

**UNDERSTANDING, PLANNING FOR AND MEETING THE NEEDS OF  
CHILDREN WHO ARE KNOWN TO HAVE EXPERIENCED NEGLECT IN  
THEIR FIRST YEAR OF LIFE: STRENGTHENING THE INFLUENCE OF  
RESEARCH ON PRACTICE**

**By**

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for the degree of DOCTOR OF PHILOSOPHY

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## ABSTRACT

There is evidence to indicate that early adversity has long-lasting impact on child development and later educational outcomes. Many studies show significant correlations between early neglect and later social, emotional and behavioural difficulties, which negatively affect school inclusion and achievement.

Six children known to have experienced neglect in the first two years of life comprised the research sample, with whom a range of assessments was undertaken, including heart-rate variability, assessment of attachment style, cognitive skills, neuropsychological skills and achievement. Their teachers and carers completed the Strengths and Difficulties Questionnaire, and questionnaires relating to adaptive behaviour and communication skills.

Assessment data were harnessed within an action research framework, to inform intervention plans to support progress in school for two of the children, and outcomes reviewed with school staff and carers.

Results highlighted both the homogeneity of the research sample and shared characteristics, and the value of a dynamic biopsychosocial model of development in accounting for the individual children's developmental trajectories.

Relational-Developmental Systems metatheory, an extension of dynamic systems theory formed the integrating conceptual framework within which results are interpreted, with emphasis on the complex, recursive, multi-level, co-actional influences between children's attributes, capabilities and historical identity, and the social contexts which children inhabit.

**This thesis is dedicated to the memory of my inspirational friend,  
Greta Hyde**

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## LIST OF ABBREVIATIONS

ABAS-II	Adaptive Behaviour Assessment System – Second Edition
ACTH	Adrenocorticotrophic Hormone
AER	Application for Ethical Review
ANS	Autonomic Nervous System
APG	Anterior Pituitary Gland
AT	Attachment Theory
CAMHS	Child and Adolescent Mental Health Services
CiC	Children in Care
CCC2	The Children’s Communication Checklist – Second Edition
CRH	Corticotropin Releasing Hormone
CSC	Children’s Social Care
DMNX	Dorsal Motor Nucleus
DST	Dynamic Systems Theories
DT	Designated Teacher
EF	Executive Functions
ECG	Electrocardiogram
EEG	Electroencephalogram
ER	Emotional Regulation
GAC	General Adaptive Composite (ABAS-II)
GCC	General Communication Composite (CCC2)
GR	Glucocorticoid Receptor
HRV	Heart Rate Variability
HPA axis	Hypothalamic-Pituitary Adrenal cortex axis
IBI	Inter Beat Interval
IWM	Internal Working Model
LA	Local Authority
LAC	Looked-After Children
MCAST	Manchester Child Attachment Story Task
MR	Mineralocorticoid Receptor
MSRA	Minnesota Study of Risk & Adaptation
NA	Nucleus Ambiguus
NG	Nurture Groups
NVI	Neuro Visceral Integration model
PEP	Personal Education Plan
PPP	Personal Provision Plan
PFC	Prefrontal Cortex
PNS	Parasympathetic Nervous System

PSE	Patient Status Engine
PT	Precision Teaching
PVT	Polyvagal Theory
RDS	Relational Developmental Systems
RSA	Respiratory Sinus Arrhythmia
SAM	Sympathetic Adrenal Medulla
SAN	Sino-Atrial Node
SATs	Standard Assessment Tests
SDQ	Strengths & Difficulties Questionnaire
SES	Social Engagement System
SMT	Senior Management Team (in school)
SNS	Sympathetic Nervous System
TA	Teaching Assistant
WIAT-II	Wechsler Individual Achievement Test – Second Edition
WISC-IV	Wechsler Intelligence Scale for Children – Fourth Edition
VSH	Virtual School Head

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## **Chapter 1**

### **INTRODUCTION**

The impetus for this research has arisen from many years of observation that Children in Care or Children in Need (of Local Authority services) growing up in psychosocial adversity often start school with varied and noticeable difficulties. Despite statutory duties placed on Local Authorities to promote the educational achievement of Children in Care, they frequently continue to have difficulties throughout their school life, often culminating in educational underachievement, reflected in national statistics detailing their poor outcomes at age 16 (DfE, 2017a).

There is an extensive corpus of literature relating the effects of early adversity on child development – but so little of it seems to have permeated into our school system, with fairly rigid adherence to ‘behaviour policies’ and national prescriptions of learning for every age group, starting at age four, regardless of children’s early experience, and their readiness for school. I was curious to know how much of the decades of research into child development was known by professionals involved in the care and education of neglected children, and the effect of this on professional practice.

Children do not present themselves as miniature adults, with simple, linear, cause-and-effect problems. Seeing the world through a child’s eyes, in order to understand why they are having difficulties in school, involves complex problem-solving at multiple levels of analysis over historical time (Hollenstein, 2012). I have come to understand that seeing the world through a child’s eyes

involves not just knowing about theories of development, but understanding holistically, the *actual processes* of development. Why have these children arrived at this day, in this school, with a series of events that are causing them, their carers and their teachers to feel unhappy? What do developmental processes tell me about this? How can they help me in the devising of effective interventions, in order to promote school inclusion, successful learning, and an identity that brings happiness, calmness and competence in areas of educational achievement, social functioning and personal identity?

Researchers ask similar questions, commenting that it is not enough to *know* that risk or protective factors influence development; *how* do the factors influence development; *what* are the processes (Center on the Developing Child, 2016; Sroufe *et al*, 2005). They observe the unity of development; that all parts of the child develop together, not in isolated units of behaviour, or emotions, or cognition, and in a Vygotskian conceptualisation: capacities are acquired in social relationships, only later becoming more individual characteristics.

Developmental models are metaphors, but I wanted to know (as a biochemist and as an educational psychologist) what actually happens? How does experience become internalised; how does adversity and stress 'get under the skin' (McEwen, 2012) to affect self-regulation and learning skills?

The Literature Review is oriented to seeking answers to these questions, theoretically and in ways that I could test empirically.

Chapter Two is devoted to an exploration of how development itself is conceptualised by theorists, researchers and practitioners.

Chapter Three explores Attachment Theory; its earliest beginnings and its most recent instantiations in neurobiology. This chapter seeks to explain how the nature of the earliest caregiving experiences shapes brain development.

Chapter Four considers what is meant by 'neglect' and how it is defined. This chapter reviews the literature in relation to longitudinal studies of child development, including those that have studied early adversity and severe neglect (institutionalisation).

The final chapter of the Literature Review is a summary of the research that seeks to explain more precisely how the earliest caregiving experiences shape the neural architecture of the brain and the stress response - and why this is important in child development and school readiness. Models that suggest how the stress response may be indexed in school are also discussed.

The Methodology Chapter explores the ontological and epistemological assumptions made during the data collection and how I consider the knowledge I create to be valid, truthful, real and pragmatic. It provides a structure within which research questions, data collection and data analysis are integrated.

The Methods Chapter describes recruitment, ethical considerations, and a detailed rationale for choosing the measures employed in this research.

Chapter 8 (Results) presents the research findings for all children and offers some initial comments in relation to the Literature Review.

Chapter 9 (Discussion) reviews the evidence presented in the Results and compares my findings with those found elsewhere in the literature. Through the Relational Developmental Systems framework, it initially analyses the developmental profile of the research children, before offering a more holistic analysis of the developmental trajectories of two of the research children through an evaluation of their progress and their intervention plans devised during the research, as they unfolded over two terms in school. The Discussion Chapter aims to answer my initial aim of designing and carrying out this research: why is it that children who have experienced early neglect tend to underachieve in school?

The Conclusion continues this theme, offering personal reflections and suggestions about what could be done differently in schools, facilitated by government policies.

'A primary challenge for educational researchers is to educate society about the complexity of learning and the complex social framework within which it is fostered' (Gardner, 2011). I hope that in the dissemination of this research, I might go a little way towards addressing this challenge.

## **Chapter 2**

### **DEVELOPMENT**

#### **2 Introduction**

The research project is concerned with the effects of early neglect on child development, and how these influence relationships and progress in school. This is explored from the perspective of individual child development, as well as the perspective of staff, core professionals and family, and how these integrate to produce understandings, explanations and decisions relating to a child's education. This necessarily implicates a concise understanding and definition of 'development'. This chapter considers the concept of 'development' and traces some of its philosophical, epistemological and ontological underpinnings to explain how the current theories and methodological frameworks used to explain and carry out research within the field of child development, have themselves evolved, as scientific and psychological theories have been progressed. Sameroff (2010) proposed that the study of human development itself would illuminate the study of the development of individuals. I believe that this historical perspective is additionally important, since psychological theories of child development are core subject matter for the training of teachers, social workers, foster-carers and other professionals associated with the education and health of children, and these frame how problems are conceptualised and solutions proposed.

Similarly, when considering why we need to think of development on a grand scale, Thelen (2005) points out, "...assumptions about the nature of development profoundly affect how one treats children and how one interprets



childhood". Clearly, how one treats children in primary school has a deep and long-lasting impact on their educational progress and sense of identity.

The final imperative for reviewing, describing and evaluating theories of child development is that a case-study design demands a rigorous theoretical framework. Yin (2014) proposes five components to a case-study research design, in order to connect theory to research questions to warranted conclusions. This includes a clear set of theory-driven propositions and clear theory-based criteria for interpreting the data.

The literature review in this chapter outlines the history and models of development before offering the relational-developmental systems metatheory (Lerner, 2015, Overton 2015) as an appropriate framework to understand the processes of child development and within which a doctoral-research project oriented around a case-study design can be situated. Bronfenbrenner (1974) observed that the arrow of influence in understanding child development is not just research to application, but application to research. A failure to apply this principle in practice is a failure to test developmental theory in ecologically valid ways (Lerner & Schmid Callina, 2013). One of my aims in this research project is to recursively apply the knowledge gained through initial data collection to support the progress in school, of children who have experienced early life adversity. Fisher, Busch-Rossnagel, Jopp & Brown (2012) argue that such research has the potential to promote social justice.

## 2.1 Defining development

When thinking about development, the concept initially seems straightforward enough. The most recent definitions in the Oxford English Dictionary (September 2016) define it:

“The action or process of bringing something to a fuller or more advanced condition; the explanation or elaboration of an idea, theory...” or, “The formulation or creation of something by successive stages of improvement or advancement”.

Inherent in these definitions, is the notion of development being purposeful, meaningful and adaptive. How is it possible then, to articulate more precisely what development is, when we are describing the evolution of holistic entities, set within ever-changing contexts along a continuum of time? If we consider child development as a specific instance, we find there are countless studies describing one or more aspects of child development, as though there is a commonly-held consensus about its definition. If we stopped for a minute to try and explain to ourselves what precisely the development of a child actually is, then we might apprehend the problem more clearly.

Theories of child development are found in every psychology course – universal theories of development however; theoretical models that apply only to certain domains of the development of any child, regardless of socioeconomic status, ethnicity and culture. This general knowledge is helpful and pragmatic; as one small example, Piaget’s theory of cognitive development has been used to influence thought about the nature of

curriculum design and educational experiences in Early Years' education. Children do not develop in isolation however, neither are they simply a product of unfolding genetic potential (Lickliter, 2007). A more holistic approach is called for.

### **2.1.2 Problems in conceptualising development**

Some researchers have believed that the search for an over-arching developmental theory is futile (Gopnik, 1996) and we would be better off working out the details for each domain, for example, a theory of language, a theory of mind etc.. Part of the problem of understanding and researching development is therefore related to the complexity of the human organism. We attempt to describe how a fully-formed, socially-functioning adult arises from one cell. We initially describe the biological ontogeny of zygotic development; how layers of cells emerge from simple mitotic divisions, subsequently differentiating into the development of tissues, organs and systems, each new hierarchy of organisation being built on previous foundations (Werner, 1957). The unfolding of biological processes of development result in the birth of a child who has the capability to support all life processes and the potential capability to socially communicate. Postnatally, as a human organism in particular, we begin to refer to the development of 'the person', now a far more complex endeavour. Although we continue to describe physiological processes, the terminology is not so clear-cut. What do we mean for example, when we talk about 'emotional regulation'? Biological descriptions are insufficient, particularly when we now add terms such as 'cognitive development', 'memory', 'learning' and

'behaviour'. What exactly do we mean by *these* things? The list continues into more abstract concepts such as 'the mind', 'personality' and 'identity'. Without clear-cut ways of operationalising these global constructs, how can we realistically progress in our understanding of 'development'?

In an article debating the origins of developmental causes, Pinker (2004) observes that many scientists "express a discomfort with any attempt to characterize the innate organization that the mind does have... Instead, there is a widespread desire that the whole issue would somehow just go away' (p7).

Kuhn (1996) argued that scientists carry out research within a specified 'paradigm'. When a substantial amount of new knowledge has accumulated, such that the problems to be solved could no longer be understood using previous ideas and methods, then a 'paradigm shift' takes place. It seems that in the area of developmental science at least, a paradigm shift is long overdue (Charney, 2012; Ingold, 2004; Lerner, 2012; Lickliter & Honeycutt, 2010; Slavic & Cole, 2013, van Geert, 2011).

This century, with scientific advances in general, and epigenetics in particular, the inadequacy of the traditional scientific paradigm to address research problems in development has led Overton (2013) to write,

...earlier conceptual frameworks that have contextualized these fields (of development) have proven, at best, inadequate to the task of integrating the new empirical advances, and at worst, a major obstacle to integration and to scientific advancement. (p10)

This lack of a suitable conceptual framework within which to position developmental research is taken up more recently, again by Overton (2015) who notes that scientific progress is overturning many previously-held assumptions about the nature of reality and about the way humans develop. His insistence on conceptual clarity, "...only through establishing coherent sets of concepts can we continue to move forward toward the goals of describing, explaining and optimizing human development" (p10) is echoed throughout the literature on development, particularly that of dynamic systems theorists (Fogel, 2007; Lerner 2015; Witherington & Margett, 2011).

It is therefore necessary to be absolutely clear about the structure of the conceptual framework itself, as well as the concepts and terms that are used when describing the aims, processes and models of development, and importantly, their origins. This forms the basis for the next section.

### **2.1.3 Concepts in developmental theories**

An extensive reading of the literature reveals that the way we conceptualise development is, understandably, historical. The main theoretical framework, the assumptions and the ideas that are widely held today in diverse fields such as the developmental sciences (including neuroscience), biology, ethology, anthropology, sociology and education can be traced back to identifiable points of origin. Gardner (2004) states that before formal theories of learning (and, by implication, development), it fell to philosophers to address issues of knowledge and it is indeed the philosophers of centuries ago that have had a long-lasting and pervasive influence on the way we

conceptualise and pose research questions in the area of human development. Both Gardner (*ibid*) and Bronfenbrenner, Kessel, Kessen and White (1986) similarly argue that it is *necessary* to understand the history of the development of philosophical ideas, and the nature of the relationship between these ideas with psychology, before we can understand the directions that research in psychology have taken us, and subsequently, *fully* understand our ideas and current models relating to child development.

From a personal point of view, when carrying out this research, I have found that linear, unidirectional models of development, in particular the mechanistic 'cause-and-effect' ideas of behaviourism are strongly entrenched in the minds of professionals tasked with understanding the needs of children who have experienced early adversity. This did not just limit the range of solutions when problem-solving, but also adversely affected working relationships between members of staff, due to deeply held convictions about the origins and causes of childhood behaviour, and what should be done when social, emotional and behavioural problems arise. Any challenge to such deeply-held beliefs will entail a thorough knowledge of how these theories have arisen in the first place, in order, I believe, to loosen constructs in the minds of professionals, and hopefully enable the initial steps towards accepting a new understanding of childhood development to take place. White (cited in Sameroff, 2010) argued that 'it is necessary to engage and deconstruct the history of the field (of developmental psychology), in parallel with efforts to understand the child' (p6).

The next sections will consider the history of the development of widely-held ontological and epistemological assumptions used in research endeavours today.

## **2.2 Worldviews in developmental theories**

Lakatos (1978) cited in Overton (2015) argues that any scientific research programme necessarily entails a coherent, hierarchical framework, consisting of a set of nested concepts, which are coherently related, and extend from commonsense observations to specific theories (including classical developmental theories, such as Piaget's cognitive developmental theory) to meta-theories (a coherent set of rules or principles that describe what is meaningful and acceptable in the field of enquiry), to an overarching worldview, which contains the specific ontological and epistemological positions constraining what is to be researched and how research is to be carried out. In essence, this is equivalent to Kuhn's concept of 'paradigm'.

Overton represented this diagrammatically:

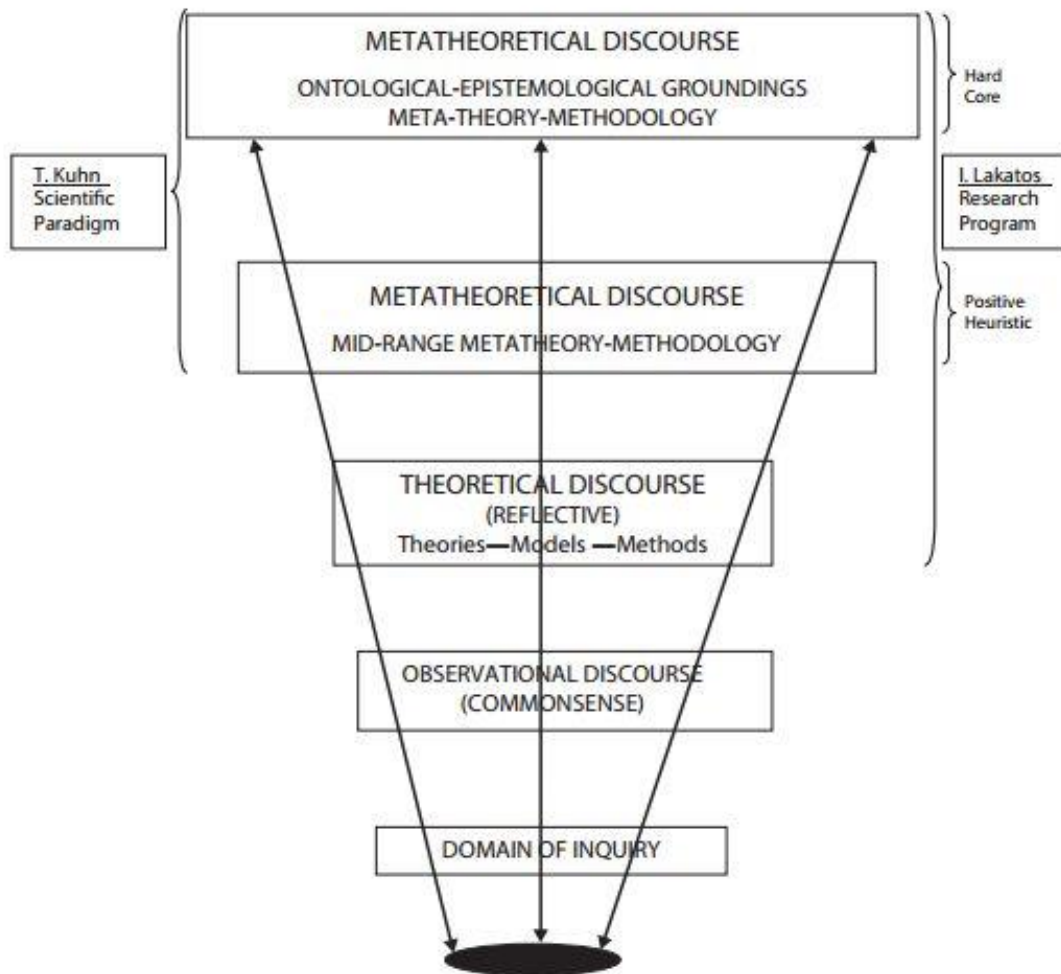


Figure 2.1 Conceptual context of a scientific research paradigm.

Several articles by well-respected theorists (Gardner (2004), Overton (2015), Pinker (2004) and Sameroff (2010) have traced current debates about the nature of development under the scientific worldview to their historical antecedents. Overton’s review (2015) is by far the most comprehensive and detailed. I shall therefore summarise it here and offer it as a reasonable explanation of the worldview that has been the dominant paradigm shaping



scientific research (and therefore influencing psychological and developmental research) over the last 350 years.

### **2.2.1 The Cartesian-Split Mechanistic Worldview**

Overton (2015) asserts that the dominant worldview (or paradigm), not just in science, but in other disciplines as well, has until recently been framed by the Cartesian-Split, Mechanistic Worldview (often abbreviated to the 'Cartesian worldview'). Hatfield (2016) similarly states that Descartes, "...more importantly... offered a new vision of the natural world that *continues to shape our thought today*: a world of matter possessing a few fundamental properties and interacting according to a few universal laws" (my emphasis).

Following the Aristotelian architectural metaphor of his day, Descartes' approach to metaphysical enquiry and knowledge-building, was to begin with knowledge of which we could be certain (the foundation), and he distinguished this from knowledge that was doubtful. Theories of knowledge could then be built on this firm (certain) foundation. 'Knowledge' therefore became 'justified belief'. Newman (2016) describes this as organised by "two analogous features: a foundation of unshakable first principles, and a superstructure of further propositions anchored to the foundation via unshakable inference".

Related to this, is the machine metaphor – the acceptance of a mechanistic view of linear, causal relations between objects, using a small-step process of analysis to understand cause-and-effect relationships between objects (i.e.

forces acting on isolated objects cause change), in the creation of general 'laws' which apply to all matter.

Overton further states that, 'Reductionism itself becomes a central feature of the Cartesian worldview', quoting Levins and Lewontin (1985) in support of this assertion:

*Cartesian reduction as a method has had enormous success in physics, in chemistry and in biology... and this has been taken to mean that the world is like the method. But this confusion of reduction as a tactic with reductionism as an ontological stance is like saying that a square wave is really the sum of a large number of sine waves. In actual practice, reductionism as a methodology and reductionism as a world view feed on and recreate each other. (p2)*

Overton next turns his attention to the development of Descartes' ideas by theorists in the next generation. He identifies the beginning of the period when what is 'real' is composed of 'matter', i.e. the beginning of objectivity, and where 'change' is conceived of as being lawful change in appearance of 'matter', caused by external forces.

*In... Descartes' work, we see that a nascent worldview had been established, which was fleshed out in the 18<sup>th</sup> and 19<sup>th</sup> centuries, and came to dominate science... for three centuries. A key feature of this worldview (is) splitting (which) yields 'either/or' propositions and the selection of one or the other of a forced choice... Whichever category is chosen becomes the foundational Real, while the other becomes the peripheral, epiphenomenal, appearance.*

The implication of these ontological and epistemological assumptions for today's research is captured by Searle (1992)

*Along with the Cartesian tradition, we have inherited a vocabulary, and with the vocabulary, a certain set of categories, within which we are historically conditioned to think about these problems. The vocabulary is not innocent however, because implicit in the vocabulary are a surprising number of theoretical claims. (p14)*

The words 'historically conditioned' clearly resonate with a number of developmental psychologists, particularly those working in field of dynamic systems theory, who argue for a paradigm shift in the way we conceptualise development, and 'the way that developmental questions are even asked' (Hollenstein, 2012).

I have also found the words 'historically conditioned' to resonate with my own experiences during this research, where people discuss child behaviour in terms of fixed development and 'cause and effect' principles typical of behaviourist ideas. As my prior quote from Thelen (*ibid*) stated, "...assumptions about the nature of development profoundly affect how one treats children and how one interprets childhood".

Overton characterises the organism (person) under the Cartesian Worldview as inherently stable, fixed and unchanging, with both development and behaviour being understood as a result of extrinsic forces. These can take the form of either internal biological causes (nature), or external, environmental causes (nurture); processes are termed mechanisms and 'forces' referred to as 'independent variables'. The organism is viewed as 'complicated' rather than 'complex'; that is, it can be analysed into its constituent parts by means of a linear analysis. Individual 'parts' include biology, affect, cognition, motivation and culture that can be combined (including 'interacting' together)

to form a whole that is not qualitatively different from the sum of its parts. Because of the mechanistic linearity, the organism is determined and completely predictable, excluding discontinuity and emergence in a process of developmental, transformational change.

*In sum, the organism at whatever level chosen for investigation – from the biological to the psychological to the cultural – operates as an input-output device. (p22)*

### **2.2.1.1 Critique**

As I understand it, Descartes was attempting to set in place a method and ideas for establishing ontological and epistemological principles which could be universally agreed upon and which would be helpful for understanding and explaining the activities of both living and non-living things. Descartes initially divided forms of knowledge, rather than nature itself, in order to combat the prevailing (Aristotelian) teleological principle of 'final cause'.

What Overton rightly points out however, is that Descartes was responsible for creating mechanistic principles to explain the observable phenomena of nature. Overton further states that Descartes' ideas about the nature of reality, and his epistemological assumptions about what could be known, were later taken up by the eighteenth century empiricists such as Locke and Hume, and integrated with the ideas of Francis Bacon (1561-1626), into the 'Scientific Method'. To my mind, this, more than the work of Descartes, seemed to lay the foundations for the reductionist method, particularly as it was Hume who

advocated using analysis and synthesis in opposition to each other, as part of the scientific method.

Overton makes reference to, but does not explicate the pragmatist views of C.S. Peirce (1839-1914), John Dewey (1859-1952) and William James (1842-1910). Peirce in particular made significant contributions to the development of the scientific paradigm, by advocating the synthesis of three forms of reasoning: induction, deduction and abduction, discussed in the Methodology Chapter.

Overton's main point is that the assumptions of the Cartesian Worldview have influenced, and continue to strongly influence, the thought and research efforts of much contemporary psychology. He argues that the vocabulary inherent in this Worldview influences the very way that we think about development and the way we subsequently shape research questions. This subsequently contributes to the conceptual confusion of current developmental science.

In the next section, I will briefly outline linear models of development that have been, and continue to be, influential in our understanding of child development. These are the models that constitute the linear, split 'either / or' 'nature – nurture' debate.

### **2.2.1.2 Cartesian-derived metatheories: linear, interactive and transactive models of development**

Sameroff (2010) contends that developmental research ‘succumbed to the dicta of Occam’s razor’ with the aim of being able to explain developmental processes as simply as possible. From the review above, it could be thought that this simplicity and conceptualisation of developmental processes has its origins more in the historical development of the scientific method and the characterisation of what should be taken as ‘real’ and what should be ‘valued’ as objects of research endeavours. The assumption that the processes of living organisms are a reflection of the laws and processes of all matter seems to be a reasonable assumption to make, in the light of the ontological and epistemological assumptions that were widely accepted (but not universally so – exceptions being the pragmatists and phenomenologists, for example) by the scientific community from the 1700s onwards, and that form the basis of methodological considerations about the most valid way to gain knowledge about the world.

Accordingly, these views of development are still widely held today; the battle of nature versus nurture has not gone away (Oyama, 2001; Lickliter, 2007)

Sameroff (2010) helpfully traces the history of linear models of development, noting that they have increased in complexity over time as our understanding and knowledge of science has similarly increased in complexity, for example, moving from unidirectional to interactive to transactive models of development. He begins his historical account in the late nineteenth century,

with the work of Francis Galton (1822-1911) and the beginning of empirical psychological research.

Sameroff contends that the history of developmental psychology has since the mid 1800s, swung between explanations that appeal to either the intrinsic properties of the child (nature), or to the extrinsic properties of experience (nurture), with smaller and more frequent swings, in parallel with technological development. Both types of explanation are, in line with historical, ontological assumptions, mechanistic, deterministic and reductionist in nature. His summary is reproduced below:

**Table 2.1**

*Rough History of Nature-Nurture*

<b>Historical Era</b>	<b>Empirical advance</b>
1880 – 1940s: Nature	Inherited differences Instincts
1920 – 1950s: Nurture	Reinforcement theory Psychoanalytic theory
1960 – 1970s: Nature	Ethology – species differences Behavioural genetics Cognitive revolution
1980 – 1990s: Nurture	Poverty Social ecology Cultural deconstruction
2000 – 2010s: Nature	Molecular biology Neuroscience

I do not propose to discuss these in depth as they are widely known. My observation is that in education, the theory still in common parlance to understand child behaviour is that of Reinforcement Theory / Behaviourism, propounded by John Watson in the 1920s. Learning Theory, and the

subsequent Social Learning Theory of Albert Bandura (1977) continue to be strongly influential in schools.

Overton highlights the major metatheories that have arisen out of the Cartesian Worldview, in four areas of contemporary developmental science: (1) the nature of inheritance (the central dogma of molecular biology, in which genes assume primacy); (2) evolution and individual development (the 'Modern Synthesis'); (3) cognition and cognitive development (the computational model of the mind), and (4) culture and individual development.

Behaviourism is seen as a form of Cartesian cognition, since it is a form of 'input-output'. Overton argues that as behaviourist learning theories have themselves developed, the 'space' between stimulus and response has become filled with longer and longer chains (termed 'mediating responses') of internal responses and internal stimuli, that link the external stimulus with overt responses. These internal responses are conceptualised as having the same theoretical status as external stimuli and responses, and could be interpreted through the same laws. Moreover, the internal mediators are also understood to have originated from the antecedents and consequents, according to traditional learning principles of reinforcement and imitation. In cognitive-behavioural approaches, the internal mediators are thoughts, representations and cognitions (Foster, Kendell & Guevremont, 1988). Any theory that assigns primacy to one or more variables, even social variables, is falling victim to Cartesian foundationalism and ontological splitting.



### **2.2.1.3 The unsuitability of Cartesian epistemology in developmental research**

The preceding sections have briefly illustrated how our ideas and ‘taken-for-granted’ assumptions about many aspects of development have their roots in ideas stretching back over three centuries – so it is not surprising that many of these ideas are still in vogue today, and many assumptions are assigned a value of ‘truth’. They have also alluded to the inadequacy of linear, reductionist models, based on a machine metaphor, with ‘causes’ producing predictable ‘outcomes’ via mechanistic laws, when considering the complexity of human development.

Learning theorists’ attempts to explain all behaviour in terms of stimulus-response / association / reinforcement and psychoanalysts’ attempts to explain behaviour in terms of drive-reduction have left a very powerful legacy: that behaviour is the additive effect of accumulating experience, and that predicting actual behaviour should be the final arbiter in psychological science (Sroufe, Egeland, Carlson & Collins, 2005).

It is not that these theories are unimportant – of course they are; they are still very relevant and important in explaining and understanding many aspects of behaviour. But they explain how behaviours that have already developed may be kept either within the repertoire of already-existing behaviours, or how their frequency might change, and not how those behaviours arose, and came to be helpful, or functional, in the first place. The *processes* of development are missing.

To frame most aspects of behaviour within the behaviourist paradigm (for example in schools), has been during my experience of carrying out this research, unhelpful at best and damaging at worst. This is why it is imperative that we do question long-held assumptions about the causes and origins of behaviour and why we should generate holistic theories of development that reflect actual biological ontogeny and child development.

In regards to conceptual clarity, linear models have highlighted the inadequacy of traditional definitions of concepts such as 'personality', 'behaviour' and 'the mind'. Where they have a theoretical basis, linear, trait theories of 'personality' (for example, Eysenck's Three Factor EPQ) assumes that these are due to physiological causes (cortical / limbic system arousal), dictated by gene expression – a clear 'nature' explanation. However, social learning theorists presented findings that people behave differently in different situations, and even in similar situations at different times. Mischel (1973) argued that it was situations, not personality structures that seemed to determine behaviour - a clear 'nurture' explanation.

The main thesis of Overton's review is to argue not just for a new conceptual clarity regarding ideas and terms that we have used for the best part of a century in developmental psychology, but for an entirely new conceptual framework in understanding what development actually *means*.

It also provokes methodological questions about how to study individual behaviour over time. If individuals do not appear to behave in similar, stable

ways across different situations and across time, then what does this mean for longitudinal studies in developmental life-span psychology? Can measurements of behaviour taken earlier in the life-course be meaningfully related to measurements of behaviour taken at a later time point? If 'behaviour' is assumed to be oriented around a 'stimulus – response' conceptualisation, then does 'development' simply mean longer and more complex chains of internal, mediating stimuli and responses, as outlined earlier?

Finally, linear, cause-and-effect models tell us very little about the mechanisms of transformative change in complex systems - of which the human organism is a prime example:

*... statistically significant t tests and analyses of variance gave an illusion that science was advancing, but when regression models became dominant and the metric changed to size of effects, it became clear that the field was not doing well at explaining how children were growing up... Increasingly sophisticated statistical models have been sought to separate the behavioural signal of interest from the noise of real life. This effort has led to some frustration in the decreasing amounts of variance that can be attributed to any single factor when everything imaginable is controlled... (Sameroff, 2010, p7)*

## 2.3 Dynamic Systems Theory of development

This section describes and proposes dynamic systems theories as more appropriate and valid conceptual frameworks for child development.

### 2.3.1 The History of System Theory

The enduring question arising from the previous sections is: 'If child development cannot be explained by linear, additive, mechanistic explanations, appealing to a greater or lesser extent on explanations deriving from either nature or nurture, then *how can* development be explained?'

Leibniz (1646-1716) in the generation after Descartes and in opposition to both Descartes and Newton, focused more on movement and dynamics, describing (before Einstein) space and time as systems of relations, rather than absolutes. His ideas about system dynamics were taken up by the German biologist von Bertalanffy, in the development of a general system theory (1933). This was disseminated firstly through lectures in the 1930s, and then publications from the 1940s.

*...there exist models, principles, and laws that apply to generalized systems or their subclasses, irrespective of their particular kind, the nature of their component elements, and the relationships or "forces" between them. It seems legitimate to ask for a theory, not of systems of a more or less special kind, but of universal principles applying to systems in general. (von Bertalanffy, 1968, p32)*

Von Bertalanffy's ideas are based not on measurement of single entities, but on the overarching activity of whole systems with 'parts' co-acting together (having mutual influences on each other). It is not meaningful to consider or

study a 'part' in isolation because the activity of each 'part' is determined by the states (activity) of all the other parts, the totality of which cannot be broken down into the additive or cumulative effect of the other, separate 'parts'.

This is not simply a matter of changing ontological assumptions; traditional reductionism has a single 'part' as its subject. In system theory, the 'whole' is the point of analysis and the emphasis shifts from analysis of individual parts to the analysis of *organisation* of parts, recognising that interactions of the parts are not static and constant, but mutually constitutive, dynamic processes.

The focus therefore, is on the *dynamic organisation* of 'wholes' rather than (as in linear models) the system being reduced to its fixed parts and the focus of enquiry (for example when explaining the development of a particular behaviour), being on the unchanging, fixed 'parts' such as genes (nature) or rewards (nurture). The idea of 'the whole being greater than the sum of its parts' is also utilised in Gestalt psychology. The foreword to von Bertalanffy's second book highlights the importance of this different conceptualisation:

*Von Bertalanffy opened up something much broader and of much greater significance than a single theory (which, as we now know, can always be falsified and has usually an ephemeral existence): he created a new paradigm for the development of theories.*

(Laszlo, in von Bertalanffy, 1974)

The premise of a general system theory is that there are general principles of organisation in every scientific domain that are at a level of analysis somewhere between mathematical formulations and the specific processes

being studied (Boulding, 1956). These mathematical formulations are related to those that describe the properties of stochastic systems, such as those utilised in chaos theory.

### **2.3.2 System Theory as a metatheory for developmental research**

The Dynamic Systems approach to development is a metatheory, specifying what is to be researched and how this should proceed (see Figure 2.2, p33) (Granic & Hollenstein 2003, Lewis, 2000). The assumption of a general system theory – that there are general principles of organisational processes in complex systems - has been taken up in a wide range of disciplines. In psychology, it has been used to investigate teacher-child relationships (Pennings, van Tartwijk, Wubbels, Claessens, van Der Want, Brekelmans 2014), parent-infant dyads (Lunkenheimer, Albrecht & Kemp, 2013; Coburn, Crnic & Ross, 2015) and the role of anxiety in childhood aggression (Cicchetti, Natsuaki, & Granic, 2014). Human development is an example of a complex dynamic system, but van Geert (2011) asserts that this is not widely recognised, "... mainstream research in developmental psychology uses an empirical paradigm that is at odds with what is purported to explain, namely, that development is a complex, dynamic process." (Abstract, p273)

He advocates that we see system theory, and dynamic systems theory in particular, not just as another 'theory' in developmental psychology, but like Overton, and as described in Laszlo's vision, as a new paradigm for shaping the way that we think theoretically about development. This idea is adopted by many other theorists in the field of developmental research (Fischer & Bidell,

2006; Gottlieb, 2001, Granic, 2010, Lewis, 2011; Rutter, 2013 and Spencer, Thomas & McClelland, 2009). Hollenstein (2012) states it thus:

*... the true metamorphosis of the nature-nurture debate is a paradigmatic shift in the way that developmental questions are even asked. That is, nature and nurture are functionally inseparable such that the question should not be whether one or the other exerts more influence on a phenomenon of interest, but how does that phenomenon emerge from a multitude of interdependent processes. (p138)*

It is increasingly being recognised that the nature-nurture debate is untenable (Pinker, 2004); that it is meaningless to ask about 'causes' of development, and that the *processes* of development – the coactions between two or more components (including genes *and* environmental factors) are what we should be taking as the ontological basis for real world, ecologically-valid research (Lewis, 2011; Sameroff, 2010).

Fischer & Bidell (1998) cited in Witherington (2007) observe,

*A decade ago, developmental psychology could easily be characterized as a field in search of ontological unity, marked by increasingly particularistic, domain- and context-specific 'minitheories' which offered a narrowed focus on specific behavior in specific settings, but at the price of an integrated, developmental account... Since then, the field has witnessed ... a widespread commitment to thoroughly relational, integrative conceptions of development that promise to transcend false dichotomies and unify the field. (p127)*

### **2.3.3 Characteristics of Dynamic Systems**

A dynamic systems approach to development is based on general theories governing pattern formation in complex physical and biological systems (Port & van Gelder, 1995, Smith & Thelen, 1993). These will be explained, as they form the conceptual framework when interpreting the results.

There are system properties not present in the individual parts, due to the interdependent, co-acting nature of the parts. These properties include self-organisation (maintained by feedback loops), mutually constitutive co-action with aspects of the environment (rather than causal, additive, linear interactions) and emergent, transformational change and variation (rather than linear change, with more parts, or connections).

The relationships between the organism and its environment are viewed as the primary source of complexity and interdependence. There is neither an endogenous cause nor an exogenous cause of the system behaviour, instead, complex dynamic systems self-organise as an inherent and emergent property of their nature, as a result of their activity in a specific context. No single entity or 'part' contains the 'directions' or has the 'blueprint' for the way the system develops. The whole system maintains an order and direction over time – it is 'lawful' development, but not in a linear sense.

Thelen (2005) identifies three principles of dynamic systems as they apply to child development:

1. 'Complexity' - referring to the relationships between many parts of a system and the emergent 'output' (system 'states' and system



'behaviour'). For example, human behaviour can be seen as the product of many interacting parts that work together to produce a coherent pattern under particular constraints. The interacting 'parts' would be seen as 'activity' in for example, neural circuits that comprise 'thought', physiological regulation to provide energy and remove waste products, nerve impulses, ion gradients across membranes, muscle contraction, sensory stimulation – as well as the feedback from all this activity, including circuits involved in memory formation and affect. She states,

*The idea that everything counts in producing behavior has profound implications for our conceptualization of developmental causality. In particular, we must reconsider any single-cause explanation, be it organic or environmental, and instead, focus on interactions and entertain the possibility that interactions are non-linear. This means that it may not be easy to find a clear, causal chain from previous conditions to later outcomes... (p262).*

It also becomes quite difficult to talk about 'different' processes as being 'distinct' processes: behaviour, learning and memory are all aspects of development and neither one can occur without all the others.

2. 'Continuity over time' implicates the idea of 'lawful development'.

Dynamic, self-organising systems are continually changing, with each arbitrary point in time being the starting point for the next change. The current 'state' of the system is the setting point for the next 'state', and because complexity is an emerging product of all dynamic systems, it is not possible to go backwards to a previous, simpler state.

This concept is illustrated in some psychological stage theories of development, such as Piaget's. Repeated experiences are assimilated into an existing schema, and with progressive changes in many schemata, accommodation occurs and the whole is comprehensively re-organised into a structure that is qualitatively different from what was there before. These concepts of transformational 'change' and 'variation' in dynamic systems are in contrast to the additive change and variation of linear models.

In zygotic development, where a single cell mitotically divides to an organised, complex, multicellular organism, small disruptions at the start of this process have profound implications for the organisation of later systems and biological functioning, because development proceeds along hierarchies of organisation, each building on what went before. Similarly, disruptions with the early development of regulatory systems and organised patterns of behaviour in an infant, have the potential to be lifelong influences (referred to as critical periods and sensitive periods in Chapters 3 and 4). This is not a deterministic view however, because concepts inherent in the dynamic systems metatheory mean that there are continual opportunities for change; the 'altered' part will itself be part of a new system, that will interact with many other potential parts (factors) that can ameliorate (or conversely, potentiate) the original developmental difference. There are many paths to similar developmental outcomes, inherent in the concept of equifinality (Cicchetti & Rogosch, 1996; Gottlieb, 2001).

3. Dynamic stability - the outcomes of developmental processes are new patterns or states of organisation, and these are conceptualised as having different degrees of stability. Human behaviour, which develops in response to a wide variety and range of stimuli, is no exception. Since the process 'output' of organised behaviour is conceived of as emerging from many dynamic components, organised patterns of behaviour are also flexible; the precursor components of organised patterns of behaviour rearrange in response to continually changing internal and external environments. Patterns of behaviour are therefore assembled and maintained with varying degrees of stability.

In dynamic systems, it could be thought that large numbers of possible states, or outcomes could occur from the multitude of interacting parts and the possibilities for the way they could theoretically interact, but this is not the case. Dynamic, non-linear systems settle into a small number of stable, more persistent patterns of behaviour, referred to as 'attractor states'.

These are recurrent, stable patterns that pull the system components away from other possible states (Hollenstein, 2012).

Thelen (2005) uses this analogy to explain how in humans, this might represent the maintenance of maladaptive behaviour:

*... maladaptive behaviour is usually the result of excessive stability. People may move, or reason, or base their social interactions on rigid patterns – patterns that may have worked in the past, but are now not appropriate for new situations. Problem solving is limited by the lack of new 'softly' assembled possibilities. One critical issue then, is what both engenders the stabilities of the system and (what) leads to instability. (p265)*

Hollenstein (2012) provides a visual representation of a dynamic system, to illustrate self-organising activity and levels of analysis<sup>1</sup>:

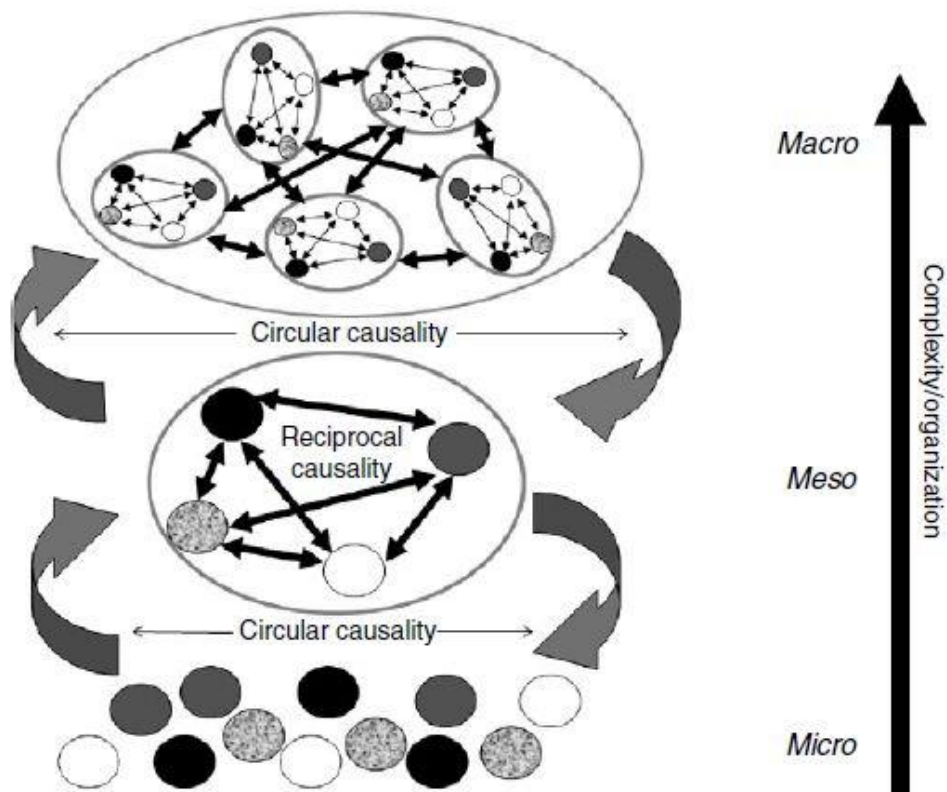


Figure 2.2 Illustration of a system at three levels of organisation. The mesolevel emerges from the reciprocal interactions among systems elements at the microlevel and in turn is constrained by the organisation at the macrolevel via circular causality. (Hollenstein, 2012)

In research utilising dynamic systems, the relationships of interest are always those at the mesolevel (e.g. a child's progress in school). At the macrolevel are interacting factors that constrain activity at the mesolevel. At the microlevel are the parts and relationships that form the mesolevel structures.

<sup>1</sup> It is analogous to Bronfenbrenner's (1979) Ecological Systems Theory, which is not however a *dynamic* model, because the relationships of interest, although bi-directional in interactionist models, are additive; they are a sum of two uni-directional influences. The relationships are one-way, linear and causal, and explanations cannot accommodate more than two parts.)

Within each level, parts co-act reciprocally via a complex set of feedback processes. Negative feedback maintains stability of the interacting parts. Positive feedback amplifies variability to generate novelty. Between the levels are feedback processes of recursive, circular causality.

This is illustrated by Lewis & Ferrari (2001):

*Connections laid down in personality macro (level of) development... constrain the possibilities for moods, which constrain micro (level of) development more immediately. Thus, it is the nesting of mood in personality that constrains emotional interpretations (appraisals) in real time, and their joint effects curtail the variance available for making sense of and feeling about the world. (p189)*

Relationships between the three levels are responsible for the properties of dynamic systems; emergent self-organisation and stable attractor states.

#### **2.3.4 Critique**

This raises questions about behaviours at the start of what Thelen refers to as the 'developmental cascade', which are typically described as instinctive behaviours or reflexes, present at birth.

Ethology, and many theories of early child development make reference to 'instincts', including Freud's theory of personality development and Attachment Theory. Are we born not just with certain, innate reasoning capabilities (as Rationalists assert), but also with certain, innate movement capabilities, or, in dynamic systems terms, 'stable patterns of behaviour'? Could this be taken back one step further to ask 'are we born with mental motivations, or drives, that *cause* sucking behaviour at birth?' (a causal explanation and a split of mind and body / behaviour).

If that is the case, would we not be saying that some behaviour (e.g. instincts) is after all, genetically programmed? In response, Edelman (1987) suggests that there are biologically plausible biases in neural networks, in which certain neural connections, when activated, are intrinsically favoured. He terms these biases 'value' biases because they have adaptive use for survival. Certainly, babies are born with reflexive behaviours, including sucking and swallowing. Edelman proposes a neural bias to stimulate the tactile receptors in the mouth – that stimulating these receptors is in itself, intrinsically pleasurable for the newborn. Not long after birth, a simple association of the stimulation of oral receptors with a feeling of warmth, touch, feeling less hungry and after perhaps a few hours, familiar smells, sounds and visual stimuli contributes to repeated neural and muscle activity that supports sucking and swallowing, which are then viewed as 'instinctive behaviours', although Edelman would argue that they have developed from an initial bias in the neural networks.

Babies also have a bias to look at complex patterns, including faces (Fantz, 1963), suggesting a visual system with a bias to engage with faces, contrast and patterns; that looking at these particular objects is intrinsically more rewarding for a newborn compared to looking at other visual stimuli, and this has 'value' in adaptive behaviour, as well as forming the setting conditions for the development of other areas of the brain, such as the visual cortex (Hubel & Wiesel, 1962, Wurtz, 2009).

A further evaluative criterion is a pragmatic one: 'Does it help to explain everyday observations with children?' i.e. can it be used to help with theory-

building and does it provide ways to test new hypotheses, as a result of this theory, for example, through evaluating an intervention derived from dynamic systems principles? In the Methodology Chapter, I argue for pragmatism as a way to reconcile epistemological issues inherent in research that utilises both qualitative and quantitative techniques (as this research does). In the pragmatist framework, observations build theory through a process of logical inference known as abduction; that is, the derived theory accounts for the best logical explanation, built up over many observations. This also means that dynamic systems theories (DST) are helpful in a case-study design, because an understanding of individual development, can, in conjunction with many other instances, contribute to theory-building. (This is 'generalisation' to a 'theory' from which further hypotheses can then be generated - and not generalisation of the distribution of a property in a representative sample to a distribution of this property in a bigger, similar population, common in much research utilising experimental designs.)

From a moral perspective, DST offer a useful framework within which to consider the ontogeny and maintenance of both adaptive behaviour and maladaptive behaviour, in a way that does not assign 'blame' to the child, the family or teachers. It offers practical ways to consider a particular behaviour, think how these patterns of behaviour might have arisen and been useful for the child in another time and context, (by making wider observations in different contexts, perhaps utilising information from other professionals who work with the family) and consider what interventions might change these patterns (or what might lead to instability in the maladaptive behavioural

pattern). It removes the cause of problem behaviour away from solely being within the child, and places a more holistic responsibility on those who support the child and their family.

Any theory of development has to encompass explanations of the idiosyncratic development of the individual, as well as between-individual differences (Lerner, 2015). It also has to encompass explanations of stability and change across the life-span - and DST seem capable of both these requirements. DST have been applied to research on social interactionism (Fogel, 2011), dyadic interactions (Steenbeek & van Geert, 2008), changes in adolescence (Lerner, 2015) and language development (van Dijk & van Geert, 2007).

DST also offers hope; it is not a deterministic view, it offers opportunities, every day, for a child who has experienced early adversity, to develop more adaptive behaviours and be successful in school; DST are theories that enhance the range of solutions to support adaptive development, as well as methods to test this empirically, through planned and reviewed interventions.

In summary, DST offer alternative, more holistic, ecologically-valid ways of explaining the development of organised patterns of behaviour and psychological functioning, that linear, mechanistic models simply cannot explain.



## 2.4 The Process-Relational Worldview

This section describes the Process-Relational Worldview and offers this as a more suitable paradigm within which development and developmental research, including my own research, can be properly and adequately conceptualised.

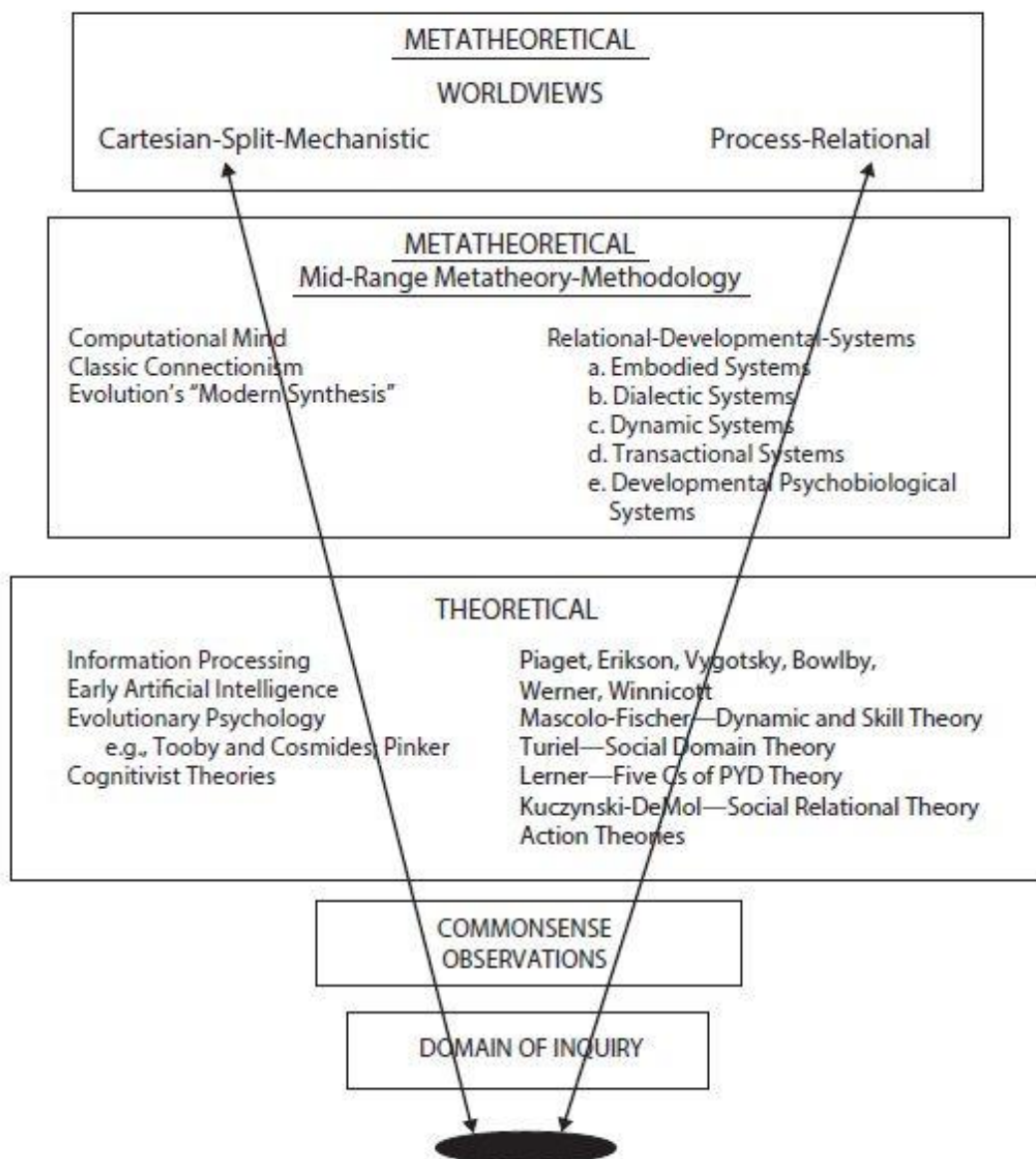


Figure 2.3 Comparison of the conceptual content of the Cartesian-Split, Mechanistic worldview with the Process-Relational worldview (Overton, 2015)

In Figure 2.3, the Process-Relational Worldview is theorised as a metatheoretical discourse, and a research paradigm with its own ontological and epistemological assumptions. These necessarily determine the nature of the metatheories at a lower level of the conceptual framework, of which DST (in their integrated form of Organicism and Contextualism) are one example.

Overton is the originator over many years, of this worldview; it is a synthesis of Pepper's (1942) Organicism and Contextualism worldviews. These worldviews share 'activity', 'process', 'change' and 'necessary organisation' as their ontological realities. Each of these worldviews is internally consistent in its own right and I will briefly review these.

#### **2.4.1 Contextualism**

Contextualism emphasises the activity of a system in the particulars of the 'here-and-now'. Any activity can only be understood and have meaning in the particular detailed context in which it is situated, at a particular time on the developmental trajectory. It is therefore described by Pepper as, "the event alive in its present... in its actuality... when it is going on *now*... This event might be called an act, so long as it is not thought of as an isolated act... but an act in context." (p232)

In terms of child development, this 'event' will have historical antecedents and a hypothetical end point; that is to say, it could not be taking place without particular prior experiences, 'making' it what it is, in the here-and-now, with an

assumed goal. (When I use the verb 'making' this does not mean a linear cause, it means that the various components of the 'system' are co-acting together to create the present action (which is emergent), and the ways in which they are co-acting are explained by various prior experiences - as well as the context.) This means that every event is unique, specific and particular to the child experiencing that 'event'. It cannot be repeated and experienced in the same way again, because both the detailed, particular context and child will have changed.

In this worldview, what is ontologically 'real' are acts or events or processes occurring at an externally-imposed time-frame: life is continuous, but in order to 'know' or 'understand' it, an arbitrary time is selected and the 'event' or 'act' or 'process' under consideration is studied, not just in its historical context, but in its imagined, but purposeful, future. Holism is therefore a feature of Contextualism; all the part-acts coherently link to create a meaningful whole event. This ontological reality of holistic, context-based 'process' is in contrast to the ontological reality of inactive 'matter', the traditional subject of the Cartesian-based, experimental research, where the 'history' or the 'present' or the 'future' is not under consideration.

#### **2.4.2 Organicism**

Organicism emphasises the irreducible, organised structure of the 'whole' system and how the relationships between the 'parts' at different levels contribute to the holistic way in which the system 'acts' in the world.

In this worldview, the organism is seen as an active constructor of reality through interactions with the world (Reese & Overton, 1970). It largely ignores the particularities of context and unique characteristics, in favour of abstracting general principles from many acts in many contexts, to create internal pattern and structure (i.e. following mathematical principles of dynamic, open, stochastic systems).

The mathematics of non-linear dynamics referred to in Section 2.2.1.3 provides the basis for understanding change, pattern and emerging self-organisation within an open dynamic system – that it is the changing nature of the relationships between parts that is responsible for the emergent structure (van Geert, 1991). Witherington (2007) observes that this confers ‘empirical legitimacy on classic system principles such as emergence and holism’.

In one sense, Organicism is timeless, because the processes of interest are those that describe the way in which the relationships between parts work together in the whole system, to create the ‘event’ or ‘act’. The ‘events’ of Contextualism on the other hand, can only be understood in terms of a past, present and future.

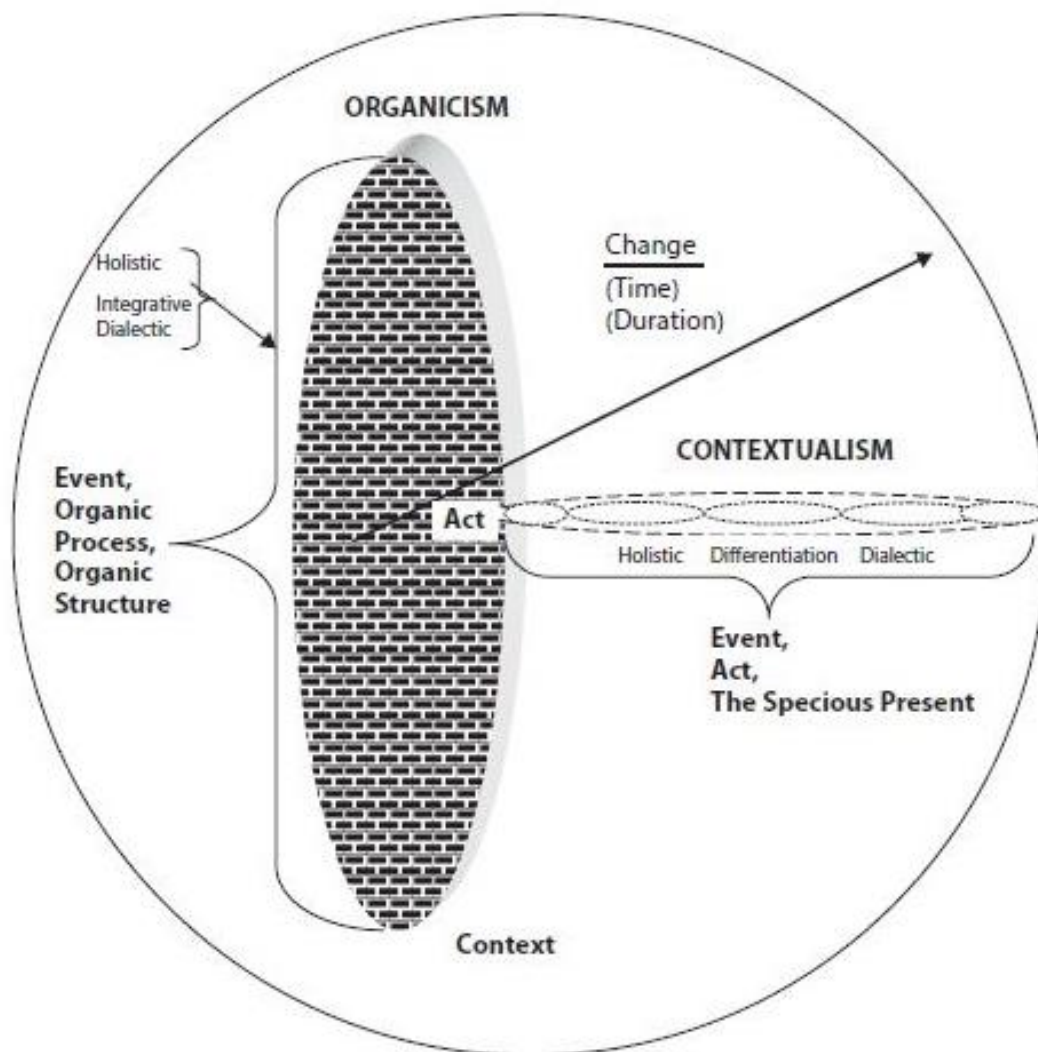
### **2.4.3 Synthesis of Contextualism and Organicism**

As a complete rejection of, and alternative to the Cartesian Worldview, Overton (2015) proposes a synthesis of Contextualism and Organicism (Figure 2.4 below) to create the Process-Relational Worldview (which applies to all of nature).

