popper's (2002) idea that we 'should' always be testing our ideas and that good scientists are always prepared to be proven wrong. I work on the assumption that one can honestly seek to get nearer what seems truer, according to the definitions of truth we currently use. Our knowledge is always provisional; we are all like the blind men groping in the dark. However, my main interest is in seeing what we *can* learn from the research rather than primarily deconstructing all the findings. Nowadays we have more information from different fields that helps us grope for an increasingly realistic view with more assurance.

There are areas I have inevitably had to leave out of this book. I do not describe, except peripherally, children's cognitive development, as space would not permit this, and I believe that this area is more than adequately dealt with in most traditional developmental psychology texts. Similarly, this book is not about physical development, and other areas also might have had more attention, such as maybe moral development. I have attempted to keep the emphasis primarily on emotional, social, and psychobiological issues.

## Un-nurtured children, feral children, and the lack of human input

From conception the developing human is influenced by and is influencing its environment. Some children receive loving, attuned care, while others suffer violence or abuse, and a few other children receive little human input and are left much to their own devices. Humans have partly survived so successfully through their extraordinary versatility in adapting to different environments. Just as people thrive in Arctic snow, in oxygen deprived high altitudes and in Saharan deserts, so too can humans survive and develop while receiving loving, empathic care, or strict and regimented care, or even abuse or neglect. The developing brain will grow differently in each of these situations. This is called **experience dependence**, which suggests that brain development differs depending on the kinds of experiences one has.

There is also something called **experience expectance**, which refers to input that humans are primed to expect, and without which they do not thrive. Food, water, and oxygen are the obvious physiological examples. A kitten needs light for its visual capacities to come on-stream and if blindfolded at a critical time in its development it will never see normally (Hubel & Wiesel, 1970). Human infants similarly need certain experiences in order for capacities like language to come fully online. This did not happen for some children who have been studied in depth who tragically lived in the worst institutional orphanages (Rutter et al., 2007). I will later describe research showing how only some of these ‘caught up’ with their peers, while others fell behind in language, social abilities, and physical development. Often these children had been left alone for most of their young lives, and film footage showed shocking pictures of infants staring into space and rocking themselves.

This suggests that particular experiences are needed to make people ‘properly’ human, and challenges beliefs that there can be ‘noble savages’ (Rousseau, 1985) who thrive untainted by the influences of civilisation. The absence of expected human contact can have devastating consequences. Many such children are described as wild or ‘feral’, which often means something like ‘having no civilising influence’ or ‘like animals’. Such children lack what most experience from the first moments of life, such as basic care and actively learning from close relationships. Children imbibe and become part of cultural rules and ways of being, what the social theorist Bourdieu (1977) calls the *habitus*. However, some children have less, or very little, human life to adapt to and learn from.

Over the centuries descriptions have abounded of ‘wild’ children, supposedly reared without human input, some reportedly even living alongside animals. Although such stories are more anecdotal than scientific, there are enough of them to put together some consistent themes. A typical example is Peter the Wild Boy, found in woods near Hanover in 1725. Descriptions of him were rife with statements about whether he was ‘human or beast’. He climbed trees, gorged himself on meat with bare hands, had no sense of morality, no ability to speak and no capacity to take seriously another’s point of view. Similarly Kamala and Amala were purportedly found living in a wolves’ den in India, and other famous accounts include Caspar Hauser, or Viktor the Wild Boy of Aveyron, who was described as ‘a disgusting, slovenly boy, affected with spasmodic, and frequently with convulsive motions . . . indifferent to everybody, and paying no regard to anything’ (Itard, 1802, p. 17). Although the accuracy of each

and every one of these stories cannot be guaranteed, putting them together with recent carefully investigated accounts and evidence from deprived orphans and other neglected children suggests that there is a consistent effect when children do not receive the experience expectant inputs needed to develop into cultural and social beings. Such children often never use language fully, despite huge efforts on the part of educators, and have only a rudimentary sense of their own and other people's feelings. Many steal and are quite without remorse. Such stories reveal that human development can take many forms, but that without certain kinds of experiences children fail to thrive. Exactly what is 'necessary' for someone to become human is controversial, and much that people assert is 'necessary' can be based on cultural beliefs or prejudice. Such questions will be at the heart of this book.

These findings raise another central theme of this book. To become a 'person', with what is often called a sense of self, requires large amounts of input from other people early in life, and an experience of ourselves as reflected back through the eyes and minds of those around us. Thus ironically a person's sense of self arises from the experience of being in the minds of others, without which it simply does not develop. Central to this book is the idea, illustrated by much of the research that I will describe, that one's sense of self is socially and co-constructed. Phillip Rochat puts it well when he writes (2009, p. 8) 'if there is such a thing as a self, it is not just interior to the individual but rather also at the intersection of the individual as he or she transacts with others'. Many of the following chapters will tease out this central idea in more detail.

## The chapters

The first few chapters each describe key elements in early development. Our journey begins with prenatal life, and the birth process. We will see what an active being a foetus is, learning and interacting, already a character forming, but also affected by the mother's state of mind. I next describe the newborn's pre-wired abilities to relate to other human beings, adapting and responding to the particular emotional environment it arrives in, whether loving or cold, happy or depressed. In Chapter 4 I describe the strategies even young infants must resort to when coping with difficult experiences such as neglect, using defensive states that can sometimes become character traits. We see that such strategies always occur within relational two-way processes, that different parenting affects children in different ways but similarly the kind of child one is can affect the parenting one receives. Then Chapter 5 describes how empathy and the capacity to understand other minds develop, what helps and hinders this, and particularly how having a carer interested in one's feelings and thoughts affects how a child makes sense of their own and other's emotions.