Overton proposes that both Organicism and Contextualism *are* similar in that they are both '*relational*' in their outlook – they both emphasise the *relationships* or processes, between parts, one between parts at the same level, in what is termed a 'horizontal plane' (Contextualism) and one between parts in different, hierarchical levels, in what is termed the 'vertical plane' (Organicism). Overton argues that they are both in effect, different sides of the same coin. Each can only have its fullest meaning therefore, by reference to the other. Each complements the other and affords an opportunity to explain developmental processes in more detail. By integrating Contextualism with Organicism, the details of the particular context (such as specific cultural practices) can be integrated into more detailed explanations of emergent self-organisation and structure. Fischer & Bidell (1998) also observe that it permits explanations of behaviour (and presumably, other products of developmental processes, such as learning) to exist at different levels of organisation, to capture the range and variety of performance, rather than relying on 'a single abstracted form to organize our understanding of behavior across a wide variety of contexts'.

Other theorists (e.g. Lewis & Granic, 1999; van der Maas & Hopkins, 1998) working within a dynamic systems metatheory, also support the notion of integrating Organicism and Contextualism, precisely for the reason stated above – it widens explanatory power.

Figure 2.4 The Synthesis of Organicism (vertical plane) and Contextualism (horizontal plane) into a Process-Relational worldview (Overton, 2015)



Both Organicism and Contextualism share the concepts of 'holism' and 'dialectic processes' in their ontology.

#### 2.4.4 Holism

Holism in Contextualism refers to the coherence and structure of the part-acts, which constitute the 'historical event' occurring in the here-and-now. The event has a 'specious present' consisting of a beginning (point of initiation), a

middle and an end (which achieves satisfaction and which could be viewed as a specified or unspecified goal).

Holism in Organicism refers to the organisation and organising activity of the organism, as it acts. The coherence (quality) of the acting is a reflection of the integration of the parts of the system, which also has a past history – to fully understand an organism's current pattern of organisation, requires an embedding of that organisation within a sequence of both past and future organisations (Overton & Horowitz, 1991). Feedback processes within the organism contribute to the holistic structure and quality of the actions (behaviour) in a particular context. Behaviour is viewed as emerging from the co-actions between the parts of the organism, and the behaviour, as it takes place in a particular context, also feeds back to the organism itself – behaviour is not just an isolated act without consequence for the system relationships, as described by Dewey (1916):

*When we experience something, we act upon it, we do something with it, then we suffer or undergo the consequences. (p139)*

#### **2.4.5 Ontological Realities in the Process-Relational Worldview**

The ontological realities in the Process-Relational Worldview are 'activity', 'process', 'change' and 'necessary organisation'. All are related and stand in opposition to the Cartesian ontological reality as being 'fixed' and 'inert' matter.

Human activity in particular contexts is not linear and finite, it is recursive, mutually-influencing (with the environment) activity. The consequences of our acting feed back and alter the system components and relationships that were the originators of the original behaviour. This is not at all the same as the linear cause and effect notion of the consequences of contingencies on behaviour, in Learning Theory.

It is worth noting that all these theorists referenced organic matter (and I presume the cycle of life) in their espoused ontologies; 'acts' are *embodied* actions in the world and the particular nature of experience is due to the way that physiological and biological 'bodies' can co-act in the world. (Kant (1724-1804 / 1996) also held that we are bound to experience reality in the way that we do, because of the physiological nature of our bodies.) If we were a different sort of 'body', then 'experience' and 'acts' would be very different (Marshall, 2014).

Activity becomes 'process' when set in the context of time. This means that, at an 'instant', there is 'nothing' – nothing can exist at a single moment of time, because 'reality' *is* activity and process. Reality cannot therefore be described, or measured, as 'a physical thing', in the same way that 'real matter' is measured in the Cartesian Worldview.

Change is the third ontological assumption in this worldview. Change implies time, which is now also viewed as a 'relational' concept, rather than an



absolute concept; any divisions of time are arbitrary, since reality (which is a process) is continuous.

*Within the dialectical process, the dichotomy of thesis and antithesis (i.e. a differentiation) is resolved through the emergent synthesis (integration)... and the process continues. (p 35)*

Necessary organisation is the final ontological reality described by Overton, and this relates to the form or pattern of an actual entity, both the vertical organisation of Organicism (as a structured or 'patterned' organism) and the horizontal organisation of Contextualism (as a structured 'event' or 'act'). It is encapsulated by the principle of holism and gives rise to the idea that structure / function is an indissociable relationship, with neither taking priority, and neither being a causal, or efficient form of explanation. This idea is again found in Piaget's (1952) writings:

*The organism and the environment form an indissoluble entity... there are adaptational variations simultaneously involving a structuring of the organism and an action of the environment, the two being inseparable from each other. (p16)*

A final observation is the notion of development again, being 'lawful', described by Piaget:

*Structure is a totality; that is, it is a system governed by laws that apply to the system as such, and not only to one or another element in the system. (p22)*

The 'laws' are not mechanical descriptions (although they can be modelled mathematically), but are described by intrinsic, emergent, self-organising properties of the system as a whole.

#### 2.4.6 Epistemology in the Process-Relational Worldview

This section considers the epistemology of the Process-Relational Worldview – if ‘process’ constitutes reality, then how can we ‘know’ process? It is an entirely different way of conceptualising ‘the world’ – any divisions into single concepts or discrete entities are meaningless – reality is firstly ‘relationships’ and secondly, ‘relational’. Both are active, and systematically change through time (the process).

Knowing in this worldview takes holism to be its necessary principle. Reality can only be understood as ‘relationship’ in its ‘whole’ context; reality cannot be understood as discrete, material objects, as in the Cartesian Worldview. ‘Relationship’ itself encompasses the idea of two or more things, creating a unity of some description, related to their mutual context.

*The concept of totality expresses the interdependence inherent in every organization... The correlative of the idea of totality is... the idea of relationship. Every totality is a system of relationships just as every relationship is a segment of totality. (Piaget, 1952, p10)*

The way to ‘knowing’ in the Cartesian Worldview is based on the systematic, ‘Scientific Method’, which distinguishes subjects from objects, or ‘knower’ to ‘known’ and forces an either/or understanding of concepts that could equally well be viewed as a relational whole. The way to ‘knowing’ in the Process-Relational Worldview therefore, is to consider concepts as relationships, not dichotomous forms.

In the Process-Relational Worldview, the method for resolving dualism, and gaining understanding is based on a set of three principles, that define the relationships between parts, in a way that maintains the identity of each, of what would previously have been considered a dichotomous pair (such as nature-nurture), but emphasises their *relationship* to one another. Two of the principles are described as ‘moments’ of analysis. The final principle is synthesis, the relation of parts to whole, which sustains the identity of the whole. The method of analysis in the Discussion chapter is based on these principles.

#### **2.4.6.1 Identity of Opposites**

In this ‘moment of analysis’, the two previously contradictory concepts are understood as differentiated, co-equal polarities comprising one indissoluble whole. They constitute two distinct, yet relationally unified concepts, because the meaning of one depends on the meaning of the other; one cannot be understood without the other, and one becomes the other; no splits are permitted. For example, ‘action-in-context’ yields ‘pattern’, and ‘pattern’ constrains ‘action-in-context’ (Witherington, 2007). (Pattern being the necessary organisation.) No ‘cause and effect’ lines can be drawn - behaviour is the product of ‘nature’ but that this does not mean that behaviour cannot be the product of ‘nurture’. In fact behaviour is also equally seen as the product of nurture, but in a way in which linear causality cannot be established, because nature and nurture are not separable, they are part of the same indissoluble ‘whole’. This idea is more of an abstract idea – a way to conceptualise. Overton contends that it cannot be tested empirically, because

it can only be described by saying both concepts contribute to a unity, in a way that cannot be deconstructed using the scientific method. It can represent a conceptual merger, or fusion of the person-context relationship.

#### **2.4.6.2 Opposites of Identity**

In this 'moment of analysis', the two concepts are momentarily understood as having their own unique identity, separate from the other. These are similar to the Cartesian 'absolute', mutually exclusive identities (except they do not remain this way). In any holistic system, these are stable identities, enduring over time (although not necessarily in the same form). The behaviour of a child for example, could be momentarily explained by a biological point of view (e.g. emotional regulation) and it could also be momentarily explained by an environmental point of view (school rules). This creates the understanding that there are multiple perspectives to reality and explanation – each perspective is real, but limited. However, the more perspectives are incorporated into an explanation, the more effectively it describes the whole. The two viewpoints have to be integrated however into a more complete understanding, via the final principle, the synthesis of wholes.

#### **2.4.6.3 Synthesis of Wholes**

The final principle relates the parts to the whole – it is the viewpoint that 'co-ordinates and resolves the tension' between the dichotomous pairs that comprise the whole. A third viewpoint is required, above the original pair, which relates the two parts to the one synthesis. For example, 'the living organism' or 'life', would co-ordinate 'biology' and 'culture'. The living

organism (the whole) encompasses the ideas of it being both biology and culture. Overton argues that the synthesis provides the broad base for designing empirical enquiry – the synthesis gives us viewpoints (such as ‘the person’ or ‘biology’ or ‘culture’) from which we can examine universal processes, from each of these standpoints. So, from a ‘person’ viewpoint, memory, perception and emotions for example, are all valid subjects of inquiry. The processes are studied in individuals, across their particular life-course, and variations across individuals are put together to provide a holistic understanding of development, that avoids cause and effect, (mechanical) explanations.

This last form of analysis permits the establishment of particular, stable viewpoints, such as the biological, cultural and psychological viewpoints, which co-ordinates the two bipolar concepts. For example, the co-ordination of ‘biology’ and ‘culture’ by the ‘person’ viewpoint creates what others have called the ‘biopsychosocial’ model of a person (Greenberg & Partridge, 2010). The ‘person’ is the relational synthesis of biological and sociocultural processes (Overton, 2015).

When seeking to know and understand development, we accept that it consists of many multiple perspectives, which have to be taken into account. Our lived experience is embodied experience, and only by incorporating biological, psychological and sociocultural viewpoints can we hope to understand the whole. Concepts might be initially separated to provide

detailed information, but development can ONLY be finally understood through knowing the whole; history and necessary organisation included. Overton notes that the classic developmental theorists of the twentieth century; Piaget, Vygotsky, Werner and Erikson, acknowledge non-linearity and emergence. He cites Vygotsky (1978) to illustrate that development is not linear, but

*the gradual accumulation of separate changes... (but) a complex dialectical process characterized by... qualitative transformations of one form into another. (p73)*

## **2.5 Relationship to the current research**

I have chosen to situate my research within the principles of the Relational-Developmental Systems (RDS) metatheory because the cornerstone of the RDS approach is to integrate multiple modes and levels of explanation (Marshall, 2013). RDS-based theories focus on the individual-context relations as the basic unit of analysis (Lerner, 2015) and not within-child explanations of behaviour and learning. In this case-study design research, the focus of enquiry is the teacher-child relationship, so RDS is conceptually suited to the present research.

The multi-level, co-actional form of understanding, and the concepts inherent in the RDS approach accord with firstly, my own reading of the literature in regards to child development and secondly, my own personal experience of working with children, families, foster-carers and social workers in schools: mechanistic, reductionist explanations do not explain my observations of how

child development proceeds. They do not form satisfactory explanations for the success or failure in the education system, of children who have experienced early adversity. The focus of understanding in RDS is not on isolated 'things', i.e. children, or teachers, or parents, but on the *relations* between people and how these shape further beliefs, actions, progress and development. Since the ontological realities are 'activity, change, process and necessary organisation', then the objects of study in my research are also these activities, encapsulated within the teacher-child relationship.

Development is a non-linear process occurring continuously in a life-span time frame, through embodied co-actions in particular contexts. Development proceeds therefore in accordance with the principle of probabilistic epigenesis, which holds that development does not have a pre-determined cause; experience induces, maintains and effects developmental processes.

RDS-based theories include the three 'moments of analysis' (Overton, 2015): Identity of Opposites, Opposites of Identity and the Synthesis of Wholes. The latter two are included in my research design and analysis (Methodology Chapter p157). The Identity of Opposites is a conceptual idea, a way to understand child development holistically. It cannot form the basis of empirical analysis.

My research is oriented within a case-study design, utilising mixed-methods. My interest is in the detail of the relationship between the child and teacher, and how this influences both child development and progress in school.

This is not a linear, reductionist 'cause and effect' analysis, with 'predictable' outcomes. Instead, understanding is achieved through abductive inference; on providing the best explanation. As can be seen above, this resonates with the broad aim of Relational-Developmental Systems metatheory, articulated by Lerner (2012):

*To describe, explain and optimize intra-individual changes in adaptive development regulations, as well as inter-individual differences in such relations across life. (p29)*

RDS metatheory emphasises continuous change; it identifies the RDS as a dynamic system, with plasticity and hopefulness as defining features. During the course of this research, I hope to be able to identify principles from biological, psychological and cultural viewpoints, that support and hinder the relationship between child and teacher in school. I hope to be able to explain why a child has or has not engaged in mutually-beneficial relationships with staff over the course of the research, and from this, to contribute to what Lerner (2015) describes as 'a 'social-justice-relevant research agenda'.



## Chapter 3

### ATTACHMENT THEORY

#### 3 Introduction

Attachment Theory is a principal theoretical framework in this research. In this Chapter, I begin by describing the early origins of Attachment Theory and outlining its key ideas. Following this, I will offer a brief critique of some of the key assumptions.

I will attempt to re-frame the main ideas of Attachment Theory in terms of RDS concepts, as any theoretical contradictions will undermine the conceptual clarity of the present research.

I next review the literature relating the effects of early caregiving to child development: this study entails research with children *known* to have experienced neglect in the first year of life.

In Section 3.11, I briefly describe Ainsworth's (1947, 1978) research, from which the empirical classification of attachment behaviours arose, and describe an extension of Attachment Theory, Crittenden's Dynamic Maturation Model (Crittenden, 2000; Crittenden & Dallos, 2008).

Finally, I conclude with a brief summary of the alternative ways in which attachment style has been assessed post-infancy, including my own chosen method, the Manchester Child Attachment Story Task (Green *et al*, 2000).

### 3.1 Early history

Attachment Theory is one of the most influential theories relating to children's personality and social development (Rutter, 1995). It has provided some of the most important conceptual and methodological tools for understanding early socio-emotional development and developmental psychopathology (Thompson & Raikes, 2003). It has been described as a theory of the development of the personality over the lifespan (Ainsworth & Bowlby, 1991) and as a theory of emotional regulation (Howe, 2005; Schore, 2001).

Attachment Theory has its origins both in the theorising of John Bowlby and the detailed observations of Mary Ainsworth, who together, over several decades, frequently collaborated in the elaboration of a theory of attachment and social development. Bowlby's first formal statement of Attachment Theory was presented in three papers to the British Psychoanalytic Society between 1958 and 1960. His initial conclusion, in the early 1950s, and to which he later returned, which was that,

*the infant and young child should experience a warm, intimate and continuous relationship with a mother (or permanent mother-substitute) in which **both** find satisfaction and enjoyment.*

(Bowlby, 1951, p.13) (my emphasis).

He believed that this early relationship was essential for healthy mental and social development, and disturbances of this were the basis for the development of later psychopathology (Bowlby, 1944). Bowlby's conclusion forms the major underpinning assumption of the hypotheses of Attachment Theory.

The three papers formed the basis of the three future volumes of Attachment, Separation and Loss (Bowlby, 1969/82, 1973, 1980). These incorporated ideas and evidence from two empirical sources: firstly (filmed) observations of hospitalised children who had been separated then reunited with their parents, carried out over two years by Bowlby and his researcher from the Tavistock Clinic (James Robertson), and secondly from Ainsworth's extremely detailed, longitudinal studies of attachment behaviour in infants from 28 families in Uganda (Ainsworth, 1967) and later, together with her research students, with 26 families in Baltimore, providing empirical evidence for his theorising and an empirical method for assessing attachment security: the Strange Situation Procedure (Ainsworth, Blehar, Waters & Wall, 1978).

Bowlby sought to understand the psychological mechanisms that might link early adversity with later maladjustment, behavioural difficulties and mental health. He associated various disciplines, including control-systems theory, cognitive processing, memory systems, ethology and evolutionary theory to form a wide-ranging theory of normal child development, which at the same time, sought to explain aspects of maladaptive development. This theory sought to extend not just the cognitive, intellectual development of thought as proposed by Piaget (1952) but the ontogeny of the various processes associated with the development of social relationships; the development of memory, emotional regulation, behavioural processes, planning, empathy, a self-concept and motivation: the capacities that a child gradually develops in a social context, initially through reciprocal interactions with a primary caregiver, and later with others. Development was seen as a lifelong, adaptive

endeavour, ideally resulting in an autonomous, social, creative adult. Bowlby's clinical experience was largely with children who had suffered early adversity in the form of early loss and trauma and he saw how the differences in their early experiences and later functioning could better be understood in relation to what happened under conditions of normal development (Cicchetti & Greenberg, 1991).

### **3.2 The importance of instinctive behaviour**

Bowlby continued his theoretical explorations by reviewing data from existing empirical studies of infants' cognitive and social development, including those of Piaget (1952, 1955), J. Huxley, Erikson, Lorenz, von Bertalanffy and Mead. He also acknowledges his indebtedness to ethology, for rescuing the notion of instincts from a clinically-helpful, but untestable psychoanalytic context and placing them within a testable, scientific framework - Attachment Theory takes as a core assumption the notion that there are instinctive patterns of behaviour, with the ultimate aim of promoting survival (Bowlby, 1957).

Bowlby believed that instinctive behaviour in humans is not inherited:

*What is inherited is a potential to develop certain sorts of system, termed here, behavioural systems, both the nature and form of which differ in some measure according to the particular environment in which development takes place. (Bowlby, 1969, p45.)*

In line with evolutionary theory, he saw that inherited, rigid patterns, or sequences of behaviour are unlikely to be able to adapt to changes in the environment, and what was needed was a balance by which behavioural

systems could respond through goal-corrected behaviour to environmental change:

*A design that permits modification according to the environment is likely to result in behavioural equipment that is better adapted. (p46)*

(Adaptation will be further discussed in Section 3.8.2.3.) Bowlby recognised that a great deal of human behaviour cannot be called instinctive, but proposed instead that in early infancy, most of the behavioural systems in working order were simple ones that could be integrated together as sequences of behaviour, which in response to the environment, integrate into organised hierarchies, that through memory representations, permit predicting and planning.

### **3.3 The Internal Working Model**

Bowlby linked psychoanalytic ideas of internal (mental) representations of an external world with the cognitive psychologist Craik's (1943) idea of an 'internal working model' (IWM). The essential features of Craik's 'internal working model' were that firstly, there is a structural correspondence between reality, and an internal representation, that somehow models what goes on in the outside world. Secondly, the internal model has a functional role in guiding behaviour.

### **3.4 Reconciling psychoanalysis with ethology**

In *Attachment* (1969/82), Bowlby sought to explain the nature of the formation of the bond that an infant makes with its principal caregiver, usually the

mother. He believed the infant's attachment-related behaviours were instinctive and part of normal development.

Bowlby had noted that organisms from ascending levels of the phylogenetic scale regulate their instinctive behaviours with increasing complexity and flexibility. (In humans this regulation was analogous to 'motivation'.) In the most evolutionarily-advanced animals, instinctive behaviours were orientated towards a set-goal, which may be 'goal-corrected' with planned adjustments and the creation of hierarchies of sub-goals. This was made possible due to memory development and hence an IWM. The more adequate an animal's IWM, the more accurately the future can be predicted, giving possibilities for creating new sub-goals.

(This view was at odds with traditional psychoanalytic views of motivation, which was thought of in terms of rigid, instinctive drives and drive-reduction, rather than the ethological framework of an innate capacity to guide instinctive behaviours that facilitated *survival*.)

He noted however, that the adaptability of the system, although with the biological function of promoting survival, might not always work in the later best interests of the organism, as changes in the environment may divert behavioural systems away from the path of optimal development. Bowlby's suggested environment in which instinctive attachment behaviours promote survival is that of caregiving in the context of small groups in a hunter-gatherer society; early inadequate caregiving may lead to the development of

an IWM that does not guide behaviour in the most optimal way in later relationships and pathological functioning may ensue.

Bowlby applied the idea of a set-goal to human attachment, reconceptualising the prevailing psychoanalytic view of the mother-infant relationship as secondary to the gratification (satisfaction) of libidinal instincts, in terms of a more ethologically-based one, proposing instead that the infant's instinctive, universal behaviours were those such as clinging, sucking, following, and the communicative behaviours of smiling and crying. Bowlby proposed that stimuli for automatic attachment behaviours in young babies could be external (such as sudden change of stimulation, rapid movement, cold, being alone) or, in line with more traditional psychoanalytic ideas, intrapsychic, or pain, or hunger. In older infants, these could also include the whereabouts and behaviour of the mother, such as the mother departing, or being absent.

### **3.5 The attachment cycle of behaviours**

Bowlby defined *attachment behaviours* as those *instinctive behaviours* that have proximity to an attachment figure as a predictable outcome (a set-goal), to reduce the feelings of distress. The infant then engages in other behaviours (such as smiling) to maintain proximity. These cause specific responses from a primary attachment figure (known as caregiving), resulting in the termination of infant attachment behaviours, when safety has been attained.

The caregiving behaviours are thought to provide a sense of 'security' (Ainsworth, 1977) in the mind of the infant. When internal arousal or distress, has diminished and a feeling of safety is present, the infant is then able to

explore their surroundings and process / form representations from sensory input (vision, smell, hearing, taste, touch) via experiences provided by the caregiver and the environment within which the infant lives. With the development of mobility, the nature and variety of these experiences is widened, and the child begins to develop a sense of agency, commensurate with opportunities provided by caregivers. The 'attachment cycle of behaviour' is therefore two-fold: the initial goal is proximity to a caregiver to seek comfort when distressed, the second goal is exploration when calm, providing opportunities for learning and development.

### **3.6 The notion of 'safety'**

Bowlby suggested that once attached to a primary figure, mobile infants are able to use their attachment figure as a 'safe base' from which to explore (a natural progression in development) and a 'safe haven' to whom they can return when they feel threatened. Returning to the 'safe haven' need not be physical, it could be through verbal and non-verbal signals and, Bowlby suggested, depended on the level of threat perceived by the infant. Sroufe and Waters (1977) reconceptualised this as a sense of 'felt' security.

Ainsworth's naturalistic observations in the homes of the families she studied, supported this notion of two behavioural systems, attachment and exploration, that are complementary to each other.



## **3.7 Critique of Attachment Theory**

### **3.7.1 Theoretical underpinnings**

An initial evaluation of Attachment Theory shows that at its inception, its theoretical underpinnings were derived and drawn together from many years of in-depth study and analysis of major psychological and biological theories, several of which, especially from psychoanalytic theory, were rejected when they did not fit with the empirical evidence of Bowlby's own wide-ranging and long-standing clinical experience of working with families, and years of detailed observations of children who had undergone separation. Attachment Theory cannot be criticised for a lack of theoretical ideas upon which it was founded. Furthermore, looking outwards from the mother-child dyad, and pre-dating future models such as Bronfenbrenner's (1979) ecological systems theory of development, Bowlby placed heavy emphasis on the role of social networks, economic and health factors on the development of well-functioning mother-child relationships, rather than focussing on within-child or solely parent-child dyad explanations of conflict.

### **3.7.2 The Internal Working Model**

Craik's internal working model was likened to a small-scale reality of the outside world, which was used to form predictions about the behaviour of other people. In early infancy, this was concerned with the physical and psychological availability of the primary caregiver as a means to reduce distress and provide safety. With increasing age and the formation of episodic memory, the IWM was also theorised to hold representations about the self, as distinct from others, and with further cognitive development (including

language and thought), the ability to form a theory of mind – to understand that other people have intentions and goals different to one’s own. These representations were hypothesised to influence incoming sensory information, including perceptions, to shape understanding about the world and how people behave in it; representations become interpretive filters. These representations are the bridge between personal experience and beliefs, which support predictions about other people and provide guidance on ways to act in the world (Thompson & Raikes, 2003). (The ability to predict with some accuracy itself providing a means to ‘feel safe’.)

However, “in the very power of such a model, lies a trap: it can too easily explain anything” (Hinde, 1998, p378), a concern shared by others (Belsky & Cassidy, 1994; Rutter & O’Connor, 1999).

That children do create representations and use these to influence behaviour is without doubt and has been given empirical support in longitudinal research:

*Experience at one age predicted representation at the next, which in turn predicted representation and social behavior. (Carlson, Sroufe & Egeland, 2004)*

Thompson & Raikes (2003) point out that the IWM is a conceptual metaphor, rather than a rigorously-defined theoretical construct, and as such, it remains open to questions of conceptual clarity: are representations consciously accessible, how are they related to memory and how do they develop and change over time, as a child develops increasingly sophisticated language

and thought? How indeed, do they act as perceptual filters, and predictive heuristics in order to shape behaviour?

Neuroscience research, and Complex Dynamic Systems notions of 'higher-order processes' has contributed partial answers to these questions, at least in terms of predictive ability. With repeated sensori-motor experiences, hierarchies of organisation spontaneously form (Figure 2.2 p33 is helpful to conceptualise this). These allow the organism to use the 'higher-order' processes to guide (limit) behaviour; to extrapolate beyond current sensory input. Memories of past events and plans for future events do enter conscious awareness, in order to influence behaviour. Edelman (1989) describes this as 'higher-order consciousness'. Toates (2006) describes a detailed model of the hierarchy of behaviour, cognition and consciousness, which illustrates this in more detail.

The notion that increasing sophistication in a child's use of language and in the development of thought creates new ways of conceptualising experience (i.e. new higher-order processes) and therefore creates different understandings and meanings related to such experience, is taken up by Crittenden (2000) in her Dynamic Model of Maturation.

### **3.7.3 The set goal of 'proximity to a caregiver'**

My understanding of Attachment Theory has been hindered by the notion of the set-goal being "proximity to a care-giver". Bowlby gave credence to the idea that instinctive patterns of behaviour could be terminated by both simple visual (or auditory) gestalts and via internal receptors. However, neither of

these were elaborated in the termination of attachment behaviour, other than to say, commensurate with Ainsworth's idea of 'security' and the notion that the goal of instinctive behaviour is ultimately survival, that the infant had reached a place of 'safety'.

Bowlby utilised the notion of control systems theory and the idea of goal-corrected behaviour to frame his understanding of the development of sequences of behaviour. Integral to this are feedback systems - essential for the initiation and termination of instinctive patterns of behaviour. Although these were referred to, they were not elaborated in the termination of attachment behaviour. However, they could be – distress and feelings of 'stress' are related to increased levels of internal physiological arousal and these physiological states could be monitored by the infant's physiological systems. Homeostatic processes could act to reduce the level of arousal and bring the infant back to a physiological state of 'calm' and 'felt security'. These physiological processes are not well-developed in the newborn; it is the care-giving activity of a familiar person that most efficiently reduces physiological arousal (although physical activity such as kicking, would release endorphins that reduce pain and are associated with feelings of pleasure).

This would mean a re-framing of the set-goal being more specifically to achieve a 'physiological state of calm' rather than 'proximity to a care-giver' and is taken up in Chapter 5, under the concept of 'autonomic balance'.

### 3.7.4 The Environment of Evolutionary Adaptedness

Bowlby stated that what is inherited, is a potential to develop certain sorts of behavioural systems, not a rigid, fixed-pattern of behaviour. He believed that there were certain *patterns* of behaviour, unique to each species, and the form that each pattern took depended on the particular, unique environment of the individual. Through his research and collaborations, he believed that the environment to which instinctive behavioural patterns of human attachment were best 'adapted' was the small social groups of the hunter-gatherer societies living some two million years ago.

Again, I think that this idea could be made more specific. The Environment of Evolutionary Adaptedness could more precisely be thought of as being '*another person*', particularly the primary caregiver in infancy. Humans are uniquely linguistic, socio-cultural organisms, and to survive successfully in groups, we need to develop physiological and homeostatic processes as infants that enable us to maintain 'calmness', i.e. regulate arousal in the face of challenge. From a calm physiological state, infants can explore and develop language, and (as children and adults) socially interact in a way that as Bowlby noted, brings satisfaction and enjoyment to both people. (It is salient to note that both Pepper (1942) and Whitehead (1929) considered the ultimate aim of goal-directed behaviour to be 'satisfaction'.)

Developments in neuroscience have shown that the infant brain develops in response to the nature of the relationship with another person. The way we develop physiological processes to maintain a state of calm and the way we develop language and organised patterns of behaviour that culminate in

playful social interaction – **is** via another person, initially, the primary caregiver. Affective attunement (see Section 3.9.2) i.e. harmonised co-actions between the infant and primary care-giver, supports the development of homeostatic mechanisms that contribute to efficient self-regulation and interpersonal skills, including empathy, that lead to successful, pleasurable, creative activity in a socio-cultural world, in keeping with systems theory. However, the social group is not irrelevant, rather the activities of the group affect the more proximal care-giving behaviour of the primary care-giver (Sameroff 1982).

Disturbances to, or the absence of a care-giving relationship, such that either or both the infant and primary care-giver do not receive satisfaction and enjoyment, has been linked to mental health problems in both infant and caregiver (Calkins & Keane, 2009; Minnis, Marwick *et al*, 2006; Murray & Cooper, 1997; Trevarthen & Aitken, 2001). The inability to form warm, satisfying relationships generally with other people beyond infancy forms the basis for many diagnostic criteria in the DSM-V; it is undoubtedly linked to poor mental health (Minnis *et al*, 2006; Arseneault, Moffitt, Caspi, Taylor & Silva 2000; Schore 2001). The foundations for relating well to other people, are created during the earliest years of life (Sroufe *et al*, 2010, Trevarthen, 2001).

The next section will consider Attachment Theory in relation to Relational-Developmental Systems (RDS) metatheory, in an attempt to evaluate Attachment Theory as a relational-developmental system. This research has Attachment Theory as a conceptual underpinning, so it is vital to consider this

issue and acknowledge similarities whilst attempting to reconcile, or at least recognise, the contradictions in order to create coherent conceptual clarity throughout the Discussion.

### **3.8 Relational-Developmental Systems and Attachment Theory**

There are several areas of commonality between Attachment Theory and RDS (and other metatheories within the Process-Relational Worldview, including most (but not all) of the Dynamic Systems Theories).

#### **3.8.1 Similarities**

##### **3.8.1.1 The integrated nature of environment and the organism**

Bowlby collaborated with systems' theorists, including von Bertalanffy, and these ideas are recognised throughout Attachment Theory in Bowlby's frequent acknowledgement that a nature / nurture split is meaningless, and that both organismic factors and environmental influences are inherent in any process of development, in a mutually influential manner.

*In living organisms, neither structure nor function can develop except in an environment, and that, powerful though heredity is, the precise form each takes, will depend on the nature of that environment. (Bowlby 1957 p231)*

##### **3.8.1.2 Development takes place through internal changes in structure**

Bowlby made frequent references to instinctive behaviour being related to changes in the structure and internal physiological state of the organism.

Both the initiation and the termination of behaviour could be internal, for example through proprioceptors or other interoceptive stimuli, via processes of negative feedback.

In accordance with Piaget's ideas, Bowlby also described internal structures being arranged in a hierarchy of organisation, for example, he proposed a 'hierarchy of regulation of sensory processing', with some form of an executive controller to select salient information for further processing (Goldberg, 2000).

### **3.8.1.3 Development takes place in a transformational manner**

Bowlby recognised that development is not linear and additive, but rather that experiences lead to a re-organisation of internal structure, contributing to behaviour which is not just variational, but also transformational (qualitatively different from what was present before, such as thought changing from a concrete to an abstract form):

*Development turns at each and every stage of the journey on an interaction between the organism as it has developed up to that moment, and the environment in which it finds itself.*

(Bowlby 1973 p 412, cited by Sroufe *et al* 2010)

Development is seen as a cumulative history, with new experiences being shaped by what has gone on before, rather than just added on to existing structures like the bricks of a house are added on to previous layers.

These aspects are entirely consistent with the Process-Relational Worldview and the RDS metatheory.



## **3.8.2 Differences**

### **3.8.2.1 The notion of 'Instinctive Behaviour'**

Attachment is built upon the notion of instinctive behaviour, and whilst Bowlby acknowledged that we do not inherit fixed patterns of behaviour, he did believe that certain behaviours (such as crying) are instinctive / innate and formed the basis for incorporation into later sequences of instinctive behaviour. RDS eschews any form of inherited, innate behaviour. The term 'innate' is used to mean 'present at birth', but this is not wholly genetically-determined; it is a result of probabilistic epigenesis between conception and birth. All of the newborn's sensory systems are functioning prior to birth (Gottlieb, 2001) and any behaviour present at birth has developed during fetal development. The communicative behaviour of smiling is present in an immature form at birth; it is only through experience with a responsive caregiver, that this develops into a sequence of purposeful, communicative behaviour.

### **3.8.2.2 The notion of 'stimulus and response'**

Since the organism is taken to be a hierarchically-organised system of inter-dependent processes, the notion of 'stimulus' causing a 'response' (i.e. a stimulus is described in terms of an efficient cause) is now meaningless. (Which part of an organised system responds to a stimulus? All of it, in a holistic, historical manner.)

Prior experiences and current organisation are interpreted in the particular

context, and the activity of an organism is seen to be *probabilistic*, albeit with certain tendencies (based on prior experience) to act in a particular way, which is 'lawful', goal-directed and consistent with prior activity. The term 'stimulus' is re-conceptualised as 'affordance' – the environment provides a specific context that provides the basis for 'activity', the course of which will lead to further change in the organism. This may or may not alter the course of development into an adaptive direction (see next section, Adaptation). In ethology, a particular visual gestalt such as a bird's courting display, would be termed an 'affordance' and not a 'stimulus'. The term 'response' is viewed as goal-directed 'action' (or 'activity', if it is at a physiological level).

### **3.8.2.3 Adaptation**

All behaviour, including adaptive behaviour is active, rather than passive - the organism does not simply passively adapt to the environment, or environmental change, it co-acts with it. Adaptive behaviour refers to *how* the organism acts in the context of changing environments (termed perturbations), so as to increase its survival (Overton 2015). (I think that as well as promoting survival, adaptive behaviour also brings an emotional experience that has a biochemical basis and is perceived as rewarding.) As development proceeds, it may also refer to how flexible the organism can be in the particular context in which it finds itself – if the organism has developed very stable patterns of behaviour (attractor states) as a result of prior experience, then the probability that new patterns of behaviour could occur (which might optimise developmental processes), is low, in which case, these stable patterns of behaviour might be described as 'maladaptive'

(Thelen, 2005). However, if the system of holistic processes that constitutes the organism has developed flexibly, in such a way that several different ways to act are possible, and one of these actions promotes the functioning and survival of the organism in that context, then this behaviour is described as adaptive.

Behaviour can also be viewed as adaptive, if both partners (organism and environment – such as another person), benefit (Gestsdottir, 2014), that is, the activity and relationship are mutually rewarding (which promotes survival). In the case of early attachment behaviour, when both partners benefit from a secure infant-partner relationship, then this is seen as adaptive behaviour; it promotes the wellbeing, positive development and survival of both infant and caregiver. If the caregiver is inconsistently available, and the infant develops stable patterns of behaviour that mean that the caregiver becomes available in times of distress, then this behaviour is seen as adaptive, because the infant's activity (with the goal of resolving distress) is successful. However, in another context, if the infant's same activity brings anger from another caregiver, or person, then this behaviour is seen as maladaptive, because distress cannot be resolved. When goal-directed behaviour is thwarted, then alternative ways of acting are tried. The alternative ways are still the outcome of the holistic organisation of processes that *is* the organism – it is still probabilistic behaviour that is the result of developmental activity up until that point. Sroufe *et al* (2005) describe it thus:

*If these (ways of behaving) become the core of established patterns, they may be maladaptive in the long run, because of experiences they compromise at the time, and reactions they garner from others later.*

In other words, the maladaptive ways of behaving reduce the likelihood of the child benefitting from other rewarding relationships that would support the development of rewarding, adaptive behaviour.

### 3.9 Attachment in early infancy

#### 3.9.1 The importance of the very early caregiving relationship

The bulk of the published research about attachment refers to child attachment behaviours towards and following, the end of the first year of life – the outcome of the relationship between the infant and primary caregiver. Proximity-seeking to assuage distress, the creation of an internal working model as a representational prototype of self in relation to others and the prediction of future functioning on the basis of the outcome of the caregiving relationship have all formed the foundation stones of hypotheses and much research in Attachment Theory. Until recently, very little attention has been paid to the nature of the relationship in the first weeks and months of life, and how the dyadic interactions influence dynamically-organising brain circuits, in what extensive research has deemed ‘critical periods’ or ‘sensitive periods’ in infant development (Calkins *et al*, 2013; Feldman, 2015; Marshall & Kenney, 2009; Meaney, 2016; Sroufe, 2013).

Bowlby was interested in how early experience was encoded into brain circuits. He noted that the earliest attachment relationship was not just to comfort in times of distress, but to *communicate*, and the different forms of communication - touch, voice, gaze – were accompanied by very strong perturbations in physiological and emotional states.

(The caregiver-infant relationship is) ...*accompanied by the strongest of feelings and emotions... (occurring by means of) facial expressions, posture, tone of voice, physiological changes, tempo of movement and incipient action... Many of the most intense emotions arise during the*

*formation, maintenance, the disruption and the renewal of attachment relationships.* (Bowlby, 1969, p242)

### **3.9.2 Affective attunement and synchrony**

Genetic expression and dynamic, changing multisensory infant experiences with the caregiver and physical environment are thought to contribute to intrinsic rhythms of CNS and ANS arousal (Schore, 2001). Reine and Capitanio (1985) believe that an *essential* attachment function is to promote synchrony or regulation of biological and behavioural rhythms and systems between infant and caregiver. Wang (1997) states that psychobiological attunement and the establishment of mirrored, rhythmical physiological states are fundamental processes that contribute to the formation of the attachment bond, such that attachment could be defined as “the regulation of biological synchronicity between organisms”. Similarly, Sroufe (1996) states,

The crescendos and decrescendos of the infant’s peripheral (ANS) and central (CNS) arousal systems underlie emotions and so the mutual entrainment of affective states in attachment transactions can be defined as the dyadic regulation of emotion.

Isabella & Belsky (1991) in a study of 153 mother-infant dyads noted that dyads that fostered secure attachment were characterised by interactions that were synchronous. Regulated, affective interaction with a familiar, predictable primary caregiver creates not only a sense of safety, but also a positively-charged curiosity that promotes exploration of novel environments and experiences (Grossman, Grossman & Zimmerman, 1999).

In 'Attachment' (1969), Bowlby postulated that a hierarchy of "increasingly sophisticated" control systems, originating in the limbic system, emerged in the developing brain of the infant in response to particular types of caregiving, and these would form the basis of a lifelong capacity to regulate physiological arousal. Since fluctuating arousal states underpin the subjective experience of emotion, then this means that the nature of the early caregiving relationship shapes the developing capacity to regulate both physiological state and emotions. More specifically, it is posited that the turn-taking, playful and *synchronous* interactions (termed 'biobehavioural synchrony' by Feldman, 2015) and which epitomise sensitive, responsive, available caregiving, are the means by which neural circuits that underpin the regulation of physiological states are developed and connected.

Synchronised face to face interactions between infant and caregiver begin with increased activity in the infant visual cortex at 8 weeks. Feldman, Greenbaum & Yirmiya (1999) describe them as being very highly arousing, short periods of interpersonal events that provide 'high levels of cognitive and social information' for the infant. The dyadic interactions are initially infant-led, and the subconscious responses of a sensitive caregiver to infant engagement and disengagement create a rhythmic interaction. Periods of mutual gaze are highly arousing (i.e. energy-consuming) for the infant, indicated by increased heart rate, and given a positive valence (i.e. experienced as pleasurable, through the release of neurotransmitters such as oxytocin (Insel & Young, 2001) and presumably endorphins, also associated with such effects. Eye contact is considered to be the most powerful means

of establishing a *communicative* bond between people (Kampe, Frith & Frith, 2003). Such high metabolic states cannot be maintained for long, so infant and caregiver disengage and this is accompanied by infant cardiac deceleration (i.e. a recuperation phase). These are synchronised with lags of milliseconds:

*Synchronicity is defined as a match between mother's and infant's activities that promotes positivity and mutuality in play. By synchronising with the child's attentive states, mothers structure playful interactions, regulate infant attention... and promote the infant's capacity for self-regulation... mutual synchrony exists when both partners simultaneously adjust their attention and stimulation in response to the partner's signals. (Feldman et al, 1996, p349)*

Lester, Hoffman & Brazelton (1985) state that,

*Synchrony develops as a consequence of each partner's learning the rhythmic structure of the other, and modifying his or her behavior to fit that structure. (p24)*

Stern, Barnett & Spieker (1983) describes 'moment to moment state-sharing', where each member of the dyad creates physiologically similar internal states, with 'open spaces' where, although physically together, each is auto-regulating their levels of physiological arousal. Bergman & Fahey (1999) and Feldman (2012) observe that in the attuned state, infants learn to anticipate responses from their caregivers and respond in turn at the appropriate time (the beginning of turn-taking and a precursor to verbal communication).

Trevarthen (2001) describes this as affective attunement, and shared mental states as 'intersubjectivity', operating below conscious awareness. That



infants gain delight from such interactions is evidenced by Tronick's (1998) 'Still face paradigm' where loss of the shared synchrony results in anxiety, visible distress and fear. Neuropeptides such as oxytocin and vasopressin, and neurotransmitters associated with reward (such as serotonin and dopamine) are thought to be implicated in the formation and maintenance of the attachment bond (Carter, 2014).

Developmental research also shows that frequent losses of attunement often occur, which rises into conscious awareness of the caregiver. Asynchrony or mis-attunement are also features of the turn-taking interactions and this is thought to be given a negative valence and an early 'stressful' experience (Schore, 2001). Sensitive caregiving by the caregiver results in the reinstatement of synchrony, termed 'interactive repair' by Tronick *et al*, (1989). Repeated transitions between positive valence states and negative valence states is also considered to form the basis of resilience, as the infant learns that negative experiences are later followed by pleasurable ones (Schore, 2001).

Bowlby proposed that the infant's capacity to cope with stress is contingent upon certain maternal behaviours: mutually-constructed attachment co-actions between infant and care-giver form the basis of an emerging biological control system that regulates physiological arousal, and hence, emotion. The developing regulatory capacities of an infant are therefore experience-dependent and contingent upon sensitive, responsive, available, consistent and playful caregiving behaviour, and the ability of the infant to respond.

### 3.9.3 The importance of synchrony in the development of the regulation of physiological arousal

Synchrony is considered to have a regulatory function; during synchronous interactions, matched attenuation of the stress response and alterations in respiratory sinus arrhythmia is observed in caregiver and infant, but this is not found during times of mismatch and asynchrony (Feldman, 2015). The experience of highly arousing experiences, followed by a period of lower arousal, or a calm state is also considered to be the basis for the ability to self-regulate (Feldman 2009).

In synchronised face to face interactions, both members of the dyad move from states of low arousal, of calm, to states of very high arousal, and back again. When the frequency of the dyadic interactions of engagement and disengagement match the frequency of the infant's endogenous physiological rhythms, then resonance and amplification of positive affect and arousal occurs. Sander (1991) describes 'resonance', the *amplification* of positive affective states which occur when both are in synchrony. Schore (2001) notes,

*This amplification especially occurs when external sensory stimulation frequency coincides with the organism's own endogenous rhythms... When a psychobiologically attuned dyad co-creates a resonant context within an attachment transaction, the behavioral manifestation of each partner's internal state is monitored by the other, and this results in... an amplification of the positive state in both. (p19)*

This has also been described as 'affect bursts' (Scherer, 1994), or 'vitality affects' (Stern, 2000), to describe the delight and excited pleasure that infants

display during synchronised, turn-taking play involving familiar faces and voices. Stern also comments that the co-action creates “mutual regulatory systems of arousal”. With regard to emotion, Schore (2001) states that,

*Reciprocal facial signalling, mutual rhythmic entrainment and dyadic resonance thus act as a psychobiological context for an open channel of social communication, and (these) interactive experiences promote the outward expression of internal affective states in infants. (p20)*

In other words, the infant is learning the associations between physiological arousal states, subjective emotional feelings (via pleasurable sensations mediated by neurotransmitters such as dopamine, oxytocin and endorphins (Schore, 2003) and facial expression – the beginnings of emotional expression, social interaction and the subjective learning of the role of emotions not just in communication, but in understanding one’s own ‘feelings’ (Sleed & Fonagy, 2012).

Face to face turn-taking and communicative synchrony have been described by Trevarthen, (1998) as ‘protoconversation’ and the interactions which constitute this develop what Trevarthen *et al* (2001) refer to as ‘primary intersubjectivity’ – the infant shows by co-ordinated actions, that his/her actions are purposeful and therefore, consciously regulated. The medial frontal cortex has been shown to be involved in play and separation behaviours, laughing, crying and facial representations (MacLean, 1993), so reciprocal connections into this area are also implicated during the development of primary intersubjectivity.

### 3.10 Attachment re-defined

The definition of Attachment can therefore also be extended to ‘the regulation of biological synchronicity between organisms’ (Wang, 1997). Grossman, Grossman and Zimmerman (1999) observe that attachment is *not just resolution of distress*, it is also the amplification of positive states, and that regulated emotional interactions with a sensitive, responsive caregiver create not only a sense of safety, but positive, rewarding emotional states which contribute to the feelings of curiosity and the desire to explore and learn.

Sroufe (1997) defined attachment as ‘the dyadic regulation of emotion’ – the fluctuating physiological arousal states of the CNS and ANS are tied to positive and negative ‘feeling states’ during person-to-person social interactions and these underlie internal subjective emotional experiences, the communicative expression of these through face and voice, and the regulation of both. This will be discussed further in Chapter 5.

The experience of comforting touch and the mutual interactions that occur during the first months of life are thought to be the precursors of a child’s ability to regulate arousal, recognise and label emotions, maintain attention, develop language skills, turn-take in conversations / social activities, develop empathy and formulate a self-concept (Calkins & Keane, 2009; Eisenberg *et al*, 2004; Kim & Cicchetti, 2010, Kochanska & Knaack, 2003; Kopp, 1989, Pearce, 2009). Sroufe *et al* (2005) state that, ‘Early regulation is the platform upon which individual adaptation is constructed’ (p87). Schore (2000a, 2000b) contends that attachment theory is in essence, a regulatory theory.

### **3.11 Classification of infant attachment behaviour**

#### **3.11.1 Ainsworth's classification of attachment behaviour**

Bowlby's theory was supported by Ainsworth's (life-time of) further research based on naturalistic observation of infants and their carers. Without this, there would be no empirical validation of his theorising. Ainsworth's studies of unweaned babies in Uganda and a longitudinal study conducted in Baltimore linked detailed home observations with organised infant patterns of attachment behaviour at one year, in an assessment termed the Strange Situation Procedure (SSP) (Ainsworth & Wittig, 1969). Eight significant events of mother and stranger combinations being present and absent for the child, including one of the child being alone, are organised. Child responses to these various combinations were observed, particularly the responses to the return of the mother. Ainsworth identified three categories of an organised behavioural attachment response, two insecure and one secure (B). (The insecure pattern was subdivided into two groups: ambivalent (C) and avoidant (A)). Analyses of the home data showed that ambivalent and avoidant children had less harmonious relationships at home. Furthermore, caregiving behaviour at home could be correlated with the three categories of organised reunion responses. Thus, the Strange Situation assessment depended for its validity upon the detailed home observations (and is meaningless without them). The observations led to the now widely-used classifications of patterns of attachment in children (Ainsworth, Blehar, Waters & Wall, 1978). In fact, Ainsworth later identified a continuum of eight categories of secure and insecure responses (A1, A2, B1, B2, B3, B4, C1 and C2). Further observations by members of the research team led Main and Solomon (1990)

to add an additional category (D) for children whose attachment behaviours were disorganised – they lacked a coherent strategy to resolve their distress in the presence of their caregiver, when attachment behaviour was triggered.

Previous sections describing attachment behaviours as organising dynamically might seem to be at odds with descriptions of categorical ‘patterns’ of attachment behaviour. RDS theories propose that development proceeds in a non-linear fashion, and that stable, hierarchically-organised patterns of behaviour can and do develop as a result of activity in particular contexts. The Ainsworth classifications of early infant behaviour may be viewed as universal, stable, organised patterns – rarely have researchers identified groups of children with behavioural patterns that do not closely parallel the ABCD infant classifications (Thompson & Raikes, 2003). Additionally, not a single study has shown that the Ainsworth patterns are due to temporary variations in behaviour (Sroufe *et al* 2010).

In their review of the effects of early experience on later outcomes during the (ongoing) 30-year+ Minnesota Study of Risk and Adaptation (MSRA) with 180 families, the researchers state that,

*Some of the most theoretically meaningful and empirically clear links between early experience and later behaviour were based on patterns of attachment assessed at age 12 and 18 months of age.*

(Sroufe *et al* 2010, p39)

This gives some validity to research attempts to relate early experience to

later outcomes, *despite* the dynamic and context-dependent nature of development. Large sample sizes can permit statistical control of variables, but for researchers interested in developmental processes, then many studies of detailed individual development are required (Rutter, 2000). The MSRA attempted to balance large-scale collection of data with detailed descriptions of individuals and their contexts, in an attempt to understand *processes* of continuity, as well as change.

### **3.11.2 Extension of these categories: The Dynamic Maturational Model**

The original research that led to the classification of attachment styles was conducted largely with middle-class families, with other samples of varying risk, due to low income and family stress (Spieker & Crittenden, 2010). Some children were difficult to classify, particularly those in high-risk samples. Crittenden's PhD research (under the supervision of Ainsworth) investigated the dyadic behavioural patterns of children who had experienced child abuse and neglect, with their caregivers. A new A/C organisation was identified (Crittenden, 1992). This closely resembles the later D organisation identified by Main & Solomon (1990) (Stacks, 2010).

Rather than the set goal being 'proximity' to the caregiver, Crittenden saw the set goal of adaptive behaviour as being to maintain *availability* of the caregiver. Crittenden's research identified the behavioural strategies of children as being individually adaptive (unlike Main, who saw adaptive behaviour as being universally directed at obtaining proximity to a caregiver (Landa & Duschinsky, 2013).

Attachment Theory proposes that development is a *dynamic* process, in conjunction with the particular caregiving environment. Therefore, attachment classifications (as indicators of representations of relatively stable, organised patterns of behaviour with the goal of assuaging distress) might in fact be expected to change, firstly if the nature of the care-giving environment changed, and secondly, as children's ability to form more complex types of representation developed and changed with age. This forms the theoretical basis of the Dynamic Maturational Model of attachment and adaptation (Crittenden, 1995, Crittenden, 2006; Crittenden & Dallos; 2008). Crittenden worked mainly with clinical populations, latterly as a Family Systems Therapist and she was concerned to identify ways in which patterns of behaviour could be more effectively understood as adaptive, with the aim of promoting child development through supporting families to engage in mutually-satisfying relationships.

Based on family work for its empirical validation, the model extended the A and C categories to 8 differentiated subtypes: A1-2 (or C1-2) being the least severe, with A7-8 (or C7-8) being the most severe. The secure (B) classification was extended to five subtypes, with B1-2 being reserved, B4-5 being described as 'reactive' (i.e. emotionally reactive) and B3 being the most flexible strategy ('comfortable'). The alternating A/C classification is retained as the most potentially maladaptive (for later life functioning) strategy, being strongly linked to the development of psychopathy. The advantage of such a differentiated classification is that in doing so, a more detailed examination of relationships is entailed, with the suggestion of a more tailored approach to



dyadic and family difficulties.

### **3.11.3 Attachment assessment of school children**

In the United States, the assessment of pre-school and school-aged children are the ones developed by Crittenden, and the MacArthur Working Group on Attachment (Cassidy, Marvin & the MacArthur Working Group, 1992). Both are based on Ainsworth's thinking and procedures, and designed to interrogate aspects of the IWM. The MacArthur story stems (Bretherton, Oppenheim, Buchsbaum & Emde, 1990) are designed to access representations of the child-caregiver relationship. Waters, Rodrigues & Ridgeway (1998) proposed a different scoring protocol, to include narrative elaboration and 'prototypical scripts'. Murray, Woolgar, Briers & Hipwell (1999) studied doll's house play as a potential correlate of current infant-caregiver interactions and emotional adjustment in school.

Rutter, Kreppner & Sonuga-Barke (2009) provide a review of methods of assessing attachment security and insecurity, as well as a helpful discussion regarding the conflation of terms associated with attachment 'disorder'.

### **3.11.4 The Manchester Child Attachment Story Task**

The Manchester Child Attachment Story Task (MCAST) was developed in an effort to generate a new and rigorous methodology to make detailed classifications of IWMs of attachment in school-aged children between the ages of 5 and 8 (Green, Stanley, Smith & Goldwyn, 2000). It builds upon previous methodologies, eliciting both representational doll play (with dolls representing both child and caregiver) and narrative, including descriptions of

action and pretend conversation. There are 6 vignettes, including a baseline, and the task emphasises (partly via the actions of the assessor when acting out the initial story stem), the child identification with doll figures. Particular attention is paid to the reunion behaviour between the dolls representing child and caregiver, and at the end of each vignette, the child is asked to suggest how the carer doll might be feeling and thinking. The scoring protocol incorporates a detailed classification of attachment behaviours represented in the completion of attachment story-stems (including an analysis of any disorganisation in either speech or action) and the detailed rating of narrative, including coherence and elaboration.

## Chapter 4

### NEGLECT

#### 4 Introduction

In this Chapter, I will firstly examine the historical definition of neglect, as one particular form of child maltreatment and early life adversity. Child neglect receives far less public attention than physical abuse and sexual exploitation (De Bellis, 2005), but its effects can be just as profound and long-lasting:

*... deprivation or neglect can cause more harm to a young child's development than overt physical abuse, including subsequent cognitive delays, impairments in executive functioning, and disruptions of the body's stress response. (Center on the Developing Child, Harvard University 2012, p2)*

Government legislation to address the issue of neglect will be described in Section 2, where the unsatisfactory nature of the legal definition will be highlighted. How neglect has been conceptualised in research will be described throughout the rest of the chapter, firstly by reviewing findings relating to the effects of early neglect in institutional settings and secondly by reviewing the findings of longitudinal research. In the final section and as a prelude to Chapter 5, I will briefly review research that links early adversity to brain development, specifically areas of the brain involved in stress regulation.

#### **4.1 Context: child abuse and neglect**

Concerns related to neglect of children are rarely out of the news. Neglect, abuse and the safeguarding of children have been the subject of extensive government and public concern for decades. Wide-ranging legislation from 1889 onwards (Appendix 2), has sought to address the difficult problem of defining child abuse (including neglect) and the ways in which children might be protected from such abuse. Between 1997 and 2010, under the auspices of the New Labour government and with rising concerns about child protection, nine new Acts relating to children's welfare and education were passed.

The associated guidance that accompanied the new legislation was intended to provide safeguarding advice and clear guidelines to follow when anyone who works with children has concerns about a child's safety and well-being. The most recent guidance, 'Working Together to Safeguard Children' (DfE, 2017b), has been revised four times since the similarly entitled 1991 'Working Together Under the Children Act'.

The snowballing of legislation pertaining to child welfare and the accompanying frequent updating of guidance following serious case reviews associated with neglect, hints at the difficulties and complexities of identifying, managing and legislating for the consequences of neglect and abuse.

The consequences of abuse and neglect are of governmental, societal and educational concern. Maternal neglect has been related to poor

developmental consequences (Rutter *et al*, 2004), including the development of social difficulties, hyperactivity and internalising and externalising behavior and problems at school (Brumariu & Kerns, 2010; Eisenberg *et al*, 2004; Maughan *et al*, 2007; Morrell, 2003; Rudolph *et al*, 2013; Shaw *et al*, 2007).

With the advent of league tables and target-setting for school achievement, the presence of emotional, social and behavioural difficulties as a consequence of neglect in children beginning school or nursery is increasingly rising into educational consciousness. Fixed period exclusions in primary schools have increased from 49,655 in 2014/15 to 55,740 in 2016/16, with 'persistent disruptive behaviour' being the most common reason for permanent and fixed period exclusions. Children with an identified SEN accounted for almost half of these and children with an EHCP or SSEN were six times more likely to receive an exclusion than children with no SEN (DfE, 2017c).

#### **4.2 Neglect defined in law**

Neglect as an issue of legal interest and government concern has a fairly recent history, beginning with the Prevention of Cruelty to, and Protection of Children Act 1889, which made 'neglect' a criminal offence. It was amended and extended in 1894 to create the Prevention of Cruelty to Children Act. For the first time, this Act also recognised mental cruelty as abuse, previous definitions had focused on physical maltreatment. In 1933 (and following the Children Act 1908), the Children and Young Persons Act consolidated existing child protection legislation into one Act.

Paragraph 2 of Section 1 defines neglect as:

*A parent or other person legally liable to maintain a child or young person shall be deemed to have neglected him in a manner likely to cause injury to his health if he has failed to provide adequate food, clothing, medical aid or lodging for him, or if, having been unable otherwise to provide such food, clothing, medical aid or lodging, he has failed to take steps to procure it to be provided.*

At this stage in the legislative history, neglect is oriented around physical, observable neglect.

Neglect in civil law (child and family law) is addressed in the Children Act 1989. This Act also gave children the right to have enquiries made to safeguard their welfare, with the assumption that wherever possible, children are best looked after by their families. Under this legislation, the local authority has a statutory duty to 'safeguard and promote the welfare' of children who are assessed as being 'in need', this being defined in Section 17:

**Section 17 (10)**

*A child shall be taken to be in need if-*

*(a) he is unlikely to achieve or maintain... a reasonable standard of health or development without the provision for him of services by a local authority...*

*(b) his health or development is likely to be significantly impaired, or further impaired, without the provision for him of such services...*

**Section 17 (11)**

*'development' means physical, intellectual, emotional, social or behavioural development; and "health" means physical or mental health.*

This time, emotional, social and behavioural development are specifically referenced, and impairment of development in this definition implies maltreatment. This can take the form of physical **or** emotional abuse / harm; neglect is often taken to be one form of emotional abuse (Dubowitz *et al*, 2005; Dubowitz, 2013; Horwath, 2007). It is not specifically referred to in Section 17, but it is defined under the associated guidance “Working Together to Safeguard Children” (DfE 2017b, p93):

- *Neglect is the persistent failure to meet a child's basic physical and/or psychological needs, likely to result in the serious impairment of the child's health or development.*
- *Neglect may occur during pregnancy as a result of maternal substance abuse. Once a child is born, neglect may involve a parent or carer failing to:*
  - *provide adequate food, clothing and shelter (including exclusion from home or abandonment);*
  - *protect a child from physical and emotional harm or danger;*
  - *ensure adequate supervision (including the use of inadequate care-givers); or*
  - *ensure access to appropriate medical care or treatment*

*It may also include neglect of, or unresponsiveness to, a child's basic emotional needs.*

Neglect is defined here as a *failing* – a ‘persistent failure’ in fact, to provide physical protection, physical care, medical care or lastly, a failure to provide care-giving itself – ‘unresponsiveness to a child’s basic emotional needs’.

Immediately, this definition is seen to be problematic. Is it possible to define with any degree of precision and clarity - which can on a pragmatic basis be

universally agreed by a group of diverse professionals - an act of *omission*, which moreover, occurs on a time continuum? Gardner (2008) observes that,

*There is a lack of clarity about what constitutes child neglect and in what circumstances intervention is warranted. This is likely to contribute to an unacceptably high threshold for intervention, to uncertainty and delays in preventative action. (p28)*

Despite this uncertainty, neglect is the largest single category of harm on the child in need (CIN) registers in England and Wales (50.6% in 2015/16) (DfE, 2016a)<sup>2</sup>. Similarly, neglect is the largest single category of harm on the child protection registers (46%) closely followed by emotional abuse (35.3%) (DfE, 2016a). Neglect cases tend to remain registered for longer and re-registration is more common than for other categories of harm and likely to lead to further forms of abuse (Fluke, Yuan & Edwards, 1999).

In their Working Paper 'The Science of Neglect' (2012) the National Scientific Council on the Developing Child at Harvard University, also noted that the criteria for determining the threshold for government intervention, and the definition of neglect, varied by state. Based on many years' research findings relating the effects of neglect to child development, they proposed a framework for distinguishing four types of neglectful caregiving and the likely outcomes on child development, which could help policy-makers and frontline staff organise an effective response to the problem of defining neglect and knowing how and when, to intervene:

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<sup>2</sup> In 2016, family difficulties accounted for 81.6% of primary need: neglect (50.6%), family dysfunction (17.4%), family in acute stress (8.7%), absent parent (3%) and socially unacceptable behaviour (1.9%). Child disability accounted for 9.6%.



**Table 4.1: Features, effects and action required for four types of unresponsive care**

<b>Science Helps to Differentiate Four Types of Unresponsive Care</b>				
	<b>Occasional Inattention</b>	<b>Chronic Under-stimulation</b>	<b>Severe Neglect in a Family Context</b>	<b>Severe Neglect in an Institutional Setting</b>
<b>FEATURES</b>	Intermittent, diminished attention in an otherwise responsive environment.	Ongoing, diminished level of child-focused responsiveness and developmental enrichment.	Significant, ongoing absence of 'serve and return' interaction, often associated with a failure to provide for basic needs.	"Warehouse-like" conditions with many children, few caregivers, and no individualized adult-child relationships that are reliably responsive.
<b>EFFECTS</b>	Can be growth-promoting under caring conditions.	Often leads to developmental delays and may be caused by a variety of factors.	Wide range of adverse impacts, from significant developmental impairments to immediate threat to health or survival.	Basic survival needs may be met, but lack of individualized adult responsiveness can lead to severe impairments in cognitive, physical and psychosocial development.
<b>ACTION</b>	No intervention needed.	Interventions that address the needs of caregivers combined with access to high-quality early care and education for children can be effective.	Intervention to assure caregiver responsiveness and address the developmental needs of the child required as soon as possible.	Intervention and removal to a stable, caring and socially responsive environment required as soon as possible.

Source: National Scientific Council on the Developing Child, Working Paper 12 (2012): The Science of Neglect, p2.

Having looked at how governments have sought to define neglect and prevent its occurrence through legislation, I will turn next to how research and theory have conceptualised maltreatment and particularly, neglect.

### **4.3 Neglect and maltreatment defined in theory and research**

#### **4.3.1 Theory**

Giovannoni (1989) states that child maltreatment (as abuse and neglect) began as a lay term and has been adopted and defined in various ways by different professions; “Through social policies, child maltreatment has been defined as a social problem and a diverse set of social institutions have emerged to manage it”. She further believes that social and legal definitions of child maltreatment “are and will remain, matters of social value judgments”.

Iwaniec, Larkin & Higgins (2006) describe neglect as overlapping with emotional abuse, because both are shown in the nature and quality of the relationship between child and carer. The American Professional Society on the Abuse of Children (APSAC) defines child maltreatment in the form of categories of care-giving behaviour within which neglect is again specifically viewed as being the withholding of care-giving:

*Psychological maltreatment includes... spurning; terrorizing; isolating; exploiting / corrupting; denying emotional responsiveness; and mental health, medical and educational neglect. (Klika & Conte, 2017).*

Glaser and Prior (2002) supported the use of more objective descriptions of care-giving behaviour in defining abuse and neglect, with neglect specifically identified as a failure to provide care. Crittenden & Ainsworth (1993) however,

observed that child abuse was identified as a social issue earlier than neglect and that early research often confused the two. With the advancement of a theoretical model (Attachment Theory), which they believe to distinguish the two, they define neglect as the failure 'to provide adequate care, as opposed to providing inappropriate care' (i.e. abuse).

Neglect moreover, occurs across all social strata; it is not limited to situations of poverty, although as Fluke *et al* (1999) observed, neglect and poverty are closely intertwined. Gardner (2008) states that,

*The outcome of both neglect and abuse is emotional harm. All forms of neglect are thought to be associated with measurable developmental damage, including social and emotional functioning. (p7)*

With this in mind, the 'Working Together' (DfE, 2017b) definition is seen to be problematic on practical and moral levels – if all forms of neglect are associated with harm, and the Working Together definition defines neglect as a 'persistent' failure – then this implies that *harm must have occurred* before an intervention can take place, under current government guidance.

The fact that 'serious harm' had most likely occurred before the child could be taken into care was identified as an issue of high concern by the professionals interviewed for the NSPCC Report 'Developing an effective response to neglect and emotional harm to children' (Gardner, 2008).

Further to these concerns, the present research aims to show that early intervention for any child thought to be experiencing neglect is of crucial

importance for later educational success, and the mental health and wellbeing of the child.

#### **4.3.2 Research: the developmental perspective**

What does developmental research offer in terms of understanding the effects of early neglect? Bowlby (1969/1982), Cicchetti & Valentini (2015), Crittenden & Ainsworth (1993), Kopp (2009), and Tronick (2007) believe that by studying the processes of adaptive (normal) development, we are in a better position to understand the effects of neglectful caregiving and the resultant developmental psychopathology. That is to say, we can learn more about pathology by studying normal functioning, and more about normal functioning by studying pathology and from this, neglect may be better understood.

Attachment Theory highlights the role of the caregiving relationship in early experiences, which is now seen to be crucial in the ontogeny of many, if not all, of the capacities inherent in coherent, creative, adaptive functioning. As previously stated, development is transformational – adverse early life experiences such as neglect are not ‘set in stone’ – early experiences can be reorganised adaptively in the light of potentiating factors and indeed maladaptively in the presence of further risk factors, but they are still important, because they form the basis of later transformations and reorganisations Rutter & Sroufe (2000). Attachment Theory begins with a dyadic relationship, but develops into a theory of individual differences; this needs to be understood when considering research findings.

#### **4.3.2.1 Methodological clarity**

Investigating links between early neglect and later functioning ideally requires prospective longitudinal studies (Campbell *et al*, 2000; Sroufe *et al*, 2005).

Making associations between early experience and later outcomes is fraught with difficulty however, firstly because validity depends on the robustness, timing and frequency of all measurements, including an ongoing variable context, not just individual assessments. Secondly, development does not proceed along mechanistic, 'cause-and-effect' lines, but is dynamic; development proceeds in an epigenetic manner and any associations are contextual and probabilistic. This can be seen in the sheer heterogeneity of outcomes in longitudinal research (Rutter, Beckett *et al*, 2007). Thirdly, and related to the last point, early experience has later, differential effects according to the system under investigation: it is not the case that all early experiences are the most critical (Sroufe *et al*, 2010). The time at which the system is emerging is the most susceptible to environmental variation.

Greenough, Black & Wallace (1987) distinguished between experience-expectant and experience-dependent development; normal processes of species-specific development require relevant experience at the time that that particular system is organising (comparable to the notion of sensitive periods in development). In contrast, experience-dependent processes optimise "individual adaptation to specific and possibly unique aspects of the individual organism's environment" (Black & Greenough, 1986, p41).

Lastly, and inseparable from the last point, is the notion of plasticity, and Rutter (2002) has therefore additionally proposed 'experience-adaptive' processes. These refer to developing systems that, if they do not have the

opportunity to be active in particular environments at particular times, have a life-long and pervasive effect on future development and adaptation.

These points make it clear that the relationship between early experience (even that measured in stable patterns of behaviour) and later outcomes is very far removed from being of a 'cause-and-effect' nature and that individual, biological systems (intra-individual variation) are just as important as inter-individual differences.

### **4.3.3 Research findings on the outcomes of neglect - early institutionalisation**

Some children, for various reasons, are cared for in institutionalised settings.

This offers the opportunity of a 'natural experiment': the developmental outcomes of children of a specific age raised in an institution, with multiple caregivers, or in the case of the Romanian orphanages, severely restricted caregiving, can be compared to those raised in a family setting.

#### **4.3.3.1 Tizard & Rees' (1975) UK study**

The behavioural problems and affectional relationships of twenty-six children aged four and a half, brought up in an institution from birth, with a large number of high-quality, responsive caregivers, were compared with thirty working-class children living at home. A third group of thirty-nine children who had lived in the institution from birth to two, but who were subsequently adopted or returned to their families, was also studied. Most of the adopted children subsequently formed appropriate, secure attachments to adults (Tizard & Rees, 1975). The children who remained in the institution had different, but no more frequent problems than the children living at home;

these problems were specifically related to being indiscriminately affectionate and over-friendly with strangers.

#### **4.3.3.2 The English & Romanian Adoptees study (ERA)**

The ERA study team followed 165 adopted Romanian children with a severely deprived background (144 were brought from Romanian institutions) from age 4, until age 15. A comparison group of 52 UK never-institutionalised children, adopted before the age of six months was included in the study. Adoptive parents were generally above average in their educational attainments (Rutter & the ERA Study Team, 1998). Seven domains of functioning were investigated (cognitive impairment, quasi-autistic patterns, inattention / overactivity, disinhibited attachment, conduct problems, emotional problems and peer-relationship problems). 78% of the comparison children had no impairments at age 11, compared to Romanian children who had experienced institutionalised care up to 6 months (64%), between 6 - 24 months (28%) and from 24-42 months (39%) (Rutter & Sonuga-Barke, 2010a).

Multiple impairment was infrequent in the comparison group (less than 10%). Findings included the observation that a proportion of the children who had spent up to 20 months in institutional care in their first years of life *did* function within normal limits at age eleven, albeit at the lower end. These children had also functioned with normal limits at age six, and almost 70% of these had been vocal on UK entry (if older than 18 months of age). This was in contrast to the group of children with multiple impairments, only 20% of whom had been vocal upon entry. (Vocalisation was the only significant factor amongst a

range of measures, including mother's IQ and extent of developmental delay (Croft et al, 2007)). In this latter group, despite at least seven years' experience of being in well functioning, caring adoptive families, about half of the children continued to show multiple impairments at age eleven (Kreppner *et al*, 2007).

The children in this group were also compared with the 45 Romanian adoptees who were adopted from the institutions within the first 6 months of life and the 52 children who had been adopted from within the UK, also within the first six months of life. (These two groups did not differ significantly.) A six-month cut-off was identified, with those who had experienced severe deprivation for less than the six months of life showing no appreciable adverse developmental sequelae, and those who had experienced more than the first six months of life in institutional care showing similar outcomes, no matter how long they were subsequently in care (Rutter & Sonuga-Barke, 2010b). This is strongly indicative of a critical period in development, discussed below.

The main differences between the Romanian children who had spent longer than six months in institutional care showing multiple impairments, and the other merged group of children (spending less than the first six months of their life in care), was most marked in patterns of cognition and social communication – the multiple-impairment group were more likely to show cognitive delays, inattention/ over-activity, quasi-autistic traits and disinhibited attachments (over-friendliness with strangers) (Kreppner *et al*, 2007). These



were termed deprivation-specific psychological patterns (DSPs), which for many children was an enduring pattern, particularly with cognition. Peer problems featured less, but were more evident in the 'more than six months' group. The study team noted in fact how remarkably persistent the effects of early institutionalisation were over the course of the study (which concluded when the children were aged 15 years).

The finding of persistent effects was found in another study of international adoptees (van der Vegt, 2009). Minnis *et al* (2006) also noted indiscriminate friendliness was a common outcome of children who had experienced early neglect.

#### **4.3.3.3 The Bucharest Early Intervention Project (BEIP)**

136 institutionalised children aged between 6 - 31 months were divided into two groups, by randomly assigning them to either 'Care As Usual' (CAU) group (N=67) or to 'Foster Care' (FC) group (N= 69). A third group of never-institutionalised children born in the same hospitals formed a comparison group (N=72). The children reared in institutions showed reduced cognitive skills (measured by standardised tests of intelligence (Wechsler Preschool Primary Scale of Intelligence-Revised)) compared to children who were brought up at home in their families. The children randomly assigned to FC experienced significant gains in cognition. This replicates the findings of the ERA study referred to above. The younger the child when placed in FC, the better their outlook (Nelson *et al*, 2007).

The 8-year follow up continued to demonstrate gains for the children in the FC group. Once again, the younger the child at initial placement, the better they did, showing the importance of the earliest years of life in development (Fox *et al*, 2011). Continued benefit for cognition (measured through IQ scores) from the FC intervention was similarly demonstrated at age 12 (Almas *et al*, 2016). At the 8-year follow up, the teacher ratings of social skills of those children who had been placed in the FC group before 20 months of age were not significantly different than teacher ratings for the never-institutionalised group (Almas *et al*, 2015).

EEG measures were taken during this study, assumed to be indicators of cortical maturity and associated with attention, effortful control and processing of sensory stimuli. This emerged as a 'significant moderator' of the relation between attachment security and social skills in the school setting. The pattern of EEG measurements among the FC children at age 8 was similar to that of age-matched community controls, as long as they had entered FC before 24 months of age. EEG measures were found to be lower in children who had spent their early life in institutional care (Almas *et al*, 2012).

In regards to psychopathology, Humphreys *et al* (2015) reported that early foster-care slightly reduced the risk of psychopathology in children who had been institutionalised: any child who had ever been in an institution was at higher risk for internalising disorders, externalising disorders and ADHD. The children in the FC group had fewer externalising symptoms than the children in the CAU group.

#### 4.3.3.4 Conclusion

A review of the literature relating to the effects of early institutionalisation highlights some heterogeneity of outcome, although later-adopted children did not catch up as much as earlier-adopted children. O'Connor *et al*, (2000) noted early in the study (age 6 assessments) that early deprivation compromised long-term development, with the length of time in the first years of life spent in an institution being a significant predictor variable of later difficulties.

Rutter *et al* (2009) observed that disorganised attachment or the absence of a selective attachment figure is important when considering later-life outcomes for children who have experienced severe adversity in early life. A common feature amongst all the children who had been cared for in institutions in their first year of life (including the Tizard study) was the lack of a selective attachment figure and subsequent indiscriminate friendliness.

Cognitive delays were an additional feature, although the studies show quite definitively that all the children benefited from good care-giving, which led to substantial improvements in outcomes (O'Connor *et al*, 2000).

The findings are also quite clear that the first six months of life do constitute a critical period in development, and Rutter's notion of development has arisen as an outcome of the ERA study (Rutter, Beckett *et al*, 2007). The critical role of experience in the earliest months of life has also been demonstrated in primate studies. Experimental deprivation studies with rhesus monkeys

showed that monkeys isolated in the first six months of life had far more difficulties in their social functioning than those who were isolated for the second six months of life. Monkeys deprived of social contact for the entire first year were more handicapped than those deprived for the first six months (Suomi, 1977).

#### **4.3.4 Research findings on the outcomes of neglect – other studies**

There is a large and rapidly growing corpus of research linking neglect in childhood to later adverse outcomes in adolescence and adult life. Several are reviews, whilst others are longitudinal studies, and show a variety of correlational cognitive, social and health-related outcomes in later life, particularly mental health.

The Adverse Childhood Experiences (ACE) study in America revealed that early adversity is not an uncommon issue; about one-third of the adult respondents in a survey carried out by a medical insurance company (n = 17,337) had experienced more than one form of maltreatment in childhood and that the likelihood of suffering health, social or behavioural problems in adulthood increased linearly with the number of adverse childhood experiences (Anda *et al*, 2006).

##### **4.3.4.1 The Minnesota Study of Risk and Adaptation (MSRA)**

This is included as an example of longitudinal research based on dynamic systems theory. The Minnesota longitudinal study followed 180 individuals living in poverty, beginning 3 months before birth to age 34 years+. There was

therefore a substantial range in the quality of care provided by the families (and extended families / support networks) and developmental outcomes. Measures were detailed, extensive, frequent, observational (including the provision of dedicated nursery classes and summer school camps) and multi-informant, including the children themselves, initially as children in the research, and later as parents. The study included measures in various domains (relational in the early months, social, emotional, cognition, language, behavioural) in a variety of contexts (home, school, laboratory, peer-group) and included a variety of environmental factors (parent characteristics, social support, family life stress, socio-economic status).

The findings from this study, as stated by the principal researchers are clear:

- i. The describable, lived experience of children predicts the presence of later disturbance;
- ii. Individual pathways can be described and are probabilistically associated with various forms of disturbance;
- iii. Disturbance in most cases, develops step by step, over time;
- iv. The earliest robust markers of pathogenic experience or of maladaptive developmental pathways lie in infant-caregiver relationships.

(Sroufe, Egeland, Carlson & Collins, 2005, p285.)

They concurred with other research that identifies that disturbance in early childhood is best characterised as *relationship* disturbance, not a disturbance in the infant or toddler (Sameroff & Emde, 1989).

In dynamic systems theory, the brain is viewed as an organ that develops in response to expected experiences at particular times when related, specific neural circuits are organising. 'Early experience' is therefore a relative term. Some experiences are required in the earliest days and months of life, whereas other experiences are required later on in development. If later adaptive functioning depends on the neural circuits being organised in a particular way in response to certain environmental experiences, then the effects of not having these experiences are likely to be long-lasting, as described in the studies of children described earlier in Section 4.3.3, adopted from Romanian orphanages after their first six months of life. However, as outlined in Chapter 2, development is transformational. Sroufe *et al* (2010) point out that changes in caregiving, for example as a result of changes in social support, or family life stress are frequently associated with changes in early developmental trajectories. Plasticity in response to environmental change is a feature of neural development. According to Sroufe *et al*, (2010) early experience can therefore be conceptualised;

*... in terms of creating vulnerabilities or strengths with regard to later experience, including what experiences are sought and how they are interpreted, rather than as directly producing particular outcomes. (p38)*

As Relational-Developmental dynamic systems theories would predict, development is not of a mechanistic, cause-and-effect nature, it is probabilistic, and proceeds according to environmental affordances, particularly interpersonal relationships.

#### **4.3.4.2 The Dunedin Multidisciplinary Health and Development Study**

The Dunedin Study followed almost 1,000 children born between April 1972 and March 1973, with a design based on British cohort studies. Multiple assessments were undertaken at birth, then every two years until 15, then at ages 18, 21, 26, 32 and 38. Unlike the MSRA, the findings are correlational and derived from statistical modelling. Retention rate is extremely high (over 90%), enabling a full range of individual variation to be followed; results are not skewed by attrition of one particular group, such as those with multiple problems. Over 1200 papers have been published, in multiple disciplines (Poulton, Moffit & Silva, 2015). Of interest to this research are the findings linking early self-control (executive function) to later life outcomes. Self-control was assessed in multiple ways (including observational, parent and teacher ratings) between the ages of 3 -11, and combined into a composite measure due to high correlations between assessments. Children who exhibited weaker self-control as infants were more likely to be less healthy, poorer, less-skilled parents themselves and be more likely to be involved in crime (Moffit, Poulton & Caspi, 2013).

Campbell (2000) reviewed some of the earlier findings, in relation to externalising behavioural problems. Four groups of boys were identified; a 'life-course persistent' group, a 'recovered' group (both groups exhibited early difficulties and lived in situations of psychosocial adversity), an adolescent-onset group and a 'no-difficulties' group. Children in the 'life-course persistent' group were characterised by chronic family adversity, whereas the 'recovered' group lived with less dysfunctional families and as older children, had better

family relationships.

#### 4.3.4.3 Reviews

In their 2010 review of 55 studies, Brumariu & Kerns aimed to evaluate the empirical evidence for the links between attachment insecurity and the development of internalising problems in childhood and adolescence. They concluded that the literature does demonstrate that insecure attachment is strongly associated with internalising problems:

*... the links of insecure attachment to anxiety and depression are stronger than the links to internalizing symptoms. The associations of attachment are also stronger in preadolescence/adolescence than in childhood. (p199)*

They noted that insecure attachment may affect the neurophysiological and biochemical processes that contribute to the biological underpinnings of anxiety and depression (see Chapter 5).

Haltigan, Roisman & Fraley (2013) argue that Attachment Theory is a helpful framework within which it is possible to develop testable hypotheses relating the effects of early experience to later outcomes. They too note that in meta-analyses, early attachment insecurity is predictive of later internalising behaviour (Groh, Roisman, van IJzendoorn *et al*, 2012) but in contrast to Brumariu & Kerns' (2010) review, found stronger links to externalising behaviour (Fearon, Bakermans-Kranenburg *et al*, 2010).

These statistical techniques estimate bivariate effects and *then* consider potential moderators to explain variance - as well as using the rather broad-



brush measure of 'attachment insecurity' to index early maternal sensitivity. So, taking advantage of data from the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care & Youth Development<sup>3</sup> (ECCRN), including multiple data collections of caregiving sensitivity and contextual risk, as well as parent and teacher measures of Total Problem Behaviour in school, Haltigan *et al* (2013) devised their own structural modelling technique to investigate *patterns* of association between variables *over time*, hence testing the hypotheses that early experience will have either an enduring effect, or a transient effect (a revisionist model) on later maladaptive behaviour. They found small, but persistent effects of early maternal sensitivity from teacher-reported data, but when parents were the informants, the data were better suited to a revisionist model.

In accordance with the goals of developmental psychopathology, they observed that the unanswered questions are firstly, how later factors contribute to changes in development (revisionist model) and secondly, the processes by which early experiences continue to influence developmental outcomes (enduring effects model), as both occur. Genetic polymorphisms and the interacting effects of genes and contexts were considered in their discussion.

#### **4.3.5 Neglect and brain development**

In this last section, I will review the literature that considers how early

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<sup>3</sup> In 1991, 1,364 families were recruited from maternity units across various American States and assessments conducted at 6, 15, 24, 36 months at home to study maternal caregiving in the first 3 years of life. Assessments then continued at home and at school until age 15.

experiences shape certain aspects of neural development. Extensive research over the last 30 years, in rodent, primate and human models illustrates that neglectful or absent care-giving leads to changes in a variety of brain regions and disruptions in neural circuits, in particular that of the stress response system (Heim et al, 2010). The ability to return to a state of calm following challenge underpins a variety of social behaviours and executive functioning skills required for learning, known as 'school readiness' (Ursache, 2012).

However, as might be expected from a relational-developmental perspective, these findings are highly variable, according to the age of the child at the time of adversity, the length of time they remained in adversity, the nature of the care-giving environment / attachment status, genetic propensity and the wide range of environmental factors (Calkins & Dollar, 2014; Cicchetti, 2015; Marshall & Kenney, 2009; McCrory *et al* 2010; Rutter & Sonuga-Barke, 2010b; Sameroff, 2010).

#### **4.3.5.1 The Effects of Maltreatment on the Brain (neuroimaging)**

Teicher and Samson (2016) carried out an extensive review of the neurobiological effects of childhood maltreatment, including neglect, via neuroimaging techniques. Reported findings included:

- childhood maltreatment is associated with consistent alterations in the corpus callosum, anterior cingulate cortex, orbitofrontal cortex, dorsolateral prefrontal cortex, amygdala and the hippocampus (areas of the brain involved with the detection and response to threat, and

reward anticipation).

- Exposure to single types of abuse is associated with specific alterations in the regions and pathways that convey the aversive experience.
- (Therefore) maltreatment-associated brain changes make sense as adaptive responses to early adversity that can alter the stress response and shift approach-avoidance decisions (e.g. in social situations).
- Relationships between brain changes and psychopathology are complex, as these changes have been reported in maltreated subjects without psychopathology. (p258)

Teicher & Samson propose that stress-induced programming of the stress response system (through prolonged perception of threat / continued experiences of distress, consistent with neglect) affect biological processes such as neurogenesis, synaptic connectivity and myelination during the critical periods in infancy, during which time these processes are taking place.

They concluded that the maltreatment-related findings (which additionally included the observation of changes in cortical network organisation, resulting in a diminished capacity to regulate impulses and emotions) appeared to make sense as neuroplastic adaptive responses. They suggested that the alterations are experience-dependent responses to the care-giving environment in which the child finds himself, and are not non-specific, stress-induced impairments.

When the environment changes however, for example when a child begins

school, the adaptations made in early life may not suit the environment of school, generally a safe environment. Adaptations made by neural circuits in response to sub-optimal care-giving at home may not be at all useful in school, particularly if the adapted circuits maintain a level of alertness, rather than homeostatic functions and the facilitation of a calm state - essential for learning and social interaction. This has been reported in longitudinal studies, such as the Family Life Project (Blair & Raver, 2016).

This latter point is taken up by Marshall & Kenney (2009), who note that the concept of the programming of HPA (Hypothalamus-Pituitary-Adrenal cortex) axis functioning by early psychosocial experience is the basis of a large literature within psychiatry and clinical psychology on the effects of early stress, much of it however derived from comparative literature in animal models. For example, pups of rat mothers that attend to them less tend to have deficits in various learning tasks in later development (Bredy *et al*, 2003), hypothesised to be associated with a number of neurobiological changes, including hippocampal development (Champagne *et al*, 2008). In their work with rats, Francis, Diorio, Liu and Meaney (1999) state that, “variations in maternal care can serve as the basis for a non-genomic behavioral transmission of individual differences in stress reactivity across generations.” (p1155)

Stress is also thought to be associated with changes in DNA (known as epigenetic markers) and has been associated with distinct epigenetic profiles in people suffering post-traumatic stress disorder (Mehta *et al*, 2013).

The neurobiological literature is extensive, however, it is correlational; it is not a linear, causal effect that in effect proposes that a certain change in morphology causes psychopathology. Consistent with previous observations about processes and complex dynamic systems, it is important to remember that the various brain structures are just one part of various inter-relating parts, operating within complex feedback loops involving neurotransmitters, receptors, inhibitors, activators, neural factors and hormones.

#### **4.4 Conclusion**

In this Chapter, I have considered legal definitions of neglect and how these are problematic in making decisions to safeguard children, because under current legislation, neglect has to be shown to be a 'persistent failure' likely to cause, or be causing 'significant harm', before there is a mandate for intervention by the court.

Through the theoretical framework of attachment theory and a brief review of the literature relating to severe deprivation, as well as longitudinal studies following the effects of family adversity, I have aimed to illustrate that the early caregiving relationship between infant and primary care-giver is critical in the ontogeny of many, if not all of the developmental processes involved in adaptive, creative, coherent functioning as a social adult in a complex world: when this care-giving relationship is compromised, for example under situations of psychosocial adversity and maternal distress, then the outcome is reflected in alterations to brain development, particularly the stress response. This can be viewed as experience-dependent adaptation, which in another context such as school, may be maladaptive. This is consistent with

the relational-developmental systems metatheory.

Viewed through the framework of attachment theory, neglect may more helpfully be viewed as a three-way definition, involving caregiving behaviour, the caregiving context (maternal distress and / or environmental, social adversity) and developmental outcomes for the infant. The main emphasis however is on the nature of the relationship between the caregiver and infant, and the failure to resolve distress.

The evidence and child outcomes at school age (and subsequently as adults) following on from early neglect are being described in much of the recent developmental neurobiological and psychological literature. Much of this has focused on the development of those skills that emerge early in life, especially the development of the stress response and self-regulation, as these abilities are considered to be the foundation stone of later abilities, including executive function, attention and emotional regulation (Center of the Developing Child, 2011).

## Chapter 5

### THE NEUROBIOLOGICAL BASIS OF SELF-REGULATION

#### 5 Introduction

In this final chapter of the Literature Review, I aim to bring forward ideas from the previous three chapters and integrate these with research findings pertaining to the ontogeny of brain development, both in situations of early life adversity, particularly neglect, and in situations of responsive caregiving, to illustrate that a child's functioning in school is contingent not just upon unfolding genetic activity, but upon the past and present opportunities afforded the child to act in various relational contexts, facilitating the creation of interlinked neural systems that underpin self-regulation and adaptive functioning.

This is consistent with the Process-Relational Worldview, presented in Chapter 2 as an alternative paradigm to the more traditional Cartesian-Worldview, which although suited to the activities and forms of knowledge associated with physical sciences at the molecular level and above, does not provide the conceptual framework or the language of practice necessary for understanding child development as a temporal, self-organising, *process* activity, inseparable from the context of relational living that characterises a child's life.

Many theorists highlight the fact that following ecosystemic models of development, researchers in child development are keen to emphasise multiple levels of influence (conceptualised as risk or protective factors)

impacting on a child's functioning (Bradley & Corwyn, 2002; Cicchetti & Dawson, 2002; Cicchetti & Doyle, 2016; Diaz *et al*, 2015; Gross, 2015; Marshall, 2013), and that these are transactional (Carlson & Ruiz, 2016; Cummings & Valentino, 2000; Perry, 2014; Sameroff, 2010; Rutter & Sroufe, 2001) incorporating notions such as child temperament (Bates, Pettit, Dodge & Ridge, 1998) and biological vulnerability (Belsky & Pluess, 2009; Horwitz & Neiderhiser, 2011). Few refer to activity as being co-actional (Lerner 2015).

Research that encompasses the biological (physiological / genetic), the psychological (behavioural / emotional / cognitive) and the context at one or more levels of the ecosystem, tend to be termed 'biopsychosocial' models (Calkins *et al*, 2013; El-Sheikh & Erath, 2011), 'biosocial vulnerability' models (Scarpa 2015), 'developmental psychobiological' models (Blair & Raver, 2012; Gottlieb, Wahlsten & Lickliter, 1998), 'ecobiodevelopmental' (Shonkoff & Garner 2012) and 'bioecological systems' models (McCoy, 2013), all situated within the more general developmental psychopathology framework (Cicchetti & Sroufe, 2013). All recognise the importance of incorporating the burgeoning corpus of research findings reflecting the 'biological level' of analysis, into empirical work, that seeks to explain the emergence of complex human behaviour and emotional experiences in child development, and which is subsequently of benefit in formulating national policy (Shonkoff, 2010).

Marshall (2014) however observes that the lack of clarity about the nature of 'levels' and particularly the nature of the relations between an embodied



system and a social context remains an impediment to progress in understanding child development.

My aim is to address this in the present Chapter, by reviewing the neurobiological literature pertaining to the crucial early developmental task of self-regulation. This task is widely considered to underpin all subsequent functioning, including emotional regulation, behavioural regulation, executive functions and attentional deployment (Eisenberg, Spinrad & Eggum, 2010; McClelland, Geldhof & Wanless, 2015) traditionally associated with school readiness (Blair & Razza, 2007).

In this Chapter, I will therefore review the literature relating the nature of early caregiving to brain development, initially the two circuits involved in the regulation of physiological arousal (and hence, energy availability) theorised to underpin self-regulation (Schore, 2001). Physiological state is contingent upon a balance in activity between the two branches of the Autonomic Nervous System (ANS), namely the Sympathetic Nervous System (SNS) and the Parasympathetic Nervous System (PNS) (Applehans & Lueckans, 2006). I will then consider how autonomic balance has been conceptualised and measured in current research, with specific reference to the neurovisceral integration (NVI) model (Thayer & Lane, 2000). The Polyvagal Theory (PVT) (Porges, 2011) will next be introduced as a theoretical viewpoint to conceptualise a child's response to safety and challenge. The NVI model and the PVT share commonality in that both use heart rate variability to index autonomic functioning, used in this research as an explanatory concept in

understanding a child's behaviour in school. The penultimate section will review the literature relating the impact of stressful early life experiences upon the long-term functioning of the stress-response system, widely believed to be a strong contributory factor to physical and mental health conditions throughout life (Hostinar & Gunnar, 2013; Shonkoff & Garner, 2012; Thayer *et al*, 2012). I conclude by considering the evidence which links early adversity to children's progress in school.

In Section 2.3.4 (p34), I discussed the work of Edelman (1987), who proposed value biases in neural networks such that life-sustaining behaviours would be favoured. In the case of sucking behaviour, (which is present at birth, but which has been taking place pre-birth) a positive value bias is encoded in neural circuits such that the experience of reward, or pleasure (facilitated by neurotransmitters such as oxytocin or dopamine binding into specific receptors in particular brain structures) is derived from the stimulation of tactile sensors in the mouth. The principle of neural processes attaching 'value' (rewarding or aversive) to a sensory stimulus is a key concept in the early developmental processes described below.

## **5.1 The Limbic System**

Bowlby (1969) postulated that a hierarchy of "increasingly sophisticated" control systems, originating in the limbic system, emerged in the developing

brain of the infant in response to particular types of caregiving, forming the basis of a lifelong capacity to regulate physiological arousal.

The limbic system is conceptualised as a series of cortical and sub-cortical structures and areas involved in emotion, memory, motivation, olfaction and learning, although there seems to be no universal agreement on which areas and structures definitively comprise the limbic system, or even whether it could be thought of as a 'system' at all (Mendoza, 2008).

Broca (1878) described a series of brain structures, which he termed the limbic lobe (limbic being the Latin for 'border') in the curved rim underneath the cerebral hemispheres and above the brain stem, either side of the thalamus. Papez (1937) identified several brain structures involved in emotional expression, and together with areas of the cortex, considered that these formed the neurological basis for the subjective experience of emotion:

*The hypothalamus, the anterior thalamic nucleus, the cingulate gyrus, the hippocampus, and their interconnections, constitute a harmonious mechanism which may elaborate the functions of central emotion as well as participate in the emotional expression. (Papez, 1937)*

This was important, as it identified neural circuits involved with the experience of emotion and *how these might influence behaviour*. Yakovlev (1948) extended this circuit to include mammillary bodies, the nuclei of the amygdala and the orbitofrontal cortex. MacLean (1964) further developed these ideas, describing Papez' circuit as the 'visceral brain' to emphasise its role in mediating visceral responses, including fighting, fleeing, playing and feeding.

These structures form numerous reciprocal interconnections with each other, and to other cortical and brain stem areas; the design is a complex, interconnecting neural network. Consistent with RDS metatheory, it would be impossible to link a particular activity to a particular component; the activity of the whole is greater than the sum of its parts. Nevertheless, connections between the various parts and functionality of limbic structures have been identified, largely through lesions, neural blockades and animal studies.

Despite the ongoing debate about the concept of a 'limbic system' and its precise components, it is considered to have heuristic value when considering neurobehavioural functions of the brain (Kotter and Stephan, 1997). A defining function is the control and regulation of physiological states, and the maintenance of homeostasis (Mendoza, 2008). He states:

*The capacities to attach emotional significance to and learn from our experiences still are essential adaptive mechanisms... (in addition) there needs to be some emotion or drive that initiates (motivates) us to pursue goals (i.e., the will to act) in the first place and then sustains (energizes) those actions (i.e., keeps us on task). (p254)*

Mendoza is describing what others call 'self-regulation' (discussed in Section 6). The components of the limbic system are thought to exert their effects on physiological arousal through the endocrine system and the ANS, underpinning emotional experiences and motivational states linked to behaviour.

Related to Bowlby's idea of a complex hierarchy of control systems *originating* in the limbic system, the next section will review the literature relating to the development of the limbic system, beginning at birth, in response to the nature of the relationship with the primary caregiver, and how this influences the developing ability to regulate arousal.

### **5.1.1 Development of the Limbic System**

A review of the literature that purports to link the effects of early adversity on later functioning of the limbic system and ANS reveals wide heterogeneity of outcomes, including some studies that show mixed findings (Calkins *et al*, 2013; Kindsvatter & Geroski, 2014; Koss *et al*, 2014) including both high *and* low levels of ANS activity (Blair & Raver, 2012a; El Sheikh & Erath, 2011; Keller and El-Sheikh, 2009). This is true at the neural level (e.g. the size or connectivity of limbic structures) and at the developmental level (e.g. attention difficulties, the presence of internalising or externalising behaviour problems in school that might indicate an imbalance in emotional regulation, or mental health diagnoses).

Sroufe *et al* (2010) offer two explanations: firstly, that *timing matters*: it is not so much *whether or not* adversity is experienced, but *when* in development it is experienced. Secondly, whether or not an effect is found in longitudinal research depends on what and how the variable of interest is measured or assessed – whether at the beginning of the study, what is important (to the outcome) has been measured and at the end, whether the outcomes relevant to the initial measurement have been considered. These are both conceptual and validity issues. (See also 4.3.2.1 p98.)

In cross-sectional studies, the vastly different experiences of each individual make it difficult to draw comparisons and hence draw valid conclusions about the specific effects of a particular adversity; probabilistic estimates and general conclusions are made. The next section is therefore included as both a critique and as a caveat to the research findings presented throughout this literature review, and particularly in this chapter.

### **5.1.2 Critical periods and sensitive periods**

Critical periods are defined as times in development when environmental affordances are required for the ontogeny of species-typical functioning and behaviour, and which bring about lasting change if such affordances are not provided (Hensch, 2005; Knudsen, 2004). This is also referred to as an experience-expectant model of development (Marshall & Kenney, 2009); development proceeds along lines of normal development in response to environmental variations that are typically expected for that species. The problem for this definition in human development is that (apart from language) humans do not have species-specific behaviour, that taxonomically define us as a species in the way that Darwin stated occurs for other species (Darwin, 1859). The notion of critical periods in development arose through animal studies, for example manipulating the natural environment to investigate processes such as imprinting (Lorenz, 1935/70), artificially creating severe sensory deprivation to investigate neurobiological development (Wiesel & Hubel, 1965) and rearing monkeys in isolation to investigate social development (Harlow, 1958). Few studies exist that consider critical periods in neural development in humans (Meaney, 2016).

In humans, a critical period for brain development may be said to exist in the first few months after conception; teratogens or errors in gene transcription may alter the gross morphology of the brain, such that later functioning is impaired. However, given a brain that is capable at birth of receiving and processing internal and external sensory information, is it possible to say that human development has critical periods? MacDonald (1985) noted that critical periods in human development are hard to identify, since humans show significant plasticity throughout development. Cicchetti & Tucker (1994) suggested that mechanisms of plasticity are built in to brain development, such that it becomes an 'extended, malleable process'. Cicchetti (2015) observes that neural plasticity occurs at several levels, including molecular, cellular, synaptic and functional (implicating epigenetic processes, since the effects of environmental affordances are often related to activity in the gene promoter regions, which regulate gene transcription).

Without doubt, appropriate environmental experience is essential to adaptive brain development (Black, Jones, Nelson & Greenough, 1998; Schore, 2002); it is not simply a matter of specific genes being translated at certain times under the chronological regulation of other cellular processes, in order to create a creative, functioning, social brain (Lerner, 2015). Experience and 'opportunities to act' matter, not just because infant activity develops existing structures, but because probabilistic epigenesis is contingent upon environmental affordances and organismic activity to influence gene transcription that supports later adaptive development (Gottlieb, 1991, 2007; Johnston & Edwards, 2002; Kaffman & Meaney, 2007; Meaney, 2010).

The research that has contributed to the notion of critical periods in human development largely relates to the effects of severe social deprivation, as exemplified by institutionalisation in Romanian orphanages (Section 4.3.3), where severe deprivation of interpersonal communication indicated that first six months of life do seem to constitute a “critical period” in development, not for species-specific patterns of behaviour, but more generally for social development, cognitive development, executive functioning and good mental health (McLaughlin et al, 2012; National Scientific Council on the Developing Child, 2011). It was also noted that subsequent warm caregiving enhanced the development of the children, but not to a developmental normality (Rutter & Sonuga-Barke, 2010b).

This had led to the notion of ‘experience-adaptive’ plasticity (Rutter, Beckett *et al*, 2007). Experience-adaptive models propose that particular social experiences are needed within particular time frames to support (neural) development; enduring effects are observed if these are unavailable, since later plasticity is reduced. This makes sense as genes that are turned on in early development may not be expressed at a later time.

Feldman (2015) describes an alternative term of ‘sensitive periods’ - restricted times in development in which the effect of experience on brain function is particularly strong. She discusses this in relation to the organisation of oxytocin receptors in cells of the neocortex and certain limbic structures in response to caregiving, suggesting that the development of a particular



function is not eliminated, but takes in a different course if the essential experiences are not consistently provided.

It is therefore important to understand the processes occurring within the first six months of life, that were identified as being so important in preventing what came to be termed “deprivation-specific psychological patterns” by the ERA study team (p99). If these processes are understood, then resources and training could be focused on supporting caregiving in the first six months of life as a matter of priority, with the aim of reducing maladaptive functioning in childhood and beyond.

### **5.1.3 The first six months of limbic system development**

Consistent with the notion of ‘experience-adaptive plasticity’ detailed above, Rinaman, Levitt and Card (2000) suggest that the early postnatal period represents a particularly crucial period of limbic-autonomic circuit development, during which time relational experiences shape the connections between different parts of the brain. Schore (1997) proposes that this is especially pertinent in the right hemisphere, which develops earlier than the left (Chiron et al, 1997) and where bidirectional connections between brain stem areas, limbic system components and cortical areas are being formed. He states that,

*Severely compromised attachment histories are associated with brain organizations that are inefficient in regulating affective states and coping with stress. (Schore, 1997)*

Birth is the beginning of the development of a sequence of ontogenetically-appearing limbic circuits, and they emerge in a fixed progression over the year, with later-maturing cortical structures exerting inhibitory influences over the earlier, subcortical circuits (Schore 2001; Smith *et al*, 2017), thus a hierarchy of control (as Bowlby predicted) is established.

The English neurologist Hughlings Jackson proposed a conceptual and physical hierarchy of brain structures and control systems in the late 1800s. MacLean (1964) and Porges (2011) similarly proposed an evolutionary organisation of the brain and nervous system, with lower levels (in the brain stem) having evolved first and the higher levels (in the cortex) having inhibiting, integrating, co-ordinating and executive functions. (Compatible with a self-organising, dynamic system, with a hierarchy of organisation and negative feedback loops between levels.)

Schore (2001) states that at birth, the amygdala is active and with the input of sensory stimuli, begins to form connections to the hypothalamus. One of its functions is thought to be to add value, or 'valence' (pleasure or aversion) to incoming sensory information, which would influence autonomic arousal (Fonberg, 1986; Mendoza, 2008). The right amygdala is known to be involved in the processing of olfactory stimuli (Zald, Lee, Fluegal & Pardo, 1998) and so it is thought to be involved in infants remembering the smell of their mother and giving this stimulus an appropriate, pleasurable valence. Edelman has previously suggested that stimulation of pressure receptors in the mouth is also given a positive valence. Smell and taste are closely linked, so infant

feeding in the first hours and days of life are organising pleasurable, 'reward' associations during the initial interactions of the caregiver and infant, supporting the emerging attachment relationship: a 'felt' sense of safety and security, and simultaneously reducing feelings of threat and hence, arousal.

Panksepp (2000) reported that experience-dependent connections are made between the right amygdala and the right paraventricular hypothalamic nuclei, and this additionally supports co-regulation of autonomic state by the accompanying neurotransmitters vasopressin and oxytocin. Zheng *et al* (2014) link this to the reorganisation of oxytocin receptors in the neocortex and specific areas of the limbic system in association with the nature of early caregiving experiences.

In the cerebral hemispheres only the primary, somatosensory cortex is metabolically active at birth (Chugani, 1998) and this relays information about 'touch' and skin contact, Schore (2001) suggests specifically to the amygdala. Comforting holding and touch by the caregiver to the infant is given positive valence, further promoting the early attachment relationship (Feldman *et al*, 2010).

At eight weeks, the primary visual cortex becomes metabolically very active, reflecting a 'critical period' during which synaptic connections are formed as a result of visual experience (Yamada *et al*, 2000). Face to face interactions begin at around eight weeks (Cohn and Tronick, 1987) and at this same time, the processing of visual preference behaviour is transferred from sub-cortical

regions to cortical regions, indicating the formation of a higher-order control system (Hoffmann, 1978). This may be linked to the observation by Fogel and Branco (1997) that at around three months of age, infants can indicate a willingness to engage or not engage in play by either looking at their caregiver, or deliberately looking away – i.e. they are showing intentional behaviour.

Research also suggests that three months of age is an important time for *regulation* of physiological arousal. The sympathetic branch of the ANS is active in response to perceived challenge or threat, or uncomfortable internal sensations (such as hunger, cold or pain). The parasympathetic branch acts to reduce arousal and restore a sense of safety and calm. Vagal tone (representing the activity of a branch of the vagus nerve between the brainstem nucleus ambiguus (NA) and the heart) is undeveloped and weak in the first three months of life (Porges, 1991), but myelination and vagal tone increase significantly between two and four months (Kagan, 1994) in safe environments. Vagal activity can also promote the release of oxytocin in response to salient, caregiving-associated stimuli that convey warmth and familiarity. The release of this neurotransmitter is associated with warm feelings of love between the infant and caregiver (Carter, 2014) and is associated with the formation of the ‘attachment bond’.

At four months, infants are able to take part in consciously-regulated, intentional, turn-taking interactions with their caregivers. Through the presence of receptors for, and the activity of neurotransmitters such as

oxytocin and dopamine, released as part of the learned associations of feeding, comforting touch, familiar faces and voices, infants are thought to be able to experience 'emotional feelings'. They are able to produce vocalisations and facial expressions that reflect these as well as maintaining the co-acting, turn-taking relationship with their caregiver (Porges, 2011). Specific cortical areas have been identified as being active when the infant is part of a warm, playful caregiving dyad: the anterior cingulate of the medial frontal cortex is thought to be involved in turn-taking (MacLean, 1987) and the right anterior cingulate is involved in exploratory attentional movements (Gitelman et al, 1996) and anticipation of being tickled (Carlsson et al, 2000).

#### **5.1.4 The development of two limbic circuits to modulate arousal**

The orbital prefrontal cortex (OPFC) enters a critical period of growth during nine to eighteen months of age (Schore, 1994). Davidson, Putnam & Larson (2000) asserts that this structure represents the hierarchical apex of the limbic system, with the development of reciprocal connections into many areas of the brain associated with the processing of arousal and emotion. Critchley *et al* (2000) describe the OPFC as being involved in 'both generation and afferent (sensory) feedback representation of arousal' (p3037). Clearly, the earlier developing connections and circuits are crucial for providing the OPFC with the variety of neural input required for flexible responding.

This highlights the importance of the nature of early caregiving, since experience-dependent processes shape the connections that are being formed during critical phases of the development of the limbic system. The

dynamic, dyadic activity of the early caregiver-infant relationship literally creates the architecture of the developing infant brain (National Scientific Council on the Developing Child, 2012).

Schore (2001) further describes two limbic circuits with the OFFC as the highest-level control centre; its function being the regulation of physiological arousal. The first to develop is the excitatory 'ventral tegmental limbic forebrain-midbrain' circuit. This circuit is involved (active) with motivational reward, approach behaviour, active coping strategies, with dopamine as its central neurotransmitter. Optimal functioning of this circuit is characterised by dopamine levels in an inverted 'U' relationship, with very low levels and very high levels being implicated in psychopathology and poor executive functions (Blair, 2010). Schore suggests that an individual's narrow or broad dopaminergic functional concentrations are formed during the positively-valenced attachment experiences beginning in the third month of life, when the dopamine neurons of the ventral tegmental area are making connections into other limbic areas.

The second circuit is the inhibitory 'lateral tegmental limbic forebrain-midbrain' circuit. This circuit is involved with negative affect, avoidance behaviour, passive coping strategies, with noradrenalin as its central neurotransmitter.

### **5.1.5 Hierarchical control systems**

Joseph (1996) also describes the OPFC as the 'Senior Executive of limbic arousal' due to reciprocal connections with both excitatory dopamine-based neurons and inhibitory noradrenalin-based neurons of the two circuits, therefore providing quick and finely-tuned changes in physiological arousal; activation of one is inhibitory of the other, under optimal development. It also has connections to the hypothalamus (Ongur, An & Price, 1998), a function of which is to fine tune activity in the sympathetic and parasympathetic branches of the ANS, and the endocrine system to respond to metabolic demands associated with threat. The activities of the PNS and the SNS are conceptualised as being in dynamic balance (Applehans & Lueckans, 2006). This is consistent with RDS metatheory which describes optimal development and responsiveness as being characterised by organismic flexibility, sustained by variability within and between levels, in a dynamically organising hierarchy, maintained by negative feedback loops.

The competing demands of the PNS and SNS can be viewed not just in terms of 'arousal', but in terms of energy regulation (since high arousal states are maintained by metabolic energy production). Attractor states were described in Chapter 2 as being 'stable states', requiring low levels of energy to maintain them. This concept can be applied to the dynamic operation of the PNS/SNS balance (Thayer & Sternberg, 2006): the autonomic balance operates to minimise the energy requirements of the organism, and the more variable the inputs (from various parts of the sensory and limbic systems), the more efficiently and flexibly it can operate. A logical consequence is that autonomic

imbalance, associated with low variability of inputs, will be associated with a small number of stable states and a lower flexibility of responding. On p32, I cited Thelen (2005) “... *maladaptive behaviour is usually the result of excessive stability*” - and this seems even more applicable to the most important regulatory function – that of arousal, since it underpins and contributes to, emotional experience and behavioural decision-making. Thayer *et al* (2009) also relate this to poor states of health.

The OPFC therefore has a major role in the hierarchical control of physiological arousal, energy production and emotional experience. In optimal early environments, neural networks emerge in which higher brain areas of the OPFC can modulate a flexible coping pattern of coupled, reciprocal autonomic control (Berntson *et al*, 1991), the ability to act flexibly in the face of challenge being noted throughout this literature review as a signature hallmark of adaptive behaviour.

Consistent with the regulatory function of synchronous caregiving described in Chapter 3, Schore (2001) states that,

*The structural connections within and between the lateral and medial orbitofrontal systems, and the excitation-inhibition balance between them, are a product of both genetic and environmental factors, specifically the caregiver’s attachment function as the regulator of infant arousal. (p38)*



Extensive findings from comparative literature (Francis & Diorio, 1999; Kinnunen *et al*, 2003; Liu *et al* 2000) also support the notion that environmental experiences shapes genetic processes, neural architecture and organism functioning. The process referred to earlier through which the environmental context influences genetic transcription and structural neurobiological development is termed probabilistic epigenesis (Gottlieb, 2007).

### **5.1.6 Summary**

The aim through this Chapter is to review the literature that considers how early adversity influences neural development and hence the regulatory processes that facilitate adaptive behaviour and later functioning in school.

Collectively, the evidence presented above indicates that responsive, synchronised, co-active caregiving behaviour is responsible for the development and organisation of limbic circuits in infancy, beginning with the nuclei of the amygdala, connectivity into the nuclei of the hypothalamus and from three months, the anterior cingulate of the medial frontal cortex, continuing with neurons of the ventral tegmental area and brainstem areas. Attachment is understood not just in terms of dyadic behaviour to reduce distress, but dyadic behaviour to encourage and regulate increasing highs and lows of physiological arousal modulated through the activity of the dyadic relationship, and a wide variety of intentional, synchronised emotional expressions, mediated through face and voice (Chapter 3).

The effects of warm, responsive early caregiving on the development of typically-developing neural networks support a flexible balance between the two branches of the ANS (SNS and PNS) in response to an expected environment of appropriate caregiving. The comparative literature describes the neurobiological consequences of not having responsive caregiving to support adaptive brain development, as well as reducing the physiological response to threat and challenge, discussed in section 7 (stress regulation), as it has implications for the functioning of neglected children in school.

## **5.2 Self-regulation**

Tucker, Luu & Pribnam (1995) state that ‘the most basic regulatory process *is* the regulation of arousal’ (my emphasis), reflected by a balance in activity in the two branches of the ANS. The ability to move quickly between physiological states of elevated arousal (e.g. to maintain focussed attention or respond to challenge) and calm (e.g. to recuperate or to engage in social behaviour) in response to a continually changing environment, is essential to flexible, adaptive, goal-directed behaviour and good mental health (Thayer *et al*, 2012). Keilman *et al* (2012) and Scarpa (2015) similarly observe that the efficient regulation of autonomic balance in response to both internal (visceral) and external change permits rapid and adaptive changes in attention, emotion, motivation and behaviour.

The *volitional* regulation of these processes (cognition/attention, emotion and behaviour) for the purposes of goal-directed actions is widely described in the literature as ‘self-regulation’ (Blair & Ursache, 2011). Consistent with the

bidirectional emphasis in Schore's quote above, Blair & Raver (2012b) state that self-regulation can be conceptualised as "*behavioural, cognitive and physiological aspects of functioning that are hierarchically organized and reciprocally integrated... and composed of interrelated top-down and bottom-up components*" (p647) with the top-down components being executive functions and the bottom-up components including automatic processes (i.e. operating outside conscious control) and associated with stress physiology, emotional arousal and attention focusing.

McCoy (2013) similarly defines self-regulation as "*an individual's ability to regulate (e.g. control, modulate, inhibit, initiate) his or her thoughts, behaviours or emotions with the purpose of achieving a particular goal*" (p256). She discusses three complementary sets of skills related to the regulation of thoughts, feelings and behaviour: executive functions, emotional regulation and effortful control ("*behavioural abilities to inhibit prepotent, impulsive actions in favor of more situationally-appropriate, subdominant responses*" (Rothbart & Bates, 2006)).

Holzman & Bridgett (2017) define it as a "*multidimensional aspect of temperament involved in the flexible regulation of behaviour, emotion and cognition through means of 'top-down' and 'bottom-up' neural mechanisms*" (p234).

Unlike Blair & Raver, Bridgett *et al* (2015) differentiate top-down self-regulation into two sub-components of emotion regulation and behavioural

regulation, (rather than executive functioning), albeit with some conceptual overlap. Emotion regulation is defined as 'regulatory processes that serve to alter the valency of an emotional experience and/or maintain it, as appropriate' (Cole, 2014; Gross, 2015), including cognitive aspects such as reappraisal and rumination, as well as behavioural aspects, such as self-soothing. Behavioural regulation was however theorised to include three principal constructs: executive functioning (Miyake & Friedman, 2012) effortful control (Rothbart *et al* 2003) and self-control (Muraven & Baumeister, 2000). Holzman & Bridgett (2017) point out that conceptual overlap between emotional regulation and behavioural regulation extends to the hierarchy of control, located consistently for both in several areas of the pre-frontal cortex (PFC), particularly the orbitofrontal cortex and the dorsolateral cortex.

There is therefore some interdependence between the regulation of executive functions, behavioural regulation and emotional regulation, and this has been commented on elsewhere in the literature (Gyurak *et al*, 2011; McClelland *et al*, 2015; Morillas-Romero *et al*, 2015). This is nevertheless consistent with the RDS metatheoretical viewpoint of an organism consisting of a dynamic organised hierarchy, of many overlapping systems (Williams, 2017), contributing to probabilistic behavioural outcomes, depending on the specific context.

All definitions emphasise executive function (including working memory, the ability to maintain focussed attention, planning in a future time, and the flexible shifting of attention), effortful control (inhibition) and emotional

regulation. Unsurprisingly, the development of self-regulation in childhood is considered crucial to later psychological, socioemotional and academic success (McCoy, 2013) and predicts a variety of outcomes, including school readiness (Blair & Razza, 2007), academic achievement during childhood (Cameron-Ponitz *et al* 2009; Duckworth *et al* 2010), improved memory and healthy peer relationships (Moffitt, 2011; Willcutt *et al* 2005) as well as long-term health and educational outcomes (Becker *et al*, 2014; McClelland *et al* 2013; von Suchodoletz *et al*, 2013).

### **5.3 Summary**

This research is concerned with an in-depth understanding of how early experiences contribute to a child's functioning and progress in school. Efficient self-regulation is understood to have arisen due to experience-dependent development of interlinked neural circuits in the limbic system and PFC in co-action with the specific nature of the relationship between infant and caregiver in the early months and years of life. Self-regulation encompasses a variety of skills needed to enable a child in school to be able to listen, pay attention, remember information, plan, inhibit certain behaviours, experience pleasurable feelings when interacting with others, view other people as a source of comfort, and have positive feelings about oneself. It is highly dependent on a flexible ANS balance, i.e. the ability to appropriately and quickly change physiological state in response to internal and external change.

Crucially, it is also dependent upon the development of bidirectional connections between the CNS (higher level, cortical areas, mid-level limbic

structures and lower level brain stem structures) with the ANS, particularly the source and terminating nuclei of ANS nerves (Thayer & Brosschot, 2005).

My idea for carrying out this research came from wondering what it would be like for a child who had not experienced good early caregiving – what would happen in developmental terms if neglect had characterised their early life, with few interpersonal opportunities to resolve distress, and how this would subsequently impact their progress in school. The next sections outline how self-regulation and specifically the ANS balance may be indexed through physiological measures, and how development changes in response to chronic early stressful experiences. The Neurovisceral Integration Model (Thayer & Lane, 2000) provides one theoretical model, the Polyvagal Theory (Porges, 2007) is another, with a wider focus on social engagement.

#### **5.4 The Neurovisceral Integration Model**

The Neurovisceral Integration (NVI) model proposes a hierarchical framework of reciprocally connected brain regions termed the Central Autonomic Network, originally described by Benarroch (1993), to explain how heart rate variability may index the level of integration of the ANS with the Central Nervous System (CNS) (Smith *et al*, 2017). Integration indicates the efficiency of central-peripheral neural feedback mechanisms between structures in the brain stem, mid-brain structures and the PFC, to support goal-directed behaviour, adaptability and self-regulation (Blair & Raver, 2012a).

The CNS refers to the brain and spinal cord. The 'periphery' refers to the dual innervation of organs and glands (viscera) outside the brain by the sympathetic and the parasympathetic branches of the ANS. Previously, 'arousal' has been characterised by activity in the SNS, but it has now been shown that 'arousal' is primarily mediated by the activity of the PNS, eighty per cent of which consists of branches of the vagus nerve (Porges, 2011). Eighty per cent of all ANS nerves are afferent nerves (nerves which run from the viscera, including the immune system, to the brain); internal inputs from the body organs to the brain therefore contribute an important source of information about health and energy availability, essential for the regulation of homeostatic processes. Damasio (1994) highlights the importance of receiving and integrating a wide variety of inputs:

*The overall function of the brain is to be well-informed about what goes on in the rest of the body, about what goes on in itself... and about the environment surrounding the organism, so that survivable accommodations can be achieved between the organism and the environment. (p90)*

Input from the viscera (including the heart) to the Central Autonomic Network (CAN)<sup>4</sup> is via the nucleus of the solitary tract (NTS) in the brainstem. The CAN includes the amygdala, the insula (which creates conscious representations of

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<sup>4</sup> The CAN consists of regions of the PFC (medial PFC and the OPFC), the Anterior Cingulate Cortex (ACC), Insula, Central Nucleus of the Amygdala (CeA), paraventricular nuclei (PVN) of the Hypothalamus, peri-aqueductal Grey (PAG), parabrachial nucleus, the Nucleus of the Solitary Tract (NTS), the ventrolateral and ventromedial medullae, and the medullary tegmental field).

bodily state), and the hypothalamus. Inputs to the CAN from external sources include the temporal cortex, involved in the evaluation of risk (Porges, 2011) and areas of the cortex involved with sensory processing. The primary outputs of the CAN control heart-rate, mediated via the sympathetic stellate ganglia and the two parasympathetic brain stem nuclei that constitute the origins of the vagus nerve (the dorsal motor nucleus (DMNX) and the NA).

Direct and indirect pathways link cortical and sub-cortical regions (Ter Horst & Postema, 1997) and importantly, neural blockade and neuroimaging studies demonstrated that activity in the PFC is associated with vagally-mediated heart-rate variability (Lane *et al*, 2001; Gianaros, 2004).

The CAN therefore consists of an integrated network of reciprocally-connected brain structures, receiving continual inputs from external and internal sources, with information travelling bidirectionally and continually between lower and higher levels of brain structure (Thayer & Brosschot, 2005). Areas of the PFC are thought to exert continual (tonic) inhibition on lower level structures (Thayer & Sternberg, 2006), including the amygdala (Aron *et al*, 2004; Chambers *et al*, 2006). The continuous processing of incoming information in the PFC contributes to an output that controls heart-rate on a moment to moment basis via the SNS and PNS - reflecting the balance of activity between the SNS and PNS and hence, the flexibility of physiological arousal underpinning self-regulation. If the system is too rigidly-coupled, lacking flexibility, or completely uncoupled, then psychopathology and poor health is observed (Friedman & Irwin, 1997; Scarpa, 2015). Flexible, balanced autonomic responsivity is associated with good health outcomes



whereas an imbalance (usually a hyperactive SNS and hypoactive PNS) is associated with stress, psychopathology and poor health outcomes (Thayer *et al*, 2012).

Heart-rate itself is shown to be under tonic inhibitory control via the activity of a branch of the vagus nerve between the NA and the pacemaker of the heart (the sino-atrial node, SAN) - if both sympathetic and parasympathetic (vagal) pathways to the heart are pharmacologically blocked, heart-rate increases.

This tonic inhibition is referred to as 'the vagal brake' – heart-rate is normally maintained at a slower pace than the intrinsic heart-rate by the activity of the vagus nerve. This explains why 'arousal' is indexed by the activity of the PNS, not the SNS – under resting conditions, the autonomic balance is tipped in favour of parasympathetic activity controlling heart-rate and inhibiting the SNS. (If the SNS is tonically active (i.e. the body is in a state of high arousal for long periods), then this may be conceptualised as 'stress', discussed in section 5.7).

Although *heart-rate* (beats per minute) is controlled by several factors, including SNS and PNS activity, heart-rate *variability* (HRV) in terms of the size and frequency (or amplitude) of change of the interbeat intervals (IBI) largely (but not solely) represents the activity of the branch of the vagus nerve running between the NA and the SAN (often referred to as vagal tone). Sympathetic influence on the heart is too slow to produce beat to beat changes whereas vagal influence on the heart is extremely rapid and capable

of producing IBI changes in the magnitude of milliseconds (Porges, 2011; Thayer *et al*, 2009).

Measures of vagally-mediated heart-rate variability can therefore index the activity of the parasympathetic nervous system and the physiological state of 'calm', as well as activity in the PFC referred to above.

Thayer *et al* (2009) observe that other research teams have identified similar neural networks of brain structures, including the Rostral Limbic System (Devinsky, Morrell & Vogt, 1995) monitoring the motivational quality of internal and external stimuli, and the Emotion Circuit (Damasio, 1998), but that all, including the CAN, represent a distributed structural network that functionally underlies self regulation (executive functions, effortful control and emotional regulation) and purposeful, goal-directed, adaptive behaviour.

Recent topographical mapping of the brain supports the idea of 'loops' (of neural circuits) distributed throughout the entire brain (Williams, 2017).