The next three chapters each take a subject which provides a lens through which much of the research in this book can be viewed. First in Chapter 6 attachment theory is described and in particular how different kinds of parental sensitivity give rise to children who form different kinds of attachments. Next, in Chapter 7 culture is given attention, and like attachment, an understanding of cultural differences needs attention in its own right but also is central in thinking about most topics. I examine the huge variation in childrearing practices across societies, and in particular between

cultures that expect a socially intertwined as opposed to more individualistic ways of living. In Chapter 8 the third area of theory, neuroscience is considered; a body of thought that has exploded in recent years, and here I focus in particular on how the brain's development is affected by experience, and the impact of trauma and **stress** on neuronal architecture and hormonal programming.

The next chapters each describe a further fundamental aspect of development. Chapter 9 focuses on language and how it is intertwined with emotional and social development. I outline the precursors of speech in the musicality of mother–infant communications, and how language acquisition and **Theory of mind** skills are closely connected. In Chapter 10 I look at how the past affects later experiences, and in particular I examine different kinds of memories, those that can be consciously recalled and others that are habitual ways of being that are learnt from past experiences. The controversial question of repressed memories also gets attention, and how memory can be notoriously unreliable. I look at children's play in Chapter 11 and what the capacity to play signifies about a child's development, as well as how playing also spurs development. I discuss the role of **symbolism** as well as the place of enjoyment and 'fun', and examine how the content of play reveals much about a child's psychological states. The final chapter in this section takes up another somewhat contentious area, that of gender differences. Here I tease out the relative roles of biological and social influences in determining gender identity, and the ways that boys and girls develop both similarly and differently.

There is a danger in a book like this that mothers are focused on too much, particularly as so much research about children focuses on how mothers interact with their infants. This can lead to blaming of mothers and criticism of parenting. Chapters 13–16 redress this balance by focusing on people other than mothers who are important in children's development. Attention is paid to how humans evolved to rear children in groups, with **alloparents** such as grandparents and adolescent girls supporting biological mothers. The impact of different kinds of childcare such as nurseries is also assessed. Next, in Chapter 14, I describe how children are influenced by peers and siblings, particularly as they move into middle childhood, as well as showing how humans are group animals, hugely influenced by those around them. Chapter 15 again stays away from mothers and discusses the roles that fathers play, describing cultural variations in fathering and considering whether there is anything distinctive that a father offers to a child's development, and what is lost when a father is not present. Adolescence is considered next, again a time when parents generally are becoming less central in a child's life. We see how adolescence relates to earlier childhood as well as being a distinctive phase, and I cast an eye on how the adolescent brain is developing fast and furiously.

As the book nears its end, I ask what impact early experiences really have on later life trajectories. Chapter 17 takes on the less pleasant topic of how traumatised and neglected children are affected by their experiences and what this means for their later development. A distinction between trauma and neglect is outlined, and some variants, such as **disorganised attachment**, are focused on. Chapter 18 then moves on to examine **resilience**, and the role that good experiences play in fostering emotional well-being. Chapter 19 looks at exciting recent research about the relative roles of genes and environment, before I sum up and revisit the question of the longer-term effects of early experiences in the final chapter.

Reporting research is central to my task, and so this book needs to be accurate and reliable. However, the research I examine can rarely be read neutrally. Thinking about infancy, early childhood, parenting, or the birth process means raising issues that evoke intense passions and strong opinions, which stir up memories, wishes, regrets, and hurts, and inevitably makes it harder to read about these subjects purely factually. I try not to take sides about what are good or correct practices. This is less out of a belief in scientific neutrality and more from understanding how transient and fleeting scientific and moral certainties can be. I rather hope that the findings discussed here can illustrate the huge range of potential psychological and emotional development that an infant and child is capable of.

The questions posed in this book are not just academic ones. When politicians argue, for example, that fathers should spend more time with their children and that single parent families are not a good idea, we can examine the data and see whether such ideas have solid foundations. Similarly, research can illuminate the effects of childcare practices, or ways of interacting with children, which can then inform parents and professionals. Although this is not a 'how to' book, and does not give direct advice, I hope that the research will inform people's work with children and families, and in how services for them are organised. My place of work is the Tavistock Clinic in London, which for many decades has combined high-quality psychotherapy services with research and training for thousands of professionals. John Bowlby founded and developed attachment theory there, and it was a place that first developed trainings in child psychotherapy and family therapy in Britain. The kind of research quoted in this book fundamentally informs how professionals like myself approach our work.

Strong feelings are an inevitable part of learning about these aspects of human development. We have all been treated in a variety of ways by parents or caregivers, have all suffered upsets, disappointments, and in some cases, terrible losses or horrible experiences. Many readers are parents, some whose own emotional histories have affected how they have acted with their own and others' children. Some come across this learning when it feels 'too late', wishing wholeheartedly that this knowledge was available when they were being parents, or being parented, wistfully wondering how different things might have been.

Neuroscience and psychology research teaches us that we absorb things best when we are neither over- nor underaroused, and my hope is that the reader will be sufficiently emotionally stimulated to be interested to learn, and neither be stirred up too little or too much. I have aimed to give as clear a picture as I can of the findings available that can help us in our lives and work. Such understanding can change how we interact with, respond to and think about children and families. Research can also fuel discussion about the practices and policies we adopt, areas where passions and strong feelings can have an outlet. My aim is to convey an understanding of recent research that has illuminated how the human child develops in its context. In the end all I would hope for is that the reader feels they have learnt something important and helpful which might inspire them to look at children and family life a little differently.