## **5.5 The Polyvagal Theory**

The PVT (Porges, 2007) proposes that the mammalian ANS has evolved in a phylogenetically-derived hierarchy of three neural circuits, active in response to safety and threat. These provide the neurophysiological basis for a sequential autonomic response to challenge and the ability to engage in emotional, social behaviour, through bidirectional regulation between the CNS and the ANS, of physiological state. This subsequently sets limits on the experience of emotion and the ability to engage in flexible, adaptive behaviour.

### **5.5.1 Response to challenge**

The evolutionarily older part of the PNS is represented by an unmyelinated branch of the vagus nerve, originating in the DMNX and terminating on the SAN of the heart and in organs below the diaphragm. The more evolutionarily advanced part of the PNS is represented by a myelinated vagus (hence the term 'polyvagal'), originating in the NA.

Under resting conditions, the myelinated vagus is dominant for the chronotropic control of the heart, reflected in a characteristic variability known as Respiratory Sinus Arrhythmia (RSA) – the IBI interval is slightly shorter during inspiration and slightly longer during expiration. This is known as the 'respiratory rhythm' and the myelinated vagus is the only source of this variability. The measurement of RSA (Chapter 7) is therefore a measure of the activity of the myelinated vagus, indexing the activity of the PNS.

The PVT proposes that parts of the temporal cortex are continually involved in monitoring the environment for signs of risk and threat, including evaluation of human body movements, facial expressions, and the pitch and prosody of the human voice. This subconscious process is termed 'neuroception'. When threat is detected, inhibitory inputs to the NA result in vagal tone falling, the vagal brake is lifted slightly and heart rate increases, without any concomitant increase in SNS activity. If the threat is prolonged, or deemed severe, the vagal brake is removed, inhibition on the SNS is lifted and an active response is marshalled, characteristic of the 'flight or fight' response. The Sympathetic-Adrenal-Medullary (SAM) pathway is activated, the hormone adrenalin is released from the adrenal medulla, heart rate and respiration rate are increased to provide more oxygen, and metabolism switches to the rapid provision of glucose to the muscles - processes facilitating increases in energy production.

In contrast, under situations of life-threat and terror, the older vagus is recruited, exemplified by the 'freeze' response (akin to death-feigning in lower-order vertebrates). Activity in the unmyelinated vagus acting on the SAN results in a massive slowing of the heart-rate, to conserve energy resources.

### **5.5.2 The Social Engagement System**

As well as the vagus, the NA is the source nucleus for other cranial nerves, responsible for innervating the muscles that control facial expressions, prosody, swallowing and sucking. The neural regulation of physiological state (via heart rate) is therefore neuro-anatomically linked via bidirectional coupling

to the neural regulation of the muscles that control the face, neck and head, involved in feeding and social communication. At birth, these nerves are myelinated and active, facilitating the co-ordination of breathing, sucking, swallowing, vocalisation, the posture of the head and early facial movements that resemble smiling. These activities take place when the infant is in a place of safety, with an associated resting heart-rate facilitated by the myelinated vagus, such that the felt experience of security and 'calm' is linked to physiological, visceral 'feelings', and the spontaneous expression of early social communication (further developed by responsive caregiving described in earlier sections).

When neuroceptive processes indicate 'safety' (familiar faces, voices, smells, comforting touch), inputs to the NA contribute to high vagal tone in the myelinated vagus. A high proportion of heart-rate variability becomes due to the natural respiratory frequency, linked to higher activity in the myelinated vagus. Homeostatic processes that promote biomolecular energy storage, immune system functions and growth and repair, are facilitated, due to concomitant efferent activity in the other parts of the vagus linked to the digestive system and liver. Due to the bidirectional coupling in the NA, afferent feedback from the slower, variable heartbeats automatically activates the cranial nerves controlling the muscles of the face and head to promote friendly, social behaviour. Porges (2011) refers to this as the 'social engagement system' (SES), characterised by prosaic voices, head postures that facilitates mutual gaze and interest, wide-open eyelids, tensed muscles of the middle ear (permitting better receptivity of higher-frequency sound

characteristic of the human voice), and appropriate facial expressions, such as smiling. Social experiences are 'felt' to be 'pleasurable', mediated via neuropeptides such as oxytocin.

As eighty percent of the ANS is comprised of afferent nerves, the experience of safety also depends on the continual monitoring of internal visceral state – the experience of pain for instance, would inhibit the SES.

The perception of safety additionally inhibits the sympathetic branch of the SNS and the HPA axis. In a physiological state of 'calmness', children can attend to social cues, listen efficiently, generate appropriate, warm social responses – and in a school classroom – learn well.

The evolution of PS branch of the ANS therefore facilitates the integration of the facial features of social communication and the internal regulation of heart-rate – which facilitates the physiological states underpinning the experiences of emotions when we feel 'safe'.

If threat is perceived, the amygdala is activated, inhibiting activity in the NA. The SES is 'switched off'; faces go down, eye-contact is lost, listening to voices becomes inefficient and the sympathetic branch of the ANS may consequently become active. Social engagement and the sympathetically-mediated response to threat are mutually exclusive processes (due to vagal inhibition of the SNS).

There are other, non-relational perspectives of self-regulation, such as the unity / diversity framework of executive function, proposed by Miyake & Friedman (2012). This argues for a substantial genetic component to executive functions in self-regulation, and relative stability across time.

### **5.6 The RDS perspective**

Self-regulation from a RDS perspective is a more malleable proposition, with its development reflecting activity at multiple levels in specific environments, with an active role for the child in shaping his/her own environmental experiences. This is echoed by many researchers (e.g. Blair & Raver, 2012a; Gottlieb, 1998; Hostinar & Gunnar, 2013; McClelland *et al* 2015; Teicher & Samson, 2016). The development of later psychopathology and problems in school, should be seen in this context; they are not 'within-child' constructs, but a product of past history and current context.

### **5.7 The stress response**

A psychologically warm, responsive caregiver has been shown above to be essential for adaptive brain ontogeny, the development of regulatory processes for physiological arousal and interlinked circuits that create pleasurable subjective feeling states linked to stable patterns of social communication behaviour. These are components of self-regulation, which additionally includes executive functions and effortful control. Structurally, these arise from a series of hierarchically-organised circuits, with the higher-

level PFC being reciprocally connected to lower-level brain stem structures implicated in automatic processing to support autonomic balance.

Absence of warm caregiving in cases of neglect means that these brain circuits, their interconnections and levels of neurotransmitters develop in the context of a very different environment; the processes of dynamic self-organisation create very different neural networks (Blair & Raver, 2012a). This is particularly pertinent for those circuits that give positive valence (associated with 'reward' states) to familiar sensory inputs (Schoore, 2001), and the whole-body processes associated with the stress-response system. Biological regulation (constituting the processes of homeostasis) is a carefully-constructed system of checks and balances that respond in myriad ways to slight perturbations in the system; biological regulation of stress has consequences in many biochemical processes, including the immune response.

The initial SNS response to threat (a stressor) is to mobilise energy resources via the SAM axis in anticipation of activity, but when threat or risk is perceived without the means to resolve it, or escape it (i.e. it is prolonged or severe), a different metabolic response ensues (a stress response), to maintain homeostatic activities and sustain life (Dallman, 2007). The physiological consequence of chronic stressors is referred to as 'allostatic load' (McEwen & Wingfield, 2003) - it reflects the cost to health of maintaining biochemicals and processes that support homeostatic mechanisms, without which life could not continue (McEwen, 2008).



The body stores finite amounts of easily-mobilised energy reserves, so it is not possible to maintain a state of high physiological arousal for long. In stressful situations, other sources of metabolic energy are created, whilst energy-consuming processes such as growth, repair and immune system activities are inhibited. This altered metabolism is mediated by a class of biochemicals called glucocorticoids (Sapolsky, 2002). To facilitate this, the amygdala stimulates the paraventricular nuclei of the hypothalamus to release Corticotropin Releasing Hormone (CRH) and vasopressin. CRH stimulates the anterior pituitary gland (APG) to release adrenocorticotrophic hormone (ACTH). The target organ is the adrenal cortex, which produces cortisol,<sup>5</sup> important in maintaining the long-term availability of glucose (the sole energy source for brain cells). This neuroendocrine system is referred to as the HPA axis. The hypothalamus also maintains the circadian rhythm, of which cortisol release is one factor; there is a daily rise in cortisol production around thirty minutes after waking to support glucose supply, with a gradual decline through the day (Fries *et al*, 2009).

Cortisol fits into two types of cellular receptor – mineralocorticoid receptors (MR) and glucocorticoid receptors GR). When released as part of the circadian rhythm, it binds preferentially to MRs. When higher levels of cortisol are present as part of a stress response, it begins to bind into the GRs. This triggers a series of slower cellular reactions resulting in gene transcription in those cells carrying the receptors, with varying effects, depending upon the

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<sup>5</sup> Cortisol is part of a group of chemicals called glucocorticoids. There are receptors for glucocorticoids in every cell, as they are involved in glucose metabolism.

particular cell and the number of receptors (Gunnar & Vasquez, 2006; Gunnar & Loman, 2010).

Several areas of the brain typically have particularly large numbers of glucocorticoid receptors, including the amygdala, hippocampus, hypothalamus and PFC. These are important as they form part of a negative feedback loop, inhibiting further production of cortisol. These areas are therefore more vulnerable to protracted early experiences of stress, especially when they are developing, and making reciprocal connections in the first two years of life (Teicher, 2000). Chronic stress has been shown to have differential effects on the size of these brain structures, with increased dendritic branching in the amygdala, but dendritic atrophy in the PFC. Lower levels of GRs in the PFC and hippocampus have also been observed, lowering susceptibility to negative feedback (Ulrich-Lai & Herman, 2009) and contributing to elevated cortisol levels.

High levels of glucocorticoids are also proposed to have widespread effects throughout the brain, for example reducing myelination through inhibiting glial cell division<sup>6</sup> (Lauder, 1983) and attenuating the development of the corpus callosum<sup>7</sup> (de Bellis *et al*, 1999). Prolonged stress responses in early life are also thought to alter reactivity in particular brain regions, creating 'stress-induced programming of the glucocorticoid, noradrenalin and the vasopressin-oxytocin stress response system' (Teicher & Samson, 2016), through

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<sup>6</sup> Glial cells manufacture the myelin sheath around axons; this speeds up the rate of transmission of nerve impulses.

<sup>7</sup> The corpus callosum transfers information between the two hemispheres, contributing to integration of information.

epigenetically-mediated alterations in GR receptor densities (Blair & Raver 2012b). This is consistent with Marshall and Kenney's (2009) observation that the impact of early deprivation is not just on the HPA axis, "*but is expressed in multiple pathways that produce effects on many brain systems*" (p106) and Meaney & Szyf's (2005) finding that poor caregiving exerted its effects through methylation of the promoter region regulating the transcription of the GR gene.

### **5.7.1 The consequence of a prolonged stress response on the processes supporting self-regulation**

Blair & Raver (2012b) in their longitudinal study beginning at birth with 1,292 children and their caregivers (The Family Life Project) reported that the processes of self-regulation were compromised in those children experiencing chronic stress. Using a psychobiological model of development and a bidirectional theory of self-regulation, they proposed that epigenetically-driven changes led to attenuation of the top-down executive functions (working memory, inhibitory control and attention shifting) as well as changes in the more automatic bottom-up processes originating in the brainstem and limbic areas (stress physiology, emotional arousal and attention focusing). All differences were seen as part of the response to changes in metabolism associated with chronic stress, including increased hormone levels, altered connectivity in those brain areas involved in the stress response and altered levels of neurotransmitters. They noted that very high or very low levels of neuroendocrine increase is related to a decrease in synaptic activity in the PFC, associated with more reactive forms of behaviour (Ramos & Arnsten, 2007; Segal *et al*, 2010).

Blair & Raver (2012a) refer to the epigenetic changes occurring in situations of stressful caregiving as 'experiential canalization of brain and behaviour'; the coaction of biology and experience contributes to the loss of connectivity and activity in areas of the brain, specifically those structures involved in the stress response system. They propose that this is an adaptive response: it is a fine-tuning of perceptual networks that develop in response to regularly occurring events of threat. Increasing a child's vigilance and ability to react quickly in situations of potential danger is more adaptive than a slower, reflective response facilitated by an active PFC (Pollack *et al*, 2010).

This is consistent with Teicher & Samson's (2016) conclusion following their review of the neuroimaging evidence (p110). They reported that maltreatment at different sensitive periods is associated with reliable structural changes in the anterior cingulate, dorsal PFC, lateral PFC, OPFC (all areas of the brain involved in emotional regulation), corpus callosum and the adult hippocampus. Increases in amygdala volume were seen in children with early exposure to neglect. A previous study by Teicher *et al* (2003) found increased excitability (termed 'kindling') in the amygdala as a result of early stress, and they noted that maltreatment is consistently associated with an enhanced response to threat and a diminished response to reward. McCrory *et al* (2011) similarly reported increased amygdala activation in children exposed to threat, including family violence.

Teicher *et al* (2003) proposed that postnatal neglect served to elicit a cascade of stress responses involving a series of neurotransmitters and particularly

glucocorticoids, that organise the brain to develop along a different, stress-responsive pathway. This is frequently mentioned in the literature as a 'pre-programming' of the stress response, i.e. that the stress response is elicited at much lower thresholds than is seen in typically-developing children, and may be more prolonged.

In research with the BEIP children, McLaughlin *et al* (2015) report that disruptions to the stress response system are the principal means by which early adversity affects development. Similarly, Shonkoff, Boyce & McEwen (2009) assert that the increased risk of physical and mental health issues associated with early adversity are mediated at least in part by the activity of biological stress systems.

### **5.7.2 Cortisol levels in children experiencing adversity**

Children who experience prolonged neglect often have lower levels of cortisol in the morning (Bruce *et al*, 2009) and an atypically flat pattern of secretion during the day (Dozier *et al*, 2006). Carlson & Earls (1997) similarly reported disruptions in the diurnal rhythm of cortisol production in children in a Romanian institution, also with lower morning cortisol levels. It is now believed that a 'blunted' response is a reflection of allostatic load and is associated with an absence of parental care early in life, with down-regulation of cortisol production over time (Fisher *et al*, 2007; Koss *et al*, 2014). Children exposed to risk or adversity are found to have generally higher levels of cortisol (Evans & Kim, 2007).

Reviews of stress response research (e.g. Gunnar & Valquez, 2006) and research with children in adversity note that both heightened and dampened HPA responses have been identified as dysregulation of the HPA (measured by the levels of salivary cortisol during the diurnal rhythm), suggesting an inverted 'U' pattern as an adaptive response to variations in caregiving (Koss *et al*, 2013).

### **5.8. Adversity, self-regulation and academic achievement**

Components of self-regulation include executive functions (attentional flexibility, attentional control, inhibitory control, working memory) and behavioural / emotional regulation. They are essential for a child to do well in school; they form the foundation for early learning skills and the ability to make the most of the educational opportunities provided to them. In early childhood, as a composite construct of self-regulation, or as individual abilities in a school context, they are robustly associated with short-term and long-term social and academic success (Blair & Razza, 2007; Ponitz *et al*, 2009; Duncan *et al*, 2007; Howse *et al*, 2003, NICHD Early Child Care Research Network, 2003; Sektnan *et al*, 2010; Trentacosta & Izard, 2007). Across cultures, self-regulation has also been found to relate significantly to academic achievement (McClelland *et al*, 2015).

Wanless, McClelland & Acock (2011) reported that young children's (age 3) performance on a direct assessment of self-regulation predicted emergent literacy, maths and vocabulary skills between the ages of 3 and 6. In follow-up

studies, self-regulation scores measured in the autumn term predicted academic achievement in the following spring and autumn terms.

Research from the Family Life Project indicates that early adversity, including poverty, is related to poor self-regulation skills, mediated through lower parenting sensitivity and elevated levels of stress hormones such as cortisol (Blair, Granger & Razza, 2005; Blair, Granger *et al*, 2011)

### **5.9 Summary and aim of the research**

The outcome of good enough early caregiving is a dynamically balanced, self-organising hierarchically-arranged ANS, which includes excitatory 'reward circuits' and inhibitory 'aversive' circuits (Schoore, 2001). Efficient bidirectional connections between PFC, mid-brain structures and brainstem integrate inputs from the outside world (exteroception) with information from internal structures (interoception) to regulate arousal and support varying emotional states, and either maintain / build energy resources (under the influence of the PNS), or in response to challenge, mount an active fight or flight response (under the influence of the SNS). In situations of terror, a third option of dramatically reducing energy utilisation through a 'freeze' response is also available via the unmyelinated vagus. Components at the top of the hierarchy, in the PFC, respond quickly with flexible behavioural patterns to adaptively cope with, and influence, environmental change.

The NVI suggests that this autonomic balance is a crucial factor in flexible, goal-directed behaviour. It also suggests that self-regulation is underpinned

by the PFC maintaining inhibitory activity over lower-level structures that are part of a reciprocally-activated CAN, and it is further responsible for the experience of appropriately-regulated emotion and efficient executive functioning.

The PVT suggests that under conditions of perceived safety, the SES supports emotionally-rewarding social behaviour, with the neurobiological substrate being an active parasympathetic nervous system exerting tonic inhibition on the SNS.

Both theories state that vagally-mediated heart-rate variability (HRV) indexed by RSA, is a measure of parasympathetic activity mediating these functions. Low vagal activity (in response to chronic early stress / lack of perceived safety) compromises social behaviour, active listening, executive functions, working memory, inhibitory control, concentration and attention – all essential skills for successful learning.

Children who have experienced early neglect (e.g. children in need and children in care) are likely to begin school with compromised self-regulation, and unless this is recognised, are likely to continue to struggle, disengaging from school and learning (Blair & Diamond, 2008; Ladd *et al*, 1999).

This literature review has attempted to explain some of these observations through conceptualising development as a complex, relational-developmental system and the effects of early neglect on the development of self-regulation.



The research aims to test these ideas empirically, by measuring self-regulation in children in school and exploring adult perceptions of children's self-regulation skills.

## Chapter 6

### METHODOLOGY

#### **6 Introduction**

In the Introduction, I explained that the starting point for this research came from two sources: firstly, personal experience of Children in Care and Children in Need experiencing enduring problems in their learning (often being described as having 'behavioural difficulties' in their earliest years of schooling) and secondly, national statistics that describe their low achievement relative to peers. My reading of the literature over the last few years (summarised in the previous chapters) and especially the ideas of Attachment Theory as it applies to unfolding child development in particular care-giving environments, have led me to believe that an in-depth study of children who have experienced neglect in the first year or two of life would be a worthwhile research endeavour. It would permit an exploration of the recent, neurobiologically-based predictions that Attachment Theory makes, as they apply to individual children in their early years of schooling, notably that children who have experienced neglectful early caregiving exhibit developmental differences in several areas, particularly in the area of self-regulation. Potentially, this would impact on their ability to engage successfully in the social environment of a school classroom and therefore influence their wider (and later) school attainments.

I am therefore interested in gaining a 'polyhedron of intelligibility' as Foucault (1981) describes it, of the strengths and difficulties that children who have experienced early neglect, demonstrate in the school context. I can also

explore reasons for, and (at least partially) explain, child behaviour - as well as potentially adding to existing theories of children's functioning in school.

### **6.1 Rationale for a mixed-methods, case study design**

This type of in-depth, holistic assessment I propose therefore necessitates a mixed-methods approach with the collection of both quantitative and qualitative data. Teddlie & Tashakkori (2003) observe, "By combining methods in one study, we can confirm and explain, verify and generate theory, all at the same time... Mixed methods are usually appropriate when there are both exploratory/inductive and confirmatory/deductive research questions in the same study". Similarly, the National Research Council (2002) notes that research claims are stronger when they are based on a variety of methods. I examined large-scale case study research carried out using mixed methods and found a wide variety of data collection methods. One study utilised data sources such as existing secondary data sets, large scale questionnaires, archived sound recordings and in-depth semi-structured interviews (Gorard and Rees, 2002), whilst another used accounts' information, observation at board meetings and in-depth individual employee interviews (Ahrens and Chapman, 2007). Both of these studies utilised vast quantitative data sets alongside qualitative detailed explorations of individual perspectives, to gain a rich, detailed picture of the topic area under investigation.

These large, mixed-methods studies were structured using a case study design. Case studies are particularly relevant when there is a desire to

understand complex, social phenomena. The advantages of a case study design are that the results are high in ecological validity and large amounts of detailed, in-depth, qualitative data are generated about a particular situation; it permits researchers to retain the meaningful characteristics of real-life events, using multiple sources of evidence. A case study focuses on one particular thing, looked at from many perspectives and explored using a variety of methods, suited to the purpose of inquiry:

*Case study is not a methodological choice, but a choice of what is to be studied... By whatever method, we choose to study the case. We could study it analytically or holistically... or hermeneutically, organically or culturally, and by mixed methods – but we concentrate... on the case.*

(Stake, 2005 p443)

Guidelines from the British Educational Research Association (BERA) state that, “It is important to emphasise that there is no one strategy which is always going to be appropriate for every piece of research undertaken. It is very much a matter of... fitting the method or technique to what is being investigated (Campbell *et al* 2003). The case study design affords an opportunity to use multiple methods to gain a wide variety of data about a particular instance. It allows the researcher(s) to explore, examine and to think in great detail about the ‘hows’ and the ‘whys’ of the phenomena under investigation. It would seem ideally suited to the study of human behaviour in social contexts - where simple principles of cause and effect do not operate; where many factors contribute to eventual outcomes and where reductionist methods are an inappropriate means of understanding ‘the whole’. The case study design lets us examine holistically, the varied influences operating in

complex social systems and together with individual, idiosyncratic information, permits us to consider how these might contribute to the system as we observe it to be, at this moment in time. It contributes to the aforementioned 'polyhedron of intelligibility' that supports insight, intuition and the development of knowledge and understanding and ideally suits the Relational Developmental Systems (RDS) perspective.

Despite these remarkable advantages, the use of case study in research has been seen somewhat of a methodological 'second best' (Thomas, 2010). For example, Yin (2014) states that, "the case study has long been and continues to be, stereotyped as a weak sibling among social science methods" (p. xiii).

A reading of the literature pertaining to educational research suggested two main reasons for this. Firstly is its lack of generalisability, somewhat puzzling, as generalisability is never an aim of case study research. What case studies aim for are in-depth understandings and insights, which might potentially be useful in other situations (but they do not have to be). Thomas (2010) notes that in the majority of social science research, what is valued, is induction from generalisation; that is, we derive general principles from many similar examples to arrive at general laws for social processes. The design of a case study however, means that we use abduction (informed ideas arising from puzzling experiences) to create hypotheses, which may be examined in great depth in a case study, with the aim of generating many useful and helpful insights and understandings of particular situations. Hence, abduction should be valued more widely, as it is based on valuable, personal observation - just

as important as studying large groups, when contributing to knowledge about *people*. Similarly, Flyvbjerg (2001) argues that we have failed to distinguish different kinds of enquiry, for different purposes and this is to the detriment of our social knowledge and understanding. I will elaborate on this in section 6.2, because I want to be clear about the different types of knowledge I will be generating, how I go about gaining this knowledge and why this *type* of knowledge is relevant for the purposes of my research.

The second reason for a case study design being seen as second best is an opposition by some to mixed methods research, seemingly due to false assumptions about the nature of the different forms of research. Tashakkori & Teddlie (2003) suggest a number of misconceptions about the way research questions are formed:

*The first one is that qualitative research is always purely inductive, unstructured and unplanned, while quantitative is purely deductive (hypothetico-deductive), structured (and) planned. (p66)*

This leads to a belief that it is impossible to have two types of questions (inductive / qualitative and deductive / quantitative) in a single study, because they are supposedly based on opposing paradigms. This belief commonly came to be known as the 'paradigm wars' (Oakley 1999).

Tashakkori & Teddlie (*ibid*) refer to this as the 'incompatibility thesis' and point out that respected researchers such as Lincoln and Guba (1985) support this view, whilst others (e.g. Howe 1988) disagree and point to pragmatism as a way to reconcile methodological differences.

Gorard and Taylor (2004) record similar statements of belief amongst other researchers: "Because the two paradigms do not study the same phenomena, qualitative and quantitative methods *cannot* be combined for cross-validation or triangulation purposes' (Sale *et al* 2002 p43). In their rebuttal, Gorard and Taylor (*ibid*) point out that all quantitative data collection begins with theory and subjective choice of some sort, about what to study, whilst qualitative data collection is frequently analysed and described using numerical, statistical claims such as 'rare', 'typical' and 'related', for example in factor analysis and discourse analysis. Therefore, to divide up two methods of data collection into 'quantitative' and 'qualitative' is a meaningless activity, and leads to an 'exaggeration of the differences between the two traditions' (Gray & Densten, 1998). Moreover, they observe that the so-called 'paradigm wars' between different methods of data collection is a gross misunderstanding of the term 'paradigm'. Kuhn (1962) introduced the concept of a paradigm when he distinguished between times of 'normal science' and 'revolutionary science'. He argued that scientists carry out research within a specified 'paradigm' – certain sets of ideas, assumptions and criteria that define research questions (the problems to be solved) and the research methods to solve them. When a substantial amount of new knowledge has accumulated, such that the problems to be solved could no longer be understood using previous ideas and methods, then a 'paradigm shift' takes place. Husen (1999) neatly summarises this: 'A paradigm determines the criteria according to which one selects and defines problems for inquiry and how one approaches them, theoretically and methodologically'. A paradigm therefore refers to the entire methodological framework for understanding and defining

problems for inquiry; it incorporates the structure of theory within which problems for inquiry are understood; it does not simply relate to the nature of *data*.

Having previously worked as a researcher wholly within the scientific, empirical paradigm (medical research), followed by twelve years as an educational psychologist working with what might traditionally be regarded as objective data from standardised assessment scores and more subjective data from assessments using personal construct psychology, I believe that the two main philosophical positions in educational research (positivist / interpretivist) have value in creating a complementary, detailed picture of the object under study, in the case of this research, the factors that contribute to the relationships between children and other people, that lead to good developmental and educational outcomes in school.

The different types of research claims made in educational (social science) research are often based on different views of what it means to be a person. Each *type* of knowledge claim (described approximately as quantitative and qualitative data) should however be of equal importance, since we are studying different aspects of what it means to be a person, acting in a social world. To put the two types of knowledge claim together in a complementary way is to describe a more holistic view of the person, holism being precisely what the case study design aims for, and a foundation stone of RDS.



In summary, mixed-methods educational research, concerned as it is with an in-depth, holistic understanding, embraces all forms of data. It does not assert superiority of one form of data (e.g. quantitative) over another (qualitative). It recognises the complexity of what it means to be a person, acting in a complex, social world of meaning and mutual influence. It recognises that there are multiple levels of analysis (intrapersonal, interpersonal and social), which interact with each other in a complex manner. It is still concerned with quality, with a systematic, rigorous approach to planning research, analysing data and warranting conclusions.

Given that I will un-problematically be combining methods in order to gain insights and an in-depth understanding of how a child engages in school and why they may or may not succeed in their academic endeavours (rather than generalising findings from one child who has experienced neglect to many others), what then counts as quality research, suited, as Flyvbjerg (*ibid*) pointed out, to the purposes of my inquiry? What factors should I consider when evaluating my research as a quality endeavour? Two main factors emerged from my reading of the methodology literature: firstly, being clear about the nature of knowledge (epistemological and ontological assumptions) and secondly, the design of the case study itself, including systematic inquiry and the nature / use of theory. I will deal with each of these in turn.

## **6.2. Epistemological and ontological assumptions**

I thought very hard about the nature and validity of the knowledge claims that I will be making and the place of philosophical issues in my (educational) research. Scott and Usher (1999) state that philosophical issues are integral to the research process because they “constitute what researchers ‘silently think’ about research”. If we view research as following the right procedures or methods, it leads to a mechanistic, technical view of research in which we forget that research is a social practice and knowledge claims can be judged with regard to their currently-accepted legitimacy.

I mentioned earlier that case-studies were often seen as the poor relation within educational research. I will now offer a further reason as to why this might be, and why this view is unhelpful, both in regard to knowledge and understanding of educational research, but also, morally.

The next section, about the nature of knowledge, is in essence, a defence of my knowledge claims within a mixed-methods piece of research.

### **6.2.1 Epistemological arguments**

Knowledge claims relate to the epistemological and ontological assumptions made by my research. Epistemology asks ‘on what basis are you making these claims (about the knowledge I have purported to demonstrate)? How are you distinguishing these knowledge claims from mere belief? How do you accept something as true? How can human beings obtain knowledge of truth? What evidence can you provide to show that these knowledge claims are

reliable, valid, trustworthy and useful in helping to solve the problems in the context you have been researching? What are the limits of your knowledge?

The question 'what counts as knowledge?' has been asked for thousands of years and unsurprisingly, no single answer has been found to be satisfactory. Plato argued that some knowledge is innate; other knowledge is gained through inductive reasoning and could be generalised to form general principles and laws. Aristotle argued that sense experience formed the basis of knowledge, interacting with qualities (a sort of 'reason') in our initially 'empty' minds. He emphasised logical, deductive reasoning and tacit, practical forms of knowledge. In contrast, St Augustine (354-430) took subjectivity as his starting point and argued that meaning and knowledge are found in personal existence.

Descartes (1596-1650) argued that the only basis for our knowledge of reality is innate and based on reason, as sensory perception is unreliable. Deduction therefore is the only valid form of knowledge. The only thing that we can be certain exists, is ourselves, because we 'think' and we are conscious of our thoughts. The evidence for an external world comes from the observation that sensory experience is involuntary and consistent. Descartes (1701/1984) believed that we use intellect to apply logic (reason) to our experiences in the world in order to obtain knowledge; but there are rules (*regulae*) for acquiring knowledge, developed through what came to be known as the 'scientific method'. Descartes' writings seemed to irrevocably change how truth and knowledge were thought about; the emphasis changed from 'absolute truth'

to, 'of what can I be certain?' – hence the move to a systematic method of acquiring knowledge, which aimed for certainty.

Descartes' writing at the start of the Enlightenment era was accompanied by more formal arguments from other philosophers of science about the nature of knowledge and how we could acquire it. The systematic, hypothetico-deductive reasoning characterising the 'scientific method' began to take priority as the means by which we acquire true knowledge; previously 'authoritative' knowledge had been the preserve of the Church. This 'scientific method' was promoted in England by Francis Bacon (1561-1626), whose emphasis on 'the positive law of nature' shifted reliance from deductive principles of logic in order to acquire knowledge, to systematic observation, hypothesising, the testing of these hypotheses and the use of induction, to arrive at general laws.

Locke (1632-1704) like Descartes, believed that our knowledge of the world is through mental 'ideas' (representations of the world) which have arisen from our experiences, but unlike Descartes, believed that our ability to form representations in the first place is due to prior experience and associations (of our ideas), rather than due to innate reasoning skills being applied to those ideas / mental representations - the only true knowledge humans could have therefore is based upon sense experience (Locke 1975). Objects of study were viewed as having primary qualities that make them what they are (and not something else) and secondary qualities, that provide the sensory information we derive from these objects and upon which, we can reflect. The

'knowledge' we have therefore consists of ideas or representations, of our experiences, of the outside world.

Hume (1711-1776) similarly believed that our mind is a mirror of the outside world, but that all perceptions resolve into two distinct types, impressions (possibly, 'feelings') and ideas (possibly, less emotionally intense 'thoughts').

Hume relied on sense experience as a source of all knowledge and was sceptical that reason could give a coherent account of knowledge. Hume divided propositional knowledge into two types – mathematical, logical propositions and propositions relating to observations about the world.

Therefore, 'true' knowledge (or as true as we could know it) is gained through observation and the association of ideas, including causality (i.e. we can identify factors or variables, that 'cause' things to happen through observing 'constant conjunctions' or regularity, in the world). This meant however, that causality cannot be rationally justified as an intrinsic mechanism as to how things behave, because we cannot know for sure that objects will continue to behave in this way (an idea which later shaped Popper's thinking about the nature of theory).

Kant (1724-1804) in what seems to be a precursor to both phenomenology and social constructionism, proposed that that our mind shapes and structures all our perceptions, giving a commonality to all human experience. He suggested that our brains are so structured that our experience of reality, is bound to be as it is – that our knowledge and awareness of space and time, is transcendental: we do not just notice 'constant conjunctions' as Hume

suggested, we are aware that our experiences occur in a certain order, so our notion of time must be intuitive and it is this that gives rise to an understanding and observation of causality. This again gives rise to the idea that objects (reality) are mental constructions and knowledge of an objective reality is therefore not really possible.

This brief history of the development of ideas culminated, at the end of the Enlightenment era with a view of knowledge (still current today) that led to the idea that *legitimate* knowledge is 'justified, true belief' and the way to gain such knowledge is through the empirical observations and the inductive-deductive approach of the scientific method. The history helps to explain the enduring belief that scientific, objective knowledge is the only valid form of knowledge, because the ideas of truth and certainty – essential for scientific knowledge claims – can only be applied to the propositional knowledge of science and mathematics. These knowledge claims are open to falsification via the experimental method, the criterion of falsification being a mark of a good theory (Popper 1979). A theory cannot be verified (proved), as new information may come along at a later stage, which would disprove it.

When carrying out real world research involving people, Robson (2011) asks 'Can we, or should we, be scientific?'. The description of the scientific method above, leads me to answer 'yes', if by the scientific method, I mean a systematic approach of formulating hypotheses, gathering data, linking analysis to conclusions and having clear criteria for evaluation. My answer is 'no' if by the scientific method I mean gathering numerical data using the

experimental method and tightly controlled variables to identify cause-and-effect relationships, in order to arrive at general laws of behaviour. What matters is the assumptions I am making, firstly about the nature of reality (ontological assumptions) and secondly about what it means to be human. Hume's assertions above, that 'reality' consists of mental representations lays the foundations for further philosophical arguments about a more subjective reality, when people are the objects of enquiry and I will turn to this next.

### **6.2.2 Knowledge claims, truth & reality in different epistemologies**

Initially, I thought that objects of inquiry in any form of research could broadly be divided into two – firstly, the objects of inquiry for traditional science – objects that are 'found' (in nature) and secondly, people, who are in a sense, objects of inquiry that are 'made' (or 'constructed'). Rorty (1999) discriminates between objects that are 'found' or 'made' and I found this a helpful distinction, because the concepts of knowledge, truth and reality are very different for each object of inquiry and during my reading, I found that the same words – knowledge, truth and reality – are used very differently (and sometimes, very confusingly) in philosophy and hence in different research claims. When I thought about this in relation to my own research and the different types of knowledge claims I would be making – about children; measurements of their physiology, their achievements and observations about how they act in the social world of the classroom – I categorised the knowledge I would be describing into two types, arising from two different epistemologies.

### **6.2.2.1 Knowledge claims, truth & reality in science**

Science itself is very difficult to define and philosophers of science agree that there is no single criterion that can distinguish the difference between what constitutes 'science' and what constitutes 'non-science' (Feyerabend, 1987; <http://undsci.berkeley.edu/article/philosophy>). Ontological questions include: 'what is the nature of 'reality'?', 'what objects exist?' and 'what can be known about these objects, that is true?'

In science, the research relationship is between a person (researcher) and an object that is 'found'; scientists assume that there is an external, objective, reality, which exists independently of us, the 'knowers', and which does not depend on us for its existence. Scientists assume this reality is stable, and it can be known and described. It is assumed that scientific research brings us closer to more accurate descriptions of the truth of reality, i.e. the objects that exist. The two main epistemological positions within science (described in section 6.2) are empiricism and rationalism. The difference between them is the extent to which we are dependent upon sense experience in order to gain knowledge. Empiricists (such as Locke and Hume) claim that sense experience is the ultimate source of all our concepts and knowledge. Within this, naïve realism assumes an unquestioning faith in the reality of what we perceive, but most scientists (following Kant) are critical realists; they accept that what is in our minds, is a representation of the external reality and therefore, we can never fully know or describe it. "The transformations that go on in the retina ... are not merely reproductions ... at every stage, a censor is at work." (Blakemore, 1973, p.51). Aspects of sensory data are selected,



attended to and amended through cognitive processes such as generalising and stereotyping. What is 'imprinted' into our minds, is not an undiluted sense impression, but an edited construction, based on prior experience.

As Kant (and Hume) observed – we cannot stand outside ourselves; all knowledge can only ever be, is a representation. Pragmatically, scientists work on the assumption that the 'found' objects of study do have an objective, intrinsic structure that is stable – it is not stable simply because scientists have colluded together to maintain its stability; to maintain that this is the way reality is (as postmodernists might say). In this scientific definition, 'truth' IS the result of scientific enquiry; it can be understood as an absolute and the processes of science bring us ever closer to describing this truth. 'Truth' theories in the empiricist and rationalist epistemologies appear to be clustered around three definitions (Glanzberg, 2016) – correspondence theory (that scientific descriptions of reality correspond with increasing accuracy to an actual, objective reality), coherence theory (for something to be true, it requires a proper fit of elements in a whole system of propositions – but this requires the propositional knowledge upon which it is based to be true in the first place; logical positivism relies on this theory) and pragmatic theory (truth is verified by the results of putting one's ideas into practice). Since knowledge in these two epistemologies is defined as 'justified, true belief', 'beliefs' become 'true knowledge' under these definitions of absolute truth. Relativism has no meaning in the scientific method, since there is an absolute truth, in theory (the product of scientific inquiry).

### **6.2.2.2 Knowledge claims, truth & reality in social, educational research**

My educational research however, is concerned with studying people in a social context, not 'found' objects in a stable context. I found it useful to distinguish two types of reality (ontology) when talking about knowledge claims with regard to *people*.

The first is our existence in the world in which we live, belonging to a group of 'similar' people, with characteristics that are measured in some way, and compared to other people. Positivism, a branch of empiricism developed by Comte (1798 – 1857 / 1974) asserts that social phenomena could be viewed in the same light as other 'positive' (natural) sciences and they could be investigated in the same way. In this view, all genuine knowledge therefore (about people) is based on sense experience and is advanced only by means of observation, experiment and hypothesis-testing. This has been typically the subject matter of experimental psychologists and much educational research (Hammersley 1986; McGhee 1999). In this view, social behaviour is objectively describable and measurable, it does not occur randomly and spontaneously. Social behaviour is caused by a range of factors, which are regular, lawful and occurs in a way that generally holds true for most people, most of the time. These relationships can only be discovered through empirical investigations, often the scientific, experimental method (outlined above), with carefully-controlled variables.

Part of my own knowledge claims will fall within this view: I will attempt to look at contributory factors of behaviour within a social context. A key hypothesis in

my research is that a child is experiencing stress, and this will be a major contributory factor to their behaviour in class; this hypothesis (if supported) would hold true for anybody. 'Stress' will be measured using physiological measures, that could be taken to be 'objective' in the traditional scientific sense of the word, as other people looking at the data I collect would agree on its measurement. In science however, 'objects' are stable and 'behave' with consistence. People are not and their behaviour, even reflex arcs, do not follow simple 'cause-and effect' relationships (Dewey 1896); other factors contribute to the 'effect' – hence other data collections in my research that consider other possible factors. This level of analysis is at the interpersonal level and although it relates to a person, its data are nomothetic and its epistemology, positivist.

Other quantitative data I will collect are standardised measurements of attainment, and questionnaire results from teachers and carers, which will also be turned into standardised scores. I am not going to argue that questionnaire and attainment measurements are objective data; they are comparative descriptions (with major elements of subjectivity), insofar as they are standardised scores – the scores have meaning only in relation to other people.

Experimental social psychology as alluded to above, cannot capture the social context in all its manifestations; we have to look at more individual descriptions for a holistic explanation of factors that contribute to an eventual behaviour in class; the aim of my case studies.

The second type of reality I will describe in relation to the study of people, exists at the intrapersonal level. It refers to how we think, what we think - and how we feel, about what we think and do. The ontological assumption here is that reality is socially constructed and multiple; each person's views, experiences and understanding, are different. Social interaction is jointly constructed, we cannot control isolated 'variables' because we are studying the 'whole' (context and people interacting together) in order to understand 'the whole system of interactions'. The whole is understood as much more than the sum of its parts, particularly as new features emerge when the individual parts act collectively. Isolating parts, in order to gain unitary understanding, would not be helpful in generating knowledge and holistic understanding - and may even be misleading. In this view, truth is understood to be relative and there can be multiple truths, alongside multiple, individual realities. 'Absolute truth' is not a meaningful concept to apply, because there is no correspondence to an external, objective reality. Relativism (the claim that truth is relative to one's point of view and is provisional) is therefore a consequence of this view of knowledge, truth and reality. The notion of relativism does not mean that value cannot be attached to an event – or that some realities will always be preferable to others. Edwards *et al* (1995) argue that adopting a relativist position does not stop one from making assertions, arguing for certain values and against others. If knowledge, reality and truth are seen as human constructions, there is even more pressure to think and argue. What is lost is not values, but what Bruner (1990) calls 'authorial meanings' – some final authority which can decide truth outside argument and debate.

In my research, the data that contributes to this type of knowledge is gathered through observation, questionnaires and a Q-sort activity. It refers to the behaviour, beliefs, values, thoughts and feelings of the children, and the adults who care, and have responsibility for them. The most appropriate epistemology for this kind of data is interpretive and hermeneutic – data have to be interpreted and I will search for meaning.

Meaning itself is a subject of debate (Frege, 1952; Husserl, 1970; Peirce, 1992). In cognitive psychology, based on the empiricist epistemology, the individual and their experiences are the starting point; we look ‘out’ at a world of objects and people, and individually, cognitively construct meaning based on our prior experiences in the world. In contrast, in the social constructivist view of my research, meaning is socially understood; it is constructed as an activity in a social world. I understand the social world of a classroom to be a form of life, a specific context with its own rules, values, language and expectations of behaviour. In this, people and context are mutually constituted – the context influences how people think, feel, and act and in turn, the context, the classroom, is shaped by the group of individuals who are its present constituents. Neither exists apart from the other. This is mutualism, the social theory of shared meanings, explicated here by John Dewey (1929):

*The meaning of a thing is made up of experiences of its active uses and not of intellectual contemplation.*

‘Meaning’ is created by activity in a social world – no object can be understood apart from its use, a view shared by James and Wittgenstein.

It is up to me, by detailed data collection, in many different forms (observation, discussion, questionnaires) to seek to understand each person's perspective and the ways in which this influences their observed decisions and actions. In this type of research activity, reasons and actions are more appropriate concepts than cause and effect. Validation of my interpretations is seen through the pragmatist view; truth, according to Howe (1988) is a normative concept, "It is what works in practice, for that is how we recognize truth". The 'truth' of my knowledge claims at this level will be partly evaluated through the activity of the action research cycle of the research – how my ideas work out in practice.

The third type of reality examined in my research exists once more at the intrapersonal level. This time, instead of being objective, physiological measurement, it relates to a child's internal world, experienced privately and accessible only to them. The ontological assumption here is that reality is once more, subjective and truth relative; the concept of absolute truth again, cannot be applied to such objects of study. This type of reality is experiential and its epistemology is hermeneutic; 'objects that exist' (its ontology) are personal thoughts, feelings, experiences and perceptions of the child, that have to be interpreted and understood.

*The world of existence is for each individual... a private world. The organism reacts to the field as it is experienced and perceived. This perceptual field is, for the individual, 'reality' (Rogers, 1951 p483)*

In this epistemology, individual realities are formed from *personal* experiences, thoughts and actions, which shape our lived, internal

experiences of what it means to act and 'be' in the particular social environment of the classroom. This type of reality cannot be measured, or operationalised in any way. It can only be interpreted, through another person (the carer, teacher and myself) in this research. The research data that forms this type of knowledge comes from the 'Ideal Self' activity, my observational records of what a child does and says and personal discussion with carers and teachers. Children's complexity of thought develops with language (Piaget, 1952) and it would be interesting to see to what extent, if any, children between the ages of 5-8 can engage in reflexive self-awareness, when thinking about themselves in school and what might change. This would constitute a moral epistemology.

### **6.2.3 Resolution in epistemology and ontology?**

In some respects, there is a commonality or coherence in both types of knowledge claim, empiricist and interpretivist. External experience (the basis of empiricism) creates internal representations, which can be reflected upon (the capacity to apply logic and reason to our thoughts being the basis of rationalism). Thoughtful reflections produce further, internal cognitive experiences linked to experiences of emotion stored within memory, depending upon prior experience. The difference is that in the social psychological aspects of educational research, what we are experiencing and reflecting upon is the 'made', subjective objects of other people, who form our interpersonal worlds, rather than the 'found', objective objects of the external, natural world. In the social world, meaning and understanding (not description

and explanation) are the goals of our knowledge claims; reasons and actions, rather than causes and effects, form the focus of interest.

Perhaps there is more similarity in the ontological assumptions of the empirical / rationalist and the interpretive epistemologies. Both assume that there is an external reality and both assume that this cannot ever be fully known, or fully described – all we can ever know are subjective representations (ideas), formed in the biochemical substrate of our brain. These do not correspond exactly to an external reality (they are not a mirror, as Hume asserted) – we subjectively choose to study certain things; we select certain aspects to measure – but even our selections are filtered and our expectations formed and interpreted in the light of past experience (Kelly, 1955) and what our social environment deems appropriate behaviour. This is true, even for scientific research, funded for specific reasons and socially understood within the community of scientists, with their own particular ways of framing problems and ‘doing’ science. Scientists pragmatically assume that there is an independently-existing external reality and proceed as if there is, developing the technical and medical knowledge we have today, that is useful. Rorty (1999) puts it thus:

*The stalemate... is between many scientists' intuition of the inevitability of... (unobservable, subatomic particles such as) quarks and many philosophers' suspicion that the claim of inevitability makes sense only if the idea of the intrinsic structure of reality makes sense.*

Similarly, the pragmatist view (which can be based on an interpretivist epistemology) in social science research is, like science, that there is ‘a reality’ that be cannot accurately described or fully known, but we can work



with approximations of this reality, to develop ways of thinking, acting and being, that are useful and helpful to us as *people*, living in a social community.

Walker and Evers (1999) attempt to draw together a unified epistemological agenda for educational research by suggesting that fundamental epistemological diversity can still occur in educational research, as long as there is 'touchstone' – certain common, shared *values* such as consistency, simplicity and fecundity, which need to be accepted by all. Their view is that the epistemology that best accounts for knowledge, its growth and evaluation, is what they term 'holistic scientific naturalism' – a theory that 'makes ready use of the most coherent theories of perception and cognition' (p53). This is based on Quine's (1960) view that theory precedes all learning and for humans, commences with an innate complement of dispositions and skills with which to respond to and learn from, the environment: 'What everyone can know is dependent on the kind of creature one is... everyone shares genetically-derived, though culturally-expressed.. touchstone standards... Added to these is further culturally-produced touchstone that people acquire as social beings... in social contexts'. This will presuppose some shared language – some shared, new understandings of 'truth', 'meaning', 'interpretation' etc.. Walker and Evers are suggesting that a new super-epistemology can be the umbrella epistemology for all educational research, with a regard to valuing all forms of knowledge since the goal is to explain human behaviour as a biological, yet socially-constructed being in the world of education. In this way, rather than partitioning educational research, a common goal of seeking after

a more comprehensive knowledge and understanding, based on concepts of learning from human development, could be attained.

My view is that there are different forms of knowledge for different objects of study and when doing research, it is this which we should be clear about. The final word goes to Rorty (1999):

*In the short term, philosophical differences just do not matter that much. In neither science nor politics is philosophical correctness, any more than theological correctness, a requirement for useful work.*

### **6.3. The design of the case study**

Yin (2014) and Thomas (2015) suggest that case studies are applicable when 'how' or 'why' questions are being asked, there is little control over extraneous variables, the focus is on the 'whole' and a large amount of rich, detailed data is required. Case studies are particularly relevant when there is a desire to understand complex, social phenomena; where the boundaries between individuals and contexts are often blurred. It permits researchers to retain the meaningful characteristics of real-life events. A variety of methods may be used within a case-study design in order to obtain a range of data, but a clear structure, incorporating a systematic form of inquiry is essential to maintain coherence and validity.

#### **6.3.1 Subject, Purpose, Approach and Process**

Thomas (2015) summarised different types of case study design and abstracted certain key principles to consider when structuring ideas and carrying out research: Subject, Purpose, Approach and Process. Each of these is considered in the next section.

##### **6.3.1.1 Purpose**

The 'puzzle' for me as a practicing educational psychologist is why it is that looked-after children fare so badly in the education statistics – why they tend to obtain far fewer qualifications than children not in care, at age 16 (DfE, SFR 12/2017a; O'Sullivan and Westerman, 2007).

There are two things that I found curious. The first is that there is a duty on Local Authorities to promote the educational achievement of Looked After Children (Section 52, Children Act, 2004) and additional money, people and resources are provided to support this and monitor progress, so I thought that the statistics on low achievement were unusual. One might perhaps expect this group to do *better* given the focus and resources that are provided. The second is that although Looked After Children (now often referred to by government as Children in Care, CiC) are a heterogenous group, the vast majority of them are brought into public care for reasons of neglect (DfE, 2016b). There is a vast corpus of literature relating the effects of neglect to child development, but in my experience, these children are far more likely to be labelled as having 'behavioural difficulties', rather than, as the literature suggests, being identified as having developmental and physiological differences. This is also reflected in statistical data: CiC and Children in Need (CiN) are far more likely to have their primary special educational need identified as 'social, emotional and mental health' and less likely to have their primary special educational need identified as a specific difficulty, or social, language and communication difficulty (DfE 2017a).

So, my purpose in this study is exploratory and it is of intrinsic interest to me. I would like to find out and explore possible reasons for these statistics and personal observations.

If I do find answers to these questions, then my case study is also explanatory: I may be able to provide some explanations and some reasons for why this is the case.

Research in developmental psychopathology has quite rightly focused on risk and protective factors. However, these are general principles applicable to all children, but I would like to drill down and look at *processes*. If I looked at two children in depth, the attributes they have, then looked at the adults around them and the beliefs they hold, then combined these two sets of understandings and observed how these attributes and beliefs worked out in practice, in the classroom and school, then I might have a far better understanding that goes beyond general principles.

My personal belief is that research should have some practical application. There is a second part to my research and hence another purpose. Since I have experience in carrying out consultations with teachers to plan educational programs for children with difficulties in school, then this will be utilised in the planned second stage of my research. Once I have collected the child assessment data, I will consult with the class teacher to plan an educational programme to support the educational progress of the research child in school and we will evaluate this after a term. Thus there is an action research element in this case study design, so my purpose is also instrumental.

The action research element aligns with one of my broader aims: to test developmental theory in ecologically valid ways. Also, through a commitment to support the educational progress of children who have experienced early adversity, I hope this research supports the principles of social justice (Fisher, Busch-Rossnagel, Jopp & Brown, 2012).

### **6.3.1.2 Subject**

The research has a local case as its subject. I have specialist knowledge of children in care and contacts within social work teams. I am not choosing an example of one particularly unusual child, or school (an outlier) and neither am I choosing a child or a school for virtue of either of them being a good example of a particular instance. I am studying neglected children because the most common reason for children to be brought into care is for reasons of neglect and the purpose for carrying out research is to investigate why children in care tend to underachieve. This population is also likely to cover a large number of children in need, the majority of whom are categorised as being in need of services, due to neglect (DfE, 2016a), so the research findings potentially have a wider application.

### **6.3.1.3 Approach**

The research is oriented around two main theories; Attachment Theory (with its hypotheses of the development of higher-order control systems in response to early caregiving experiences) and RDS theories of holistic development. I will be testing the ideas of Attachment Theory (forming the basis of three of the research questions) as well as seeking to understand

how child development and the ideas of Attachment Theory are conceptualised by professionals. The action research part of the case study means that I will also be building explanations of how the needs of neglected children are understood by professionals and what professionals think the children need to help them make good progress. Through discussion with professionals, I will seek to understand what might hinder progress, again contributing to theory-building.

#### **6.3.1.4 Process**

I plan to carry out the research activities with three children, over the period of two terms in school, involving their class-teachers, foster-carers and social workers. This is a multiple, nested case-study. Of particular interest is the relationship between the child and class teacher and how this impacts on the development and progress of the child in school. A holistic (i.e. biopsychosocial) analysis of the teacher-child relationship incorporates firstly, the biological and psychological aspects of the child. Secondly, it incorporates the social viewpoint, the third viewpoint of the 'whole' (section 2.4.6.3 p49). This is related to the knowledge and beliefs of the teacher about their understandings of the effects of neglect on child development, and how the knowledge and beliefs they hold influence their activity and behaviour towards that particular child. My notion of 'relationship' is therefore defined by the biological and psychological attributes of the child and the knowledge and beliefs of the teacher, and how all of these aspects probabilistically contribute to their particular, specific, teacher-child relationship, that in the analysis, is reflected in the educational outcomes for the child.

Action in a social sphere is mutually constitutive and takes place within a school context and a wider government agenda. As the child-teacher relationship is the focus of the design within this larger picture, then the case study is a nested design.

#### **6.4 Quality and analysis within the case study**

In discussing evaluation criteria for qualitative work generally, Gorard & Taylor (2004 p40, 41) state,

What we require are explicit, transparent methods, a clear description of what counts as data and a detailed account of how representation is constructed from the data. We need to consider and present, alternative representations and explain why our conclusion is the preferred one and we need to provide evidence as to the efficacy of our conclusion (its practical import)... (*We*) should present (*our*) findings in such a way as to convince a sceptic (rather than playing to a gallery of existing believers).

This promotes critical thinking about how I structure my research and later attempt to answer my research questions. Has it been designed to answer the research questions I set myself? Could other factors, known and unknown, also account for my findings (warranting)? Have I critically analysed the data I have produced; have I measured carefully (and taken into account inevitable measurement error), have I listened carefully, have I recorded a wide range of data to address my research questions, have I checked the meaning of my participants' responses with them, to improve validity / the trustworthiness of my data? Have I used the understanding that I thought I gained, to inform further aspects of my research?



With regard to design and the warranting of research claims, Yin (2014) suggests that five components of a research design are important in order to connect the empirical question to a study's initial research question and ultimately, to its conclusions. These are; the question(s), propositions, unit(s) of analysis, the logic linking the data to the propositions and the criteria for interpreting the data. As the propositions guided the data collection plan, I found this a useful strategy for data analysis, compared to other alternatives, such as developing a case description (Yin, 2014).

I will address the five components in turn:

#### **6.4.1 Propositions**

From the initial literature review and my twelve-year experience of being an educational psychologist, several propositions were considered:

- Neglected children are likely to show highly idiosyncratic patterns of development, according to their own particular early life experiences; moderated by subsequent life experiences.
- Neglected children are likely to show different ways of relating to other people compared to their classmates, including their confidence and expectations of others, and this could be shown behaviourally through observation and through the completion of attachment-based story stems using doll play.
- Children who have experienced early neglect are likely to have an insecure attachment style.

- Training about Attachment Theory is variable amongst teachers, foster-carers and social workers and likely to be reflected in their ideas articulated during planning meetings and consultations.
- Adults may misunderstand children's intentions and motivations of behaviour, resulting in labelling and exclusion of neglected children.
- If information about the effects of neglect on child development is shared between professionals, then more developmentally-appropriate ways to support children's progress in school could be devised.

A more detailed literature review, particularly the thirty-year longitudinal Minnesota Study (Sroufe *et al*, 2005) which outlines the potential effects of neglect on child development and the factors which mediated or potentiated optimal developmental outcomes, led me to consider further propositions.

Sameroff and Mackenzie (2003) also suggest that the goals of developmental psychopathology are 'to understand the *processes* that lead to developmental success or dysfunction', so I thought it would be worthwhile to look in depth at individual aspects of child development and see, if differences were indeed shown, whether these could be precisely addressed through an ethically-oriented, multi-disciplinary intervention plan.

I thought that compared to their classmates, neglected children are likely to:

- have developed very different competencies in language;
- be underachieving in literacy;
- have working memory difficulties;

- have developed very different competencies in their ability to interact with peers;
- have developed very different competencies in their ability to interact with adults in school;
- have developed very different competencies in their ability to interact successfully with their carers at home;
- show differences in the expression of their emotions, including behaviour associated with depression and behaviour associated with over-excitability (including anger);
- find it more difficult to attend to a task;
- have lower vagally-mediated heart-rate variability;
- Children who have experienced long-term early neglect are likely to show a blunted HPA response as an indicator of dysregulation of the HPA axis (measured by the levels of salivary cortisol during the diurnal rhythm);
- Children who are experiencing current neglectful or stressful circumstances are likely to show a heightened HPA response as an indicator of dysregulation of the HPA axis (measured by the levels of salivary cortisol during the diurnal rhythm).

Close examinations of the transactions between a child and a teacher / teaching assistant would provide a deeper understanding of the outcomes when a child and adult interact. A child would use their current competencies and an adult would use their current understanding about the effects of neglect, to carry out a particular transaction in a particular context and consistent with the RDS perspective, this might also help me understand

some of the factors that led to a child being understood or misunderstood (and potentially labelled as having social, emotional and behavioural difficulties) in school. For example,

- an appropriate transaction would be one in which the child's fluctuations of internal physiological arousal would remain contained; the teacher would be able to identify what the child needed and the child would remain calm.
- an inappropriate transaction would be one in which the teacher misunderstood either the child's communication or what the child needed and the child would become overly distressed.
- If the transactions were appropriate at school and the child was making good progress, then this would be reflected in the comments and observations of peers, school staff, carers and social workers in the classroom and during meetings.

#### **6.4.2. Formulating the research questions**

Within the overall purpose of conducting exploratory and explanatory research, to investigate why neglected children tended to both underachieve and be labelled as having behavioural difficulties, and following a consideration of the above propositions, five research questions were developed:

- 1) Do the children in my research show a set of differences in their development as suggested by the literature?**
  
- 2) Do neglected children show patterns of insecure attachment?**
  
- 3) Is there any evidence to show that neglected children find it difficult to self-regulate and consequently remain in a long-term, physiological state of stress?**
  
- 4) What is the knowledge and understanding held by carers, teachers and social workers, about the key ideas in child development, particularly the effects of early neglect and how is this reflected in professional practice?**
  
- 5) How does a holistic analysis over time of the teacher-child co-actional relationship (including biopsychosocial attributes of the child and the teacher's personal beliefs) contribute to our understanding of why neglected children tend to make poor educational progress?**

The individual Research Questions 1 to 4 are addressed at the biopsychosocial aspects of child development, so will be combined together in the Discussion to address Research Question 5.

The third research question is a key research question for me, firstly because it emerged from my own thinking a few years ago about what would happen in developmental terms for neglected children with no adequate means to resolve distress / perceive safety, and secondly because self-regulation operationalised through physiological measures has not been measured in school classrooms, it has been measured in university laboratories.

Whereas the research questions 1 to 3 are child-focused and investigated through child measures, the fourth research question relates to the perspective of the adults, as the other part of the co-actional relationship between child and adult, theorised in relational developmental systems. This will be investigated using three data sources: an activity based on Q methodology, the action research section of the research and through class observation, teacher consultation and attendance at planning meetings.

### 6.4.2.1. Methods

**Table 6.1 Methods of Data Collection**

Data collected	Methods
<p><b>RQ1</b> Child assessment data:</p> <ol style="list-style-type: none"> <li>1. Cognitive skills</li> <li>2. Executive Function skills</li> <li>3. Language skills</li> <li>4. Achievement data (Literacy / Numeracy)</li> </ol>	<ol style="list-style-type: none"> <li>1. Wechsler Intelligence Scale for Children (Fourth Edition)</li> <li>2. NEPSY (Neuropsychological assessment)</li> <li>3. Children’s Communication Checklist (Second Edition) and the Wechsler Individual Achievement Tests.</li> <li>4. Wechsler Individual Achievement Tests (Second Edition)</li> </ol>
<p><b>RQ2</b> Attachment style</p>	<p>Video-Recorded Attachment assessment (MCAST)</p>
<p><b>RQ1 &amp; 3</b> Child physiological data</p>	<ol style="list-style-type: none"> <li>1. Heart rate data</li> <li>2. Cortisol levels</li> </ol>
<p><b>RQ1 &amp; 3</b> Child’s view of themselves</p>	<p>Child View (Ideal Self)</p>
<p><b>RQ3</b> Adult view of the child’s emotional regulation, behaviour and social communication skills.</p>	<p>Questionnaire data from teachers and carers:</p> <ol style="list-style-type: none"> <li>1. ABAS-II (Adaptive Behaviour)</li> <li>2. Strengths &amp; Difficulties Questionnaire</li> <li>3. Children’s Communication Checklist 2</li> </ol>
<p><b>RQ4</b> Adult view of the effects of neglect on child development</p>	<p>Q study</p>
<p><b>RQ4</b> Adult view of what is needed to help a child make good educational progress</p>	<p>Observational data Consultations &amp; meetings</p>

### **6.4.3. Unit of analysis**

The unit of analysis in this case study is the ongoing relationship between child and class teacher (incorporating biopsychosocial factors), and what influences this to create particular outcomes for that child.

### **6.4.4. Linking data to propositions & criteria for interpretation**

The links between propositions, research questions, data and data analysis are shown in Table 6.2:

### **6.4.5. Type of data**

In accordance with ontological assumptions, data from the current research are divided into two types, nomothetic data and observational or language-based data (which) are interpreted.



**Table 6.2 Analysis of Data**

Research Question	Propositions	Data	Data will be analysed for
<p>Research Question 1: <i>Do the children in my research show a set of differences in their development as suggested by the literature?</i></p>	<p>Neglected Children are likely to</p> <ul style="list-style-type: none"> <li>• show highly idiosyncratic patterns of development, according to their own particular early life experiences;</li> <li>• have working memory difficulties;</li> <li>• have developed very different competencies in language;</li> <li>• be underachieving in literacy.</li> <li>• find it more difficult to attend to a task;</li> <li>• have developed very different competencies in their ability to interact with peers;</li> <li>• have developed very different competencies in their ability to interact with adults in school;</li> <li>• have developed very different competencies in their ability to interact successfully with their carers at home</li> </ul>	<ul style="list-style-type: none"> <li>• The developmental profile of each of the children (WISC-IV &amp; NEPSY).</li> <li>• The attainments of each of the children (WIAT-II).</li> <li>• The individual child's view of themselves and what helps / hinders their enjoyment of school.</li> <li>• Observational data in school - the social interactions of the children with peers and school staff.</li> <li>• Questionnaires completed by adults: [ABAS-II (Adaptive Behaviour); Strengths &amp; Difficulties Questionnaire; Children's Communication Checklist 2]</li> </ul>	<ol style="list-style-type: none"> <li>1. Delays and strengths in development.</li> <li>2. Delays and strengths in school attainment measures.</li> <li>3. The ways in which a child views themselves and others.</li> </ol>
<p>Research Question 2: <i>Do neglected children show patterns of insecure attachment?</i></p>	<ul style="list-style-type: none"> <li>• Children who have experienced early neglect are likely to have an insecure attachment style.</li> </ul>	<ul style="list-style-type: none"> <li>• The attachment style of each of the children.</li> <li>• Their reliance on adults in school for comfort.</li> </ul>	<ol style="list-style-type: none"> <li>4. An attachment style; a coherent behavioural, interpersonal strategy to resolve distress.</li> </ol>

<p>Research Question 3: <i>Is there any evidence to show that neglected children find it difficult to self-regulate and consequently remain in a long-term, physiological state of stress?</i></p>	<p>Children who have experienced early neglect are likely to</p> <ul style="list-style-type: none"> <li>• find it more difficult to attend to a task;</li> <li>• have working memory difficulties;</li> <li>• have low vagally-mediated heart-rate variability;</li> <li>• Children who have experienced long-term early neglect are likely to show a blunted HPA response as an indicator of dysregulation of the HPA axis (measured by the levels of salivary cortisol during the diurnal rhythm).</li> <li>• Children who are experiencing current neglectful or stressful circumstances are likely to show a heightened HPA response as an indicator of dysregulation of the HPA axis (measured by the levels of salivary cortisol during the diurnal rhythm).</li> <li>• show differences in the expression of their emotions, including behaviour associated with depression and behaviour associated with over-excitability (including anger).</li> </ul>	<ul style="list-style-type: none"> <li>• Observation in school during learning activities.</li> <li>• The physiological levels of arousal ('stress'). operationalised as RSA.</li> <li>• The physiological levels of arousal ('stress'), operationalised as cortisol levels throughout the day.</li> <li>• Observation in school: the behaviour of the children when they are upset.</li> <li>• The perceptions of adults about how the children regulate their emotional arousal.</li> </ul>	<ol style="list-style-type: none"> <li>5. Physiological evidence that might indicate the presence or absence of prolonged stress.</li> <li>6. The ways in which children resolve distress or cope with challenging situations in school.</li> <li>7. The ways in which a child views themselves and others.</li> </ol>
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<p>Research Question 4: <i>What is the knowledge and understanding held by carers, teachers and social workers, about the key ideas in child development, particularly the effects of early neglect and how is reflected in professional practice?</i></p>	<ul style="list-style-type: none"> <li>• Training about attachment theory is variable amongst teachers, foster-carers and social workers and likely to be reflected in their ideas articulated during planning meetings and consultations.</li> <li>• Adults may misunderstand children's intentions and motivations of behaviour, resulting in labelling and exclusion of neglected children.</li> <li>• If information about the effects of neglect on child development is shared between professionals, then more developmentally-appropriate ways to support children's progress in school could be devised.</li> </ul>	<ul style="list-style-type: none"> <li>• The perceptions and understandings of adults about the effects of neglect on child development.</li> <li>• Classroom observations of child-teacher interactions.</li> <li>• The comments made by adults during meetings about reasons for a child's needs and how these should be met.</li> <li>• Any comments made by adults during meetings about behaviour of the child and what should be done if it is unsatisfactory.</li> <li>• The ideas proposed for the Personal Educational Plan / any school planning documents for the educational progress of the child.</li> </ul>	<p>Data from observations, consultations, meetings &amp; the adult-completed questionnaires will be analysed qualitatively for:</p> <ol style="list-style-type: none"> <li>8. Adults' views about the ways in which, and how competently, the child manages emotional regulation.</li> <li>9. Adults' views about the ways in which a child's differences and difficulties are understood (or misunderstood).</li> <li>10. Adults' views about the nature of the educational provision that would best support the child in helping them to make good educational progress.</li> </ol> <p>Data from a Q study will be analysed qualitatively to provide subjective evidence of how an adult conceptualises the effects of neglect on child development &amp; what would best support the child in helping them to make good educational progress.</p>
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## **6.5 The use of theory**

Consistent with the RDS perspective, and the principles of 'Opposites of Identity' / 'Identity of Opposites' / 'Synthesis of Wholes', I will try and understand the success or failure of two research children in school through this framework, in order to arrive at explanations and understandings designed to explore the overall purpose of this case study – to understand why it is the neglected children tend not to do well in school and why they are likely to be labelled as having behavioural difficulties. Observational data, evidence from meetings, and child data will be analysed to understand how the co-actions of child and teacher contribute to educational success and failure.

### **i) Opposites of Identity**

This is a 'moment of analysis' where each individual can be considered, on a temporary basis, to be a single entity. Detailed measurements of firstly, child attributes, including physiological measures of emotional regulation, stress, language skills, attachment style, school attainment measures and their self-construal are considered in their historical context and the current progress of the child in school. Teacher beliefs about specific children will be gained through individual discussions during the creation of an intervention plan. Teacher beliefs about how early adversity affects child development in general, the research child in particular and the wider governmental context will be explored using an activity based on Q Methodology.

The opinions of professionals working with both the family at home and the child in school will be sought, in terms of gaining further information about

current and historical antecedents to the current relationship between child and teacher.

## ii) Synthesis of Wholes

The progress of two children will be monitored over time and discussions held with school staff about the nature of change. Reflections about the processes of change will be encouraged. The school context in particular will be an essential part of these reflections; contextual processes are obviously an essential part of research in RDS theories. In the Discussion section, the research data will be considered holistically, with suggestions developed in the Conclusion as to what supports adaptive developmental regulations and therefore, the subsequent progress in school, of children who have experienced early life adversity.

In discussing the role of theory in social science, Gorard & Taylor (2004) warn against interpreting research findings so that they fit with the findings of favoured theories described in the literature review, as though there were some unstated pressure to make our own results fit with accepted theory, thus stifling progress. They state that,

*When setting out to test a practical question, imagining the eventual argumentative structure on which a knowledge claim will be based, helps ascertain the form of data it would require and so helps planning the research.*

I hope that including both the RDS framework and Yin's five suggested components will go some way towards addressing these concerns. In the section on epistemology and ontology, I have thought in depth about the nature of the knowledge claims I will be making and shown how different concepts of truth and reality will be applied to the different types of knowledge gained.

Reichardt and Rallis (1994) warn about the under-determination of theory, particularly in educational research where there may be very few formal theories and 'any given set of data can be explained by many theories'. Linking data to propositions forms a partial answer to the question of how to gain warranted beliefs, as does thinking of many possible reasons for a given incidence of behaviour.

## **6.6 Participant Observation**

Participant observation is a form of observation in which the researcher may hold a variety of roles within the activities of the organisation or environment under study, he or she is not merely a passive observer and recorder of events. Advantages are that this form of observation provides insight into interpersonal behaviour and motives of the people in the study (Yin, 2014). In this relational-developmental-oriented case study, this is an essential form of data collection for me, as interpersonal motives are precisely what I am seeking to understand. One problem of participant observation is gaining access. The information about the research that is initially provided to school staff explains what is entailed in the research and this includes classroom

observation and teacher consultations. All consent is freely-given, so by agreeing to take part in the research, the class teacher has been consulted and agrees for me to be present in the classroom, and to meet with me, at mutually-agreed times.

The disadvantages relate to the researcher's own bias, unavoidable since situations are interpreted through our own beliefs, values and prior knowledge. This potential threat to validity will be addressed through asking the other adults present at the time of my observations to read over my records and make their own observations and comments, such that other perspectives are brought to bear.

### **6.7 Researcher Reflexivity**

The choice of what to research is always mediated by personal experiences and pre-existing ideas and values (Seale, 2007). For the first seven years of my professional work as an educational psychologist, I worked with two social care teams, providing consultations to social workers and following their requests, I carried out direct work with parents of children in need, to support their children's development and educational progress in school. Local Authority work sometimes required me to write Court Reports to support the Local Authority's application to bring children into public care and these always followed many months, if not years of work with social work teams. In schools, I observed the long-standing difficulties that young, neglected

children experienced, and from the teachers' perspective, how difficult it was to support their progress.

All of these experiences have contributed to a desire to understand more fully the day to day experiences of children who have experienced neglect in the earliest years of their life and how children, their parents or carers and their teachers can best be supported, so that effects of the adverse early experiences can be understood and their consequences, mitigated. My own personal experiences shape how I understand the contexts I observe during this research; this would be very different to a researcher who is not an educational psychologist. During the research, I checked my understandings with teachers and professionals involved; we held regular discussions to share ideas. In this way, I hope to reduce some of the subjectivity. However, this clearly cannot be eliminated, although I hope my experience and training enhance the interpretation of the research activities.

The Process-Relational Worldview firmly accords with my own personal belief that the 'school – social-work – home' community is a dynamic system in which everyone depends on and is influenced by everybody else, such that mutual, encouraging support is essential, and every day is a new opportunity for positive change.



## **Chapter 7**

### **METHODS**

#### **7 Introduction**

This Chapter provides details of firstly, the means through which participants were recruited and engaged with the research process, including the consideration of ethics; secondly the rationale for choosing the measures used to investigate different aspects of child development and achievement in school; thirdly it describes the methods, procedures and where necessary, the analysis used at each stage of the data collection process and finally, it describes the action research part of the case study and gaining the perspectives of key adults.

#### **7.1 Ethics**

The research proposal was developed over several months with due regard to the University's Code of Practice for Research and the British Psychological Society (BPS) Code of Human Research Ethics (2014). The research was designed with a particular orientation to the following BPS ethical standard:

The aim of generating psychological knowledge should be to support beneficial outcomes. Such outcomes can be broadly defined as those that not only support and reflect respect for the dignity and integrity of persons (both individually and collectively) but also contributes to the 'common good'.

An Application for Ethical Review was made to the University of Birmingham's Humanities and Social Sciences Ethical Review Committee. The research was designed to be conducted with children known to have experienced neglect in the first year or two of life. This meant working with children who are either in foster-care or who have been adopted, as their early life history is known.

Sponsorship was also sought from the Local Authorities (LA) in which the research could potentially take place, due to the involvement of Social Care with potential research children.

The full Application for Ethical Review (AER) including its appendices, with the detailed steps taken to address ethical issues is provided in Appendix 1.

## **7.2. Overview of the LA**

The LA in which the research was conducted is in the North of England. It is in the top twelve most deprived LA, according to the summary measure of deprivation on the Index of Multiple Deprivation (Department for Communities & Local Government, 2015). There is a low rate of economic activity (10% lower than the national average) and a high proportion of single parent families. Just under half of 16 year-olds leave school with 5 A\*-C GCSEs and 7% leave schools with no qualifications (LA website).

### **7.3 Recruitment**

Once full ethical approval was granted, I approached the Directors of Children's Social Care of three LA in the north of England, to explain the proposed research. One meeting was face to face, and two were via email. Agreement for the research to proceed was provided from two LA; I did not receive a reply from the Director in the third.

Inclusion criteria for the children were:

- The child is between the ages of 5 to 8 (the age range for the MCAST attachment assessment).
- The child had been brought into public care for reasons of neglect and this had occurred during the first year or two of life.

Details of the children's early life history were not needed or requested.

Exclusion criteria were:

- Children who are subject to current Court proceedings.
- Children who have previously suffered sexual abuse.
- School settings where no teaching assistant is available for at least 1 hour a day.

**Table 7.1 Recruitment Strategy**

Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Write to 3 Local Authority (LA) Directors of Children's Services	Two favourable replies received: my research details were forwarded by the Directors to the Virtual School Heads (VSH) & managers of the Fostering Team.	<u>LA 1</u> No children met the criteria.  <u>LA 2</u> Several children were identified as fitting the criteria. The VSH emailed the Designated Teachers (DT) of the schools where these children were on roll.	Two DTs replied with expressions of interest. One Social Worker also expressed some interest and said she would speak to the school staff where the child was attending school*.	I emailed the DT of the two schools with the information about the research (Appendix C of the AER). They asked to meet, to discuss the research. I asked that they discuss the research with the class teachers, as their freely-given consent must be obtained prior to discussing the research with potential carers.  I provided them with further information for the carers of the children (Appendix D of the AER) to read and consider.	Both the school staff and carers gave consent for each child in each of the two schools, but one school was able to provide a Teaching Assistant for 30 minutes a day, not 60, as the potential research child was already receiving numeracy and literacy interventions. These two children took part in all research activities, including action research with their teachers.	Comparison children for the heart-rate monitoring were recruited via a letter sent to all children in the class (Appendix G of AER). Comparison children for the attachment assessment were recruited via opportunity sampling. Two were classmates and two were the children of a colleague.

\* This child and his younger sister later became research children 3 and 4 (Paul & Pippa), but as consent was not gained for these children until much later, then only part of the research was carried out with these two children. Some of the child assessments were completed and short teacher consultations held subsequently, using the research data to plan their support in school.

### **7.3.1 Overview of the participants**

#### **7.3.1.1 Children who participated in the child assessments**

I had originally planned for three in-depth case studies. Two children were recruited as soon as ethical approval had been granted and they were involved in all the assessment activities, including the action research section. Close liaison with their carers was maintained. One child (“Jeff”) had been on the ‘Child in Need’ register since birth and had been brought into the care of the LA with his siblings on a long-term fostering plan, eight months previous to the start of the research. The second child (“Minnie”) had similarly been on the ‘Child in Need’ register since birth and had been placed with his siblings into foster care on a Care Order for six months. They had been returned to the care of their mother nine months previous to the start of the research, still under a care order and family support implemented. I maintained close links with both the mother and the family therapist. Both ‘research children’ were in Year 2.

Three further children were recruited three months later. Two children (siblings) recruited via their Social Worker are the third and fourth research children. One child (“Paul”) was in Year 3, with his sister (“Pippa”) in Year 1. The carer of the fifth child (“Simon”) (in Year 3), was known to me in a school to which I provided consultancy, and had previously expressed an interest in her foster-child being involved; the SENCO provided her with research details. This child was being cared for on a private fostering arrangement (although the carer, a close relative, was considering a Special Guardianship Order).

She had detailed knowledge of the child's early history, which is also known to the school.

The participation of these three children was limited to child assessment data only, including the attachment assessment and heart-rate monitoring. I could not include any action research, due to the late entry into the research.

Teacher consultations were held with the teachers of the third and fourth children, whilst a written report was provided to the carer and school of the fifth child, to support their progress in school. The report contained details of the child assessment data for the achievement assessments; school staff assured the confidentiality of this data.

#### **7.3.1.2 Children who participated in the heart-rate monitoring**

Letters (Appendix G of the AER) were sent home to all the children in the class of each of the two main research children, asking for volunteers to wear heart-rate monitors, to measure heart-rate and breathing rate, as part of a class project about 'healthy hearts'. Fifteen consents were received from one class and eleven in the second. (Section 7.6.1 below provides details of the heart-rate monitors.) The letters also requested volunteers to wear the heart-rate monitors overnight and provide samples of saliva. Three potential consents were received from one class and three from the second. I phoned the six carers who had given consent for this further monitoring and spoke to four of them, prior to providing further information in writing (Appendix H of the AER) via school. The further information contained two copies of a signed consent and one copy was returned to school by each of the four carers. I left

a voicemail message for the remaining two carers, but did not receive any reply, culminating in four children who wore the heart-rate monitors overnight.

#### **7.3.1.3 Control children who participated in the attachment assessment**

I had previously explained all of my research to the carers of the four children who had volunteered to wear the heart-rate monitors overnight. I explained the attachment assessment to the carers and provided an information sheet (Appendix I of the AER), again with my contact details on. They contacted me if they were happy for their child to take part in this further piece of data collection. Two parents contacted me, one from each school and gave consent for their child to take part in this. Two further children were recruited by asking a colleague who had children between the ages of 5 and 8. She discussed this with her children, who were both interested and happy to take part.

It was convenient to measure cortisol during this part of the research, so tubes and instructions for collecting saliva were left with the carers during this part of the data collection.

#### **7.3.1.4 The sixth research child**

A sixth child (“Sally”) took part in the attachment, heart-rate monitoring and saliva collection in school and overnight. She is also the daughter of a colleague and is adopted, having experienced early neglect in the first year of life. The colleague was interested in my research and in the heart-rate monitoring. Having discussed it with her daughter, the colleague approached

me and asked if her daughter could take part as she fitted the criteria, and I agreed.



**Table 7.2 Summary of all the child participants**

	<b>MCAST</b> (attachment) assessment with heart-rate monitoring	<b>Carer and Teacher completed questionnaires</b> (SDQ, CCC2, ABAS-II)	<b>Standardised tests for child</b> (NEPSY, WISC-IV, WIAT-II)	Classroom heart-rate monitoring	Overnight heart-rate monitoring	Intervention plan	Sustained Intervention plan
<b>Up to 6 Research Children</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Controls</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>3</b>	<b>N/A</b>	<b>N/A</b>

The MCAST and all standardised test activities took place in school, at times convenient for the child and school staff.

## 7.4 Child assessment measures

When considering which measures to use, I conducted a literature review of longitudinal studies related to child development. Following a review of the literature to ascertain which measures were in common research use, my first criterion in choosing a particular measure was to ensure that it was valid for the area of interest and it demonstrated good test-retest and inter-rater reliability. My second criterion was a pragmatic one, in terms of being competent to use a particular assessment and having received training in its use, where applicable. My final criterion was also pragmatic, in terms of having access to the assessment material and being able to discuss results with other psychologists and/or researchers.

**Table 7.3: Summary of assessments used in the research project**

	<b>Individual Assessment Activity</b>	<b>Observation</b>	<b>Heart Monitors</b>	<b>Cortisol</b>	<b>Q study</b>
Children	1. WISC-IV UK (cognitive skills) 2. NEPSY (executive functioning skills) 3. WIAT-II UK (literacy & numeracy skills) 4. Ideal Self (child's voice) 5. MCAST attachment	Whole class observation during lessons and break time.	Whole class once during school hours.  Volunteers for overnight	6 research children and 4 controls recruited during the MCAST activity	No
Teachers & Carers	All of these are teacher views of the child: 1. ABAS-II (Adaptive Behaviour) 2. Strengths & Difficulties Questionnaire 4. Children's Communication Checklist 2 (CCC2)	N/A	N/A	N/A	Yes
Social workers	None	N/A	N/A	N/A	Yes

**Table 7.4 Summary of the children and adults who took part**

Research Child	Adults who took part			
	Class Teacher	Teaching Assistant	Foster Carer	Social Worker
<b>Jeff</b>	CCC 2 ABAS-2 SDQ <b>Q Study</b>	Delivered Precision Teaching	CCC 2 ABAS-II SDQ <b>Q Study</b> Core Group Meetings	<b>Q Study</b> Core Group Meetings (organised by Children's Social Care)
<b>Minnie</b>	CCC 2 ABAS-II SDQ <b>Q Study</b>	Scheduled to complete Precision Teaching, therapeutic stories and yoga breathing. Minnie did see a school counsellor, who took part in the research.	<b>(Mother)</b> CCC 2 ABAS-II SDQ Core Group Meetings	Core Group Meetings
<b>Pippa</b>	CCC 2 ABAS-II (not completed) SDQ <b>Q Study</b>		CCC 2 ABAS-II SDQ	
<b>Paul</b>	CCC 2 (not completed) ABAS-II SDQ <b>Q Study</b>		CCC 2 ABAS-II SDQ	
<b>Simon</b>	CCC 2 ABAS-II SDQ <b>Q Study</b>		CCC 2 ABAS-II (not completed) SDQ	
<b>Sally</b>	Sally just took part in the heart-rate monitoring			

#### **7.4.1 Standardised measures of cognitive ability and achievement**

With regard to measures of cognitive assessment, the Wechsler Scales were the most commonly cited measure of cognitive ability (e.g. Sroufe *et al* 2005, the ERA and BEIP studies). With regard to achievement in literacy, numeracy and language, a variety of assessments were employed, including the Woodcock-Johnson Tests of Achievement- Third Edition (Woodcock *et al*, 2001).

The two Wechsler assessments, Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV) (Wechsler, 2004) and the Wechsler Individual Achievement Tests – Second Edition (WIAT-II) (Wechsler, 2005) were linked during the standardisation of these tests, such that Verbal Comprehension and Perceptual Reasoning Index scores of the WISC may be used to predict scaled scores in literacy, numeracy and language of the WIAT. This would potentially enable me to consider under achievement of the research children, or equally, whether the children are performing better than other children of their age of similar verbal comprehension ability. These assessments provide standard scores, so controls are unnecessary. Finally, I am extremely familiar in the use and interpretation of these two assessments and have used them frequently for many years, so the Wechsler assessments were selected.

#### **7.4.2 Standardised measures of Executive Function**

The measures of Executive Function cited in the literature include the NEPSY-II (taken from the word NEuroPSYchology) (Korkman, Kirk & Kemp, 2007). This is a measure of neuropsychological development in the areas of Executive

Functioning, Language, Memory and Learning, Sensorimotor Skills, Visuospatial Processing and Social Perception. Other measures cited in the research that are suitable for young children include the Head, Toes, Knees Shoulders (HTKS), which measures inhibitory control, attentional flexibility and working memory (Ponitz *et al*, 2008; McClelland & Cameron, 2012). The Behaviour Rating Inventory of Executive Function (BRIEF) (Gioia *et al*, 2000) is a standardised parent/ teacher questionnaire widely-used in research and clinical settings to provide information about a child's executive functions in everyday settings. It has high reliability and validity (Fournet *et al*, 2015; Skogan *et al*, 2016), but it is an 'other' measure rather than a child assessment, so this method was not chosen.

The NEPSY was selected because it contains a wide range of tasks related to several pertinent areas relevant to this research, including attention and executive function, social perception (which the literature indicates is pertinent to children who have experienced early adversity) and both visual and verbal memory tasks. It provides standard scores and it would provide some cross-comparison data with the WISC and WIAT for assessments of memory, language and spatial skills. I am unfamiliar with the HTKS and would be doubtful of my competence to use it.

#### **7.4.3 The Ideal Self**

The Ideal Self is a Personal Construct Psychology (PCP) activity, based on Kelly's (1955) Personal Construct Theory. PCP is an approach with the basic assumption that behaviour represents the individual's search for meaning. It is

often a good way of understanding a child's view of the world and it can therefore offer useful insights and strategies. In the process of 'doing' PCP, the child is asked questions about themselves and then asked in an open-ended, curious manner, to elaborate upon their answers. The Ideal Self is based upon Moran's (2001) drawing activity to explore a child's sense of self and is suitable for use with young children. It is used with that purpose in mind in this research, with the aim of eliciting what sorts of things contribute to emotional regulation or dysregulation. Additionally, it will be used to explore what the child thinks would be useful in helping them make good progress in school.

### **7.5 Teacher and Carer-completed questionnaires**

The purpose of my research is to try and explore the reasons for why neglected children tend to under-achieve in school, so I looked for a range of measures that might provide me with pertinent information.

Three questionnaires were chosen as a measure of firstly, the child's social language skills, secondly as a measure of adaptive behaviour in school and thirdly, strengths and difficulties in mental health.

If the social use of language is a limiting factor in making friendships, then this may be reflected in how teachers and carers perceive their children to engage and communicate socially. Similarly, adaptive behaviour scales and mental health scales would also potentially shed light on the nature of a child's strengths and difficulties in school and would supplement my own observational data. Importantly, when combined with data on executive functions, they

contribute to the understanding of self-regulation in school and I am particularly interested in this.

Multi-informant measures were selected (Child Communication Checklist (CCC2) (Bishop, 2003), the Strengths & Difficulties Questionnaire (SDQ) (Goodman, 2005) and the Adaptive Behavior Assessment System (ABAS-II), (Harrison and Oakland, 2003) so that responses between teachers and carers could be compared.

Research demonstrates the high potential for measurement error in these types of rating scales – in a study of 3-5 year-olds, Mashburn *et al* (2006) found that one-fifth of the variance on teacher ratings of social competence and problem behaviour was due to non-child characteristics, such as teachers' self-reported self-efficacy and whether the nursery was in a day centre or in a school.

Similarly, in a study of 4-6 year-olds, Waterman *et al* (2012) demonstrated that the amount of variance when teachers completed rating scales was substantially more than that of independent assessors, where the variance was negligible.

When comparing parent and teacher ratings, Crane *et al* (2011) found that when children had low abilities, parents tended to give higher ratings than teachers, but when children had high abilities, teacher ratings were higher, on measures of social competence. The scores will therefore be examined for

discrepancies between teachers and carers and taken into account in the Discussion.

### **7.5.1 Language skills**

The way in which we use language informally to communicate is referred to as pragmatics – what we say and how we say it, to achieve social goals. It includes the appropriate use of gesture and intonation and is important for conveying personal thoughts and feelings. The Children’s Communication Checklist – Second Edition (CCC2) was employed in this research to supplement observational data about how the children use language, particularly in everyday social interactions. The manual (Bishop, 2003) states that ‘The main function of the CCC-2 is to obtain ratings of aspects of communication that are not easy to evaluate in more traditional one-to-one clinical assessment’ (p10). There are 70 multiple-choice items, with a response based on frequency of occurrence (0 = less than once a week, up to 3 = several times a day). Items are divided into 10 scales (Speech, Syntax, Semantics, Coherence, Inappropriate initiation, Stereotyped language, Use of context, Non-verbal communication, Social relations and Interests). It has high internal consistency (mean internal consistency of Cronbach’s alpha of at least .65 across all scales) and high validity. Correlations between parents and professionals varied from .157 (Stereotyped language) to .529 (Speech) on a sample of 55 children (Bishop, 2003).



### 7.5.2 The Strengths and Difficulties Questionnaire (SDQ)

The SDQ (Goodman, 1997) is frequently cited in the literature and widely used across the world for research purposes, and as a screening and an outcome measure for clinical and research-based interventions (Mathai *et al* 2002). It is a brief screening questionnaire for mental health problems completed by carers and teachers of children under 11 (children aged 11+ can complete the questionnaire themselves). It is a 25-item scale, divided into 5 sections: Conduct Problems, Hyperactivity (which can be summed to give a measure of externalising behavior problems), Emotional Symptoms, Peer Problems (which can be summed to provide a measure of internalising behavior problems) and Pro-Social Behaviour. Summing two scales together is helpful for children who obtain lower total scores and whose scores would otherwise show poor discriminant validity on the 4 subscales (Goodman *et al* 2010). Each item is rated on a 3-point Likert scale of agreement (*Not True, Somewhat True, Certainly True*). The first four sections are totalled to give a score out of 40 representing 'Total Difficulties'. In individual analyses, each one-point increase in SDQ score predicted a higher prevalence of a mental health disorder (Goodman & Goodman, 2012) and in population-level analyses, mean SDQ scores predict the prevalence of disorder (Goodman & Goodman, 2011). It correlates highly with the Child Behavior Checklist (Achenbach, 1991) and is considered more sensitive in detecting inattention and hyperactivity and equally sensitive in detecting internalising and externalising problems (Goodman & Scott, 1999). The SDQ was chosen because of its high validity and reliability (mean internal consistency of Cronbach's alpha of 0.71 across scales for parents, mean cross-informant (parents and teachers) correlation of 0.37

across scales, and 3 to 6 month test-retest reliability of 0.62 (Goodman, 2001), its wide recognition in research and its ease and speed of administration. It is multi-informant (teacher and carer), it includes strengths as well as problems, and it is easy to obtain and score (<http://www.sdqinfo.com/a0.html>).

### **7.5.3 Measures of Adaptive Behaviour**

In Section 3.8.2.3 (p71), adaptive behaviour referred to the way in which the organism acts in the context of changing environments (termed perturbations), so as to increase its survival. Gestdottir (2014) states that behaviour can also be viewed as adaptive, if both partners (organism and environment) benefit. The 'environment' could include teachers and peers of a young school child. However, *measures* of adaptive behaviour originated with a different theoretical slant, being studied in individuals with moderate to severe learning difficulties. More recently, other factors such as academic skills, physical developmental skills and social competence have been regarded as contributors to adaptive behaviour (Bruininks, McGrew, & Maruyama, 1988) so the usefulness of its measurement is now recognised in a wide variety of other populations, including children in foster-care (Hochstadt *et al* 1987), children with developmental delays (Pearson & Lachar 1994) and gifted children (Janos, Fung & Robinson, 1985) - adaptive behaviour measures must identify strengths as well as weaknesses. Hochstadt *et al* (1987) believe that both health and adaptive behaviour should be measured for every child entering the care system due to the high incidence of behavioural and mental health problems in this population. Similarly, Harrison & Boney (2008) suggest that adaptive behaviour should be routinely assessed for children who experience difficulties

that interfere in daily school life. Measures of adaptive behaviour also contributed significant additional predictive power when predicting achievement (reading, language and mathematics) from intelligence scores (diSibio, 1993). The American Association on Mental Retardation (AAMR) originally defined adaptive behaviour as 'what people do to take care of themselves and to relate to others in daily living'. (This compared to the more abstract concept previously implied by intelligence measures.) The AAMR identified ten areas of adaptive behaviour: communication, home living, self-care, health and safety, self-direction, community use, leisure, functional academics, work and social skills. The two most widely-used measures of adaptive behaviour (Vineland Adaptive Behavior Scales (Sparrow, Cicchetti & Balla, 2005) and the Adaptive Behavior Assessment System (Harrison & Oakland, 2003)), are based on assessing skills in these ten areas.

Adaptive behaviour therefore refers to the way in which an individual meets their own needs, whilst at the same time being able to adjust their behaviour flexibly, to meet the demands and expectations of the social situations in their environment, commensurate with age. It can be understood as a measure of appropriate independence, but also as a way of considering the individual child's skills and capabilities in the context of specific environments such as school, and importantly, whether the needs and requirements that exist in the environment exceed the adaptive skills of the child. This brings the measure into closer alignment with the previous definition of adaptive behaviour (Gestdottir, 2014) - maladaptive behaviour can be seen as contributing to relationship activities that are not beneficial to either teacher or child, and are

likely to occur when the demands of the school environment exceed the skills of the child.

It also incorporates the identification of some elements of stress, defined by Lazarus & Folkman (1984) as a mismatch between adaptive capacities and the demands of the environment.

Measures of adaptive behaviour were infrequently cited during my review of the longitudinal studies of child development, however, educational psychology colleagues and I have found it useful in professional practice to evaluate it in school children with complex difficulties. It provides an overview of how a child is managing with respect to practical and social skills in the school environment (and therefore practical ideas for intervention), rather than a focus on the more restrictive 'behavioural difficulties' (that generally apply to the child's social relationships with staff and peers).

The Vineland Adaptive Behaviour Scales were cited more often during my reading of the literature, but in their review of potential measures for the Early Childhood Longitudinal Study in the United States, the Vineland scales were rejected as being too lengthy with some items possibly being misinterpreted by staff (Meisels *et al*, 1996). Information from the publishers (Pearson UK / Harcourt Assessment) states that administration is up to sixty minutes.

The alternative Adaptive Behavior Assessment System (ABAS-II) is an extensively-validated, norm-referenced measure of adaptive behaviour, with

high internal consistency and test-retest reliability (Community-University Partnership, 2011). The ABAS-II describes three domains of functioning: Conceptual, Social and Practical, conceptually derived from the ten areas of competence identified by the AAMR. The Conceptual domain comprises communication skills (speech, language, listening, conversational skills), functional academic skills (reading, writing, maths) and self-direction (independence, responsibility and making choices). The Social domain comprises general social skills (getting along with others, good manners and showing / recognising emotions) and play/leisure skills (following rules, team membership and consideration for others). The final, Practical domain comprises self-care, home/school living, understanding the community and health/safety knowledge. The scores in the three domains can be combined into a General Adaptive Composite (GAC) score. It is a multi-informant measure, with both teachers and caregivers completing a rating form that assesses how frequently (*Always, Sometimes, Never*) a child can independently complete a given activity when needed. It is straightforward to administer and can be completed in fifteen minutes. It emphasises the importance of understanding behaviour in a particular context and hence the need for support.

## **7.6 Measures of Emotional Regulation**

The measurement of emotional regulation (ER) is not straightforward, with frequent discussions taking place in peer-reviewed journals about what constitutes 'emotional regulation' (e.g. Thompson, 2011) - measurement of ER being related to theoretical formulations of the construct, which vary. Larsen & Prizmic-Larsen (2006) noted that all measures are in fact 'construct-method

composites'. In their review of studies published over the last 35 years, Adrian, Zeman & Veits (2011) noted that researchers interested in studying children's ER measure it primarily in four ways: self-report; other-informant (caregiver, teacher or peer); observational and lastly, physiological.

They assumed the following definition of ER, "*the extrinsic and intrinsic processes responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features*" (Thompson, 1994, pp27-28). Other definitions were described in section 5.2 (p134). For the purposes of this research, I am interested in the definition of ER as a component of self-regulation: the ability to modulate arousal in order to facilitate adaptive functioning (Graziano, Keane & Calkins, 2007), more specifically, to support learning processes and pro-social behaviour in a school context. Adrian *et al* (2011) note that 4.5% of their reviewed studies utilised four methods to measure ER; 61.1% relied on only one. Calkins and Fox (1992) note that a more detailed understanding of individual differences in ER can really only be gained by looking at intrinsic (within child) and extrinsic (contextual) factors. Similarly, Perry *et al* (2014) state that models of ER that incorporate multiple levels *and* the environmental context are needed in order to further our understanding.

In this detailed case study, in order to capture the multi-dimensional features of ER alluded to above, I aim to use four methods, although self-report by the child will be done indirectly via the Ideal Self activity if possible, rather than requiring them to maintain diaries and to explain their feelings, as has been described

elsewhere in child research (Durbin, 2010). Other-informant measures of ER have been described in the preceding paragraphs relating to the SDQ. I had proposed to use the Emotion Regulation Q scale derived from the California Child Q set (Block & Block, 1980), but found it difficult to ask the class teachers to complete this, as it is time-consuming and the research data were eventually collected at the same time as the statutory Year 2 Standardised Assessment Tasks (SATs) when teachers are under more pressure than usual.

Observational methods have been referred to as the 'gold standard' in developmental research (Cummings, Davies & Campbell, 2000). None of the observation methods cited in Adrian *et al's* review were naturalistic observations; all were responses to an arranged situation or task. I originally proposed an observation schedule for emotional regulation in school partly based on Buss & Goldsmith's (1998) research. They identified two different emotion regulation dimensions: firstly the person who regulates (social or individual) and secondly, the effectiveness of the regulation. I devised my own observation schedule incorporating these dimensions, adding how the child signals their emotions (Appendix O of the AER), but found in practice that the frequency of emotional change was too low. Instead, I found it easier to record what the child was doing in class, in response to particular activities and propose hypotheses at the time for how they might be feeling, what they did to self-regulate, and why. The hypotheses were later discussed with two other adults in school.

The final method to measure ER is via physiological measures. Cicchetti & Rogosch (2001b) state that the majority of research on the consequences of childhood adversity has been focused on psychological outcomes, but with the advances in neurobiology and neuroimaging, attention has additionally turned to physiological consequences. Curtis and Cicchetti (2007) note that neurophysiological systems are necessarily involved in the experience and regulation of emotion, and so physiological measures are being employed to measure not just ER, but the long term consequences of remaining in a 'stressed' state. Commensurate with this idea, in this research, I have used physiological methods as a measure of both ER and of stress reactivity.

Several non-invasive biomarkers are identified in the child development literature as suitable measures of ER, chronic physiological stress and stress reactivity. These are based on physiological indicators of ANS activity, including skin conductance, heart rate, heart rate variability, cortisol, salivary alpha amylase and blood pressure (Obradovic & Boyce, 2015). I have used a heart-rate variability (HRV) measure as an index of PNS activity and hence ER, since activity in the PNS promotes a subjective experience of 'calm', active listening and social engagement (section 5.5 p144).

A principal component in the body's stress response is the Hypothalamus-Pituitary-Adrenal (HPA) axis. I have used HRV, heart rate and salivary cortisol to index stress reactivity.



With regard to questions of validity – is HRV a valid measure of top-down self-regulation - Holzman and Bridgett (2017) noted that there is a strong theoretical base for HRV as an index of self-regulation (primarily guided by Porges (2007) Polyvagal Theory and Thayer & Lane's (2000) Neurovisceral Integration model), but that there are mixed findings in the extant literature. Consequently, they conducted a very thorough meta-analysis of 123 studies (N=14,347) that reported relationships between HRV and aspects of self-regulation and concluded that there is a significant effect, albeit small, such that greater HRV was related to better top-down self-regulation.

It is worth noting that there has been little research investigating the role of emotion regulation in children's early academic performance (Graziano *et al* 2007) and I have moreover been unable to identify research that assessed children's physiological arousal *in school*.

## **7.6.1 Heart-Rate Variability**

### **7.6.1.1 Collection of heart-rate data**

In order to measure HRV, electrocardiogram (ECG) data must be collected. In this research, this was achieved via the Lifetouch© wireless sensor, generously and kindly provided by Isansys Lifecare Ltd.. Photographs and technical data are provided on the Isansys website (accessed 10<sup>th</sup> June 2017)

<http://www.isansys.com/en/products/sensors>

The Lifetouch© is a small, adhesive, 'smart patch' wireless sensor that is worn on the child's chest over the apex of the heart; it is invisible under clothing. It records the time of every heart-beat and the breathing rate, providing

continuous real-time data wirelessly to a tablet nearby, which displays this information graphically. Data was stored on the tablet and I downloaded the interbeat time periods (or interbeat intervals (IBI) - also known as the R-R period or heart period) later as an Excel file, for analysis. Data can be stored on the Lifetouch itself for over 24 hours at 90 beats per minute (bpm). During the overnight monitoring sessions, three research children and one classmate took tablets home with them. Two further classmates went home with just the Lifetouch sensor and I downloaded their data to the tablet the following day in school. As the Lifetouch© system is designed for use in hospitals, the tablet is known as the Patient Status Engine (PSE) and can be viewed on the Isansys website (accessed 10<sup>th</sup> June 2017) <http://www.isansys.com/en/products/PSE>

The protocol for setting up and recording the data for each child that took part is found in Appendix 3.

#### **7.6.1.2 Analysis of heart-rate data**

The two principal methods for calculating HRV are based on either frequency-derived indices or statistically-derived indices (Berntson, 1997). Statistically-derived indices (also known as time-domain indices) are calculated directly from IBIs in order to look at the variance. The analysis in this research however utilised a frequency-derived method to remove the variance of the IBI attributable to influences that are not vagally-derived. This results in a quantity known as Respiratory Sinus Arrhythmia (RSA), a relatively more 'pure' measure of PNS activity on the heart compared to statistically-derived measures. (This is important because it is PNS activity specifically that indexes top-down PFC

regulation.)

Heart period (IBI) data were downloaded from Isansys PSEs as an Excel file and subject to analysis using CardioEdit software (Brain-Body Center, University of Illinois at Chicago, 2007). Training in this was kindly provided over several sessions by Dr Keri J. Heilman via Skype. Successful completion of the reliability training enabled me to visually inspect the IBI data, edit outliers and use integer arithmetic to compensate for missed beats (dividing intervals) or adding intervals (when invalid beats were recorded). The edited IBI file was then imported into CardioBatch Plus software (Brain-Body Center for Psychophysiology and Bioengineering, University of North Carolina, Chapel Hill, 2016) and RSA calculated using a time-frequency algorithm patented by Porges (1985) and further developed by Porges and Bohrer (1990) to quantify the amplitude of RSA with age-specific parameters.

**Table 7.5 Collection of heart-rate data and calculation times for RSA**

Type of heart-rate data collected	Place of collection	Time of collection	Number of research children	Number of classmates / controls
Resting RSA	Home	Just before bedtime	3 (overnight)	3 (overnight)
RSA during school activities, including break time	School	Ten minute or two minute epochs during the first 2 hours of the school morning	4	26 classmates

### **7.6.2 Cortisol**

The measurement of salivary cortisol as an index of HPA activation and hence stress has been available since the 1980s, when advances in laboratory techniques made it possible to measure very small concentrations of cortisol present in saliva (Schmidt, 1997). Salivary cortisol is unbound and biologically active, making it suitable for measurement in enzyme-linked immunoassays (ELISA). These are sensitive biochemical techniques, capable of measuring very small amounts of the chemical of interest.

Cortisol is a hormone, released in small amounts in short bursts from the adrenal glands during the day (Hartmann *et al*, 1997), but its release also reflects the circadian rhythm; cortisol levels rise around the time of waking and continue to rise until they reach a peak ten - thirty minutes later, due to an increased number of pulses around this time (Schmidt-Reinwald *et al*, 1999). There is then a gradual decline (fewer pulses) during the day, before finally reaching the lowest point around midnight (King & Hegadoran, 2002). The

timing of cortisol collection is therefore critical when carrying out between-subjects analyses, particularly in the morning, when the rise upon wakening needs to be taken into account. Cortisol appears to be released in anticipation of wakening; it was lower upon wakening in children who slept longer than usual (Born *et al*, 1999).

A basal level of cortisol is essential to support metabolic activity and in supporting the body to mount an effective sympathetic response to challenge (Gunnar & Quevedo, 2007; McEwen, 1998). Basal levels of cortisol are particularly important in the early years of life, where it supports neural maturation and organisation (Gunnar & Loman, 2010). Cortisol is also released in response to stress (section 5.7, p147), where a rise in cortisol is observed approximately twenty minutes after the stressor.

The HPA axis is not fully mature at birth (Gunnar & Donzella, 2002) and early experiences have enduring effects on both basal levels and reactivity of the HPA system (Hostinar & Gunnar, 2013; Tarullo & Gunnar, 2006). There are however mixed findings in the literature about the effects of early adversity on basal cortisol levels and cortisol reactivity (how much it increases in response to threat) (Hostinar & Gunnar, 2015). Consistent with other developmental research, duration and timing matter, with long-term deficits in regions that were developing at the time of chronically-stressful experiences (Sawchenko *et al*, 1996). Depending on the nature and timing, the stress response becomes either hyperactive, or hypoactive (Smith, Kim, van Oers & Levine, 1997). In their review, Gunnar & Vazquez (2001) reported that neglected children appear to

fail to produce the peak upon waking, with low levels throughout the day. A similar response was observed in pre-schoolers in care entering a new foster-placement; 35% showed a blunted rhythm (Fisher *et al*, 2000).

Gunnar & Vazquez (2001) hypothesised that prolonged elevation of cortisol may have affected the negative feedback systems of cortisol production in order to protect the developing brain from excessive cortisol, which may lead to cell death (Chan *et al*, 1996), particularly in the hippocampus (Cicchetti & Rogosch, 2001a).

One possible mechanism suggested by Gunnar & Loman (2010) was the down-regulation of receptors for CRH on the anterior pituitary gland. In older children (7+). De Bellis, Baum *et al* (1999) found that children who had been abused as infants had higher levels of cortisol throughout the day. Cicchetti & Rogosch (2001b) similarly noted the variable findings in relation to cortisol levels and reviewed the links between various types of early adversity, later psychopathology (such as depression) and concurrent cortisol, stating that the type of early life maltreatment was related to HPA responsiveness in later life, so care with sample recruitment was needed.

Information on salivary cortisol concentrations for children under three has been reported (Gunnar & Donzella, 2002), but time-based norms for older children is not well-established (Groschl *et al*, 2003) with each study tending to report their own norms. The manufacturer of the assay materials (Salimetrics) provide a range of morning and evening values for children aged eight, and these are provided in the Results (p229). Medicines may affect cortisol production, so I

checked beforehand that no child was taking medication. Blood contains cortisol so children were asked not to brush their teeth or eat in the 30 minutes before saliva collection (protocol in Appendix 4).

### **7.7 Measures of Attachment Security and Insecurity**

The validity of the Strange Situation Procedure for measuring attachment classification at age one year (Ainsworth *et al* 1978) depended for its validity on detailed observations of the nature of the caregiving relationship in the home situation during the first year of life, as well as extensive notes taken during the assessment. It aimed to tap the behavioural response system of the infant in response to a mildly distressing situation. Slade, A. (2007) noted that researchers and clinicians have found it challenging to utilise attachment classification, as it 'is seen as reducing and over-simplifying complex mental phenomena' (p227). Moreover, confusion exists in the understanding of attachment concepts post-infancy (Rutter *et al* 2009; Thompson & Raikes, 2003), which adds further complexity into the measures that purport to assess it.

Bowlby's idea was that caregiving experiences contributed to the formation of a representational internal working model (IWM) with its neurobiological basis in a hierarchical control system (including cortical and limbic system structures), which modulated emotional experiences. As development proceeds, it is hypothesised that increasing neural connectivity maintains and extends the 'conceptual' IWM, but commensurate with the principle that development builds on what precedes the present circumstances, its early features become

integrated into current functioning - memories and emotional experiences associated with the past caregiving relationship are involved in the appraisal, perception and response to current interpersonal relationships (i.e. post-infancy), hence efforts to describe the IWM being included in the research. The Adult Attachment Interview (George, Kaplan & Main, 1985) makes the assumption that early experiences and memories are available to conscious processing, particularly when asked unexpected questions which are then contrasted with specific episodic memories. Goldwyn and colleagues utilised this idea in the development of the Manchester Child Attachment Story Task (MCAST) utilising attachment story stems developed by Bretherton, Ridgeway & Cassidy (1990) rather than the recall of an episodic memory. Doll play is used to access representational material, with the interviewer describing and amplifying the emotional intensity of an attachment vignette, before handing the dolls to the child to complete the story. An orientating, baseline vignette ('Breakfast') is followed by four attachment vignettes, before concluding with a pleasurable family play vignette, to 'wind down'. Like the coding of the Adult Attachment Interview (Main & Goldwyn, 1985/1991), the MCAST utilises discourse analysis, similarly incorporating Grice's (1975) four maxims of a coherent discourse (quality, quantity, relation and manner). The manual has copyrights, but details of its development, validity, inter-rater reliability, content validity and the procedure are published elsewhere (Green, Stanley, Smith & Goldwyn, 2000). I have previously received training in the MCAST, so I chose to use this assessment in preference to other measures of attachment in young children, such as the MacArthur Story Stems, based on the Ainsworth classifications (Cassidy, Marvin, & the MacArthur Attachment Working Group,



1992) utilised in the BEIP, and the Preschool Assessment of Attachment (PAA; Crittenden, 1992), based on the Dynamic Maturational Model. I have not received training in either of these measures.

## **7.8 Action Research**

The purpose of action research is to influence or promote change within the topic under study (Robson & McCartan, 2016) and hence adds an additional dimension to the 'explore' and 'explain' parts of my case study, although the action research activity seeks to contribute to both. Robson & McCartan, (2016) note that improvement (of practice or understanding, or both) and involvement are central to action research, so it is ideally suited to this research. The involvement of school staff in this part of my research is consistent with my aims to understand why a child does or does not make progress in school, as the viewpoints of the staff (and not just my own) become part of the explanation. It may be viewed as emancipatory research because the journey of learning is shared between the researcher and the collaborating participants and hopefully leads to more knowledgeable and empowered practice for all.

The widely-adopted version of action research is cyclical (Kemmis & Wilkinson, 1998). It involves participants reviewing together the current state of affairs, specifying an idea of what is to be achieved, planning a change, carrying out the specified change, observing, measuring and reviewing what occurs during the change, critically reflecting on the process and outcomes, then using the information derived during the reflective process to make a new plan to achieve the desired changes and outcome.

The stages of action research I plan to adopt are modified from Bassey (1998) and cited in Robson & McCartan (2016) (p201):

**Table 7.6 Stages of Action Research**

<b>Stages of action research</b>	
<p><u>1. Define the inquiry</u>            What is the issue of concern?            What research questions are we asking?            Who will be involved?              When and where will it happen?</p>	<p>The child has delays in several areas of development that are contributing to underachievement.            Class teacher, SENCO / INCO / DT, external consultants, parents or carers            School</p>
<p><u>2. Describe the situation</u>            What are we trying to do?                  What thinking underpins what we are doing?</p>	<p>Support the child to make good educational progress and catch up on developmental delays.            Using our own knowledge of the child to share ideas and plan a specific, personal education programme for a term.            Relational-developmental systems thinking - child development is historical, dynamic and takes place in a specific context in relationship with other adults.</p>
<p><u>3. Collect evaluative data and interpret it</u>            What is happening for the participants?    <u>4. Review the data and look for contradictions</u>            What contradictions are there between what we would like to happen and what seems to happen?</p>	<p>Is the child making better progress educationally and socially?            (Educational achievement is measured by reassessment of literacy and numeracy.) If there are behavioural difficulties, are they reduced?</p>
<p><u>5. Tackle a contradiction by introducing change</u>            By reflecting critically and creatively on the contradictions, what change can we introduce which we think is likely to be beneficial?</p>	<p>Consult together and look at what went well and what did not. Plan changes so that what went well is maintained and what did not go well is analysed for reasons. Make a new personal education programme, as a result.</p>
<p><u>6. Monitor the change</u>            What happens when the change is introduced?</p>	<p>Review again, as in step three.</p>

### **7.8.1 The conduct of the stages of action research**

Once the child assessment data had been collected with the two main research children (who wished to be known as Jeff and Minnie in the writing up of the research), I approached the Designated Teacher (DT), to request a consultation meeting with the class teacher, DT and the carer. I explained the purpose of the meeting: to share ideas to support the child's progress in school and to draw up a Personal Educational Plan, with targets and strategies commensurate with the research data and the knowledge of the class teacher. The strategies were to include the 30 or 60 minutes of Teaching Assistant time, depending upon the prior agreement with the school, at the recruitment stage. A date was set for this in each school, with a plan to review it at the end of July, or in September of Year 3.

Before the meeting took place, I summarised the child assessment data and recorded my ideas for what would be helpful to support the progress of both children in school. Stages 1 to 3 of the action research cycle were carried out fully for Minnie, resulting in the completion of a personal education programme (i.e. intervention plan), termed a Personal Provision Plan by the school (Appendix 6). I engaged in informal, partial activities of stages 4 to 6 of the action research cycle, by holding meetings every half term with the designated TA, where we considered at length the contradictions or differences in the expected outcomes relating to Minnie's progress. We reflected why these had occurred and what could subsequently be done differently to reflect our new hypotheses. New activities and ways of behaving for the TA within the TA-child

relationship were planned, which we hoped would support Minnie's progress (Appendix 5, Meeting 10).

A central aim of action research however is problem-solving, and shared, reflective questioning of the initial aims, assumptions, beliefs and practices, which lead to new insights and an alteration in professional practice. It was not possible to fully evaluate the Plan under the expected method and protocols of Stages 5 and 6 (above) with other school staff because in the school meetings my input was simply to explain how Minnie's difficulties were often related to his low levels of literacy, and so the detailed evaluative and reflective steps of an action research protocol were not followed.

Stages 1 to 3 of the action research cycle were carried out partly for Jeff, and an intervention plan created (described in the Results, section 8.7.2). Stages 4 to 6 of the action research cycle were not conducted, so the evaluation of the intervention plan was therefore largely based on a more simplistic, 'Plan – Do – Review' cycle, rather than recursive cycles of reflective problem-solving, contributing to a greater refinement of our thinking, hypotheses and understanding related to Jeff's progress.

## **7.9 Part 2 of the Research – The Perspectives of Key Adults**

### **7.9.1 Q Study**

The previous section has considered aspects of child functioning – what it is that the children bring to the teacher-child relationship in school. The RDS perspective emphasises development as being co-actional. Therefore, in order to gain a truly holistic understanding, the other sections of the data collection are focused upon the beliefs, knowledge and understandings of the teachers. I chose an activity based on Q methodology to investigate adults' beliefs about the effects of neglect on child development because it is a measure of subjectivity; no pre-existing rating scales are used and raters are kept naïve of target constructs. It also helps to avoid response bias by asking raters to sort the items into a fixed distribution (Waters & Deane, 1985).

From experience, I have found that just asking teachers for their understanding of what it is their child needs to help them develop, and how / why it is that they need it (for example through a structured interview), tends unwittingly to put people on the spot and may result in short and sometimes, defensive conversations. Q methodology on the other hand, explores beliefs and personal hypotheses in an open-ended, curious manner through asking people to agree or disagree, to varying extents, with a set of statements (termed the concourse) reflecting what is thought about a particular topic by a wide range of people. It promotes dialogue and stimulates thinking; a detailed description of individual beliefs can be ascertained through Q methodology.

I was also interested to see if there were any differences between professional

groups (teachers, foster-carers and social workers), and Q can facilitate this, as it is an inverted form of factor analysis: instead of examining which factors or characteristics of people cluster together, as in a typical factor analysis, it considers which sort of *people* cluster together, given a set of viewpoints to rate (Watts & Stenner, 2013).

The concourse (Q set) was developed during my extended literature review and reading over the previous two years, I recorded research findings about the effects of neglect on child development and this effectively provided me with a narrative about normal development and developmental psychopathology in situations of early neglect. I abstracted ideas from this narrative, rephrasing them as statements with which it is possible to agree or disagree, depending on one's beliefs. During my professional practice, I also encounter other professionals' expressions of belief or hypotheses about the development of neglected children, together with espoused theories about the reasons for the behaviour of such children and these also became part of the concourse.

I initially devised a Q set with 60 statements, but after trialling this with other educational psychologists, specialist teachers, social workers and a school governor, I narrowed it down to a final set of 48 statements, discarding some statements due to ambiguity or repetitiveness. The final Q concourse comprises 28 statements relating to the effects of neglect on child development, a further 12 statements relating to the possible reasons for the behaviour of neglected children, whilst a final 8 statements relate to the respondents' feelings about neglected children and the sense of competency in being able to meet their

needs. No further categories were indicated in the literature, although that does not mean to say that there are not more – it is possible that further categories will emerge during analysis. There are no right or wrong answers in a Q sort; it simply establishes each individual's agreement (or disagreement) with a set of statements. From this, I hope to establish the current beliefs of the sample of teachers, assistants, head teachers, carers and social workers. (See Appendix A of the AER (Appendix 1) for the list of statements.)

During the Q sort activity, observations were made and recorded in the form of brief written notes. These included for example, which statements are placed quickly, or thoughtfully. The usual practice at the end of a Q sort is to ask for immediate feedback and comments about the task. I planned to ask for narrative stories from the participants about their experiences of working with neglected children and (commensurate with the research aims) what their thoughts were about why these children tend not to do so well, or conversely, do succeed, within the education system, but in fact this took often place spontaneously during the sorting activity. Where supportive / hindering factors were not spontaneously mentioned, I then asked questions about these (including supporting the development of social skills), relevant to the participant's experience, including:

- What constitutes the 'right support' to help neglected children catch up?
- What had made the difference in neglected children who had done well?
- Can you tell me a little more about your experiences relating to Nurture Groups?
- Is it possible do you think, to engineer friendships between neglected



children and other children in the same class?

Ideas, thoughts and reasons from the conversations were analysed for common themes.

For Q sorts to be effectively analysed, 25 sorts are ideally needed. As I wished to examine differences in beliefs between professional groups of social workers, teachers and carers, I aimed to recruit 10 participants in each category, to include the 3 core adults for each child (teacher, carer and social worker). In the event, although 8 members of staff in schools completed the sorting activity, only 4 social workers and 3 foster-carers took part. A Q analysis was conducted on the sorts of the 8 school staff (Appendices 8 and 9). Due to the low numbers however, in the Results section 8.8 (p328), the data from the Q sort were analysed qualitatively for common areas of agreement and disagreement, as well as individual views, so these aspects of data collection and interpretation are referred to as a Q study, or an activity based on Q methodology.

### **7.9.2 Recruitment of Social Workers, Foster-Carers and Teachers**

I designed and printed an A2 poster (Appendix L of the AER) briefly outlining my research, explaining what a Q sort is and requesting volunteers to take part. I placed this on the wall of the team room of Children's Social Care (CSC) offices in one LA, with my contact details included. The Social Workers who were interested to volunteer contacted me and I provided them with a consent form (Appendix M of the AER) with further details. If they were happy with this, they signed the consent form and we met at a mutually convenient time and place. In the second LA, the Social Workers of the four research children with CSC involvement all took part and on my behalf, informed colleagues about the Q sort activity, passing on my contact details if anyone expressed an interest. The class teachers of the two main research children took part. One child moved school and his new class teacher kindly consented. Remaining teachers were recruited on an opportunity basis in the schools to which I provided consultancy and gave consent as above, to take part.

The foster-carers of one of the main research children took part at the start of my research. The research child moved placement and his new carer also completed the Q sort.

### **7.9.3 Meetings and Consultations**

Engagement in the research schools was kindly facilitated by the Virtual School Head. Due to my involvement in school, the children's Social Workers invited me to the review meetings for the children, so I could present verbal evidence about the children's progress in school. During the meetings, with permission, I

took notes about the children's overall progress in school.

I had extended involvement with one research child (Minnie) and discussed his progress with two external consultants. One was the counsellor, employed by the school to work with children showing troubling behaviour. She had previously worked in the school for many years, but had left and retrained as a counsellor. She therefore had detailed knowledge of the local area, the school, how it met the needs of neglected children, the children who attended and their families. The second consultant was engaged with the support of CSC and worked to support the family. She also saw the children individually. With their permission, I also made notes about their involvement. We met up regularly, to share ideas about what was contributing to the current difficulties and what may be helpful, and these were also typed up. All of these, plus my class observations were sent to the two consultants, to check that I had an accurate record of these discussions.

The second research child (Jeff) moved school in September, still within the LA. I maintained contact with his class teacher and the DT, and went in twice during Year 3 for consultations.

Notes for all meetings and consultations are in Appendices 5 and 7.

## **Chapter 8**

### **RESULTS**

#### **8 Introduction**

The Results chapter is divided into three sections. Section 1 presents and comments upon the child data from all six research children, in order to answer research questions 1, 2 and 3.

Section 2 presents the aggregated data of the two main research children, with whom interventions were carried out. A short comparison of the two children will be made, followed by individual data, including the plans of their interventions, class observations, and meeting notes with the professionals involved in their educational planning (Appendices 5 and 7). Utilising the RDS perspective this section will form the basis for a detailed exploration in the Discussion chapter of the possible reasons as to why neglected children might underachieve in school and why their difficulties may sometimes be viewed as 'behavioural difficulties'.

The final Section 3 presents the data from the Q sorts, in order to answer research question 4.

#### **SECTION 1 – all research children**

##### **8.1 Child data from all research children**

The following sections will present data tables for the WISC-IV, WIAT-II, NEPSY-II and a summary of the child's view from the Ideal Self activity.

The average range for all standard (Index) scores is 85 to 115; a score of 100 falls right in the middle of the average range. The average range for scaled scores is 8-12.

**Table 8.1 WISC-IV UK Cognitive Assessment Results**

CHILD	WISC-IV UK Scaled scores													Index scores <i>(Percentile scores in italics)</i>				
	Verbal Comprehension Index (VCI)				Perceptual Reasoning (PRI)				Working Memory		Processing Speed (PSI)			VCI	PRI	WMI	PSI	FSIQ
	Sim	Vocab	Com	Inf	BD	Pict Conc	MR	Pic Cp	DS	LN	Co	SS	Can	Conf 95%	Conf 95%	Conf 95%	Conf 95%	Conf 95%
<b>Minnie</b>	10	10	11		10	9	8	9	6	8	10	6	11	<b>100</b> <i>50</i>	<b>96</b> <i>39</i>	<b>83</b> <i>13</i>	<b>103</b> <i>58</i>	<b>(95)</b> <i>37</i>
														93 - 107	89 - 104	77 - 92	94 - 112	N/A
<b>Jeff</b>	10	6	8	7	5	11	7	7	6	7	12	10	11	<b>91</b> <i>27</i>	<b>90</b> <i>25</i>	<b>80</b> <i>9</i>	<b>109</b> <i>73</i>	<b>(89)</b> <i>23</i>
														85 - 98	83 - 98	74 - 89	99 - 117	N/A
<b>Pippa</b>	11	10	8	6	10	10	6	8	11	9	10	9	8	<b>98</b> <i>45</i>	<b>96</b> <i>39</i>	<b>99</b> <i>47</i>	<b>97</b> <i>42</i>	<b>97</b> <i>42</i>
														91-105	89-104	91-107	88-106	92-102
<b>Paul</b>	14	12	11	8	6	12	7	9	8	7	5	8	11	<b>112</b> <i>79</i>	<b>96</b> <i>39</i>	<b>86</b> <i>18</i>	<b>97</b> <i>42</i>	<b>(99)</b> <i>47</i>
														105-118	89-104	79 - 95	88-106	N/A
<b>Simon</b>	8	9	9	8	9	12	10	10	6	6	18	7	13	<b>93</b> <i>32</i>	<b>104</b> <i>61</i>	<b>77</b> <i>6</i>	<b>131</b> <i>98</i>	<b>(101)</b> <i>53</i>
														97-100	96-111	71 - 86	118-136	N/A

**KEY for Table 8.1:**

Sim = Similarities;

Vocab = Vocabulary;

Com = Comprehension;

Inf = Information;

BD = Block Design;

Pict Conc = Picture Concepts;

MR = Matrix Reasoning;

Pic Cp = Picture Completion;

DS = Digit Span;

LN = Letter-Number Sequencing;

Co = Coding;

SS = Symbol Search;

Can = Cancellation;

Conf = Confidence interval at 95%

### **8.1.1 Wechsler Intelligence Scale for Children (cognitive assessment)**

All five research children scored within the average range for their Full Scale Intelligence Quotient (FSIQ). The individual Index scores for four children demonstrated a statistically significant difference between one or more of the individual Index scores, so are bracketed.

All five children scored in the average range in the areas of Verbal Comprehension skills (VCI), Perceptual Reasoning skills (PRI) and Processing Speed (PSI). Processing Speed was a strength for two children (Jeff & Simon), with Simon scoring in the 'above average' range. (The two highest subtest scores were used to calculate the Processing Speed Index.)

In contrast, Working Memory was a difficulty for four research children, with three scoring in the below average range, and one scoring right at the lower end of the average range (Paul scored 86). Pippa is the youngest child and she was brought into care at the age of six months. Her score on the Working Memory Index falls in the middle of the average range and she was the only child without specific difficulties relating to Working Memory.

### **8.1.2 Wechsler Individual Achievement Test**

This measures achievement in four areas: reading, writing, numeracy and language (including oral language and listening comprehension). The results are presented in Table 8.2:

**Table 8.2 WIAT-II UK - Achievement Assessment Results**

Child	WIAT-II UK Index scores							
	Reading Composite			Mathematics Composite		Written	Oral Language Composite	
	Word Reading	Reading Comprehension	Pseudoword Decoding	Numerical Operations	Mathematical Reasoning	Spelling	Listening Comprehension	Oral Expression
Minnie (age 7)	<b>86</b> 18 92 – 90			<b>97</b> 42 84 – 110	<b>88</b> 25 80 - 96	<b>78</b> 8 71 - 85	<b>85</b> 16 73 - 97	<b>81</b> 10 71 - 91
Jeff (age 7)	<b>81</b> 10 77 – 85	<b>82</b> 12 76–88	<b>92</b> 30 88 – 96	<b>98</b> 45 85 – 111	<b>72</b> 3 64 – 80	<b>90</b> 25 83 – 97	<b>79</b> 8 67-91	<b>73</b> 4 63 – 83
Pippa (age 6)	<b>102</b> 55 99 - 105	<b>108</b> 70 103 - 113		<b>103</b> 58 92 - 114	<b>90</b> 25 82 - 98	<b>96</b> 39 89 - 103	<b>88</b> 21 76 - 100	<b>105</b> 61 95 - 115
Paul (age 8)	<b>108</b> 70 104-112	<b>101</b> 53 94-108	<b>109</b> 73 105-113	<b>104</b> 61 95-112	<b>101</b> 53 93 - 109	<b>103</b> 58 96 - 110	<b>97</b> 42 85-109	<b>115</b> 94 105-125
Simon (age 8)	<b>75</b> 5 71 – 79	<b>81</b> 10 75 – 87	<b>77</b> 6 73 – 81	<b>95</b> 37 82 – 108	<b>97</b> 42 89 – 105	<b>76</b> 5 69 - 83		

KEY	
<b>100</b>	<b>Standard Score</b>
50	<i>Percentile Score</i>
96 -104	Confidence Interval (95%)



### **Reading Composite**

Two children (Jeff and Simon) scored in the below average range for Reading and Reading Comprehension. Jeff (who has additional classes for phonics) scored in the average range for Pseudoword Decoding, a phonological decoding activity. A third child (Minnie) scored right at the lower end of the average range for reading (with a standard score of 86) and did not wish to participate in any further reading activities, which he finds difficult. No scores in Reading Comprehension or Pseudoword Decoding are therefore presented for Minnie.

Pippa and Paul scored in the middle of the average range or better in the Reading and Reading Comprehension tasks. Both these children receive individual tuition in literacy every day, funded by the Pupil Premium.

Three children (Minnie, Jeff & Simon) therefore have difficulties in reading related activities, despite having scored in the average range on the Verbal Comprehension Index of the cognitive assessment.

### **Mathematics Composite**

All five children scored close to the middle of the average range for Numerical Operations, where they are required to carry out basic numerical operations using pencil and paper. Pippa, Paul and Jeff receive additional numeracy classes; Pippa and Paul have individual tuition funded by Pupil Premium.

Simon and Minnie do not receive additional numeracy tuition. Both of them reported enjoying maths (and strongly disliking literacy). In the Mathematical Reasoning subtest, all children apart from Jeff scored in the average range.

### **Writing (Spelling)**

Two children (Minnie & Simon) scored in the below average range for spelling. Jeff scored at the lower end of the average range; he has additional literacy classes in a small group. Pippa and Paul scored in the average range for spelling; they have individual tuition in literacy.

### **Oral Language (Listening Comprehension & Oral Expression)**

On the Listening Comprehension subtest, one child (Jeff) scored in the below average range and two children (Minnie & Pippa) scored right at the lower end of the average range (85 & 88 respectively).

On the Oral Expression subtest, Jeff and Minnie scored in the below average range, whilst Pippa and Paul (who have additional classes in literacy) did well, scoring more highly than they did in the Listening Comprehension section.

### **Conclusion**

Without individual tuition, the children scored in the bottom third of percentile ranks for all reading and spelling activities. Apart from one child (Paul) they also **all** scored in the lower third of percentile ranks for Listening Comprehension. In contrast, all children tended to do well in basic numeracy, whether or not they had additional interventions.

### **8.1.3 NEPSY**

This considers skills in six areas: Attention & Executive Functioning, Memory & Learning, Language, Visuospatial Processing, Sensorimotor skills and Social Perception.

**Table 8.3 NEPSY-II Assessment Results**

**“Attention & Executive Functioning” scaled scores (average range = 8 - 12) and percentile ranks (99.9 = the highest rank)**

Child	Attention & Executive Functioning															Statue (age 6 only)
	Animal Sorts (age 7+)			Clocks (age 7+)	Design Fluency	INHIBITION										
	Total Correct Sorts	Total Errors (% rank)	Combined			Naming			Inhibition			Switching			IN Total Errors	
				Completion Time	Total Errors (% rank)	Combined	Completion Time	Total Errors (% rank)	Combined	Completion Time	Total Errors (% rank)	Combined				
Minnie	6	26-50	6	11	11	2	2-5	2	6	6-10	5	11	<2	5	1	-
Jeff	7	51-75	7	2	9	7	<2	3	11	6-10	7	11	<2	5	1	5
Pippa	N/A			N/A	10	9	11-25	7	11	>75	13	11	51-75	11	11	
Paul	9	26-50	9			4	<2	2	9	6-10	6	10	<2	5	2	

**“Memory & Learning” scaled scores and percentile ranks**

Child	Memory & Learning																	
	List Memory Total	Memory for Designs				Memory for Faces			Memory for Names			Narrative Memory			Sentence Repetition	Word List Interference		
		Immediate		Delayed		Immediate	Delayed	Cont***	Imm	Delay	Total	Recall	Recog (%rank)	Con**		Repetition	Recall	Con
		Sca	Con*	Sca	Con*													
Minnie	10	10	13	6	3	11	9	12										
Jeff	6	8	7	6	7	10	11	11	8	8	7	6	51-75	4	7	9	1	1
Pippa		5	8			13	7	5	10	8	9	8	>75	6		10	15	15
Paul		7	9									10	51-75	10		11	10	10

\* Memory for Designs: Con = Contrast Scores: **Immediate**: Content scaled score vs Spatial scaled score; **Delayed**: Immediate vs Delayed scaled scores

\*\* Narrative Memory Contrast Score: Free & Cued Recall scaled score vs Recognition percentile rank

\*\*\* Memory for Faces Contrast Score: Immediate vs Delayed scaled scores

**“Language” scaled scores and percentile ranks**

Child	Language								
	Comprehension of Instructions	Phonological Processing	Repetition of Nonsense Words	Oromotor Sequences (% rank)	Speeded Naming			Word Generation	
					Total Completion Time	Total Correct (% rank)	Combined	Semantic Total	Initial Letter Total
Minnie	13								
Jeff	9	9		11 - 25	11	26 – 50	10	11	9
Pippa	11								
Paul									

**“Visuospatial Processing” scaled scores and percentile ranks**

Child	Visuospatial Processing					
	Arrows	Block Construction	Design Copying		Geometric Puzzles*	Route Finding (% rank)
			Scaled Score	Global v Local Contrast score		
Minnie	12	14	16	8	7	
Jeff	6	3	9	6	<2 (% rank)	26 - 75
Pippa	9	13				
Paul		8				

\* Geometric Puzzles scores are scaled scores for children aged 7 and above, but percentile ranks are for younger children.

**“Social Perception” scaled scores and percentile ranks**

Child	Social Perception								
	Affect Recognition							Theory of Mind	
	TOTAL score	Happy Errors (% rank)	Sad Errors (% rank)	Neutral Errors (% rank)	Fear Errors (% rank)	Angry Errors (% rank)	Disgust Errors (% rank)	Verbal (% rank)	Total Scaled score
Minnie	11	2 - 5	2 - 5	51 - 75	<2	51 - 75	26 - 50		
Jeff	10	>75	2 - 5	>75	11 - 25	>75	26 - 50	51 - 75	9
Pippa	10	51 - 75	26 - 50	26 - 50	11 - 25	2 - 5	>75	51 - 75	11
Paul	5	26 - 50	26 - 50	2 - 5	51 - 75	51 - 75	26 - 50	26 - 50	2-5
									(% rank)

I was unable to complete all subtests for all children within the time I had, but focussed on Attention & Executive Functioning, Memory & Learning and Social Perception, as deficits in these areas are commonly cited in the literature. Where only the two main research children (Minnie and Jeff) completed the tasks, these are commented upon in Sections 8.6 (p291).

Three children completed the Attention & Executive Functioning section and apart from one score of 9 on 'Animal Sorts' for Paul, all children scored in the below average range on the combined scores (light shading). They tended to proceed quickly but make several errors.

Four children completed the Memory & Learning section. Two scored in the average range for immediate recall of Memory for Designs Faces / Names, but two obtained a lower score on the delayed tasks and two obtained a below average score on immediate recall of Memory for Designs.

Four children completed the Social Perception Section and three scored in the average range. The pattern of errors was quite variable, with only the faces showing 'Fear' leading to a high number of errors for all the children.

The children all scored in the average range for Comprehension of Language. This subtest requires a child to look at pictures, then point to an item or items that match the spoken instruction. The children could for example "Point to the one that is not a cross and not blue or yellow" (e.g. a red circle or square). I thought that this subtest would not be too difficult for the children, as they had a good

knowledge of shapes, and they often repeated my instructions to help them remember.

### **Conclusion**

These tasks were planned in order to gain information for intervention plans to support the children's learning. The results for the four children were brought together to see if there are any common patterns. The main observation I would make is that the Inhibition task was a difficulty for all the children (but less so for Pippa), as was delayed recall during the memory tasks. Three children did not have difficulties in the area of Social Perception, including Theory of Mind, but Paul did. (As a young child, he was probably the most socially isolated research child, as Jeff is from a large family.) Three of the children are Looked-After and have been in good foster-care placements for at least a year.

#### **8.1.4 Ideal Self**

I completed this with Jeff and Simon.

Jeff found this task extremely hard to do, finding it difficult to bring descriptive words to mind. He also found it hard to be reflective and think about someone he would not like to be like and also, what he might find helpful in school. For his Ideal Self, he drew himself and described himself as 'great', 'good' and 'the best' and said he liked the children on his table and playing out with the Year 6 children. At home, he said he liked playing out with his siblings and the other children he lives with.

Simon related his responses very much to his own life experiences, with his Non-ideal Self engaging in angry, aggressive behaviour and 'being horrible to people',



because 'that is what he hears and sees around him'. He said this person likes to get revenge on people who hit him. In contrast, his Ideal Self is always happy and nice to people around him. He said that in the future, he would like to be like his granddad, who is funny. He hoped that when he is older, he would 'have an allotment like granddad, be married and have kids'. His Ideal Self had become a nice person because he had kept on being nice to people and they were nice to him, so he kept being nice back. On a scale of 1 to 10, where 10 is the Ideal Self, Simon placed himself at 6. He thought that what would help him move more towards 10 would be something to help him concentrate, listening to his teacher more and following instructions more often. He also thought that he would need help to stop him becoming angry when other children are mean to him, because he hits them. He explained that his nan (carer) doesn't always let him play out because of this.

### **Conclusion**

I thought that Jeff seemed very much to 'live in the moment that exists right now' and when I spoke to his foster-carer, she said that his sense of time was extremely poor; he did not really seem to know what time of day it is. He is generally a happy boy, who receives many smiles and encouragement from the people around him. I did not ever see him unhappy or angry. I thought that Jeff's self-regulation skills are generally supported by other people (discussed further in section 8.7.2, p302). Simon has been with his grandparents for almost five years and I thought that his Ideal Self responses indicate that they are a source of happiness and comfort to him – that other people are seen as trustworthy. He is however aware that not everyone is like this and other people enjoy violence because that is what they

have seen. He was far more reflective about himself and said that when other people say mean words to him, he gets angry and hits them. His grandmother expressed concern about him and said that 'he thinks about things too much', and then he 'pops' – he becomes very upset and angry, suggesting his behaviour is strongly linked to thoughts, without much inhibition of these thoughts or behaviour.

## **8.2 Adult-completed data relating to the research children**

The following sections will present data for the ABAS-II, SDQ and the CCC-2.

These are questionnaires completed by teachers and carers.

### **8.2.1 ABAS-II**

The literature review identified that difficulties in adaptive skills are often apparent in children with developmental delays. A purpose of the ABAS-II is to describe a child's adaptive behaviour in three domains (Conceptual, Practical & Social) and use this to identify strengths and weaknesses. All scores were examined for patterns. Teachers completed the forms at the end of the school year.

**Table 8.4 ABAS-II - Adaptive Behaviour – TEACHERS**

CHILD	ABAS-II - Adaptive Behaviour												
	Conceptual			Social		Practical				Composites			
	Comm- unication	Functional Academics	Self Direction	Leisure	Social	Comm- unity Use	School Living	Health & Safety	Self Care	Conceptual	Social	Practical	GAC
Minnie	6	5	1	3	3	1	1	2	11	<b>70</b> 2 64 - 74	<b>66</b> 1 61 - 71	<b>63</b> 1 59 - 67	<b>64</b> 1 61-67
Jeff	3	8	4	9	8	5	8	10	10	<b>75</b> 4.8 70 - 80	<b>92</b> 29.7 86 - 98	<b>92</b> 29.7 86 - 98	<b>86</b> 17.5 83-89
Pippa													
Paul	9	10	11	11	11	5	9	5	10	<b>100</b> 50 96 - 104	<b>101</b> 53 96-106	<b>86</b> 18 82 - 90	<b>94</b> 34 91-97
Simon	3	4	7	9	10	5	3	9	8	<b>72</b> 3.1 67 - 77	<b>97</b> 42.1 91-103	<b>84</b> 14.3 78 - 90	<b>83</b> 12.9 80-86

**Scaled scores** are shown for the **Conceptual, Social & Practical skills**. The average range is 8 - 12

KEY for Composite Standard Scores	
GAC = General Adaptive Composite	
<b>100</b>	<b>Standard Score (average range 85 – 115)</b>
50	Percentile Score (highest rank is 99.9)
96 -104	Confidence Interval (95%)

**Table 8.5 ABAS-II - Adaptive Behaviour – CARERS**

CHILD	ABAS-II - Adaptive Behaviour												
	Conceptual			Social		Practical				Composites			
	Comm-unicatio n	Functional Academics	Self Directio n	Leisur e	Socia l	Comm- unity Use	Schoo l Living	Healt h & Safet y	Self Car e	Conce ptual	Social	Practic al	GAC
Minnie	7	13	9	8	7	10	9	7	13	<b>97</b> 42.1 91 - 103	<b>89</b> 23.2 82 - 96	<b>101</b> 52.7 94 - 108	<b>97</b> 42.1 93- 101
Jeff	1	2	1	3	1	1	1	2	3	<b>53</b> 0.1 48 - 58	<b>61</b> 0.5 54 - 68	<b>46</b> <0.1 41 - 51	<b>46</b> <0.1 43 - 49
Pippa	9	10	4	11	7	4	7	10	8	<b>87</b> 19.3 82 - 92	<b>96</b> 39.5 89-103	<b>86</b> 17.5 80 - 92	<b>87</b> 19.3 83 - 91
Paul	2	5	1	3	1	1	1	2	1	<b>63</b> 1 58 - 68	<b>61</b> 0.5 54 - 68	<b>42</b> <0.1 37 - 47	<b>48</b> <0.1 45 - 51
Simon													

Scaled scores are shown for the Conceptual, Social & Practical skills. The average range is 8 - 12

KEY for Composite Standard Scores	
GAC = General Adaptive Composite	
<b>100</b>	<b>Standard Score (average range 85 – 115)</b>
50	Percentile Score (highest rank is 99.9)
96 -104	Confidence Interval (95%)

**Table 8.6 ABAS-II Comparison of composite scores between Teachers and Carers**

CHILD	Conceptual		Social		Practical		GAC	
	Carer	Teacher	Carer	Teacher	Carer	Teacher	Carer	Teacher
Minnie	97	70	89	66	101	63	97	64
Jeff	53	75	61	92	46	92	46	86
Pippa	87		96		86		87	
Paul	63	100	61	101	42	86	48	94
Simon		72		97		84		83

Similarities and Differences between the children

The teachers of Jeff and Paul rated their skills more highly than their foster-carers, although Jeff’s scores from his teacher were still low. When I spoke to their carers, they tended to see Jeff and Paul as being quite vulnerable children and needing high levels of supervision at home. All the carer composite scores for Jeff and Paul fell in the ‘Extremely Low’ range, below the second percentile (dark shaded in Table 8.6).

In Table 8.4, **teachers** rated all the children as ‘below average’ in the **Community Use** subtest (darker shading), which considers independence skills in the wider community, such as using the school library, respecting property, crossing the road and carrying small change to buy snacks.

The scores from the **teachers** also tend to be low in the areas of **Communication** and **Self Direction** (lighter shading). Self-Direction includes emotional self-control (e.g. not losing temper when disagreeing), working independently, being organised, completing tasks in a timely manner and maintaining perseverance on

difficult tasks. Communication involves skills such as listening, turn-taking, good use of social gesture, appropriate eye-contact and sociable conversations.

**Teacher**-rated GAC scores fell in the below average range for two children (Minnie & Simon) and right at the lower end of the average range for Jeff (shaded).

In Table 8.5, **carers** rated all the children as below average in the Social subtest (darker shading). Items relate to appropriate, stable friendships, showing empathy, showing good manners and complimenting others. **Carers** rated all the Looked-After children (Jeff, Pippa and Paul) as below average in **Self-Direction**, **Community Use** and **School Living** (shaded). School Living relates to a variety of activities that reflect school involvement, such as bringing appropriate equipment, tidying up, keeping things in the classroom neat and tidy and remembering homework.

(Minnie's scores are slightly higher in this table; he has been returned to the care of his mother, which may explain the difference - she has perceived him as having good adaptive skills.)

Areas of commonality between teachers and carers were difficulties in

**Communication**, **Self-Direction** and **Community Use**.

Areas of strength identified by teachers were Leisure, Social and Self-Care.

It was difficult to see an area of strength identified by all the carers, as Jeff and Paul were given consistently low scores, and difficult to see an area of strength identified by all teachers, as Minnie's teacher gave him consistently low scores.

### 8.2.2 SDQ

The results for the five children were quite similar (Tables 8.7 & 8.8, below). The child who is experiencing the most difficulties in school in terms of behavioural difficulties (Minnie) scored in the 'Very High' range in the 'Total Difficulties' scale by both his teacher and carer (mother). Pippa and Minnie were the only two children to obtain this pattern. However, on the Pro-Social behaviour scale, Minnie's mother rated him as 'close to average', whereas his teacher rated him as 'very low'. There was not good agreement between teacher and carer for Simon either, with Simon having far fewer difficulties when rated by his teacher (apart from Hyperactivity, which was similar). There was not good agreement between teacher and carer on the Externalising Scale / Pro-Social behaviour for Paul.

For all children:

- All five children obtained a score in the top 10% for 'Total Difficulties', obtained by either teacher or carer ratings (four in the top 5%) and two obtained this score with both teacher and carer.
- Four of the five children obtained a score in the top 5% for 'Conduct Problems', obtained by either teacher or carer ratings.
- Four of the five children obtained a score in the top 10% for 'Hyperactivity', obtained by either teacher or carer ratings
- Four of the five children obtained a score in the 'Close to Average' range as rated by their teacher (Paul & Simon) or carer for Pro-Social behaviour.

It is concerning to see that all the children have scores in the top 10% for Total Difficulties, as scores are linked to later mental health problems.

**Table 8.7 SDQ Scores – “Problems” scales**

Child	R	Externalising Problems								Internalising Problems							
		Conduct problems				Hyperactivity				Emotional Symptoms				Peer Problems			
		Close To Average	Slightly Raised	High	Very High	Close To Average	Slightly Raised	High	Very High	Close To Average	Slightly Raised	High	Very High	Close To Average	Slightly Raised	High	Very High
Minnie	C		3					8		2						4	
	CT				8				10	2				2			
Jeff	C	0					6			1				1			
	CT	2							10	0					4		
Pippa	C				8			8			4						7
	CT	2					5				5				4		
Paul	C				8			8		3				2			
	CT	2				3				3				1			
Simon	C				6	5							6				6
	CT	0				5				0				0			

SDQ scores are on a continuous scale, but can be categorised: Very High = top 5%; High = next 5-10%; Slightly raised = next 10% and Close to average = 80% The highest score is 10 and the lowest score is 0.

Key	
R	Respondent
C	Main Carer
CT	Class Teacher



**Table 8.8 SDQ scores: Pro-social Behaviour & Total Difficulties**

Child	R	Pro-Social Behaviour				Total Difficulties				Impact			
		Close To Average	Slightly Lowered	Low	Very Low	Close To Average	Slightly Raised	High	Very High	Close To Average	Slightly Raised	High	Very High
Minnie	C	8							17				5
	CT				3				22				6
Jeff	C	8				8					1		
	CT		5					16					3
Pippa	C		7						26				4
	CT		5					16			1		
Paul	C			6					21			2	
	CT	10				9				0			
Simon	C				5				22				4
	CT	10				3				0			

SDQ scores are on a continuous scale, but can be categorised: Very Low = top 5%; Low = next 5%; Slightly Lowered = next 10% and Close to Average = 80%

Impact scores are 0-6 (Teachers) and 0-10 (Carers). Categories: Very High = 3-10 (Carers) & 3-6 (Teachers); High = 2; Slightly Raised = 1 and Close to Average = 0

### 8.2.3 Children's Communication Checklist - Second Edition

In the General Communication Composite (Table 8.10 below), any score at or below 54 represents the bottom 10%.

- Every child obtained at least one score below 54 in the ratings given by either a teacher or a carer.
- One child (Jeff) scored below 54 on both Teacher and Carer ratings.
- No children scored above 55 for both teacher and carer ratings.
- Three children obtained at least one score above 55 (Minnie on the carer ratings (mother) and Simon & Pippa (teacher ratings)).

A score at or below 45 represents the bottom 5%.

- Three out of five children obtained at least one score below 45 in the ratings given by either a teacher or a carer.
- One child, Minnie scored below 45 on the teacher ratings
- Two children (Paul & Simon) scored below 45 on the carer ratings

A score around the 10<sup>th</sup> percentile / a scaled score of 5 is a “cause for concern” if there are **3 or more scales** on this percentile. **Every** child fell into this category for either teacher ratings **or** carer ratings, and Jeff fell into this category for both.

Two or more scores at or below the 5<sup>th</sup> percentile is usually taken to represent a profile of communication difficulties of “clinical significance”. Every child apart from Pippa fell into this category for either teacher ratings **or** carer ratings. Jeff & Minnie fell into this category for both.

On the two social scales (Social Relations and Interests<sup>1</sup>) Minnie has scores at the 10<sup>th</sup> percentile or less on **both** teacher and carer ratings; Simon, and Paul were rated at the 10<sup>th</sup> percentile or less by their carers.

I analysed all the responses together, to see if there were common statements on which all children were rated as having difficulties, but this was not really the case. Two or three children might well obtain a raw score '3' on a particular item, but then another one or two might score '0' or '1'. (Scores of 0 on the first 50 items indicate no problems; 1-3 indicate increasing frequency of problems.) Each child did show their own pattern of strengths and difficulties. I was struck however by the overall pattern for all the children – although they might not all score highly on specific statements, they did tend to have (problem) scores of 1, 2 or 3 on particular statements, especially those listed above and when these statements are read together, the picture that emerges is that these children do not talk much about friends, or about their plans for the future, they tend to be preoccupied and they tend to be left out. (I would be interested to put all their scores into a correlation matrix to see how much this is the case.)

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<sup>1</sup> Items on these scales include statements such as:

- With familiar adults, seems inattentive, distant or preoccupied.
- Is left out of joint activities by other children
- Is babied, teased or bullied by other children.
- Talks about his / her friends and shows an interest in what they do
- When given the opportunity to do what s/he likes, chooses the same favourite activity.
- Reacts positively when a new and unfamiliar activity is suggested.
- Shows flexibility in adapting to unexpected situations, e.g. does not get upset if planned to play on the computer, but it isn't working.

In the structural language scales (B to D), all the children scored 3 or 2 on the 'use of abstract words' and 'using categories'. No child scored 0 on both teacher and carer ratings of their ability to recount a recent event in sequence, and talk clearly about past / future events (i.e. no child is without problems in this area). This difficulty is likely to have a detrimental impact on their ability to engage successfully in speaking and writing tasks.

**Table 8.9 Children’s Communication Checklist 2 – scaled scores**

Child	Speech		Syntax		Semantics		Coherence		Inappropriate Initiation		Stereotyped Language		Use of Context		Non-Verbal Communication		Social Relations		Interests	
	<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>		<b>E</b>		<b>F</b>		<b>G</b>		<b>H</b>		<b>I</b>		<b>J</b>	
	CT	Carer	CT	Carer	CT	Carer	CT	Carer	CT	Carer	CT	Carer	CT	Carer	CT	Carer	CT	Carer	CT	Carer
<b>Minnie</b>	9 37	9 37	7 22	6 15	7 19	7 19	<b>4</b> <b>4</b>	9 42	<b>4</b> <b>1</b>	6 10	5 6	7 23	<b>3</b> <b>1</b>	<b>5</b> <b>5</b>	<b>2</b> <b>1</b>	8 33	<b>3</b> <b>2</b>	<b>1</b> <b>&lt;1</b>	6 10	8 36
<b>Jeff</b>	10 45	7 22	<b>3</b> <b>3</b>	<b>3</b> <b>3</b>	5 6	7 19	5 8	5 8	6 10	8 36	5 6	8 36	<b>5</b> <b>5</b>	<b>4</b> <b>3</b>	5 9	7 22	8 31	6 14	9 50	6 10
<b>Pippa</b>	13 91	8 30	5 10	4 6	6 12	6 12	6 14	6 14	8 36	6 10	11 61	7 23	7 23	<b>5</b> <b>5</b>	5 9	5 9	6 14	6 14	9 50	9 50
<b>Paul</b>		5 10		4 6		5 6		<b>2</b> <b>1</b>		<b>3</b> <b>1</b>		<b>2</b> <b>&lt;1</b>		<b>2</b> <b>&lt;1</b>		<b>2</b> <b>1</b>		<b>0</b> <b>&lt;1</b>		<b>5</b> <b>5</b>
<b>Simon</b>	9 37	<b>0</b> <b>&lt;1</b>	4 6	<b>2</b> <b>2</b>	7 19	<b>4</b> <b>4</b>	7 22	<b>4</b> <b>4</b>	9 49	6 10	9 44	<b>4</b> <b>3</b>	6 12	<b>5</b> <b>5</b>	10 54	<b>4</b> <b>5</b>	10 52	<b>2</b> <b>1</b>	10 63	<b>5</b> <b>5</b>

KEY for Scaled Scores	
10	Scaled Score (mean = 10; SD = 3)
50	Percentile Score (highest rank is 99.9)

Guidance from the CCC2 manual (Bishop, 2003, p20)

- Scores at or above the 16<sup>th</sup> percentile / a scaled score of 6 are regarded as falling within normal limits.
- If two or more scales have scores at or below the 5<sup>th</sup> percentile, this suggests the child has communication problems of clinical significance. These are shown in **bold figures** in Table 8.9 above.
- Scores below the 6<sup>th</sup> percentile on both the Social Relations & Interests scales, combined with a score off <55 on the GCC may indicate a communicative profile associated with an autistic spectrum condition. One child (Paul) has this profile on Carer rating.

**Table 8.10 Children’s Communication Checklist 2 – Composite scores**

Child	Aspects of language (structure, vocabulary & discourse) <sup>1</sup>  (scales A-D)		Pragmatic aspects of communication <sup>2</sup>  (scales E-H)		General Communication Composite <sup>3</sup>  (GCC)  (scales A - H)		Social Interaction Deviance Composite <sup>4</sup>  scales (E,H, I, J) – (A,B,C,D)	
	CT	Carer	CT	Carer	CT	Carer	CT	Carer
<b>Minnie</b>	27	31	14	26	<b>41</b> 4	<b>57</b> 13	<b>-12</b>	<b>-8</b>
<b>Jeff</b>	23	22	21	27	<b>47</b> 6	<b>49</b> 7	<b>5</b>	<b>5</b>
<b>Pippa</b>	30	24	31	23	<b>61</b> 16	<b>47</b> 6	<b>-1</b>	<b>2</b>
<b>Paul</b>		16		9		<b>25</b> <1		<b>-6</b>
<b>Simon</b>	27	10	34	19	<b>61</b> 16	<b>29</b> 1	<b>12</b>	<b>7</b>

**KEY**

**Composite Score (82 = 50<sup>th</sup> percentile)**

*Percentile Score (highest rank is 99.9)*

Mean score for scales (A-D) and (E-H) is 40

**Notes**

1	“Aspects of language” relates to the structural aspects of language and is the sum of the scaled scores for the Speech, Syntax, Semantics and Coherence scales. These are often impaired in children with a Specific Language Impairment. <b>All children scored below the mean value.</b>
2	“Pragmatic aspects of communication” is the sum of the scaled scores for the Inappropriate Initiation, Stereotyped Language, Use of Context and Non-verbal Communication scales. These cover pragmatic aspects of communication. <b>All children scored below the mean value.</b>
3	The General Communication Composite includes all scales except the ‘Social Relations’ and ‘Interests’ scales. Cut offs below 54 / 45 / 40 represent the bottom 10% / 5% / 3% of children. <b>All children had at least 1 score from either teacher or carer below 54. Three children had a score below 45.</b>
4	The Social Interaction Deviance Composite reflects any mismatch between the sum of (Inappropriate Initiation + Non-verbal Communication + Social Relations + Interests) and the sum of (Speech + Syntax + Semantics + Coherence). A score with negative values indicates disproportionate difficulties in the areas of Inappropriate Initiation, Non-verbal Communication, Social Relations and Interests compared to structural language skills (Speech, Syntax, Semantics and Coherence) and is associated with the communication profile of an autistic spectrum condition (ASC), particularly when the GCC score is below 55. <b>Two children showed this pattern (Minnie [CT rating] &amp; Paul [carer rating] ), but neither have an ASC.</b>

### 8.3 Manchester Child Attachment Story Task

Out of the six children that took part, four of the children have been in good Foster-Care for at least one year. Minnie has been returned to the care of his mother and has been back home with his siblings for a year. Sally was adopted at the age of 17 months, having experienced neglectful caregiving in the first year of life.

All the children indicated throughout all the vignettes that they saw their primary carer as the person they would go to for comfort when they felt distressed, and all were given a rating of a 'secure' attachment style.

At the end, Minnie's 'free play' was full of violence and included his mother falling off the roof of their house, children being pushed through windows and all of them dying.

Of the control children, three chose their primary caregiver to be their mother, and one (classmate MT) chose his father. His stories during the vignettes were charming!

### 8.4 Cortisol

The salivary cortisol results are presented below, in Table 8. 11 and are largely presented as comparative data. Information from Salivette has the following ranges of cortisol concentration in a sample of 285 children aged 8:

Morning	0.084 – 0.839ug/dL
Evening	None detected – 0.215ug/dL

**Table 8.11 Salivary Cortisol concentrations**

<b>Child</b>	<b>Timepoint</b>	<b>Cortisol concentration (nmol/L)</b>	<b>Cortisol concentration (ug/dL)</b>
<b>Minnie</b>	Waking	16	0.580
	Waking + 30 mins	18.1	0.656
	11.30am	2.1	0.076
	Bedtime	0.9	0.033
<b>Jeff</b>	Waking	6.8	0.246
	Waking + 30 mins	5.9	0.214
	11.30am	1.6	0.058
	Bedtime	No saliva in tube	
<b>Pippa</b>	Waking	6.2	0.225
	Waking + 30 mins	8.8	0.319
	11.30am	1.5	0.054
	Bedtime	0.47	0.017
<b>Paul</b>	Waking	11.1	0.402
	Waking + 30 mins	6.6	0.239
	11.30am	1.2	0.043
	Bedtime	2	0.072
<b>Simon</b>	Waking	5	0.181
	Waking + 30 mins	5.4	0.196
	11.30am	2.1	0.076
	Bedtime	0.55	0.020
<b>Sally</b>	Waking	No saliva in tube	
	Waking + 30 mins	6.5	0.236
	11.30am	No saliva in tube	
	Bedtime	No saliva in tube	
<b>CONTROLS</b>			
<b>Classmate MT</b>	Waking	10.4	0.377
	Waking + 30 mins	13.8	0.500
	11.30am	3.9	0.141
	Bedtime	0.8	0.029
<b>Classmate JT</b>	Waking	3.8	0.138
	Waking + 30 mins	5.6	0.203
	11.30am	1.5	0.054
	Bedtime	0.93	0.034
<b>Friend Joe</b>	Waking	6.1	0.221
	Waking + 30 mins	6.1	0.221
	11.30am	1.7	0.062
	Bedtime	0.73	0.026
<b>Friend Joy</b>	Waking	7.9	0.286
	Waking + 30 mins	2.3	0.083
	11.30am	2	0.072
	Bedtime	0.43	0.016



All children showed the expected pattern of an early morning rise in cortisol, followed by a steady decrease during the day (Methods: Section 7.6.2). There were no 'flattened' profiles of any of the children in care, and no child has cortisol levels outside the published range. Notable readings are:

- Paul, who has a high evening level, compared to all other children.
- Minnie, who had the highest readings of any child upon waking.
- His classmate (MT), who also had high readings in the morning. (Their cortisol samples were collected just as their primary school finished moderation for Year 2 SATs.)

De Bellis & Baum (1999) found that children who had been abused as infants had elevated levels of cortisol throughout the day, but the results above indicate that well-cared for children may also have high readings throughout the day. MT lives in a very loving family with a high degree of parental involvement and he is doing well in school.

## **8.5 Heart-Rate data**

This section will present the values for heart-rate and / or Respiratory Sinus Arrhythmia (RSA), an indication of vagally-mediated heart-rate variability (HRV).

### **8.5.1 Data at home**

Minnie wore his Lifetouch<sup>®</sup> heart-rate monitor from between 6pm in the evening, to 3pm the following afternoon. Two other classmates (ME and MB) wore their Lifetouches<sup>®</sup> in school from 9-9.30am until the same time the following morning. Baseline data were therefore recorded at home for these three children.

Jeff plus one other classmate (JT) wore their Lifetouches<sup>®</sup> from between 5.30-7pm in the evening, to 3pm the following afternoon. Baseline data were therefore recorded at home for these two children.

Sally (the 6<sup>th</sup> research child) wore her Lifetouch<sup>®</sup> from 2pm in the afternoon to 2.37pm the following day, so baseline data at home were also recorded for her.

Home baseline data were therefore recorded for 6 children.

I calculated baseline RSA values for five minutes at a time every half hour between 9-11.30pm when the children were hopefully relaxing, going to bed and finally asleep. I did calculate a mean and standard deviation for these values, but the last two values are more likely to show the resting RSA.

These are shown in Table 8.16.

### 8.5.2 Data at school

In Minnie's class, 15 volunteers wore their Lifetouches<sup>®</sup> in the classroom. I had 6 PSEs (tablets), so the heart-rate monitoring was conducted over three days in school, two days just before the SATs in May and one day afterwards, in late June, because I could only collect data for 6 children at a time.

The children arrived in school around 9am, so the volunteer children had their Lifetouches<sup>®</sup> placed individually between 9 to 9.45am. The children follow a similar timetable each day, with break at 10.50am. RSA values were calculated every ten minutes during the first two hours of school.

In Jeff's class, 11 children volunteered to wear Lifetouches<sup>®</sup>, so this was carried out over two consecutive days in April. After registration and some teacher input, the children have an hour in the classroom, with break at 10.15am. I decided to calculate RSA every five minutes during the first hour of school, as Jeff was writing, a task he finds difficult and I wondered whether RSA values would reflect difficulties in concentrating over shorter time scales.

School RSA values are shown in Tables 8.12 and 8.13.

Sally's RSA values were calculated during the first two hours of her school morning (Table 8.14) every ten minutes.

Simon's RSA values were calculated during the last fifteen minutes of lunch and the first half hour of afternoon school, every five minutes (Table 8.14).

**Table 8.12 RSA values in School (Minnie's school)**

Activity	Registration	Teacher Input					Work at Tables				Break- time	
Time->	9.00 - 9.10	9.10 - 9.20	9.20 - 9.30	9.30 - 9.40	9.40 - 9.50	9.50 - 10.00	10.00 - 10.10	10.10 - 10.20	10.20 - 10.30	10.30 - 10.40	10.40 - 10.50	10.50 - 11.00
<b>Child</b>												
Minnie	<b>5.46</b>	<b>5.50</b>	<b>5.15</b>	<b>3.67</b>	<b>4.83</b>	<b>5.04</b>	<b>5.61</b>	<b>5.69</b>	<b>5.99</b>	<b>6.13</b>	<b>4.27</b>	<b>3.07</b>
Control 1		6.67	7.12	7.17	7.8	8.21	8.06	8.03	7.69	7.83	6.3	3.67
Control 2		8.41	8.17	8.26	8.74	8.59	8.58	8.25	8.64	8.42	8.19	6.73
Control 3			7.93	8.06	8.03	8.35	8.33	7.97	8.2	7.91	7.13	6.51
Control 4			6.7	6.56	6.93	6.89	6.48	6.19	6.27	6.06	4.88	4.15
Control 5				7.69	7.54	7.92	7.57	7.44	7.48	7.46	6.28	5.49
<b>DAY 2</b>												
Control 6	6.57	6.91	7.27	7.15	8.00	7.76	8.08	8.14	8.06	8.20	7.57	7.05
Control 7			6.36	6.50	6.51	6.47	6.50	7.05	6.86	6.86	6.45	6.25

Activity	Registration	Teacher Input					Work at Tables				Break- time	
Time->	9.00 - 9.10	9.10 - 9.20	9.20 - 9.30	9.30 - 9.40	9.40 - 9.50	9.50 - 10.00	10.00 - 10.10	10.10 - 10.20	10.20 - 10.30	10.30 - 10.40	10.40 - 10.50	10.50 - 11.00
<b>Child</b>												
Control 8		6.13	6.35	7.02	7.10	7.03	6.67	7.20	6.80	6.75	6.79	5.53
Control 9	6.50	6.79	7.08	7.16	7.55	7.51	6.66	7.33	7.50	7.89	5.86	5.88
<b>DAY 3</b>												
Control 10 (athlete)			5.05	5.54	5.37	5.62	5.50	5.54	5.63	6.19	6.29	6.49
Control 11				7.55	8.67	8.23	7.63	7.80	7.64	7.71	6.17	7.04
Control 12							7.68	7.92	7.44	8.15	5.30	6.45
Control 13			7.03	8.32	8.42	8.34	8.34	7.99	8.09	7.78	6.17	5.94
Control 14		5.39	6.07	6.36	6.09	5.41	5.27	5.55	5.50	5.26	3.89	3.77
Control 15						7.85	7.78	6.46	7.12	7.45	7.17	8.03

Heart period is in the order of milliseconds, so although the finish time is (for example) 9.10am, the start time of the next time period is only milliseconds later, so it is still displayed as 9.10am.

**Table 8.13 RSA values in School (Jeff's school)**

Activity	Registration	Teacher Input	Work at Tables									
Time->	9.15 - 9.20	9.20 - 9.25	9.25 - 9.30	9.30 - 9.35	9.35 - 9.40	9.40 - 9.45	9.45- 9.50	9.50- 9.55	9.55- 10.00	10.00 - 10.05	10.05 - 10.10	10.10 - 10.15
<b>Child</b>												
<b>Jeff</b>	<b>9.00</b>	<b>8.75</b>	<b>8.41</b>	<b>8.40</b>	<b>8.81</b>	<b>8.54</b>	<b>8.29</b>	<b>8.70</b>	<b>8.46</b>	<b>8.42</b>	<b>8.52</b>	<b>8.43</b>
Control 1	5.50	5.32	5.55	6.40	6.59	5.29	5.55	5.42	6.29	5.71	6.21	6.01
Control 2	6.82	6.27	6.27	6.22	6.17	5.55	5.76	6.47	5.85	6.05	6.10	6.06
Control 3	6.89	7.38	6.81	6.78	7.26	7.35	6.53	6.76	7.05	7.06	6.87	7.27
Control 4				7.99	7.17	6.77	7.05	6.38	7.98	7.89	6.91	7.87
Control 5						7.29	6.91	6.98	7.54	7.13	7.17	6.95

Activity	Registration	Teacher Input	Work at Tables									
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Time->	9.15 - 9.20	9.20 - 9.25	9.25 - 9.30	9.30 - 9.35	9.35 - 9.40	9.40 - 9.45	9.45- 9.50	9.50- 9.55	9.55- 10.00	10.00 - 10.05	10.05 - 10.10	10.10 - 10.15
<b>DAY 2</b>												
Control 6	6.93	6.87	6.98	6.78	6.84	7.18	6.50	6.66	6.92	6.96	7.01	7.21
Control 7	7.04	7.12	6.78	6.66	6.37	5.82	5.40	7.44	7.10	7.12	6.57	6.16

Control 8	6.79	6.71	6.74	7.17	7.32	7.20	5.89	6.56	6.27	6.30	6.45	6.06
Control 9	7.10	7.78	7.26	7.75	7.91	7.31	8.07	8.23	7.72	8.13	8.27	7.31
Control 10						5.47	7.82	7.50	7.77	8.07	8.10	7.90
Control 11	7.31	7.31	6.74	6.89	6.56	7.30	7.34	7.01	6.77	6.54	7.28	6.78

**Table 8.14 RSA values for Sally & Simon**

**Sally** (Different school – activities kindly written in an exercise book for me)

Activity	Registration			Assembly			Maths 1:1 lesson			Break- time		
Time->	9.00 - 9.10	9.10 - 9.20	9.20 - 9.30	9.30 - 9.40	9.40 - 9.50	9.50 - 10.00	10.00 - 10.10	10.10 - 10.15 / 10.15- 10.20*	10.20 - 10.30	10.30 - 10.40	10.40 - 10.50	10.50 - 11.00
<b>RSA</b>	<b>5.03</b>	<b>5.48</b>	<b>5.30</b>	<b>5.72</b>	<b>5.28</b>	<b>6.25</b>	<b>5.74</b>	<b>5.93 / 4.60</b>	<b>6.20</b>	<b>4.35</b>	<b>4.51</b>	<b>5.17</b>

\* The ECG file had a clear divide in heart rate variability half way through, so the RSA was calculated separately for each half.

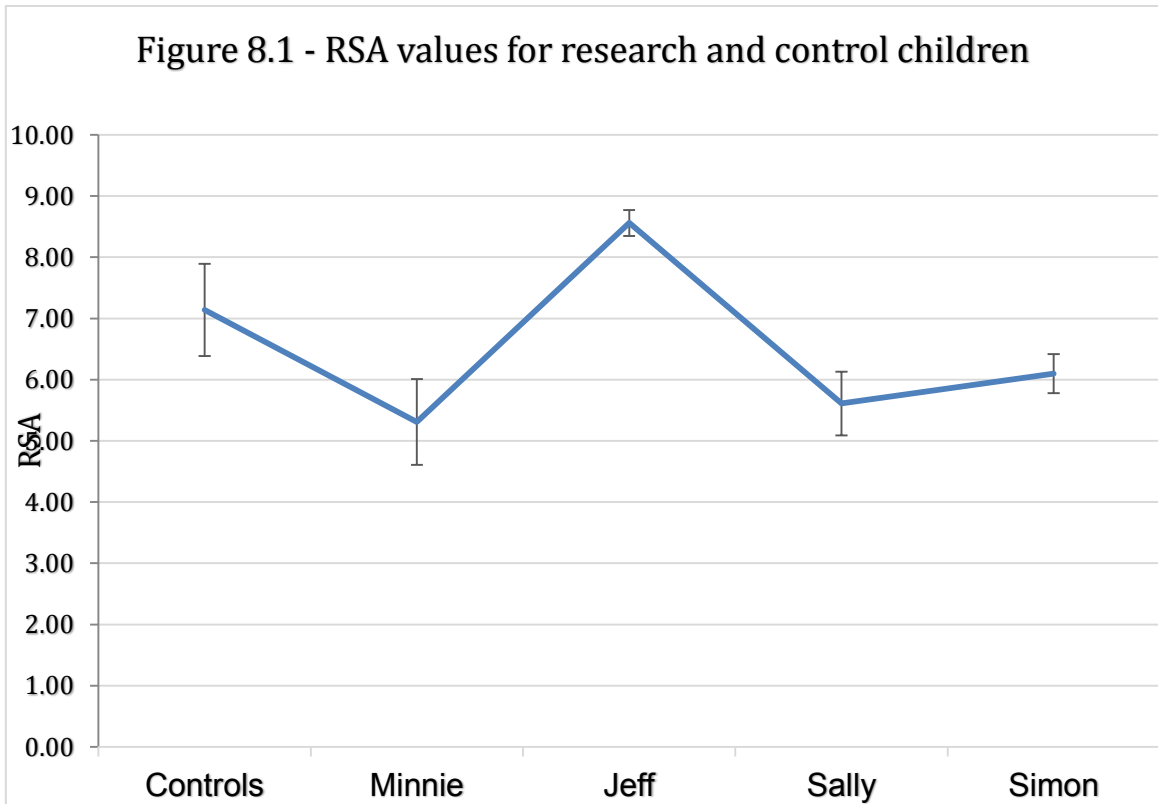
**Simon** (Different school)

Activity	Lunch time					Afternoon class			
Time->	13.00 - 13.05	13.05 - 13.10	13.10 - 13.15	13.15 - 13.20	13.20 - 13.25	13.25 - 13.30	13.30 - 13.35	13.35 - 13.40	13.40 - 13.45
<b>RSA</b>	<b>6.14</b>	<b>5.95</b>	<b>6.59</b>	<b>5.51</b>	<b>5.80</b>	<b>6.16</b>	<b>6.18</b>	<b>6.45</b>	<b>6.08</b>

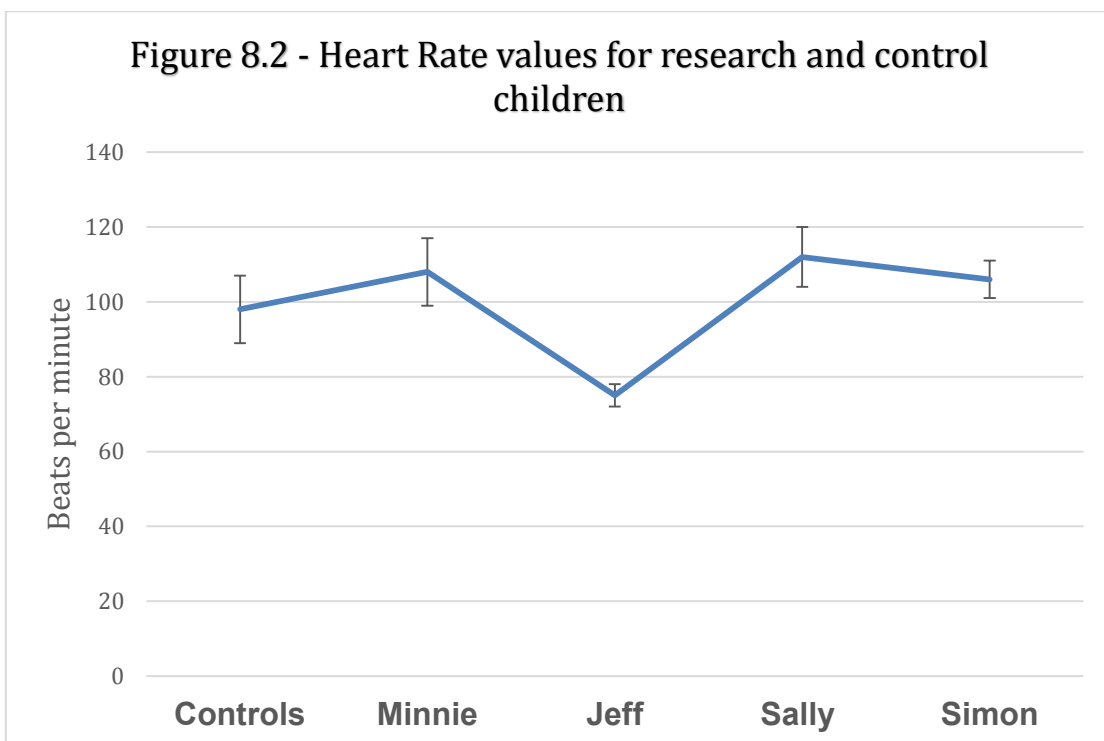


**Table 8.15 RSA values and Heart Rates for all children**

<b>Participant</b>	<b>Average RSA</b>	<b>Range</b>	<b>Average Heart Rate (bpm)</b>
NWP 1	5.82		104
NWP 2	6.13		103
NWP 3	7.00		101
NWP 4	7.06		102
NWP 5	7.14		99
NWP 6	6.90		102
NWP 7	6.63		107
NWP 8	6.62		113
NWP 9	7.74		101
NWP 10	7.78		88
NWP 11	7.03		102
PB 1	7.74		88
PB 2	8.45		84
PB 3	8.10		90
PB 4	6.51		103
PB 5	7.59		93
PB 6	7.73		86
PB 7	6.68		98
PB 8	6.94		101
PB 9	7.34		99
PB 10	5.71		113
PB 11	7.89		81
PB 12	7.80		90
PB 13	8.04		90
PB 14	5.75		112
PB 15	7.41		96
<b>MEAN RSA</b>	<b>7.14</b>		
Standard Deviation	0.755		
Range for RSA		<b>6.385-7.895</b>	
<b>MEAN Heart Rate</b>			<b>98</b>
Standard Deviation			<b>9</b>
Range for heart-rates			<b>89-107</b>
<u>Research Children: Mean scores for RSA &amp; Heart Rate, with standard deviation &amp; range</u>			
<b>Minnie</b>	<b>5.31 +/- 0.70</b>	<b>4.61-6.01</b>	<b>108 +/-9</b>
<b>Jeff</b>	<b>8.56 +/- 0.21 (-8.77)</b>	<b>8.35-8.77</b>	<b>75 +/-3</b>
<b>Sally</b>	<b>5.61 +/- 0.52</b>	<b>5.09-6.13</b>	<b>112 +/-8</b>
<b>Simon</b>	<b>6.10 +/-0.32</b>	<b>5.78-6.42</b>	<b>106+/-5</b>



Figures 8.1 and 8.2 graphically represent the mean scores, plus or minus one standard deviation, from Table 8.15. There are 26 control (comparison) children in total, 11 from NWP school and 15 from PB school.



The mean RSA and heart-rate values exclude break-time, when the children were running round – exercise lowers HRV, but I wanted to examine it during classroom activities only. Minnie’s RSA dropped during the ‘teacher input’ time, when he was required to sit still and listen. At 10.05am, Minnie had to write a story and he found this very difficult; his RSA remained low until assistance was provided, at 10.20am.

Minnie’s and Sally’s mean RSA values plus one standard deviation (SD), were both lower than the 26 control children’s mean RSA values minus one SD. Jeff’s mean RSA value minus one SD was higher than the controls’ mean RSA values plus one SD. A significant difference (in two directions) was found for three of the four research children (Figure 8.1).

Additionally, Jeff’s mean heart-rate plus one SD was lower than the controls’ mean heart-rate minus one SD, also a significant difference for heart-rate (Figure 8.2).

No significant differences were found in heart-rate for Minnie, Sally and Simon. Simon’s RSA and heart-rate do not differ significantly from the control children, although his mean RSA value was the fourth lowest out of 27. (One of the three control children with lower values is a competitive athlete.)

The heart-rate data at home are presented below. There was no significant difference between the home and school values for the three control children, and Minnie. Minnie’s RSA values were low at home and at school.

There was a significant difference between home and school for Sally and Jeff - Sally's and Jeff's RSA scores were higher at home. Jeff's bedtime is 9pm and his heart-rate was very slow after this.

**Table 8.16 RSA values and heart rates at home (evening / night) for 3 research and 3 control children**

<b>Time -&gt;</b>	9.00 – 9.05 pm	9.30 – 9.35 pm	10.00 – 10.05 pm	10.30 – 10.35 pm	11.00 – 11.05 pm	11.30 – 11.35 pm	Mean & Standard Deviation HOME	Mean & Standard Deviation SCHOOL
<b>Research Children</b>								
<b>Minnie</b>	<b>3.39</b>	<b>5.56</b>	<b>5.29</b>	<b>5.89</b>	<b>4.27</b>	<b>4.82</b>	<b>5.17*</b> +/-0.64	<b>5.31</b> +/-0.70
<i>Heart Rate</i>	140	104	103	92	100	96	99	108
<b>Jeff</b>	<b>9.81</b>	<b>9.13</b>	<b>9.64</b>	<b>9.48</b>	<b>9.43</b>	<b>9.60</b>	<b>9.52</b> +/-0.23	<b>8.56**</b> +/-0.21
<i>Heart Rate</i>	58	58	56	62	57	56	58	75
<b>Sally</b>	<b>5.17</b>	<b>6.28</b>	<b>6.52</b>	<b>7.04</b>	<b>6.69</b>	<b>7.00</b>	<b>6.71</b> +/-0.32	<b>5.61**</b> +/-0.52
<i>Heart Rate</i>	121	90	90	84	80	76	84	112
<b>Control Children</b>								
<b>C1ME</b>	<b>6.31</b>	<b>6.74</b>	<b>6.16</b>	<b>8.92</b>	<b>8.97</b>	<b>9.56</b>	<b>7.78</b> +/-1.53	<b>7.74</b> +/-0.40
<i>Heart Rate</i>	97	95	110	66	65	68	84	88
<b>C2MB</b>	<b>8.24</b>	<b>7.90</b>	<b>8.00</b>	<b>9.22</b>	<b>8.18</b>	<b>8.50</b>	<b>8.34</b> +/-0.48	<b>8.45</b> +/-0.20
<i>Heart Rate</i>	85	96	89	75	79	74	83	84
<b>C1JT</b>	<b>6.06</b>	<b>6.39</b>	<b>5.77</b>	<b>6.14</b>	<b>6.24</b>	<b>5.66</b>	<b>6.04</b> +/-0.28	<b>5.82</b> +/-0.46
<i>Heart Rate</i>	85	78	86	79	78	85	82	104

\* Excludes the 9pm figure, when he was probably running around.

\*\* Significant difference between home and school.

## **SECTION 2 – Collation of results for the two main research children**

### **8.6 Summary of results for the two main research children, Minnie & Jeff**

Following the data collection with the two children, I met with staff from each of the two schools and we agreed an intervention plan. The next sections contain a tabulated summary of the data for both children (Table 8.17, below) and a brief descriptive comparison of their strengths and difficulties.

Each child, their intervention plan, the observations I made (and subsequent reflections) and their review will then be discussed separately in their own sections (Minnie: p295, and Jeff: p314); they both presented as quite different children.

#### **8.6.1 Comparison of the two children**

Minnie and Jeff have many strengths, alongside numerous, but different difficulties in school.

- Both Jeff and Minnie enjoyed taking part in the research and as individuals, are friendly and open-hearted children.
- They both enjoyed maths.
- They both scored in the mid to high-average range on the Processing Speed Index of the WISC-IV.
- They both scored in the average range for verbal and non-verbal reasoning skills.

However,

- They both have extremely poor literacy skills in reading and spelling.
- They both have below average scores on the Oral Language Composite of the WIAT-II (Table 8.2 p253). They have difficulties with the structure

and organisation of speech (low scores on the CCC2) and they have difficulty providing sufficient detail in a coherent account in a timely manner when writing in class. They are both very slow, very reluctant writers.

- They both scored in the 'below average' range on the Working Memory Index of the WISC-IV (Table 8.1 p250) they tend to quickly forget spoken instructions.
- They both scored in the below average range on the NEPSY Executive Function (Inhibition) subtest (Table 8.3 p257), and they find it very difficult to pay attention in class. Minnie has a low RSA score (an indication of stress and hence difficulties in maintaining focused attention). Jeff has an RSA score similar to his classmates (which indicates he is not in a physiological state of stress), but he has a very low heart-rate and from my observational data, I would say that he finds it even more difficult to pay attention than does Minnie (maybe also due to poor language skills), as he often gets up and walks around. Both children rarely ask for help.
- Minnie scored close to the middle of the average when rated by his mother on the three skill areas of the ABAS-II (Conceptual, Social and Practical), (Table 8.5 p265) but on the second percentile or below when rated by his teacher (Table 8.4 p264) – a very noticeable difference. His teacher-rated GAC score of 64 fell on the first percentile. Jeff scored below the first percentile across all three skill areas (with a General Adaptive Composite (GAC) of 46) when rated by his carer (to whom he is close) and right at the lower end of the average range on the GAC (86) when rated by his teacher. Both teacher and carer rated Jeff below the

5<sup>th</sup> percentile for Conceptual Skills (Communication, Functional Academics and Self-Direction).

- Jeff scored in the bottom 10% of the General Communication Composite (GCC) on the Children's Communication Checklist (Table 8.9 p274) with both his teacher and carer ratings; he has particular difficulties with time awareness and using time-based language in his speech.
- Both children have difficulties with social skills and with making rewarding and enduring friendships. They both obtained low scores on the Social Relations and Interests scales of the CCC2.
- Jeff was rated as 'average' by his teacher on the Social skills scale of the ABAS-II (Table 8.4 p264), but in school, he does not have reciprocal friendships with children of his own age, tending to hang around on the periphery.
- Minnie is more sociable, did have good reciprocal friendships, but he was seen as having behavioural difficulties (see Meeting 1) in Reception and this has persisted.
- On the SDQ (Tables 8. 7 and 8.8 p269/270), both Minnie and Jeff scored in the Very High, or High range (top 10%) when rated by their teachers, indicating noticeable difficulties in school. Minnie also scored in the Very High range when rated by his carer (mother), whereas Jeff scored Close to Average.

The assessment data reveal several areas representing developmental differences and numerous indicators of difficulties in school.



**Table 8.17 Summary tables for the two main research children**

CHILD	Standard / Scaled / Composite Scores									SDQ*
	Verbal Skills	Non-verbal (Perceptual) Skills	Working Memory	Processing Speed	Reading & Oral Language	Numerical Operations	NEPSY Inhibition	ABAS GAC	CCC GCC	
	WISC-IV (Standard score)	WISC-IV (Standard score)	WISC-IV (Standard score)	WISC-IV (Standard score)	WIAT-II (Standard scores)	WIAT-II (Standard score)	(Scaled scores: Naming/ Inhibition/ Switching)	Composite	Composite	Total Difficulties
	(Average range: 85 - 115)						(Average range: 8-12)			
<b>MINNIE</b>	<b>100</b> 50%	<b>96</b> 39%	<b>83</b> 13%	<b>103</b> 58%	<b>86</b> 18% <b>80</b> 9%	<b>97</b> 42%	<b>N = 2</b> <b>I = 5</b> <b>S = 5</b>	<b>97 / 42%</b> (Carer) <b>64 / 1%</b> (CT)	<b>57 / 13%</b> (Carer) <b>41 / 4%</b> (CT)	<b>17 / H</b> (Carer) <b>22/VH</b> (CT)
<b>JEFF</b>	<b>91</b> 27%	<b>90</b> 25%	<b>80</b> 9%	<b>109</b> 73%	<b>81</b> 10% <b>73</b> 4%	<b>98</b> 45%	<b>N = 3</b> <b>I = 7</b> <b>S = 5</b>	<b>46 / &lt;0.1%</b> (Carer) <b>86 / 17.5%</b> (CT)	<b>49 / 7%</b> (Carer) <b>47 / 6%</b> (CT)	<b>8 / Av</b> (Carer) <b>16/H</b> (CT)

For ease of reference, Percentile scores are shown with a % sign after the number

\*SDQ: Continuous scale VH = Very High (top 5%); H = High (5-10%); Av = Close to average (80%)

## **8.7 Interventions for the two main research children**

The observational data for Jeff and Minnie is tabulated (Tables 8.19 & 8.21) in their sections, below. I observed them once a month formally, but saw them in school each week at the start of the research when we did the assessments together, so I came to know the children quite well. I had involvement with the children for a term and a half, and involvement with the school staff for a year.

I saw Jeff and his Teaching Assistant (TA) each week during June and early July (after the May SATs), when they were doing the Precision Teaching together. I kept in regular contact with Jeff's foster-carer. I also attended meetings in his new school in Year 3, and followed his progress until Easter of Year 3.

I saw less of Minnie himself during June and July, but had regular meetings with the two external professionals who supported Minnie and his family, and we regularly discussed his progress (what is helpful and what hinders progress). Following these discussions, I went into school to consult with his class teacher and TAs and to share ideas about supporting his progress, and this continued until Easter of Year 3.

### **8.7.1 Minnie**

A summary of meetings throughout the year is provided in Table 8.16 below. The full contents are found in Appendix 5.

**Table 8.18 Summary of meetings (Minnie)**

Meeting number and Date	Attended by	Main points
1 June	INCO & both External Consultants	The school 'Behaviour Protocol' was outlined and the assumptions underpinning its efficacy (& how this related to Minnie) were discussed. His behaviour at home, the difficult relationships between mother and children following time in Foster Care / mother's ability to manage his behaviour, were considered in relation to his behaviour in school (he sees 'rough and tumble' play as normal). Intervention Plan drawn up collaboratively.
2 June	INCO & CT	CT outlined her thoughts about why Minnie did not do his work (bad moods /disorganisation & pressure at home). Two further targets / strategies added to the Intervention Plan.
3 June	Both External Consultants	Thought about ways to support his mother, so she could look after the children more effectively & support their educational progress. The past experiences impact a great deal on current views of self-competence. Financial implications of this were discussed alongside the possibility of parent support groups.
4 mid July	Social Care Review	Transition for next year, plans for summer break activities, and literacy were discussed.
5 late July	External Consultant (Counsellor)	Discussed the (sometimes violent) nature of the community in which the school is situated, and how this affects the socialisation of, particularly boys and their bravado / avoiding appearing 'weak'. Also, how observing this might traumatise children. Discussed past activities in the school (making early relationships, from Nursery, with the parents, and more focus on how the children were feeling (including circle time games). Discussed how 'authoritarian' teaching compounded the difficulties of the children and contributed to their being 'labelled'. Taking notice of how the children are feeling and what they have experienced now seems to be a bit of an ideal, as the curriculum is over-loaded and there isn't the time.  Minnie's past experiences in learning are by now, probably contributing quite heavily to his poor motivation to engage in literacy tasks, and to his behaviour in school.

6 October	Social Care Review	Minnie's strengths, preferred activities, his moods, and problem behaviour were discussed. Family relationships are improving with the Theraplay activities. CT has been staying in at lunch with Minnie, but this had not prevented all his problem behaviours and the reasons for this were discussed (Rome isn't won in a day!). Minnie's difficulties in literacy seemed to be a surprise to school staff. Nobody seemed to have the time to look in detail at his PPP and think in depth whether or not it's working. The children on PPPs seem to either achieve targets OR they miss them, and an in-depth analysis is not carried out, of why this is and what should be done differently.
7 November	External Consultant (Counsellor)	The importance of the nature of the relationship between TA & child in affecting behaviour and child motivation to engage in learning, was discussed at length in terms of Minnie's experiences
8 November	Class Teacher & Senior Learning Mentor / DT	CT outlined the disadvantages of lunch-time games with him and stated this was perceived by other children as a 'reward' for Minnie's bad behaviour and it was consequently having a detrimental effect on his relationship with the other children, who thought it unfair. A literacy intervention would be delivered every morning by the trusted TA. Minnie would be attending external provision 2 days a week. He would be allowed to go home for lunch.
9 January	Social Care Review	School staff said that Minnie likes to be in control and he does things on his own terms. He goes to the Reception playground with a friend of his choosing at break, as there are still problems with other children on the junior playground. He sees a senior member of staff each day to talk things through and feel encouraged.
10 March	2 new Teaching Assistants	Minnie is still struggling to complete work and often refuses to do it, lacking confidence. He goes home at lunch-time, and is out of school 2 days a week, so he is losing contact with his friends.

The Discussion addresses the reasons for educational success and failure for Minnie, under the RDS framework.

After the data had been collected, a meeting was held with the (Inclusion Co-ordinator (INCO) and the two external professionals, to draw up a joint Personal Provision Plan (PPP). I had asked for the class teacher (CT) to be present, but the INCO arranged this without her and organised a separate meeting the following day between herself, the CT and me.

We discussed Minnie's strengths and difficulties and what might help his educational progress (Appendix 5: Meeting 1). The school counsellor noted that 'rough and tumble' play was a normal part of his everyday experiences at home, but this was seen by school as inappropriate and Minnie was not allowed out at playtime because other children complained to playground supervisors that he hit them.

The school had agreed to provide 60 minutes of Teaching Assistant (TA) time every day for the duration of the research intervention (8 weeks). Minnie has a very good relationship with a particular TA, and she had agreed to deliver the activities. The following Plan was written up as formal document (Appendix 6):

### **Intervention Plan**

- Precision Teaching daily for High Frequency words (fifteen minutes - researcher to plan with TA) to develop reading and spelling skills, and to improve confidence and motivation in literacy tasks generally.
- Mother would be asked to read to Minnie daily.
- INCO would buy Minnie's favourite comic and read to him every Friday afternoon. When he is confident, he could choose a small section to read to his mother, to give him a chance to show off and a chance for mother to say 'well done' and notice his progress.
- The INCO suggested using class time to practice story-telling with the TA

during literacy tasks. When his language skills and confidence have improved, his story would be recorded on a Dictaphone and Minnie could write a story from this.

- Maths is a particular strength and Minnie should continue to be given plenty of praise for completing tasks.

During the meeting with the class teacher the following day (Appendix 5: Meeting 2), she said that she thought the main problem is that Minnie cannot articulate his feelings and when he is moody, this prevents him from doing his work. She said that she has found the best strategy is to give him a choice to do his work now, or complete it during break.

Two more items were consequently added to the intervention plan:

- The TA knows the family well and is very empathic. I had discussed the 'Therapeutic Story' books (Margot Sunderland) with the TA and she thought the activities would help Minnie. She will do this each day for thirty minutes, and talk about how Minnie is feeling with regard to his experiences. (This has also been discussed with the school counsellor, who uses these books.) The aim of this was to provide a low-key, and hopefully enjoyable way for Minnie to talk about his feelings, and re-conceptualise his experiences in a way that means it will be less likely that he feels low, moody or angry, reducing his ability to concentrate on his work. It is also an opportunity for him to talk and reflect about what is currently going on for him. It may also support the development of his reflective, verbal skills.
- Heart-rate variability can be improved by rhythmical breathing activities, such as yoga breathing techniques. The TA has watched the yoga

breathing video for primary children, kindly provided by the Special Yoga Foundation (yoga activities for children with special educational needs) and she has agreed to do this as often as she can, ideally 10 minutes each day in the morning with the whole class.

**Table 8.19: Observation 1 Minnie (Playground & Classroom: April)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
Lunch break	Playground	Playing basketball with one girl and one or two other boys.	Quite 'rough and tumble' with physical contact, but not enough to hurt anyone and nobody complained	(He's not often allowed out to play as other children complain he hits them)
2.45pm	Classroom On the carpet	CT: "Hands up if you have some news"	Did not raise hand	
		Other children sharing their news	Looking at floor Difficult to tell if he was listening Looked up when someone shared a photograph	Difficulty with listening / concentration / looking at people (?)
		CT: Are we all showing good listening?	Sat up straight Looked at who was speaking No social interaction with anyone else	Responded to CT change of voice
		Two children chose him to ask them a question	Asked a good question about their news	Seems valued by peers, as he was chosen by them
3pm	Classroom Table of 6	Teacher-led 'times table' activity	Spoke to a girl on the next table and this was reciprocated Not looking at the Class Teacher Spoke to the boy next to him and this was not reciprocated Standing up when the rest of his table were sitting down	Initiated social interaction & accepted Initiated social interaction & rejected
		Individual work	Rocking on chair	



		Class teacher explanation	Appeared to not be listening or interested. Definitely not looking at CT (unlike other children); he carried on working on his sums	Are sums more rewarding than looking at the CT? Does he notice what other children are doing?
		Teacher asked him a question	He smiled and answered it correctly	He was listening!
		Teacher asking other children questions	Playing with the glue – not doing his sums Fiddling with the table name card	Listening and sitting still seem very difficult

**Observation 2 (Playground: April)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
Lunch break	Playground	Playing in the 2-storey wooden play houses with several children	Quite 'rough and tumble' with physical contact. Kicked a girl; pushed away a boy (in the year below) Joined in throwing coats over another child	Ran to LTS* for a hug when she came over

**\*Lunch Time Supervisor (LTS) comments**

1. He is a lovely boy
2. Other children wind him up
3. He does become a bit rough

**Observation 3 (Classroom: May)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
9.15am	Classroom On the carpet	CT showing a video on the whiteboard of an imaginary story – fish in the washing machine in a kitchen.	Watching and listening	Better concentration when there is something to watch.
		CT stopped the video and asked for adjectives; most of the rest of the class responded by raising hands to reply.	Not contributing; not looking up Leaning against the easel of the whiteboard, fiddling with the cleaning pad; rubbed the whiteboard with it. Placed his arm under the tray and curled it round the back. Used a pair of scissors to try and pick up the whiteboard pen. He is the only child not contributing.	Poor concentration when the class teacher is talking. Difficulties with explaining his ideas (verbal skills)?
	Classroom On the carpet	Class teacher wrote the adjectives on the board. Explained the task to the class – to write their own imaginary story. Gave a suggested beginning line and advice about what to do.	Not contributing; not looking up. Still wriggling around on the carpet.	
9.45am	Table of 6, with me next to him	Task – to write an imaginary story in his book.	Very reluctant to write. I asked some questions. “Let’s imagine you’re sitting in the kitchen. What sort of funny thing might happen in your washing machine that would make you look at it?” (No reply.)	

			<p>“What time of day is it?” (Afternoon)  “What is the weather like?” (Raining)  “What are you doing?” (Reading my favourite comic.)</p> <p>Then what happens? (No answer)  Turned away and rocked on his chair.  Encouragement from me to have a go (no).  I suggested a first line from the information he had said so far.  He wrote about 3 words, then got stuck on a spelling.  I provided the spelling, but by this time he’d written this, he’d forgotten the rest of the sentence and lost the thread.  The boy next to him had written a full page by this time.</p>	<p>Became irritated and cross about his spelling.</p> <p>Looked angry.</p> <p>Not calm enough / experiencing ‘stress’ - so he can’t think clearly?</p> <p>Very reluctant to continue.</p>
		CT came.	Gave him a choice: “Do it now, or finish at break time”.	

**Reflection following Observation 3 (recorded at the time)**

<b>Child difficulties</b>	<b>What might help?</b>	<b>Thoughts or questions about why he has these difficulties</b>
He found it very difficult to think of a story on his own.	<ul style="list-style-type: none"> <li>➤ practice story-telling with him or narrative talking skills – he loves stories.</li> <li>➤ ‘News’ on the carpet, rehearsed previously with the TA</li> </ul>	<ul style="list-style-type: none"> <li>➤ Imaginative skills?</li> <li>➤ Structural verbal skills?</li> <li>➤ Ability to maintain the thread of a story in his mind?</li> </ul>
Instead of telling me an imaginative story, he was focused on getting his spellings right	<ul style="list-style-type: none"> <li>➤ teach him ‘high frequency’ spellings (Precision Teaching).</li> </ul>	
He became distressed when doing a writing activity – is this because he thinks he cannot do the work, so this produces bad ‘feelings’ / stress and this affects his behaviour?	<ul style="list-style-type: none"> <li>➤ Give him a writing task we know he can do.</li> <li>➤ Praise when he has completed it.</li> <li>➤ Offer lots of reassurance.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Poor confidence / self-belief</li> <li>➤ Past experiences of failure is affecting his emotions – is he subjectively experiencing unpleasant feelings?</li> </ul>
Listening and sitting still tasks are VERY difficult	<ul style="list-style-type: none"> <li>➤ Sitting right by the class teacher</li> </ul>	<ul style="list-style-type: none"> <li>➤ How can we help him feel part of the class?</li> <li>➤ If he was able to sit still, listen and look at the teacher, he would look the same as everyone else.</li> </ul>
He stands out because he wriggled and fiddled		<ul style="list-style-type: none"> <li>➤ Is he aware that he stands out? (I think so -&gt; he is kept in at break &amp; separated from his classmates.)</li> </ul>

Continued:

**Thoughts or questions about why he has these difficulties**

Q. How does he feel about himself – what does he think? Does he think to himself at some level that he cannot do the work? Does he think it's boring? Does he think into a future time, so that if he remembers that if he has not completed the work, he will have to stay in?

Q. Is there no enjoyment or intrinsic reward from sitting and listening and thinking things through for himself? Is this also related to motivation?

Q. How can we help him feel good about himself and enjoy listening?

- What about reading a story to him of his choice, and talking about this? What about looking for a text about kick-boxing, and taking it in turns to talk about this; firstly on a 1:1, then in a small group.

### Observation 4 (Classroom: June)

Time	Place	Class or Group Activity	Child activity	Comments & Emotional regulation
<10.00am	Classroom On the carpet	Class Teacher (CT) Presentation	Listening to Class Teacher	Seemed fine
10.10am	Classroom Sitting at tables	Cutting and sticking – making cards	Low level chatter with peers He didn't finish his activity before break time – a warning by the CT of how much time is left might be helpful (she tends to give him a choice (now or break) & this does hurry him up)	Lovely interactions! A lot of positive social interactions, with face to face looking
10.23am	“	CT talking	Listening to Class Teacher	
10.40am	Playground	-	I supervised: he played well with other children	
11am	Classroom On the carpet	Class Teacher (CT) Presentation about 'movement'	Sitting at the back of the group of children, with the Teaching Assistant (TA). Listening to Class Teacher. Discussed ideas with the TA	The TA support to discuss his ideas definitely helped
		CT asked question	He raised his hand immediately and gave an answer He put the word 'movement' into its correct context, in a sentence	

	Classroom Sitting at tables	Writing The children had to think of a sentence with the word 'happiness' in it	Minnie said, "The cat was happy". He couldn't get a sentence with 'happiness' in I gave an example and he copied this, but did not come up with anything else, despite encouragement – he just wanted to copy.	Put his head down in his arms, on the table. Got off chair and sat under the table (poor regulation).
	"	CT came	Gave him a choice: "Do it now, or finish at break time".	
	"		I suggested a short sentence. He drew a cat, then wrote a longer sentence. He preferred drawing activities – there were animal stencils on the table - he was keen to draw round these rather than write.	I thought that he wanted to be involved with the group learning activities with peers.
12.03pm	On the carpet	CT talking	Not listening – being told off.	

**Observation 5 (Classroom Y3: January)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
Afternoon	Classroom	Working at tables Class Teacher and trusted TA were present in the classroom	This time, Minnie looked different from other children. They were working at tables, he was sitting by the teacher's computer. He was asked to move away from this and he went into the nearby cloakroom. It looked like he is doing what he wants to do – that people are asking him to do this, and bargaining with him, e.g. "If you come out of the cloakroom, I will give you a smiley". I did not see any interaction at all with his classmates and this was quite a big difference since Year 2	He looked 'sulky' and defiant; he wasn't smiling.

**Discussion with the trusted TA afterwards**

I explained that my thoughts as an 'outsider' were that the staff now seemed to be afraid of Minnie and gave into him, so he was largely doing what he wanted to, in school. She agreed. We thought that this could be contributing to Minnie feeling insecure in school, as there were few boundaries for his behaviour. I discussed the idea of discipline only being effective within the context of a relationship with someone Minnie trusted, otherwise it would be perceived by him as criticism and he would react badly. She agreed with this and said she would think about ways to re-establish some authority and be 'firm but fair' – i.e. be clear about what he could do and what he could not do. If he had to do some work, then he had to do it, but he could do it with some help.

I felt surprised at the 'fearful' approach by staff and wondered how this had arisen.



### Reviews (Years 2/3: June - March)

The research had been scheduled to finish in July at the end of Year 2, but the school kindly let me remain involved with Minnie by providing consultations with staff and reviewing his progress.

The school had been moderated throughout June following SATS in May and this involved additional work for the staff, who said they still felt under some pressure. The TA had not managed to implement any precision teaching, or a systematic programme of literacy teaching, although there had been some small group work. She had done some yoga breathing with the class and observed that all the children had enjoyed it. She noted that the children with attentional difficulties were immediately obvious, as they found the co-ordination difficult. She had begun the Therapeutic Story, but again had not had time to do it each day as she had been called away to help with moderating tasks or be with small groups of children. The INCO had brought Minnie's favourite comic in but she had not done this every week. She also retired in July. Due to staffing issues therefore, very little of the plan had been carried out, and literacy skills had definitely not been targeted.

During meetings with the Theraplay professional (Appendix 5, Meeting 3) and the Counsellor (Meeting 5) we discussed the influences of home experiences on child behaviour, and what had worked in school in the past, for example Circle Time had been very valuable in building relationships between staff and children and between the children themselves. The importance of getting to know parents personally when their children began school, and helping them to

support their children, especially parents who have had (or have) depression was also agreed.

Meeting 4 was a Social Care review, during which the INCO (who was retiring the following week) briefly reviewed the intervention plan and she mentioned Minnie's literacy difficulties.

A Social Care review was held again in October (Meeting 6). Previously, the two external consultants and myself had met with the new class teacher (CT) and advised building a good relationship with Minnie, because this went a long way to reducing behavioural difficulties – if Minnie feels that he is genuinely cared about and encouraged, he is much more likely to attempt work he does not like, and much less likely to engage in what is generally seen as 'bad' behaviour, such as refusing to do his work, or sitting under the table. Minnie's relationship with the trusted TA had been good and with her support, he had been able to get on with much of his work and she had been able to support his learning without him becoming upset.

The CT kindly agreed to spend part of his lunch-time with Minnie (playing a game), and to support him in class with literacy, such as writing the first part of his work with him. The importance of improving literacy skills and confidence in literacy had been emphasised by me.

The role of the Designated Teacher (DT) had been assumed by a senior Learning Mentor who had been with the school for many years. Because

Minnie's transition into Year 3 had not been smooth and because I was concerned about his literacy skills and this being a large contributory factor to 'misbehaviour' in class, I provided a written report for the school staff prior to the October Social Care Review (Meeting 6) having previously provided verbal feedback to the INCO and CT. The DT expressed great surprise that Minnie's reading and spelling scores were so low! The information did not seem to have been passed on. A new TA had been placed with Minnie, funded by school.

Although the Review meeting had been positive, Minnie's behaviour seemed to be presenting problems in school (as exemplified by him moving class). In November, there was a serious misunderstanding (behavioural incident) in school and the new TA had gone on sick leave, which appeared to be related. This was discussed with the school counsellor (Meeting 7) who thought that there had not been enough time for new relationships to be developed and any consequent improvement. Minnie's progress was also discussed with the CT and DT (Meeting 8). The CT thought that his relationship with the other children in the class was suffering, as a result of him treating Minnie differently.

Following the behavioural incident, Minnie was then placed in an external provision 2 days a week, which taught children with social and emotional difficulties in small groups, as school staff felt that he needed specialist provision. The trusted TA was put back with him during the three days he was in school, and this was helpful. The counsellor explained that he was also provided with activities to support social and emotional development.

The next Social Care Review in January (Meeting 9) was also largely positive, but the issue of defiance was raised again, as was his difficulty with working independently.

I observed Minnie again in January (Observation 5), and following a discussion with the trusted TA, she implemented firmer boundaries and his behaviour improved a little.

The school funded a new TA, and I met with her and the original TA in March, to discuss Minnie's progress (Meeting 10).

The implications of these results will be explored further in the Discussion, under the RDS framework.

### 8.7.2 Jeff

Following the data collection, the planned feedback meeting was held with the Designated Teacher (also Deputy Head) and the class teacher in April. The DT agreed I could contribute a literacy target to Jeff's PEP, which was to improve his standard scores in reading and spelling to 90 / 95 (by the end of July) and for him to write independently for 3 minutes (See Appendix 7, Meeting 1).

**Table 8.20 Summary of meetings (Jeff)**

Meeting number and Date	Attended by	Main points
1 April	DT and CT	I set a literacy target for the PEP, and agreed to plan a Precision Teaching programme with the TA. Jeff is involved in a lot of interventions, but I was unsure as to how these were related to the targets on his PEP.
2 April	Social Care Review	The Learning Mentor updated social care staff about Jeff's progress – he is not meeting age-related expectations. A list of interventions was supplied, but the PEP and its targets were not provided by school and not really discussed.
3 October	Social Care Review	Jeff has moved school, closer to where his foster-carer lives. He is a happy child in school and 'fussed over' by older children. He is below age-related expectations, but his foster-carer stated 'he is not short of ideas'. She thought the Precision Teaching has helped. PEP & targets not seen.
4 April (Year 3)	DT and CT	Jeff finds it extremely difficult to maintain focused attention and often gets up from his table and wanders round. If he does not have someone else with him, directing his attention onto the task in hand, he wouldn't do it. He is still below age-related expectations and the CT was unsure as to how best to help him, as he is below everybody else in his class.

The school had very kindly agreed to provide 30 minutes of teaching assistant (TA) time each day and I agreed to arrange a Precision Teaching programme with the TA. The TA was also keen to try 10 minutes of yoga breathing each day and I had given her a copy of the video for primary children from the Special Yoga Foundation.

### **Intervention Plan**

- Precision Teaching (PT) daily for High Frequency words (twenty minutes - researcher to plan with TA) to develop reading and spelling skills, and to improve confidence and motivation in literacy tasks generally.
- Ten minutes of yoga breathing for primary children.
- Liaison with the Foster-Carer for the PT programme – a small exercise book would be sent home every Friday with the 5 words in and the FC would supervise practicing these at home, verbally and then writing them in a sentence.

Jeff benefits from therapeutic work with the school's Learning Mentor, so therapeutic story work was shared with her, for her to think about at a later time.

### **Reviews**

Children's Social Care held a review shortly afterwards (Meeting 2).

The PT went really well, in no small part due to the creativity and enthusiasm of the TA.

Jeff moved school during the last week of term, with his older sister. He appeared to be fine with this and did not express any views about it, although I wondered what he must be thinking, as he has been in the school since Nursery

and he often saw adult family members at the school railings. (Jeff did not ever say very much to anyone about his own thoughts and feelings.) The new school was very welcoming and Jeff settled in.

I saw him and his CT once in the Autumn Term before a Social Care Review (Meeting 3) and once in the Spring Term, when I held a consultation with his CT (Meeting 4) and the DT (who also took part in the Q sort). A summary of the four meetings is provided above in Table 8.20, whilst the observations and reflections are provided below.

I did not ever see Jeff upset or angry; on the contrary, he always seemed very cheerful. The people around him were very encouraging and I thought this helped Jeff with his self-regulation skills.

The Discussion addresses the reasons for educational success and failure for Jeff, under the RDS framework.

**Table 8.21: Observation 1 Jeff (Classroom: March)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
9am	Classroom On the carpet	CT reading a story to the class	Seemed to be sporadic attention – he looked at the class teacher (CT) for a few minutes, then he looked away. (The rest of the children all looked steadily in the CT’s direction.)	Difficulty with listening / concentration?
		CT asking questions about the story	He was looking away. Other children raised their hands, but he didn’t. He was reminded by the TA to pay attention and he immediately sat up straight.	He seemed very keen to please and responded immediately and politely when spoken to.
		CT continuing with the story	Had his hand in a pot of pencils (CT said that he enjoys this).	Very short attention span Good eye-contact when the CT spoke to him.

**Small group activity**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
10am	In another classroom with specialist CT	Literacy activity game	Not looking consistently at his word cards – looked around Sliding the sheet of paper around in front of him, rather than reading it.	Difficulty with listening / concentration? Struggled with vowel-consonant-e
		CT giving directions and asking the children questions about the words on their cards	Tapping his fingers on the table.	Appeared very impulsive



**Observation 2 Jeff (Classroom: April)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
10.05am – 11am	Classroom Working at tables	'Independent Write'.	Sitting at the front facing the board and copying off it. Sliding down a little in his chair. Looked around / behind him approx. every minute - not maintaining good focus.	Difficulty with formulating sentences? Vocabulary? Concentration?

**'One to two' activity with TA**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
11am	In the central 'small group' area outside classroom 1:2 with TA	Numeracy activity: 5 times table. A verbal activity but also with number cards.	The other child was listening well and looking at the TA. Jeff was putting the number cards in the box. TA tapped his arm & gently but firmly said, 'Put the box down and listen. This is what we are doing'. He often looked around the large area, possibly to see what was going on?	Difficulty with listening / concentration?  He seemed to notice the smallest sound and he looked round to see what it was.
		CT giving directions and asking the children questions about the words on their cards.	Tapping his fingers on the table.	Appeared very impulsive.

**Playground - Lunch time**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
12.30pm	Playground	Free play – running round with the other Year 1 and 2 classes	Jeff came over and said. “I’ve got no friends”, but then another girl came running over and said “Come and play with me”. Jeff looked up and said ‘What’s that sound?’ (It was the police helicopter, which appears quite regularly.)	Does he have reciprocal friendships? If not, why not? He was born in this area and has been coming to the school since he was age 3-4.

The Lunch Time Supervisor commented that Jeff enjoys running around, but he does not have a particular friend. There are two boys that he is more often seen with. One of these boys appears quite shy and tends to keep to himself.

**Observation 3 Jeff (Classroom: Late April)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
9.30 am	Class-room  On the carpet	CT discussing a topic about owls, with pictures on the large class whiteboard.	Jeff rocking and wriggling around almost as soon as the CT began talking. Playing with his fingers.  Brought to attention by the CT mentioning his name.	Difficulty with listening / concentration when it's just talking?  Although he could have looked at the pictures of the owls on the whiteboard (but he didn't). Prior expectations guiding behaviour?
	"	'Talk-Pair-Share' activity.  Other pairs of children gave their ideas.	He turned round immediately he was given this instruction.  The girl he was paired with spoke to him and they had a good interaction and looked at each other. He spoke to her, very briefly, maybe a few seconds.  He did not seem interested in the ideas of his classmates.	He is listening!  Difficulty formulating ideas and sentences, to explain his own ideas?
		CT continuing with her discussion. She began a sentence paused, looked expectantly at the class and all the children except Jeff finished her sentence.	He was not maintaining good eye contact with the teacher, or looking towards the front of the classroom, at the board.  He was playing with his shoes, and had his arm round the girl he had just been talking to.	Is physical contact with other people more rewarding than listening?

10am approx	At tables Small group with TA	TA asking questions to the group of 6 children.	<p>He did not volunteer answers as often as the other children.</p> <p>He was listening – as soon as the TA asked him a question (e.g. what have I just said?), he replied correctly, but he just did not volunteer any information until he was asked directly.</p> <p>He was very keen to begin writing</p>	<p>He's listening &amp; motivated to get on with his work.</p> <p>What is he thinking? Is he thinking about owls, or something else?</p> <p>Can he formulate speech well enough and quickly enough to provide an answer?</p>
	At tables Small group with TA	<p>TA writing a sentence on a small whiteboard.</p> <p>Giving prompts, "Think about what owls eat".</p> <p>Giving directions, "Miss a line".</p> <p>TA left the classroom</p>	<p>Jeff was looking round, then began writing when he noticed the TA.</p> <p>Jeff was interested in balancing his pencil on his hand whilst the TA was providing prompts.</p> <p>TA asked Jeff what she had just said and he replied correctly. He began tapping the table.</p> <p>Jeff asked, "Where did she go? What for?"</p>	<p>He is listening.</p> <p>He doesn't ask questions if he's stuck.</p> <p>Although the TA is asking him lots of questions, it doesn't seem to 'kick-start' him into thinking longer about owls – about what they eat etc? There seems to be little curiosity in a 'spoken' topic.</p> <p>He is monitoring what the adults are doing however.</p>

**Classroom - Lunch time (raining outside)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
12.30pm	Classroom All the children on the carpet	Video on the large class whiteboard	Jeff maintained very good focused attention. He sat really still and he appeared very interested in the story. I wouldn't notice him from the rest of the class during this!	He is quite able to sit still and maintain focused attention where he does not have to respond.

<b>Reflections following this observation</b>	<b>Possible difficulties?</b>
He's listening well, and remembering what is being said, but he is not talking anywhere near as much as the others.	➤ We use language to think with – are his language skills delayed?
He does not initiate many activities until he's prompted to by the TA or CT.	<ul style="list-style-type: none"> <li>➤ Is this 'dependency'?</li> <li>➤ Does he think that he can't write?</li> <li>➤ Or just doesn't think at all, he's mainly 'observing', until prompted to action?</li> <li>➤ CT often observes that 'he is in a world of his own'. What <i>does</i> he think about?!</li> </ul>
Although 'Owls' is a new topic, he doesn't seem particularly interested, although you'd think that he might be.	➤ Is this due to prior expectations - the children and adults talk about a topic, then write about it, but he struggles to think of a sentence on his own, then write it, so is he not really motivated?

<b>What worked?</b>	
<ul style="list-style-type: none"><li>• Good humour</li><li>• Lots of intonation in your voice</li><li>• Mentioning his name frequently to keep him on track</li></ul>	<ul style="list-style-type: none"><li>➤ Would it have helped to have a soft toy owl – something visual and touchable to help maintain his attention on a particular line of thought?</li><li>➤ Would it have helped to talk to Jeff for a few minutes on a 1:1 basis first, to stimulate his interest and get him talking?</li></ul>

**Observation 4 Jeff (Heart-Rate monitoring; Late April)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
9.00am	Class-room. On the carpet	Registration	Talking a little to children on his table.  Answering name & lunch choice.	
9.30am	“	All children sitting at tables	Sitting at the front of the class facing the whiteboard.  Engaged in a writing activity – some things needed to be copied from the board, then he needed to write from his own ideas.  Gazing into space.	Heart-rate very slow  All bars (HR and breathing rate) suddenly turned from green/ orange to red
10.14 am - 10.30 am	Play time		Outside for about 5 minutes, then came in to get fruit and a drink.	
10.32 am	On the carpet	CT reading a story & asking questions	Sitting on the carpet with other children.	
10.36 am	“	Class joining in the reading	(I couldn't see whether he was speaking.)	
10.41 am		Small group work	Got up & went to the large area outside classroom.	

10.45 am		Small group work	<p>SATS practice (Reading Comprehension paper).</p> <p>I read the story to him – he was rocking on his chair. Other children were reading the questions; Jeff was looking round &amp; was very easily distracted from the task. It seemed really difficult for him to maintain focused attention on the question.</p> <p>One question began ‘How much...’ - but I don’t think he understood what he was reading.</p>	HR bars orange & yellow
11.30 am	Play ground	Lunch	All children running around outside (then coming in to look to their heart rate!).	
12.35 pm	Class		Sitting in class, after lunch.	
13.10- 13.25 pm	In the small room	Precision Teaching	With TA, high frequency word reading from flash cards.	HR bars green & orange
13.25- 13.35 pm	“ no windo w	“	Paired memory game with the high frequency words – he did maintain quite good, focused attention.	HR bars yellow - lower
13.40- 13.48 pm	“	Reading	TA and myself read a story to him.	HR bars yellow - low
13.50 pm	Play ground	Afternoon break	Running round outside and this continued into the PE lesson.	
14.40 pm	In class	CT reading a story	Listening to ‘The Gruffalo’.	



Reflections following this observation	Thoughts
<p>I read the short story to him on the SATs Reading Comprehension paper. He appeared to find it very hard to listen and he rocked on his chair and looked round. I read it to him 2 or 3 times, but it was as though my speech wasn't being processed.</p> <p>To try and engage him a bit more, I asked, 'Show me Jeff, where it says 'Mother eagle' and I read the sentence again. It took me about 4 attempts really, to gain some of his attention.</p>	<ul style="list-style-type: none"> <li>➤ We use language to think with – are his language skills delayed?</li> <li>➤ We were in the open area outside the classroom. Is he very distracted by this – is he subconsciously monitoring his surroundings, making it difficult to focus?</li> </ul>
<p>There seemed to be no motivation to think ahead, to wonder about what might come next in the story.</p>	<ul style="list-style-type: none"> <li>➤ Does he live very much in the 'here and now'?</li> </ul>
<p>As his reading is poor, we couldn't really share the activity either. I found it hard to imagine Jeff engaging in a <i>joint activity</i> with either an adult, or a peer.</p>	<ul style="list-style-type: none"> <li>➤ The ability to <i>jointly share</i> an activity – does this come from synchronous interactions in early life?</li> </ul>
<p>In the afternoon Precision Teaching, we were in a small room, with no distractions and no windows.</p>	<ul style="list-style-type: none"> <li>➤ He did so much better, and it was almost a shared activity.</li> </ul>
<p>What's going well in PT? – the competitive edge during the paired game really seemed to help his concentration and he was smiling. The distraction-free room also seemed to help, as he was not looking round as much, he was focused on the activity.</p>	<ul style="list-style-type: none"> <li>➤ Improved his turn-taking.</li> </ul>

**Observation 5 Jeff (Classroom: July)**

<b>Time</b>	<b>Place</b>	<b>Class or Group Activity</b>	<b>Child activity</b>	<b>Comments &amp; Emotional regulation</b>
9.30 am	Class room	Children seated at their tables, writing a card for their new teacher –they had to write about themselves.	The TA that does the precision teaching was helping at Jeff’s table. He told her what he wanted to write, ‘I am going to Blackpool’ and she wrote this on the small whiteboard and he copied it.	‘Going’ was one of his high frequency words 3 weeks ago. Has he forgotten it?

<b>Reflections following this observation</b>	<b>Possible solutions?</b>
<p>I was surprised that he was unable to write ‘I am going’ independently. Do we encourage too much dependence once he is in class? If the TA had said to him, “Jeff, ‘going’ was one of our words – can you tell me the first letter?” – so she does with him in class what she does in the PT lessons – what would have happened?</p> <ul style="list-style-type: none"> <li>• Does he still see himself as dependent?</li> <li>• Are the skills that he learns in his 30 minutes a day not being transferred into independent writing skills in class?</li> <li>• His handwriting is still immature –there were big gaps in between the letters of ‘going’.</li> </ul> <p>Independent writing is still a big issue. We have made some progress in 7 weeks, but I think it needs to be consistent, and everybody needs to focus on it, for example by asking him more questions.</p> <p>I asked Jeff about his writing. He told me that he had got better at his writing. I asked him what helped and he said ‘Don’t know’.</p>	<ul style="list-style-type: none"> <li>➤ Encourage more independent thinking in class by asking questions. (But this still requires a high level of 1:1 support. However, if this is not present, he does not work.)</li> <li>➤ We should try giving him a special ‘Precision Teaching’ exercise book, so he can write his sentence in this, having practiced it first on the whiteboard.</li> <li>➤ Could we try 3 sentences to write every night at home, using the words he is learning this week? The foster-carer has a new list of words every Friday.</li> </ul> <p>Is this ‘cause and effect’ thinking, that he can’t do?</p>

## **SECTION 3 – The Q sorts**

### **8.8 Q sort analysis – Teachers**

The Q sort activity was designed to elicit respondents' views about the nature of neglect and its effect on child development. It was not targeted specifically at neglected children in the care system, it was designed to include all children who had experienced neglect, in whatever way that was conceptualised by the teacher.

The Q sort is a measure of interpersonal subjectivity, so each person places their own interpretation on the statements, and can – and did – interpret them differently. The Q sort statements are tabulated in Table 8.22 (p338).

#### **1. Knowledge**

This covers Items 1 – 28, regarding information in the literature about the development of children who have been neglected. It covers general developmental delays, social, emotional, behavioural and attentional difficulties, the potential of any support to help children catch up, if delays are evident, and the respondents' views as to whether these difficulties are permanent and irreversible. The final few items in this section ask for views regarding vulnerability, friendships and whether children who have been neglected appear different in any way from their peers.

#### **How was neglect conceptualised by teachers?**

Neglect was widely seen as an ongoing relationship issue with parents who showed little interest in their children and who did not particularly care much about them or how they looked – it was the absence of a special person to care personally for the child, and the subsequent effect this had in school with

respect to being accepted by peers / making friends, having educational support for reading and homework, or simply feeling part of the school culture by their parents attending assemblies and school events.. These parents were described as those who did not sign letters and who were reluctant to be involved in school activities.

Reasons given for the parents' behaviour included low confidence (and school failure themselves), not understanding their child's needs, alcoholism, or just generally not caring about their children.

Staff with pastoral responsibilities commented that neglect was more of a recent term and it was extremely difficult to prove.

What did the teachers think about the nature, prevalence and permanence of social, emotional and behavioural difficulties?

1. In common with the literature, difficulties in 'social skills' was the most frequent observation, with neglected children being very vulnerable to being taken advantage of by other children, and 'gravitating' towards unsuitable friends, whom they think will be their 'best mate'.
2. Teachers thought that if they were delayed in relation to their social skills and emotional regulation, then they were likely to have difficulties all round.
3. Lack of parental support in reading and homework was cited as a reason for low achievement.

4. Examples of poor emotional regulation included withdrawn behaviour as well as externalising behaviour. Every teacher mentioned the quiet children who show excessively low affect, and often said that these children were of most concern to them, because it was difficult to know what to do for the best and because it was difficult to obtain support from outside agencies for this type of child, including educational psychologists and CAMHS (Child and Adolescent Mental Health Services). Those who show externalising behaviour 'get to the top of the list'. Nobody mentioned children becoming very over-excited or exuberant; being 'boisterous' was mentioned in terms of not really having regard to other children. Feelings of happiness or showing positive emotions was not mentioned in this section by any teacher, although they did mention positive aspects in other areas (such as being verbally skilled).
  
5. Everyone could think of one or two neglected children who had been successful. When asked to reflect on why this might be the case, teachers generally thought that children who are verbally skilled do better – children who join the school council, who are articulate, who can write extended projects, or even those who can go away and reflect, who might have "some inner place where they can escape to".

6. The 'right support' was thought to be not just educational, but holistic. Teachers thought that mental health, learning, behaviour and emotional regulation cannot be separated into individual descriptions of 'need' for those children who have been neglected. Teachers frequently mentioned counselling and teacher training to support good mental health in school; that school is the place that counts the most in a young child's life, and good primary mental health begins in school.
  
7. There was general agreement on neglected children seeming to be different in some way. This was either physical because their clothes were dirty or did not fit properly, or it was emotional: "You can see it in their eyes, craving my attention". There was almost universal agreement on being socially vulnerable, joining the wrong groups in an effort to fit in. "More than anything, neglected children want to fit in. They stand out, for all the wrong reasons, they have no P.E. kit, they don't get their letters signed to go on school trips, their hair is a mess".
  
8. Towards the end of the research and following several discussions, one head teacher commented that she now thought that neglected children who start school behind their peers, fall further behind, because they are unable to take advantage of the educational opportunities provided to them. She commented that children who are loved and whose parents support them can take full advantage of their lessons and learning experiences, so for them, their learning gathers momentum and snowballs. Another similarly remarked on "children

who have been left in a pram all day in front of the TV”, who start off at a disadvantage for learning skills, and consequently, fall further behind: “They can’t share their toys with other children, they can’t pay attention, they have poor concentration and they worry about things at home”.

## **2. Attributes & Beliefs about Neglected Children**

This section aimed to explore what the respondents thought about the children’s motivations; why the children behave the way they do. It also explored preferred solutions – is it specialist, mainstream, nurture group (NG), or ‘one-to-one’?

1. There was universal agreement about children having a poor sense of identity. If they were in care, this was because they might have had several foster-placements. Teachers with pastoral responsibilities mentioned that if the child lived with a parent, then sometimes, the male at home was not their father (and they did not know who their father was), but he might be the father of a sibling and this caused distress that may go unrecognised by their mother. Two teachers observed that not having a secure identity could lead to the children having low self-esteem: “They think they’re of no value”.
2. There was universal agreement about children not deliberately choosing to misbehave and it was unhelpful to ask them to use ‘the language of choice’ when they did know how to choose appropriately: “The language of choice! They are NOT choosing to have difficulties

with their behaviour. They didn't choose to be in a position where they have difficulties making the right choice". They noted common reactions to behavioural difficulties, "Other teachers say, 'Why should he get a reward?' The other children though, can be quite accepting. You have to explain to them (what's up), but you have to use the right phrases, such as, 'X finds it a little difficult to get things right and behave, so we have to give him a little support'."

3. There was universal agreement about neglected children being quite manipulative, but not in a negative sense, it is to get their needs met. 'Control' was therefore viewed as acting in ways to have predictability in the child's environment, thereby bringing a sense of safety and a means by which the child could gain the attention and time of an adult.
4. The teachers that engaged in the Q sort generally did not see a 1:1 specialised TA as being the answer to low educational achievement. They perceived the 'difficulties in learning' to be related to emotional and motivational dispositions, rather than the children not being able to understand the work in the first place. They thought that a dedicated counsellor or learning mentor, someone to 'offload to' would be more beneficial, perhaps weekly, perhaps daily, depending on need. In short, they needed some like a parent, in school, who cared about them individually and who could provide support, personal encouragement and a secure idea of who they were – a positive identity.



5. Views about Nurture Groups (NG) were mixed. Most teachers agreed in principle that they were helpful, but expressed concerns that it was seen as a 'work-avoidance' placement by some children, that not enough thought was given to the mix of children in the NG, that not enough thought was given to educational planning, such that children fell behind their peers, or that NG did not address the specific needs of the child, so that it was really just a 'containment' solution to avoid exclusion, and children ended up being placed in secondary specialist provision anyway.

### **3. Feelings & Competency relating to Neglected Children**

Items 41 - 44 aimed to explore the feelings of the respondents towards the children and whether they thought that their knowledge and training was sufficient to help them address the needs of neglected children.

There was widespread agreement that it was very difficult to meet the needs of neglected children. Most recognised that a good relationship was at the heart of the matter for remediation in school, but found it difficult to make the time for this, due to the large numbers of children needing individual attention and the pressures of the curriculum: "There is always the pressure of SATs. The government are putting teachers in an impossible situation" (to teach children to pass exams at the same time as find time to care about them). "We have an over-full curriculum. It's (the curriculum) overwhelming. If we stripped it all back to Maths, English, Topic, then it would be much better.

There's so much they (the children) have to learn by Year 3. If we take away a few bullets (points in the National Curriculum) and reinforced the other basic ideas, like Number, it would be better".

Many teachers welcomed the monitoring of the educational progress, but more commented on the balance of support – that the Pupil Premium money is used to improve levels in English and mathematics, but it is not used to provide counselling or mentoring, which the children need just as much, if not more: "Teachers are trying to get levels up, but someone has to push for the emotional support, but the Pupil Premium is stretched".

Most teachers expressed the view that they did not know what to do with the withdrawn children and it was these children that gave them most cause for concern. The most recently-trained teacher thought that she did understand the needs of neglected children, but did not always know how to meet them. For example, if leniency was applied now to their behaviour in Year 2, would this make it more difficult in later years? More experienced teachers said that they did overlook things with neglected children that they would not overlook for other children, because they understood the situation at home and how this impacted on their behaviour in school.

Almost all mentioned that more training would be helpful, covering theory and practice: "I don't feel out of my depth, but I would welcome more training. Neglect is a recognised term of abuse, but it's quite recent. What we see as neglect, is sometimes a professional viewpoint". This highlights the

problematic definition of 'neglect' and *when* school staff should think it appropriate for an intervention.

One teacher thought that not enough time was given to fully understanding the needs of individual neglected children and the Personal Education Plans (PEP), whilst completed with good intentions, were mainly adult-led. Not enough time was spent listening to and genuinely trying to understand what it was like to be in the child's shoes, and this child-led information subsequently being shared with staff, so that the implementation of a PEP was genuine and completed as a staff team discussing the issues for each particular child, rather than being passed round as a piece of paper to follow. Several teachers mentioned the importance of knowing the past history of the child in understanding how to support them individually, and that often, they were not privy to this information.

A few teachers observed that staff expected young children to cope with things that they themselves as adults would struggle to cope with, such as loss of family – the children are expected to come into school and 'learn' just like everyone else, whereas if a member of staff experienced bereavement, there would be empathic understanding and they would not be expected to carry on as normal.

Two teachers made reference to the earliest years of life, with respect to children being left in front of the TV, or not having opportunities to play. Nobody mentioned that neglect in the earliest years of life had an enduring

effect. Unsurprisingly, the effects of neglect were recognised at the level of the presenting issues that the children have in school, i.e. the issues are an outcome of the current lack of someone to personally care for them.

All teachers recognised that the lack of a special person was demotivating and contributed to low motivation to engage in learning experiences. Some teachers thought that a few children were angry as a result, asking why they couldn't have a mum or dad like everyone else, whilst the majority of children just seemed resigned to it: "They seem to think, 'It's not worth getting upset about it because nothing is going to be done'. They just accept their circumstances".

#### **4. Adult Behaviour towards Neglected Children**

Items 45 - 48, although quite similar were designed to explore what is personally meant by 'treating all children the same', a phrase commonly mentioned by teachers, and whether neglect elicited more sympathy than other forms of educational need.

The general impression conveyed by the responses was that the teachers are overburdened with curriculum issues and trying to ensure all children attained age-related expectations (published in league tables) compared to devoting individual time to the children in their class: "There's no time to listen to 'News', unless we make a specified time (which is difficult), I have to say, 'I'll listen to you later'". (During the research, I noticed that finding time 'later' was

difficult, and exacerbated if there had been a 'behavioural incident' during playtime.)

The individual needs of the children were recognised; more experienced teachers were flexible and did not treat all children 'the same', whilst the youngest teacher described it as 'an internal struggle' (to be lenient). Another commented on the inequity of the behaviour policy for neglected children: "The School Behaviour Policy (is not right) – if you punish them (insecure children), it reinforces a sense of failure, of anxiety and the feeling that they are not 'good enough'". Others commented on the attitude of other members of staff towards neglected children: "Why should he get a reward?" (when his behaviour is generally poor) and saying that (these children) should be treated 'the same' as everyone else.

Understanding of individual needs was therefore good in the teachers who volunteered to take part in the Q sort activity, perhaps reflecting their interest and care in neglected children, but very little was mentioned about the effects of neglect on brain development and self-regulation.

**Table 8.22 Q Sort Summary – Teachers**

Eight teachers, including the class teachers of the research children completed the Q sort. Their responses were categorised as follows:

- All 8 = Universal Agreement (These statements are highlighted in **bold**)
- 6 or 7 teachers agreed = General agreement
- 4 or 5 teachers agreed (3 or 4 disagreed) = Mixed views
- 2 or 3 teachers agreed (5 or 6 disagreed) = General disagreement
- All 8 disagreed = Universal disagreement (These statements are highlighted in **bold**)

<b>Knowledge</b>	
1. Neglected Children are developmentally delayed	Mixed views Yes, if a child has Fetal Alcohol Syndrome or if there are few opportunities to play. No, if there is support for them from elsewhere, including peers and parents of peers. “We think of neglect in terms of poverty, but there are also materialistic parents who give their children ‘presents’ but no time or genuine love.” “Neglect is SO difficult to prove.”
2. Neglected Children show a difference in their development	General agreement “They differ mainly in their relationships – they are far more vulnerable.”
3. Neglected Children can catch up developmentally, with the right support	Mixed views “Yes, they can catch up.” “It depends on what their needs are, as a result of the neglect. Some don’t catch up.”
4. Neglected Children are always going to need support in school	Mixed views “If they are CIN and with their parents, yes. If they are in good FC, then not necessarily. “ “I’m fairly confident this is not the case.” Counselling or mentoring was generally thought to be helpful (preventative).
<b>5. Neglected Children have difficulties relating to peers</b>	<b>Universal agreement</b> One teacher noted that sometimes, they are part of a small, close group. One teacher noted that social relationship problems were rare in isolation; behaviour, learning, social skills and mental health are all linked together.

<p>6. Neglected Children have difficulties relating to adults</p>	<p>Mixed views          “There’s more chance of a successful relationship with an adult, compared to peers.”          They do if they are introverted and have low self-esteem.          One teacher differentiated by age: if they are young, they have no problem, as they are very trusting (and therefore, vulnerable). If older, then often yes, because they feel let down by adults.</p>
<p>7. Neglected Children who have social difficulties can be helped with the right support</p>	<p>Mixed views          “Some can, some can’t – some are just too emotionally scarred.”          Or, they need support for their appearance as well, because if they are not well-presented, other children are less likely to play with them, so they don’t have the opportunity to develop early social skills and move higher up the social hierarchy.          “I’ve noticed that their social skills are better if they are well presented... Even quite young children judge what they see. If they are scruffy, other children don’t want to play with them. If they soil and wet themselves, other children won’t sit near them.”</p>
<p>8. Neglected Children have behavioural difficulties</p>	<p>General agreement          Two types of ‘difficulty’ were distinguished: externalising (the majority of behavioural difficulties) and internalising (the silent minority).</p>
<p>9. Neglected Children who have behavioural difficulties can be helped with the right support</p>	<p>General agreement          It was thought to be easier to provide educational support in the classroom, compared to garnering external support from (for example) mental health staff and educational psychologists.</p>
<p>10. Neglected Children will always have behavioural difficulties</p>	<p>Mixed views          No: “If they have overt behavioural difficulties, they are more likely to get to the top of the SEN list and be seen.”          Yes: If they have problems with making friends and / or they are withdrawn, then there was common agreement that these children go under the radar and they are more likely to be the ones that will always have difficulties.          “Educational psychology time is very hard to get for the withdrawn children.”</p>
<p>11. Neglected Children who have mental health difficulties can be helped with the right support</p>	<p>General agreement          There was uncertainty for children who had been severely traumatised, with this being described by one teacher as ‘opening Pandora’s Box’. This related to provision in school – although mental health difficulties should be prevented through good school relationships, where this wasn’t possible because the trauma is too severe, then professionals are needed. There was universal acknowledgement that CAMHS support is VERY difficult to access.</p>

	<p>One recently qualified (in the last 3 years) teacher thought that there wasn't enough training given to teachers to be able to know what to do when they could see young children with potential mental health issues, such as being very withdrawn.</p>
<p><b>12. Neglected Children have good mental health.</b></p>	<p><b>Universal disagreement.</b> Mental health was thought to be inseparable from other aspects of child development. "The children in Nurture Groups are those with evidence of a poor relationship with their carers and if they do not have good, positive relationships with their carers, then no matter how resilient they are, this will have adverse effects on mental health later".</p>
<p>13. Neglected Children will always be behind in their educational achievements</p>	<p>Mixed views Many teachers recalled a few children who had done well against all the odds. A few noted that neglected children are 'always playing catch up' – they start off behind everyone else and either stay in that position or fall further behind.</p>
<p>14. Neglected Children who have educational difficulties can be helped with the right support</p>	<p>Mixed views Yes: "We've recognised that across all areas of education that the right support, at the right time, is what matters". Sometimes: "With 1:1, you can get more out of him, but I don't think that he gets spoken to a lot at home. There's nothing that he wants to do (in school)". "The right support has to be holistic" and ideally include therapy and counselling for those children with emotional trauma.</p>
<p>15. Neglected Children have difficulties keeping up, educationally</p>	<p>Mixed views Some said 'yes' because of inconsistent school attendance, some said no, with the right support, they catch up. Others pointed to children who have "been left in a pram all day in front of the TV" – they can't share their toys with other children, they can't pay attention, they have poor concentration and they worry about things at home.</p>
<p>16. Neglected Children find it more difficult to learn</p>	<p>Mixed views Because they have missed their developmental years; they have missed basic care-giving, so it is more difficult for them. Some are very bright and cope well. They tend to be more socially adept. Their parents might be there for them, but they are not able to provide (physical) things.</p>
<p>17. Neglected Children learn just like other children</p>	<p>Mixed views Some said they all learn the same, what is different is their ability to take advantage of educational opportunity, including their motivation and readiness to learn. Others said that they all learn differently and if there are emotional traumas going on, then they don't feel safe</p>



	and they are unable to learn. If they fall behind, this is demotivating and then, they don't want to learn.
<b>18. Neglected Children find it more difficult to pay attention</b>	<b>Universal agreement</b> “They often have poor sleep and they are hungry. They are not used to social interactions, If they have not been shown how to attend, then they won't be able to”.
19. Neglected Children find it more difficult to keep themselves calm	General agreement Most of the teachers said that the children may look calm on the outside, but they are not on the inside.
20. Neglected Children take longer to calm down after something has upset them	Mixed views Some children, particularly young children are inconsolable at small upsets. Others keep it all inside. Others seem to have some resilience.
21. Neglected Children are more sad than other children	Mixed views “It depends on whether they choose to display their emotions, Some might be sad, but don't show it.” “It depends on their age. Most are more worried than sad.”
22. Neglected Children are more angry than other children	Mixed views “Sometimes, yes they are – they are more likely to be angry than not. Being physical calms them down.” “No, a lot of children bottle it up and hide their feelings.”  In an alternative interpretation about being angry at their <i>circumstances</i> : “No, they seem to think, “It's not worth getting upset about it because nothing is going to be done”. They just accept their circumstances. “ “Some are angry and ask, ‘Why can't I have that mum, or dad or family?’ “. “Some are more accepting of their situation, because they have low expectations. They are often quite ‘down’.”
23. Neglected Children lose their temper more easily than other children	General disagreement Due to the observation that many children hide their feelings, or they don't know how to handle their feelings.
24. Neglected Children have more difficulty controlling their emotions	General agreement That they are more emotional; that they haven't been taught how to recognise or handle how they feel – so they are either very boisterous, or get very angry or become inconsolable at small things. Two teachers considered it important to stay with the children when they are angry, even if it's at a distance and even if this means that they are on the receiving end of a lot of abuse and threats: “It's better out than in”. Some said that children are too scared to show their

	emotions, they hide what is going on, so they are very controlled.
25. Neglected Children are emotionally immature.	<p>General agreement</p> <p>“Some children have become more emotionally mature, to care for younger siblings.”</p> <p>“They are not as emotionally secure and I don’t think that’s the same thing.”</p>
<b>26. Neglected Children are more vulnerable</b>	<p><b>Universal agreement</b></p> <p>Negativity at home was thought to have an adverse impact on children’s resilience and their ability to cope: “I remember once, I told (him) off in quite a stern voice. He was distraught, he jumped on me and clung to me”.</p> <p>One teacher observed that neglected children were far more vulnerable to underachievement.</p>
<b>27. Neglected Children are more likely to choose the wrong friends</b>	<p><b>Universal agreement</b></p> <p>Often, children joined ‘gangs’ or ‘popular groups’ (if they could) to be liked; they gravitate towards people they think will be their ‘best mate’. Vulnerability was most likely to be mentioned in this regard – that other children would take advantage of them and ask them to do things for the group advantage / the dominant child’s advantage, but which was more often than not, harmful for the neglected child’s welfare.</p> <p>There were many comments that neglected children do not know how to establish friendships, especially if they are young. For example they might complain that other children don’t play with them, and this makes them stand out (even more). Quite often, they would befriend younger children, particularly if they are or were caring for younger siblings at home.</p> <p>“Can we engineer friendships for young children? No. They think of friends as being ‘my true friend’. Other children might be kind to them and nice to them, but they are not similar enough to be their ‘one true friend’. We do try to give them opportunities to make friends – we have circle time, we have Kegan groups, we sit them with different children in the class to do their work with. Does this transfer into the playground? Not always. Sometimes, they ask, ‘Will you (adult) play with me?’ It’s easier when they are younger or when there are extremes (of differences). It’s much harder to socially mix children who are in the middle.”</p> <p>“If they can, they make friends with people like themselves; they feel safer then.”</p>

<p>28. Neglected Children are indistinguishable from other children</p>	<p>Mixed views:  “Sometimes, if they are well-presented and they are quiet.”  “It depends how well you know them. If you know them well, they do stand out from other children, because then, they will want to hold your hand and they ask ‘Do you love me?’ “  Yes: “Their clothes might be dirty, or they don’t fit, or (it’s clear) they’ve dressed themselves”.  “You can see it in their eyes; craving my attention. Some are eager to please. Others don’t make eye-contact.”</p>
<p><b>Attributes &amp; Beliefs about Neglected Children</b></p>	
<p><b>29. Neglected Children struggle with their identity</b></p>	<p><b>Universal agreement</b>  Many teachers commented that if the children are in the care system, they don’t know who they are, with many placement moves being ‘very confusing’ for them. Several teachers mentioned the importance of a Life Story book, as some children did not know who their parents were, and some siblings having different fathers – sometimes the father who is currently at home and sometimes not, so a sibling might have a father at home, whilst that child did not, and did not know who his father was - and that could be confusing and upsetting. One teacher commented that this insecurity, about who they are, contributes to low self-esteem, “They think they’re of no value.”  “They struggle to understand the separation from their families, for example if mother is an alcoholic.”</p>
<p>30. Neglected Children have little sense of what is right and wrong</p>	<p>General disagreement  Most children “have a range of places in which to learn this”.</p>
<p><b>31. Neglected Children NEED the attention they seek</b></p>	<p><b>Universal agreement</b>  “At the point in time they seek attention, they need it for whatever reason. You have to validate that need, then deal with it when they are calm.”</p>
<p><b>32. Neglected Children choose to misbehave</b></p>	<p><b>Universal disagreement:</b>  “It’s not a choice. Everyone wants to be good. For some, it’s the final straw.”  “The child’s behaviour is a response to whatever is going on in their life.”  “The language of choice! They are NOT choosing to have difficulties with their behaviour. They didn’t choose to be in a position where they have difficulties making the right choice. Other teachers often ask, ‘Why should he get a reward?’. I don’t think they understand the situation”.  “When they misbehave, they’re trying to get their</p>

	<p>message across. Often, they don't know HOW to explain. How can they say (if they have no homework) that the electricity had gone or mother or dad are drinking, or they have no P.E. kit because their younger sibling has it. Some teachers try to unpick (why they haven't got their P.E. kit, but then they (the children) are disruptive."</p> <p>"They don't know how to handle 'positive attention'.</p> <p>"They're not used to being praised and they often brush it off by doing something silly."</p>
33. Neglected Children enjoy the attention they receive when they misbehave	<p>Most thought 'yes'.</p> <p>"They might at the time, but after the event, they might feel guilty."</p> <p>"If they think they are not receiving enough attention, then yes, I think they deliberately misbehave – they're constantly trying to control people to get their attention. They don't care if it's negative or positive."</p>
<b>34. Neglected Children behave badly because it gives them a sense of control</b>	<p><b>Universal agreement</b></p> <p>"Yes, they try to manipulate adults (into doing things that the child wants to do)."</p> <p>"I think it unconsciously gives them a sense of control. Predictability is 'safe', they maintain this by trying to control people and manipulate them, to get their needs met."</p> <p>"If they are spoilt (i.e. emotional neglect without poverty), they get lip-service from their parents. They generally feel worthless. Behaving badly gives them a good feeling."</p>
35. Neglected Children should be educated full-time in a mainstream classroom	<p>Mixed views</p> <p>Several thought that it depended on the individual needs of the child. One teacher commented that if they are in mainstream, they are often taken out for 'Intervention Groups' mostly with the same group of children (because they all need to catch up), so it is difficult for them to be educated with 'ordinary children'.</p>
36. Neglected children should attend a small class such as a nurture group for some of the week	<p>Mixed views</p> <p>"Some children want to go to avoid work. They want to avoid work because there is too much going on at home."</p> <p>I know one child who did not benefit from a NG. Even though he got the attention he needed, it wasn't the right mix of children for him. You needed a group of children who wouldn't get wound up by him."</p> <p>"NG can help some children. It's very difficult, in a whole-class situation, to give them what they need. (This child) went to NG during years 3 to 6. But he still went to secondary specialist provision for EBD. It maintained his primary placement, but it clearly didn't tackle the issues. Another went to NG five afternoons a week during Year</p>

	<p>5. In Year 6, he did not keep up with his peers, educationally. You should let the children choose if they want to go.”</p> <p>“I think NG help. They build relationships, help children to trust people and experience success.”</p>
37. Neglected Children should have a specialist teaching assistant	<p>Mixed views</p> <p>“Not necessarily. The TAs are there to support academic work, not relationship or emotional issues. If a good relationship can be achieved through mentoring, then it should.”</p> <p>“I think there should be a specialist TA who can work in certain situations” (where the CT might be uncertain about what to do).</p> <p>“There should be a 1:1 for them, someone to offload to. Neglected children have not got ‘a person’ – someone they can offload to. They feel like they’re on their own. If we increased Pupil Premium, then we could provide more 1:1 time. This should be with a specialist person; someone who is well-trained, who will promote independence and not do things for the children. Someone who will promote educational confidence, ability and prompt them to think for themselves.”</p>
38. Neglected Children need extra help compared to other children	<p><b>Universal agreement</b></p> <p>Most thought this would be helpful for relationship and emotional issues. Neglected children need help with identity, someone to listen to them, someone who looked after them and provided encouragement.</p>
39. Neglected Children are more likely to end up in the criminal justice system	<p>General agreement</p> <p>Few comments.</p>
40. A Neglected Child has been dealt a poor hand	<p>General agreement</p> <p>Few comments</p>
<b>Feelings &amp; Competency relating to Neglected Children</b>	
41. I worry more about Neglected Children than other children	<p>Mixed views</p> <p>Observations that children with an autistic spectrum condition also gave much cause for concern. Most said that there is such a wide range of children with many different needs, whom they saw as individuals.</p>
42. I feel able to understand the needs of Neglected Children	<p>General disagreement</p> <p>Most said that they would like more training. Others said that they thought they understood their needs, but it was hard to meet them, due to pressures of the curriculum. Others pointed to the difficulties in genuinely understanding a child’s needs: “Sometimes, we don’t spend enough time with them, to know what their needs are... we don’t really know what is helpful, we do it by trial and error. If we talked with the child, and did a Pen</p>

	Portrait; if we involved the child, that would be helpful. But, their needs change all the time; it's having that flexibility and keeping your mind open."
43. I often feel out of my depth in knowing how to meet the needs of Neglected Children	General agreement "Teachers have limited opportunities to learn about behaviour, but we need to know how to support all our children in the right way. We need to have a basic understanding of attachment behaviour and why children behave like this. We need to know what we can do to address it. I know there's been SEND training for SENCOs, but it has not been passed on. Why can teachers not have it? We need to agree a strategy with the whole teaching staff, to use the Personal Educational Plans for children in care, effectively. Or, "I don't feel out of my depth, but I would welcome more training. Neglect is a recognised term of abuse, but it's quite recent. What we see as neglect, is sometimes a professional viewpoint. Emotional neglect is hard to spot."
44. Neglected Children affect me more than any other type of child	General disagreement Other children, especially children with autism also have needs that are of equal importance.
<b>Adult Behaviour towards Neglected Children</b>	
45. I spend more time with neglected children	General disagreement One said that all children needed their time, and generally, there wasn't enough time to go round. Lack of time was commonly mentioned.
46. I would spend more time with neglected children if I was able to	General agreement Many said that admin and record-keeping get in the way of spending more time with the children. One said that the neglected children tend to 'seek you out'. "They want reassurance, a quick chat and a hug."
47. I treat neglected children differently	Mixed views Some said 'yes', on an individual needs basis: "For some children, on some occasions, you have to take into account what might have happened that morning".
48. I treat all children the same, no matter what their background	Mixed views One teacher commented, "It's hard to treat them all the same. We are all subjective and reactive, no matter how hard we try not to be. I give more leeway to certain children – I might be more likely to overlook things, because I know their home life. I was told the story of one child and it impacted on me, and how I treated him. What he'd experienced, was beyond belief. If you don't have that warm, loving relationship (as a child)... do you have that desire to try and make something of your life? I would say that teachers need to know... about extenuating circumstances. You get to know the

	<p>children, their resilience and you know when they can be challenged, and when they can't".  The recently qualified teacher: "It's an internal struggle; if I'm lenient, then what will it be like for him, in future?"</p>
<p><b>General comments</b></p>	
<ol style="list-style-type: none"> <li>1. It made me think differently about my practice, perhaps I should expect more of these children – give them a chance to be normal – I should raise my expectations (of them as people). Usually, we just think about raising standards of education.</li> <li>2. It's very difficult to have unconditional positive regard for a child with very challenging behaviour.</li> <li>3. I think, a lot of the time, that they have not had their needs met early on. Teachers don't always know what has gone on, when children are brought into care, and we should know.</li> <li>4. The LAC children are all very different; it's important to understand the experiences of the child before they come into school. It's important to know the FC they're with, and the fact that they might have other children in other schools.</li> <li>5. Head teachers – they don't know necessarily, what it's like for these children. They don't have as much experience.</li> <li>6. We expect these children to cope with things that we as adults would struggle with.</li> </ol>	
<p><b>Parents of children on the Child in Need register / on Child Protection Plans / Neglecting parents</b></p>	
<ol style="list-style-type: none"> <li>1. Some parents avoid the issue when you speak to them. Dad's an absolute charmer and knows how to say the right thing.</li> <li>2. Parents - it's like a nodding dog – you speak to them, but nothing really changes. It's surface compliance.</li> <li>3. For the neglected children / CIN – the school can't deal with parenting problems, there aren't enough resources.</li> <li>4. Children just below the threshold for CPPs, make excuses for their parents (as to why things are bad, or they haven't got things). We encourage the parents to come in for coffee, but sometimes, their own low confidence at coming in to school holds them back. One child, did not like his mother coming into school, because of her appearance, he would be called names (by the other children).</li> <li>5. When it was the school assemblies, and plays, his mother did not use to come. The children (siblings) did not build up their hopes for her attending assemblies, sports days or school plays.</li> </ol>	

6. The effects of neglect can be very long-lasting. If the parents knew – if they just did this simple thing - improve their child's presentation - it would be so much better for their children. I feel very sorry for the children who stand out for all the wrong reasons. More than anything else, they want to fit in.

### **Government pressure & funding**

1. There is always the pressure of SATs. The government are putting teachers in an impossible situation (to teach children to pass exams at the same time as find time to care about them).

2. There's a lot of pressure in school, we have to collect data all the time. This can be helpful for the LAC, because we track progress, but it's at the expense of emotional support.

3. It's a balancing act to get the right support. Teachers are trying to get levels up, but someone has to push for the emotional support, but the Pupil Premium is stretched.

4. The School Behaviour Policy (is not right) – if you punish them (insecure children), it reinforces a sense of failure, of anxiety and the feeling that they are not 'good enough'.

5. Considering there's a Mental Health initiative in this LA, there's not much happening.

6. We have an over-full curriculum. It's (the curriculum) overwhelming. If we stripped it all back to Maths, English, Topic, then it would be much better. There's so much they (the children) have to learn by Year 3. If we take away a few bullets (points) and reinforced the other basic ideas, like Number, it would be better.

7. There's no time to listen to 'News', unless we make a specified time (which is difficult), I have to say, "I'll listen to you later".

8. Perhaps we (teachers) should stand up for ourselves.

9. (Relating to targets): Parents are often working late. They don't want to force their kids to do homework. They'll often say, "Sorry, I didn't have time to listen to my child read".



## Children's Social Care & Foster care

1. Sometimes, Foster Care doesn't work, the FC don't always have enough experience. They don't always understand what it's like, to be taken from your home.
2. They (the children) should have been brought into care earlier. I knew (the 2 older children, now in the later years of primary school) when they were in Nursery. By the time (younger sibling, now in Year 2) was born, they'd been on a CPP, then off and they would let the parents try again. It was never long-lasting, so they'd be on it (the CPP) again. Seven years this went on for, with 3 younger children being born during this time. Now, they're all in the care system.
3. With the CiN Plans, they're off it, then there's some crisis, then they're on it and so things improve and the SW says things are 'good enough' and they're taken off it. But they are often at home without a parent to spend time with them. School becomes somewhere to go. School is the place where someone spends time with you.
4. With (the local specialist high school for behaviour) – whole families of children go there. In Year 2, their behaviour might be really extreme, they might sleep at school. You can see a child – and predict what is going to happen to them.

## What helps?

1. I think outdoors activities are good, and teaching independence skills. Other activities, they give you the chance to recognise skills that were not previously noticed (in school).
2. Very firm, clear boundaries and you have to be very consistent.
3. For those children who do well, who seem to have resilience, it would be interesting to look back and ask them, what has helped them? Is it being well thought of by other children? A non-alcoholic partner of their parent?
4. We need to connect with the parents. Often, we don't know what's happened on the way to school, but the parents don't want their children to be noticed.
5. I've tried pairing him up with older children, but if I put him in a pair, he turns away and the other child does it all. Can we teach younger children to pair up successfully? A little, but they want to do their own thing in the end.
6. Looking the same as everyone else (i.e. not dirty or dishevelled). (Named a child in Year 4) recently moved to a good foster carer. She has a lovely hair style, a new coat, a nice school bag and she comes into school now with her head held high."

## Chapter 9

### DISCUSSION

#### 9 Introduction

This research project aimed to explore possible reasons why children in care tend to underachieve. As one possible route, I specifically sought to understand how the effects of early neglect on child development influence a child's relationships and progress in school, from the perspective of individual child development, and from the perspective of staff, core professionals and family, and how these integrate to produce understandings, explanations and decisions relating to a child's education, and their subsequent progress in school. This Chapter will discuss the theory and results in pursuit of this aim.

The research project as a whole has Relational-Developmental Systems metatheory as its conceptual framework and this Discussion Chapter is similarly organised around its key principles. The epistemological first principle is that child development is holistic, comprising interpenetrating, co-acting parts understood through the worldviews of contextualism (multiple events coherently linked through time) and organicism; that as a result of a child with a fundamentally significant historical past (Elder *et al*, 2015) acting in the present school context with teachers and peers, re-organisations take place at multiple levels in multiple 'parts' of a living organism to continually create a child who understands and acts differently in every new event. Development and achievement are not determined; every day is a new opportunity to create change. The ontological realities (Chapter 2 p44) are: activity, process, change and necessary organisation (Overton, 2015) and

child development can only be meaningfully understood if these are taken as 'real'.

Consequently, unlike much research in child development, the present research attempts to move from a variable-centred conceptualisation to a person-centred conceptualisation; the developmental paradigm shifts from a split, reductionist ontology with explanatory forms 'adding' nature to nurture and incorporating linear mechanistic models of cause-and-effect, to a holistic 'process' ontology, emphasising mutually influential, co-creating relationships between children and their contexts, through time. This reflects the 'Identity of Opposites' moment of analysis, where nature and nurture are subsumed, in an indivisible way, to create the holistic development of every aspect of the child. Cognition, self-regulation, memory, emotions, language, identity – all 'parts' develop together and cannot be isolated from one another or from the context, during developmental processes and activity. Both the child and context 'define and are mutually constituted by, the other' (Lerner, 2015).

Epistemological holism means that although analysis (of parts) may be temporarily 'split', they must finally be brought together to understand how different aspects of child development take place in the context within which it occurs, in this case, school.

In the first section of this Chapter therefore, the analysis is initially 'split' into psychological aspects (descriptions) of child development, then biological aspects, then social aspects, whilst theoretically acknowledging that these are

not context-free - what Latour (2012) refers to as a 'relative relativity'. Through the 'Opposites of Identity' moment of analysis, the 'person' standpoint will consider the children's particular psychological attributes (common to all 'persons'), such as strengths and difficulties in language, memory, verbal and non-verbal reasoning, processing speed, executive functions, social perceptions and learning (including achievement). Next, the 'biological' standpoint will be considered, in terms of how neurobiological processes, including heart-rate and heart-rate variability contribute to development, 'activity' (behaviour) and progress in school. The final view comprises the 'social' standpoint and I will make reference to the general points of teacher knowledge and understanding about the effects of neglect on child development described by the Q sorts and outlined in Section 8.7 of the Results Chapter. This seeks to understand the school context within which child development and hence, educational progress, is occurring. The first section of this Chapter therefore answers the four research questions in turn, to form a preliminary understanding of how early neglect influences child development from the three 'standpoints' outlined in RDS metatheory.

In the second section, I will apply the 'Synthesis of Wholes' concept to consider how the integration of the psychological factors, biological factors and school (social) factors described above may explain in more detail the trajectories and outcomes in school of the two research children for whom an intervention plan was created, and with whom I have had the most involvement. Similar models in the literature are referred to as 'biopsychosocial' (Calkins *et al* 2013; Greenberg & Partridge, 2010), bio-

ecological (Panlilio et al, 2017), developmental psychobiological (Blair & Raver, 2012a) or an eco-biodevelopmental framework (Shonkoff & Garner, 2012) although not all may be relational and holistic. This section will adopt a more narrative approach, as I apply this form of analysis to the progress of each of the children during the implementation of the intervention plan.

## **SECTION 1: The first four Research Questions**

### **9.1 Research Question 1: Do the children in my research show a set of differences in their development, as suggested by the literature?**

Table 6.2 of the Methodology Chapter (p198) states that the data will be analysed for:

- The developmental profile of each of the children.
- The attainments of each of the children.
- The individual child's view of themselves and what helps / hinders their enjoyment of school.

Five children completed assessments relating to cognitive skills, neuropsychological skills (executive functions, language, memory and social perception) and achievement (in reading, writing, mathematics and language). Tables 8.1 – 8.3 of the Results Chapter (p250 / p253 / p257) detail their standard scores.

#### **9.1.1 Cognitive skills**

All the children achieved IQ scores in the average range on the cognitive assessment, when their 10 subtest scores were totalled. It is not meaningful however to combine all 10 subtests for four of the children, because their score for Working Memory was statistically significantly different to (lower than) their Index scores in other areas, particularly Processing Speed. For Simon and Jeff, Processing Speed was in fact statistically significantly different to (higher than) all their other Index scores; a definite strength for these two children. Blair (2010) points out that in unpredictable environments,

reactivity is an adaptive feature: both these children (and Minnie) have grown up in impoverished, chaotic households, with many different people and situations of rapidly-changing threats. Blair & Raver (2016) note that in households characterised by poverty “stress physiology is hypothesized to shape brain development in ways that promote fast reactive and automatic responses to stimulation” (pS33).

On the Verbal Comprehension Index, all the children scored in the average range, although there was a wide variation: Jeff scored at the lower end of the average range, on the 27<sup>th</sup> percentile, whilst Paul scored towards the upper end, on the 79<sup>th</sup> percentile. All five scored within the average range for Perceptual Reasoning, with most scores clustered around the middle, although Jeff again scored towards the lower end, on the 25<sup>th</sup> percentile.

### Conclusion

In this small group of children, early neglect has not contributed to difficulties in overall IQ, Verbal Comprehension, Perceptual Reasoning or (particularly), Processing Speed, reported to be an adaptive feature in unpredictable households. It does seem to be linked to difficulties in Working Memory. The only child not to have working memory difficulties was Pippa, who was brought into public care at the youngest age (six months). Working memory underpins executive functioning (Garavan, Ross, Li & Stein, 2000) and is closely related to inhibitory control (Best & Miller, 2010; Goldman-Rakic, 1998). The literature review (e.g. Blair & Raver, 2012b) highlighted that children growing up in neglectful environments, where multiple stressors may

characterise the family and caregiving environment are likely to have difficulties in these areas, due to inefficient functioning of the PFC. Section 5.1 (p118) describes how the nature of the early caregiving environment may influence reciprocal connectivity between the PFC and sub-cortical areas such as the limbic system and brain stem, which are later responsible for contributing towards efficient self-regulation, including executive functions. The ERA study (p99) identified that children who experienced neglect for longer than the first six months of life were likely to have lifelong developmental differences, termed 'deprivation-specific psychological patterns' (Kennedy *et al*, 2016; Kreppner *et al*, 2007).

This research provides supportive evidence for early neglect contributing to difficulties in working memory, but not other cognitive skills.

### **9.1.2 Attainment**

On the WIAT-II achievement assessment (Table 8.2 p253), which considers literacy, mathematics and language, despite having scores on the Verbal Comprehension Index that fall in the average range, three of the five children obtained scores in the below average range / right at the lower end of the average range for reading, with percentile scores of 18 or less. The only children to score in the average range were Pippa and Paul, who are given individual tuition in literacy, funded by the Pupil Premium. There was a similar picture for reading comprehension (which Minnie did not want to do, as he dislikes reading, aware that he is not very good at it) and spelling, although Jeff did slightly better, with a percentile score of 25 for spelling. He takes part in a small-group intervention for spelling.



In the Oral Language Composite, only the two children who received individual literacy tuition (Pippa and Paul) scored in the average range on the Oral Language subtest. Four children obtained scores below the 21<sup>st</sup> percentile on the Listening Comprehension subtest, which partly assesses receptive language skills. Paul was the exception, with a score falling on the 42<sup>nd</sup> percentile.

All children scored close to the middle of the average range for Numerical Operations; Pippa and Paul have daily individual tuition, whilst Jeff has small group tuition. Both Minnie and Simon said they enjoyed maths. Scores were lower on the Mathematical Reasoning subtest, which I was initially a little surprised about, because the children had scored close to the middle of the average range for Perceptual (non-verbal) Reasoning in the WISC-IV assessment. However, a closer examination of the subtests that comprise this Index revealed that on the Matrix Reasoning subtest (which requires logical reasoning and pattern recognition skills), three of the children had scored in the below average range. Elsewhere in the developmental literature, poor mathematical reasoning has been linked to poor executive functioning (Espy *et al*, 2004; Dehaene *et al*, 2004; McClelland *et al* 2007; Ponitz, 2009).

### Conclusion

In this small group of children, early neglect has not contributed to difficulties in numerical operations (basic mathematics) although three of the children have daily support. There was mixed evidence for logical reasoning, with

three of the five children having difficulties in this area. Other researchers have proposed that mathematical reasoning skills utilise executive functions, such as working memory, so difficulties in these two areas are associated (Blair & Raver, 2016). Early neglect also seems to be linked to literacy and language difficulties for the three children who do not have support, and for listening skills for all of them. 'Listening Comprehension' incorporates language skills, especially receptive language, and if this is delayed due to a language-poor, neglectful environment, with little talk or chatter between children and adults, then the visual modality would take precedence over the auditory modality in terms of the brain being able to predict what is likely to happen next, and subsequent feelings of 'safety'. Language development is considered central to the development of self-regulation and metacognition (Salmon *et al* 2016; Whitebread & Bingham, 2011).

Other research has shown that young children who experience significant neglect in family environments show difficulties in language development compared to young children who have experienced other forms of maltreatment (Allen & Oliver, 1982; Gowan, 1993). Blair & Raver (2016) point to the strong links found in research between school underachievement and living in poverty and neglect. The research data thus far suggests that this may be partly mediated through language deficiencies and working memory difficulties.

### 9.1.3 Neuropsychological skills

I was unable to complete all the subtests of the NEPSY, but tried to focus on 'Attention & Executive Functions', 'Memory & Learning' and 'Social Perception' for the four children who took part in this task, as these were referenced most frequently during my reading of the literature (Table 8.3 p257).

#### Attention & Executive Functions

4. On the Inhibition subtest, **three of the four** children scored in the 'below average' range on their combined scaled scores for **all three** sections. Pippa was the exception, scoring in the below average range on just one (Naming).

#### Memory & Learning

5. On the Memory for Designs subtest, Pippa and Paul scored in the **below average** range for immediate recall. Minnie and Jeff scored in the **average** range for immediate recall, but in the **below average** range for delayed recall.
6. On the Memory for Faces subtest, all children scored in the **average** range for immediate and delayed recall, except for Pippa, who scored in the below average range for delayed.
7. On the Memory for Names subtest, all children scored in the **average** range for immediate and delayed recall.
8. On the Narrative Memory subtest, all children scored in the **below average to mid-average** range.
9. On the Comprehension of Instructions, all children scored in the **average** range.

## Social Perception

10. On the Affect Recognition subtest, all children scored in the **average** range, except for Paul, who scored in the below average range.

11. On the Theory of Mind subtest, all children scored in the **average** range, except for Paul, who scored in the below average range.

## Conclusion

In this small group of children, early neglect seems very likely to have contributed to difficulties in Executive Functioning (EF), because **all** children had difficulties on the Inhibition subtest. Minnie & Jeff had some difficulty in maintaining focused attention and flexible thinking ('set-shifting') in the Animal Sorts subtest (a variation of the Dimensional Change Card Sort, generally considered to be a reliable measure of mental flexibility in young children (Bierman *et al* 2008; Zelazo, 2006). There was some evidence for difficulties in Working Memory (Narrative Memory and Word List Interference) for Jeff, but less so for Pippa and Paul who listened attentively (and repeated words to facilitate remembering), in a distraction-free environment.

Difficulties in EF in neglected children are often reported throughout the literature (for a review, see Center on the Developing Child at Harvard University, Working Paper 11, 2011). Good executive functioning is widely thought to be a significant factor in school readiness (Bierman *et al* 2008; Blair & Razza, 2007; Eisenberg, Valiente & Eggum, 2010; Mann *et al*, 2017; Raver *et al*, 2011; Shaul & Schwartz, 2014; Shonkoff & Garner, 2012; Ursache *et al*, 2012).

In these children, only Paul demonstrated any problems with Social Perception and recognising facial expressions, although difficulties in social perception have been reported elsewhere (Kennedy *et al*, 2016). Early neglect may have had some effect on *long-term memory* for faces and spatial patterns (designs). Children from the BEIP who had experienced severe early neglect also demonstrated difficulties with visual memory (Bos *et al*, 2009), even those allocated to the trained foster-care group. The lower score on some of the delayed memory tasks in this part of the research may equally well be due to distractions (including distracting thoughts or feelings), or not paying sufficient attention at the time of presentation.

Overall, the results lend further support to the theoretical base which links early neglectful caregiving to inefficient EF but not social perception; the children who had experienced early neglect for a longer time period showed the most difficulties with EF tasks such as Inhibition.

#### **9.1.4 Ideal Self**

Simon identified several difficulties for himself in school, and what might help. He thought that having someone to help him concentrate and focus on his work would be helpful and he thought that he became angry too easily when other children were mean to him, so he thought that ways to deal with this would be helpful. When he was explaining his responses to me, I thought that he does think about and worry about his past experiences, particularly as he still has some contact with his mother, which does not always go well, especially because she misses some contacts. This preoccupation seems to

influence his thoughts and behaviour in school, where he is towards the lower end of the class with respect to achievement, particularly in literacy (standard score of 75 for reading on the WIAT-II). This view of Simon worrying and ruminating about his experiences was shared by his carer, who rated him as 'very high' on the Emotional Problems and Peer Problems (Internalising Problems) of the SDQ. Simon's teacher rated him in the below average range on the Conceptual domain of the ABAS-II (including Communication and Self-Direction) and in fact his overall Composite for adaptive behaviour was in the below average range. Like his carer, his teacher thought that Simon could be quite an emotional boy.

Argyle (2008) suggests four major factors that influence the development of self-esteem:

1. The way in which others relate to us;
2. How we think we compare to others;
3. Our social roles, and
4. The extent to which we identify with people.

Simon's description of other children being mean to him does raise some concern about the development of his self-esteem, in relation to Argyle's points above, suggesting that more effort and attention should be paid to children who have experienced early traumatic life experiences: my research experience has been that not much attention is paid in school to the emotional life and thoughts of children who have experienced adversity, but Simon's responses and scores in the 'Very High' category on the Total Difficulties

scale of the SDQ given by his carer, suggest that this is likely to be important in helping to prevent low achievement and mental health issues.

Jeff found reflection really difficult and did not really know either what he found difficult, or what would be helpful. He has a lovely foster-carer and the school is small and nurturing – so his view of himself is very positive. During my observations, it was very obvious that he found it hard to concentrate and also, that he did not play with friends of his own age, so I thought that his view of himself is based on his experiences in the present time; Year 6 children come to play with him and his teacher is very encouraging – and he enjoys all of these things. Chronic early stress (which Jeff has experienced) is hypothesised to adversely affect neural connectivity between limbic system structures and areas of the PFC important in co-ordinating reflective thought and action (Barbas & Zikopoulos, 2007; Blair & Raver 2012b) and I would say that this difficulty is very evident in Jeff, who really struggled to engage in reflective thought at age 8 (when we did this activity). Areas of the cortex involved in time awareness have been identified, but I did not find references as to how this might function, or might be different, in children who have experienced early neglect.

#### **9.1.5 Conclusion for child-based assessment data**

Taken together, these results suggest that children who have experienced early neglect are likely to demonstrate delays in literacy, listening comprehension and executive functioning (including working memory, mental flexibility, and inhibition of impulsive behaviour). These findings are consistent with the neurobiological literature described in Chapter 5. They raise

important questions about how the effects of neglectful early experience are understood in a school setting - traditionally research on child development in the context of neglect has focused on reduced stimulation and fewer opportunities for talking and learning (Blair & Raver, 2016), rather than on such experience being responsible for connectivity between brain areas / specific neural circuits, and the subsequent development of skills, such as executive functions, that are absolutely essential for young children to make the most of their educational experiences in school. Teacher responses in the Q study overwhelmingly indicated the traditional view - that neglect is mainly conceptualised as the lack of a significant caregiver, who personally cares about the child, who supports their progress in school by helping with homework, and helps them to be part of a social group, because their children 'fit in'.

There was a *little* evidence in these results to suggest that early neglect affected expressive language skills, logical reasoning skills / pattern recognition, long-term memory for patterns and social perception.

There was no evidence to suggest that early neglect affected verbal and non-verbal reasoning skills, processing speed, numeracy skills and memory for faces.



## **9.2 Adult-completed assessments**

I found it quite difficult to summarise the results where both teachers and carers completed rating scales, because for two children in particular, there was poor agreement between teachers and carers: Minnie's class teacher rated him as having quite low ability in the ABAS-II, the CCC2 and notable problems in the SDQ, in comparison to his mother, who largely gave him average scores. (Minnie has a great deal of difficulty in school and is described as having 'behavioural difficulties'.) Haltigan, Roisman & Fraley (2013) noted a similar discrepancy, when relying on teacher and carer data for statistical modelling.

Only Jeff's teacher and foster-carer were in quite close agreement about his difficulties; his teacher has known him for three years, since he began in Nursery.

I thought (unsurprisingly) that the teacher ratings mirrored quite closely the difficulties that the children had in school and to a lesser extent, the carer ratings reflected problems at home, particularly in relation to externalising behaviour, home being a place where the children might more easily express their feelings.

### 9.2.1 Adaptive Behaviour

The importance of adaptive behaviour was described in Section 7.5.3 (p223), where factors such as academic skills, self-regulation skills and social competence have been regarded as contributors to adaptive behaviour (Bruininks *et al* 1988). Teachers rated three-quarters of the children in the **below average range** (<18<sup>th</sup> percentile) on the General Adaptive Composite (GAC) (Table 8.4 p264). The exception was Paul, who despite his carer rating him below the first percentile for all domains, was rated in the average range and on the 34<sup>th</sup> percentile by his teacher. This strongly suggests that adaptive behaviour in school is a problem for children experiencing early neglect.

The foster-carers of two children (Paul and Jeff) rated them **below the first percentile** on **all** domains (Conceptual, Social and Practical) and considered them to be very vulnerable children (shaded in Table 8.5 p265). Jeff's teacher, (but not Paul's) shared this view in the Conceptual domain, which encompasses Communication<sup>1</sup>, Functional Academics and Self-Direction<sup>2</sup>.

Except for Paul's teacher in fact, all **teachers** rated **all children** in the **below average range for Communication and Self-Direction**. In the Practical domain, all **teachers** rated **all children** in the **below average range for**

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<sup>1</sup> Communication involves skills such as listening, turn-taking, good use of social gesture, appropriate eye-contact and sociable conversations.

<sup>2</sup> Self-Direction includes emotional self-control (e.g. not losing temper when disagreeing), working independently, being organised, completing tasks in a timely manner and maintaining perseverance on difficult tasks.

**Community Use**<sup>1</sup>. These results suggest a high degree of vulnerability and difficulties in self-regulation skills for children whose early life has been characterised by neglect.

All **teachers** rated all children **highly in regards to Self-Care** ('Practical' domain), but other aspects of Practical skills (Health & Safety / School Living) and the 'Social' domain presented mixed findings. The teachers of Simon, Paul and Jeff rated them in the average range in the Social subtest and the overall Social Domain, considering them to be kind and considerate children. In contrast, all **carers** rated **all children** in the **below average** range in the Social subtest, with Paul and Jeff being rated below the first percentile by their carers in the overall Social Domain.

### Conclusion

What the GAC teacher-ratings strongly indicate, is that children who have experienced early neglect, regardless of whether they are in foster-care, kinship care or returned to their mothers, do have noticeable difficulties in school with regards to specific aspects of adaptive behaviour, many of which are related to executive functions (such as being able to maintain attention), listening and turn-taking. In this small group of children the three subtests indicating this are: Self-Direction, Communication and Community Use.

These were also of concern to the Carers, except for 'Communication' in Pippa's case – the only girl. Self-Direction is related to the ability to maintain

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<sup>1</sup> Community Use considers independence skills in community activities, such as using the school library, respecting property, crossing the road and carrying small change to buy snacks.

effort, work independently and in a timely manner and demonstrate good self-regulation skills. If these are common problems for children who have experienced neglect, then this is indeed likely to contribute, as diSibio (1993) noted, to poor achievement, as they are study-related skills, and suggests that additional time should be provided in school to specifically further develop these skills, and they should be referenced on PEPs for children in care. Carer ratings unanimously indicated very high concerns in the Social domain, again suggesting this should be addressed in school and / or Foster-Carer training.

### **9.2.2 Children's Communication Checklist**

Tables 8.9 and 8.10 (p274/5) present the results for the children's communication skills. In many respects, these results mirror the Adaptive Behaviour findings above, with Minnie being rated poorly by his teacher (in the bottom 5%), but much better by his mother, and Paul again being rated in the bottom 5% by his carer.

In the General Communication Composite:

- Every child obtained at least one score in the bottom 10% in the teacher OR carer ratings.
- One child (Jeff) scored in the bottom 10% on both Teacher and Carer ratings.
- Three children obtained at least one score in the bottom 5% in the teacher OR carer ratings (Minnie – rated by teacher, and Paul & Simon (rated by carer).

In the whole set of ten subtests, two or more scores at or below the 5<sup>th</sup> percentile is usually taken to represent a profile of communication difficulties of “**clinical significance**”.

- Every child apart from Pippa fell into this category for either teacher ratings or carer ratings.
- Jeff & Minnie fell into this category for both.

If there are 3 or more scores with scaled scores of 5 or lower, this is deemed a “**cause for concern**”:

- Every child fell into this category for either teacher ratings or carer ratings.
- Jeff fell into this category for both.

**All** the children have scores at the 14<sup>th</sup> percentile or less on the carer ratings for the ‘Social Relations’<sup>1</sup> subtest, mirroring the results from the ABAS-II.

In relation to the pragmatics aspects of language (Table 8.10 p275), all the children scored below the mean value of 40. Pragmatics describes the way we use language informally in communication, to achieve social goals, for example through the appropriate use of gesture and intonation. It is also important for conveying personal thoughts and feelings.

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<sup>1</sup> Items include: Is left out of joint activities by other children / Is babied, teased or bullied by other children / Talks about his / her friends and shows an interest in what they do.

In relation to the structural aspects of language, for example using grammar appropriately and conveying ideas coherently, all children again scored below the mean value of 40. Table 8.9 shows that all children were rated within the average range for 'Speech', but apart from one score of 9 (given by Minnie's mother), all the children scored in the below average range for 'Coherence' and 'Syntax' by both teachers and carers.

### Conclusion

In this small group of children, early neglect does seem to be strongly related to later communication skills in school, as every child was rated as having communication problems that are a 'cause for concern' by either their teacher or carer and two had problems of 'clinical significance'. This was unexpected, given that none of the children have previously been identified as having any form of communication or speech and language difficulty. This may be related to the lower scores on language skills reported in Section 9.1.2 (p357) above, and is therefore indeed a cause for concern; poor communicative skills are also very likely to have a detrimental impact on social inclusion. This was indicated in scores below the 14<sup>th</sup> percentile in the two social scales for four of the children (Minnie, Jeff, Paul and Simon) and below the 14<sup>th</sup> percentile on the **Social Relations** subtest for all of the children. Poor communicative skills may also have a detrimental effect on the child's ability to explain their thoughts and feelings to another (which may be related to later effects in mental health) and may be predictive of later behavioural difficulties (Petersen *et al*, 2013).

Poor communication skills in terms of the structural aspects of language is highly likely to have a detrimental impact in the children's ability to explain their ideas accurately in detail both verbally and in writing<sup>1</sup>. Narrative, the ability to coherently tell a story (Peterson & McCabe, 1983), depends on the underlying skills of vocabulary, syntax and pragmatics (Salmon *et al*, 2016), so delays in these areas profoundly compromise a child's ability to write well. The observational data for Minnie and Jeff (Table 8.19 p300 for Minnie and Table 8.21, Observation 3 p320 for Jeff) record severe difficulties for both children when conveying their ideas clearly in writing, but they are helped by having someone to talk to about their ideas (Minnie, Observation 4 p307). Children who have not achieved age-appropriate language skills are at risk of increasing and enduring social, emotional and behavioural problems (Girard *et al*, 2017; Masten & Cicchetti, 2010).

### **9.2.3 SDQ**

The SDQ is a brief screening questionnaire for mental health problems. It was used in this research partly to identify any difficulties in attention / hyperactivity, as well as the presence (or absence) of internalising and externalising behaviour problems, that might contribute to children's difficulties in school. For the purposes of answering Research Question 1, it is argued that differences in attention, and in externalising / internalising behaviour are indicators of differences in the development of self-regulation skills, which

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<sup>1</sup> Minnie's CT told me, "he seems easily confused when writing. If he tells a story, there's no sequence".

underpin effortful control and behavioural regulation (Holzman & Bridgett, 2017; Rothbart *et al*, 2003).

On the SDQ continuous scale scoring system, the ‘Close to Average’ descriptor includes 80% of children, the ‘Slightly Raised’ descriptor includes the next 10%, whilst the ‘High’ and ‘Very High’ descriptors each represent the top two 5%. **All** the children obtained a score in the top 10% for ‘Total Difficulties’, obtained by either teacher or carer ratings (Tables 8.7 & 8.8, p269/ p270). Two children were rated in this category by both. There was no pattern as to whether it was more likely to be the teacher or the carer that identified the most problems.

Externalising Problems scale:

- On the Hyperactivity scale, four children were in the top 20%, with two children obtaining the highest score of 10 (‘Very High’) when rated by their teachers.
- On the Conduct Problems scale, three children were rated in the top 5% by their carer and one by their teacher.

Internalising Problems scale:

- On the ‘Peer Problems’ scale, four out of five children were in the top 20% when rated by either teacher or carer.
- On the ‘Emotional Symptoms’ scale, three children were in the lowest 80% (close to average) when rated by both teacher and carer.



### Prosocial Behaviour Scale:

- All of the children were rated in the bottom 20% by either teacher or carer. Equally, four of them were also rated in the 'close to average' (top 80%), two by teachers and two by carers.

### Conclusion

In this small group of children, as predicted by theoretical formulations of the effects of early neglect on the development of self-regulation skills, neglect does seem to be strongly related to delays in self-regulation, hyperactivity and potential mental health difficulties, as all children were rated in the top 10% on the Total Difficulties scale, and in the bottom 20% for Pro-social Behaviour, when rated by either teacher or carer.

High scores in the Total Difficulties scale were linked to high scores on the Externalising Problems scale (Hyperactivity and Conduct Problems): four children were rated in the top 10% for Hyperactivity when rated by either teacher or carer. This is similar to the 'Inhibition' subtest results on the NEPSY, where three children (Minnie, Jeff and Paul) scored in the below average range.

There were fewer difficulties on the Internalising Problems scale, particularly 'Emotional Symptoms', where children were not identified as having many worries or fears, being nervous, or being downhearted and unhappy (SDQ items).

This reflects other research findings relating to the prevalence of mental health problems in children who have experienced early adversity. Minnis (2006) for example, reported the overall prevalence of mental health problems of children in care to be around 45%. Using the SDQ, Ford, Vostanis, Meltzer & Goodman (2007) compared children in care with deprived and non-deprived children, and found that just 9% of children in care scored in the normal range on all the subscales, compared to 42% of deprived children and 53% of non-deprived children.

The results also indicate to me, the variance of the Conduct Problems ratings between home and school – the carers of Pippa, Paul and Simon rated them in the ‘Very High’ range (top 5%) and worried about them far more, whereas the teachers of the same children rated them in the ‘Close to Average’ (lowest 80%) range in school. Perhaps in the close relationships at home, it is easier for children to express their feelings, as this scale includes statements relating to temper tantrums, obedience, fighting with other children and lying / stealing. It suggests that foster-carers should be able to access high-quality advice for support with their children’s difficulties.

In individual analyses, each one-point increase in SDQ score predicted a higher prevalence of a mental health disorder (Goodman & Goodman, 2012) and in population-level analyses, mean SDQ scores predict the prevalence of disorder (Goodman & Goodman, 2011), so these results are of concern, since two children scored in the top 10% when rated by both teacher and carer, whilst the remaining three were rated in the top 10% by either.

### **9.3 Conclusion for Research Question 1 (the “psychological standpoint”)**

This question examines the ‘psychological’ standpoint. The children do show a set of differences, in several areas. From the findings in this research, difficulties in language, listening, literacy, working memory, executive functions (including attention / inhibition) and communication skills were a common feature for the all children and are likely to be a major contributor to poor school readiness and early underachievement in the first three years of schooling (the age range of the children).

The research findings strongly support the neurobiological literature proposing that early neglectful caregiving contributes to inefficient executive functioning skills (e.g. Shonkoff & Garner, 2012). These skills underpin all learning and social relationships in school (Bierman *et al*, 2008; Graziano *et al*, 2016; Raver *et al*, 2011). Further evidence for this is considered in Research Question 3.

Language is the principal means by which we learn, the principal means by which children are assessed and a major component of appropriate social interactions (Trentacosta & Fine, 2010). Language is also the means by which we think, reason and reflect; delayed language, listening comprehension and communication skills are very significant factors in the development of self-regulation skills (Duckworth & Steinberg, 2015; Roben *et al*, 2013; Vallotton & Ayoub, 2011), executive functions (Fuhs & Day, 2011; Kuhn *et al*, 2016) and in early underachievement (Denham *et al*, 2012).

A focus on improving the language and literacy skills of all children growing up in adversity, is strongly indicated, to reduce the likelihood of neglected children falling further behind, particularly in writing (Hindman *et al*, 2016; Morgan *et al*, 2015).

The two children who achieved higher scores on the achievement tasks were those children who receive individual tuition in literacy and numeracy.

The opportunity to read and *talk* every day with an interested adult, as has been pointed out elsewhere in the literature (Wasik *et al*, 2006; Weisleder & Fernald, 2013), would also be highly beneficial.

With regards to adaptive behaviour, Hochstadt *et al* (1987) believe that every child in foster-care should be routinely assessed for adaptive behaviour, whilst diSibio (1993) states that measures of adaptive behaviour contribute significant additional predictive power when predicting achievement. The research findings support these views, as **all** the children were rated by their teachers in the below average range for Community Use and all children except Paul were rated in the below average range for Communication and Self-Direction - and these are indicators of skills for learning and social inclusion.

The Ideal Self activity, which seeks to understand the child's perspective highlighted the importance of fostering confidence and good self-esteem in children who have experienced early adversity. Simon's carer expressed concern about him ruminating on his past and current experiences, noticed

also by his teacher, who described him as 'emotional'. Other researchers have pointed out the need for children to form positive representations of themselves, which underpin motivation for learning, positive self-identity, competent social skills, and contribute to self-regulation (Blair & Diamond, 2008).

#### **9.4 Research Question 2: Do neglected children show patterns of insecure attachment?**

Data will be analysed for:

- The attachment style of each of the children
- Their reliance on adults in school for comfort.

I was unsure as to what the Manchester Child Attachment Story Task (MCAST) might show. Out of the six research children, three had been in care with the same (good) care-givers for at least the immediate previous eighteen months, with the oldest child (age 8) having been in care for four years, since he was 4 (so he has had one change of placement). The child that was in kinship care had been with his carer for 5 years, from the age of 2. One child (Minnie) also aged 7, had been in foster-care at the age of 5, but had since been returned to the care of his mother. She had experienced severe post-natal depression and all family members had been victims of domestic violence. Minnie's play was violent during the last activity of the MCAST, probably reflecting and perhaps enacting, his early experiences. (All members of the family were receiving therapeutic support, and this has probably contributed to this child seeing his mother as caring and available.) The sixth child was adopted at the age of 17 months, following severe early neglect, and was aged 7.

The MCAST showed that all six of the research children showed a secure attachment with a primary care-giver, as did the four control children. During the doll play with attachment story stems, all the children showed immediate movement towards their 'mother' doll, with a verbalisation of concern from the

parent dolls. The length of the narrative varied, with some story stems from both research children and control children being quite short. The coherence of the narrative also varied, with some elaboration provided by the control children (such as 'my dad sang me a little lullaby to help me get to sleep again'), but not with the research children. McCabe, Peterson & Connors (2008) noted that securely attached children have internalised the inclination to disclose themselves by the narration of longer, personal narration to others.

Five of the children that took part in the research experienced neglect for at least the first year of life (Pippa experienced it for 6 months), and many continued to experience neglect for longer. Neglect by its nature is associated with insecure attachment; had these five children been assessed with the Strange Situation Procedure at age 1, it is very doubtful that they would have been classified as 'secure'.

A major tenet of Attachment Theory (AT) is that development is a dynamic process and goal-directed patterns of behaviour change in response to variations in the caregiving environment. Bowlby proposed a period of goal-corrected partnership during the pre-school years when the child develops a theory of mind, with insight and anticipation of his caregiver's motives and plans. The child modifies his behaviour accordingly, reflecting reorganisations of the IWM. These ideas are closely reflected in Crittenden's Dynamic Maturational Model (Section 3.11.2 p83), an extension of AT with adaptive behaviour being oriented towards maintaining *availability* of the caregiver. In this model, attachment classifications are expected to change if the caregiving

changes and when the child's ability to form more complex representations of the caregiving relationship develops with age.

All six research children have been in a placement for at least eighteen months where the caregiving is consistent, responsive, available and warm; they experience genuine and empathic care. Their experiences help to form representations about the interpersonal behaviour of other people, part of the hypothesised IWM. Memories of past events enter conscious awareness in order to create expectations and influence behaviour (Edelman, 1989; Toates, 2006).

If supportive adult relationships are also experienced in school, then a turn towards more adaptive development is indicated. Indeed, Brandtstader (1998) describes relationships that are mutually beneficial as 'adaptive regulations' – descriptions of interpersonal behaviour that both people find rewarding and which support optimal development for both, similar to Bowlby's original definition of attachment, in fact (p55).

I observed two children (Jeff and Minnie) in school. Jeff relied notably on his class teacher for emotional support and to resolve distress - she described one situation where Jeff had been distraught and clung to her. There were two adults in Minnie's class, one I have described in the meeting notes as the 'trusted TA', known to the family, and the other being the class teacher. Although I knew that the teacher cared about Minnie, I did not observe him going to the teacher when he was distressed, he tended to either sit under the



table, or go to a corner of the classroom where there were seats and books. However, if the trusted TA was present, he would go to her, and she offered him empathic care.

Sroufe (2013) pointed out that patterns of attachment in early infancy are often carried forwards in development. Children who were chronically rejected tend to form representations of other people commensurate with their early experiences in terms of how they interpret the behaviour of others (with perceived hostility) and the environments and experiences they tend to create; although they might spend a lot of time in the vicinity of teachers, they often 'isolate themselves and explicitly do *not* go to them when threatened or distressed' (Sroufe, 1983). In the MSRA he observed that these children were often mean to their peers and were treated in a 'controlling, disciplinary and sometimes even angry way by teachers' (Sroufe & Fleeson, 1988). These mirrored my observations of Minnie throughout the year of my involvement. He could sometimes be mean to peers (e.g. hitting them) and he was often kept in at break due to this. Equally, other children took advantage of this and sometimes blamed him for things he had not done, knowing that he would then be told off. Minnie went to the trusted TA for comfort if he was distressed, rather than the less well-known teacher.

In contrast, Sroufe observed that those children with ambivalent histories (inconsistent caregiving) tended to want to be with other people, but often hover around the group, 'and simply fail to be well-accepted, because of their... social immaturity' (Sroufe, 2013, p1221). This describes Jeff (who had

experienced chaotic early care-giving), quite accurately. During a class party one afternoon, although there were musical games organised for everyone, he sat around at the edge, despite my encouragements to join in. During a lunch-time observation, he came up to me to say that he had no-one to play with, although as he was a cheerful child, older children did take him under their wing (including in his new school), which compensated for his social difficulties with same-age peers.

### **9.5 Conclusion for Research Question 2: Do neglected children show patterns of insecure attachment?**

No, the children all showed patterns of secure attachment, commensurate with their current caregiving experiences. However, I thought the current behaviour of the two children I observed, did reflect earlier patterns of adaptation, alongside some more recent adaptive behaviour, such as going to a familiar, trusted person for comfort, rather than perceiving general school staff (familiar but unknown) as also providing security.

### **9.6 Research Question 3: Is there any evidence to show that neglected children find it difficult to self-regulate, and consequently remain in a long-term, physiological state of stress?**

Table 6.2 of the Methodology Chapter (p198) states that the data will be analysed for:

- The physiological levels of arousal ('stress'), operationalised as heart-rate variability and cortisol levels of each of the children.
- The social interactions of the children with peers and school staff.
- The behaviour of the children when they are upset.
- The perceptions of adults about how the children regulate their emotional arousal.

#### **9.6.1.1 Heart-rate variability**

Vagally-mediated heart-rate variability (HRV) was indexed by measures of Respiratory Sinus Arrhythmia (RSA), described in Section 7.6.1. Data are presented in Tables 8.12, 8.13 & 8.14 (p281-285) for the four research children who wore Lifetouch<sup>®</sup> monitors in school (Minnie, Jeff, Simon and Sally) as well as the 15 control children in Minnie's class and the 11 control children in Jeff's class (Table 8.15, p286). Minnie, Jeff and Sally, one child from Jeff's class and two children from Minnie's class also wore Lifetouches<sup>®</sup> overnight (Table 8.16, p290).

In school, the RSA values for Minnie were much lower than those of all the other children in his class, throughout the two-hour monitoring period, and for Sally also, RSA is significantly lower than the 26 control children. Simon's RSA values were the fourth lowest out of 27 children, so they are lower than

most other control children, but not significantly so. He has had weekly support from his grandmother since birth, until he went to live with her at age two.

Significantly lower RSA is an important finding in relation to the behaviour in school, of children who have experienced early neglect, as low RSA values (low vagal tone) are indicative of low activity in the PNS and PFC. The PFC exerts tonic inhibition on the amygdala and hence SNS (Motzkin *et al*, 2015) Porges (2007) similarly states the PNS exerts tonic inhibition on the SNS. Low PNS activity releases the inhibition on the SNS, suggesting that all the research children (leaving aside Jeff) are experiencing stress during the school day.

This addresses one of my reasons for designing the research in the way I have: I wanted to know what happened, in physiological terms, for children who had no satisfactory means of resolving distress in their early years – would this stress / distress, continue in school? Having observed neglected young children (Reception, age 4-5) in my professional practice finding it very hard to pay attention and obey instructions, I thought that children who demonstrated ‘behavioural difficulties’ and who were neglected, were likely to be stressed in school (rather than deliberately ‘naughty’ as the staff often perceived it) and this would be a contributory factor to the difficulties in their social and academic success. I thought that behaviour policies exacerbated their difficulties rather than supporting their development, because children

were then labelled as having behavioural difficulties, and the focus of support was on this, rather than child development issues.

I did ask about the early life experiences of other children in Minnie's class, and some did experience some family neglect, although this was not described as severe. Two were considered to experience chronic stress, with social care involvement. The control data is anonymous (apart from PB10, who also provided saliva samples; he is a junior athlete); PB4 and PB14 do have lower RSA, but I do not know whether they are the children in adversity.

The NVI model (Thayer & Lane, 2000) and the Polyvagal Theory (Porges, 2011) outlined in Sections 5.4 and 5.5 (p138 & 143) both explain how low RSA indexes low activity in the PFC, and earlier sections of Chapter 5 explain how neglectful early experience in the first year or two of life (which all research children have experienced) contribute to poor connectivity between areas of the PFC and sub-cortical regions, giving rise to a hypoactive PFC. A hypoactive PFC has several important consequences for brain functioning, autonomic activity, self-regulation, behaviour and learning:

- The PNS branch of the ANS becomes hypoactive, resulting in the low vagal tone (measured by RSA).
- The SNS is tonically inhibited by the PNS, so low PNS activity releases the inhibition on the SNS, resulting in the activation of the SAM axis, and the release of stress hormones.
- The PFC exerts tonic inhibition on the amygdala; a hypoactive PFC exerts less inhibition on the amygdala, contributing to activation of the

HPA axis and general emotional experiences that are synonymous with feelings of anxiety (and not 'calm').

- Chronic stress (referred to as 'toxic stress' in the neurobiological literature), contributes to an increased allostatic load, associated with a range of negative consequences throughout the body ('the symphony of stress') including poor immune functioning.
- There is an autonomic 'imbalance', with the balance tipped in favour of the SNS, contributing to more rigid patterns of behaviour and lower flexibility of responding, when there are unexpected changes in the environment, or when goal-directed behaviour is blocked.

Beauchaine (2015) observes that RSA is a proxy marker for poor executive control over behaviour, and I would add over emotional regulation and executive functions too, in accordance with Holzman & Bridgett's (2017) theoretical stance.

An active PFC is important for self-regulation (Section 5.2). Self-regulation incorporates executive functions (including working memory, mental flexibility and effortful control / inhibition of inappropriate or unhelpful behaviour), emotional regulation, and arousal (Blair & Diamond 2008; Duncan *et al*, 2007; Thayer *et al*, 2009). All of these are absolutely essential skills for what has been termed 'school readiness' (Bierman *et al*, 2008; Graziano *et al*, 2016; Raver *et al*, 2011). The relevance of this to Minnie personally will be discussed further, in Section 9.10.

I wondered whether there would be consistent RSA depression during teacher input, which requires sitting still, listening and maintaining focused attention, compared to writing at tables, in small groups, as vagal tone is withdrawn during periods of focused attention (Calkins & Dedmon, 2000; Porges *et al*, 1996; Suess, Porges & Plude, 1994). Although some children did show lower RSA during teacher input, not all did, with PB4, 5 and 14 having lower RSA during the writing task. In the more detailed five-minute interval testing in Jeff's classroom, RSA can be seen to vary (rather than remaining static); this reflects the PNS rapidly altering heart rate to meet momentary demands of the task in hand, including focused attention, so it may be that the time periods for RSA calculation are too long in Minnie's class to show short time periods of vagal withdrawal when listening, and that RSA falls and rises quite quickly during all classroom activities (i.e. listening and writing), both of which are effortful. Graziano *et al* (2007) reported RSA drops of 0.59 (problem solving task) and 0.49 (sustaining attention) from baseline, in five and a half year-old children, so if RSA drops are of a similar magnitude in my 6-7 year-old children, this is indeed reflected in the small variations over the 1-2 hours of RSA calculations.

RSA noticeably dropped at break time (as is expected for exercise, when heart rate goes up).

The RSA values for Jeff were higher than the other children in his class, but his heart-rate was noticeably lower, particularly when he was concentrating. When the teacher asked him to begin writing at 9.30am, I saw the bars on the

PSE (tablet) display at the side of the classroom suddenly change from green / orange (normal range) to red (very low) for both heart-rate and breathing rate. I did not observe this for any other child, on any of the five full days (5-6 hours) of heart-rate monitoring in school. I could not find a comprehensive explanation in the literature to explain why heart-rate itself might be consistently low, or why it might suddenly drop in response to a task requiring executive functioning (effortful thought and concentration). Scarpa (2015) through analysis of meta reviews, notes that low heart-rate is associated with callous, unemotional traits and sensation-seeking, and posits low sympathetic arousal. Jeff is neither callous nor sensation-seeking, and Scarpa did not explain the neurological basis of low sympathetic arousal.

My best hypothesis for a sudden drop in heart rate is that Jeff knows that he is not very good at writing (he finds it very difficult to sit still, let alone write) and this was experienced by him as 'threat'. Although his teacher was very strict, I do not think that this constitutes a surge from the unmyelinated vagus associated with 'life threat'! However, Jeff's high RSA has to be vagally-mediated. It may be that his early experiences have resulted in continued low vagal tone in the myelinated vagus: in the first three months of life, vagal tone in the myelinated vagus is low, increasing significantly in safe environments (Kagan, 1994). Activity from the myelinated vagus provides some protection at the sino-atrial node from surges in the unmyelinated vagus - infant distress in newborns is marked by surges of activity from the unmyelinated vagus (high RSA) and the resultant bradycardia is a significant risk factor (Doussard-Roosevelt, 1996). Jeff grew up in a risky environment, which school staff



described as 'chaotic and frightening', so I wonder if it is possible that there is still low activity in the myelinated vagus and it is the unmyelinated vagus that is active and contributing to high RSA and low heart-rate. Continuing low vagal tone in the myelinated vagus would help to explain his difficulties maintaining attention, as its source nucleus (NA) is bidirectionally connected to the PFC.

Both Spangler *et al* (2015) and Marcovitch *et al* (2010) reported high RSA in adults and children, respectively. Spangler *et al* suggested a curvi-linear association between RSA and EF, with poor EF at each extreme of RSA. They proposed a greater use of EF for emotional regulation during high RSA, accounting for lower performance on EF tasks. Partial confirmation of their hypothesis was found in their results, but I am unsure of the neurological basis.

#### **9.6.1.2 Cortisol**

The results for the salivary cortisol concentrations are presented in Table 8.11 (p277) and the rationale described in 7.6.2 (p233). All six research children, plus four controls provided samples of saliva. Neglected children were hypothesised to have a flattened cortisol response (Gunnar & Vazquez, 2001), but I did not observe this in any of the children. All of them had a peak of cortisol release in the morning (although this was either at the measurement taken upon waking, or 30 minutes later), with a steady decrease throughout the day. Paul's cortisol level went up again at bedtime, and was twice as high as any of the other children at this stage of the diurnal

cycle, so his showed a slightly unusual pattern. Paul's carer reported some difficulties with adaptive behaviour at home (and the placement broke down six weeks later), so this may possibly reflect a feeling of stress in the evening.

High morning levels of cortisol have been reported in children who had been abused as infants (de Bellis, Baum *et al*, 1999) and amongst children in poverty (Cutuli *et al*, 2010). Minnie (who was subject to domestic violence as a young child) did indeed have the highest levels of cortisol at the two morning points (16 & 18 nmol/L). However, his classmate MT also had higher levels than the other children in the morning (10.4 & 13.8 nmol/L). These children were in Year 2 and had just taken their SATS examinations (Jeff was dis-applied from SATs and the other 3 children were in Years 1 or 3). The school was being moderated at the time of the cortisol collection, so higher levels for Minnie and MT may possibly reflect a more stressful school environment<sup>1</sup>.

It is difficult to be conclusive about these results. It is not the case that all the children showed either a heightened response, or an attenuated response, as reported in the literature. Minnie experienced neglect and witnessed domestic violence as a child and he did have the highest cortisol concentration, as the research suggests. However, the next highest concentration was measured in his non-abused classmate. The cortisol levels could also be reflective of

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<sup>1</sup> MT has very loving parents and did not experience any early abuse. He is however an athlete and this may be related, as cortisol facilitates energy production.

current circumstances, rather than early experience programming the HPA axis to produce cortisol at a higher level (for Minnie).

All the cortisol levels fell within the normal range, so another explanation is that the results are just showing normal, individual variations.

### **9.6.2 The social interactions of the children with peers and school staff**

Self-regulation encompasses emotional regulation as well as behavioural control and executive functioning (Blair & Diamond, 2008; Eisenberg, Spinrad & Eggum, 2010; Holzman & Bridgett, 2017; McClelland *et al*, 2015). This research question was devised with the aim of understanding the difficulties in school, of children who had experienced early neglect, utilising a multi-methods approach – the data to address this question included observational data as well as biological measures.

Both Minnie and Jeff were sociable children, although Jeff did not socialise with same-age peers and he did not engage in reciprocal friendships – the children with whom he was friendly were either older, or they were also vulnerable in some way (observational data, Table 8.21). Jeff engaged more with adults and he was popular with all teachers, who always smiled when they saw him. Minnie engaged only with adults he trusted, such as a TA, a lunch-time supervisor.

When engaged in classwork, or listening to the CT, he frequently did not look at her, and this was also often true for Jeff (Observation 3, p320). The

polyvagal theory suggests that this is an indicator of stress: when the social engagement system (SES) is active, a child looks at people and makes good eye contact. If they feel stressed, then the SES is switched off, activity in the vagus nerve falls, concomitantly activity in the nerves that control facial muscles falls (because they share the same source nucleus), eye-lids fall and a child looks down. The ability to hear sounds at the frequency of a human voice is compromised, since middle ear muscles also relax.

Minnie was more sociable with same-age peers (Table 8.19, Observation 1) and when I first met him, halfway through Year 2, there were two or three boys in his class that he played with at school and at home. When I observed him in the playground, he took part in ball games like any other child, although he was prone to engaging in rough play. By November of Year 3 he had been moved to a different class and by March of Year 3, Minnie was in different school provision for two days a week and he went home for lunch. His TA told me that he rarely saw boys who had earlier been his friends. So, although Minnie began by being part of a same-age peer-group, towards the conclusion of the research, he was not, and his social skills did not appear to have developed in line with peers. For example, the TAs reported that he deliberately picked on children whom he perceived to be weaker.

### **9.6.3 The behaviour of the children when they are upset and the perceptions of adults about how the children regulate their emotional arousal**

This has previously been addressed in Research Question 2 – Minnie will only go to trusted adults, whereas Jeff goes to any adult, for comfort when

distressed. Minnie tends to go to a quiet place on his own if there is no trusted adult, and he quickly becomes angry when he cannot do his work, or if he is being blamed for something. His CT described him as 'moody' (Appendix 5: Meeting 2) and this preventing him from concentrating on his work.

I did not ever see Jeff in an angry or distressed state; he looked cheerful most of the time. However, his CT recalled telling him off in a stern voice, whereupon he became distraught (Q-study data, Table 8.22, p339), so he does have difficulties with emotional regulation; with maintaining a calm state when he is upset.

The ABAS-II and the CCC2 data also indicate that adult perceptions of how the children regulate their behaviour and emotions when upset, is problematic. All children obtained low scores by teachers and carers on measures of 'Self-Direction' on the ABAS-II (Tables 8.4 & 8.5 p264/5) with three of them obtaining a scaled score of 1 (Very low) by either teacher or carer (the exception was Pippa) and four of them obtaining 'High' or 'Very High' scores on the Total Difficulties of the SDQ (Table 8.8 p270).

### **9.7 Conclusion for Research Question 3 (the “biological standpoint”)**

This research question examines the 'biological' standpoint. There is clear evidence from heart-rate data that neglected children do find it difficult to self-regulate. (This is also supported by the observational data, and questionnaires completed by carers and teachers: the ABAS-II responses indicated that children have difficulties with skills associated with good

executive functions and the CCC-2 responses indicated that children have difficulties with communication skills, that support self-regulation, either by communicating distress effectively to another person or by self-soothing, since language skills are compromised).

The cortisol data were inconclusive – only Minnie showed high levels of cortisol and no child showed a blunted response.

Self-regulation is a complex construct, encompassing executive functioning, inhibition, working memory, effortful control / behavioural control and emotional regulation (McClelland *et al*, 2015) in the service of planned, goal-directed behaviour. The Discussion has aimed to illustrate that they all are essential skills for success in school.

As the Literature Review has demonstrated, there is an extensive corpus of literature relating to the development of self-regulation and its associated constructs. Researchers have linked difficulties in self-regulation to poor school readiness (Bierman *et al*, 2008; Blair & Razza, 2007, Eisenberg, Valiente & Eggum, 2010; Lynch *et al*, 2017; Mann *et al*, 2017; Raver *et al*, 2011). Many studies and reviews have also demonstrated the role of early self-regulation skills in later academic achievement (Bull, Espy & Wiebe, 2007; Denham, 2006; Duckworth, Tsukayama & May, 2010; Duncan *et al*, 2007; Entwisle *et al*, 2005; Graziano *et al*, 2007; Mischel *et al*, 2010; Ponitz *et al*, 2009; Sabol & Pianta, 2012; Valiente *et al*, 2008).

There is also evidence to say that the Minnie and Sally are experiencing stress during the school day, due to consistently low RSA. Simon's RSA is also low compared to the control children (although not significantly so), also indicating some degree of stress and difficulties with self-regulation.

Jeff's continually low heart-*rate* indicates high PNS activity, but possibly, low vagal tone in the myelinated vagus: observational, child assessment and teacher report data clearly show he has difficulties with EF, such as maintaining attention, impulsivity, working memory and being very easily distracted. He is sociable with older children, less so with classmates. My hypothesis is that he has low activity in the myelinated vagus / PFC contributing to difficulties in executive functions.

Neither Minnie nor Jeff made good eye-contact with their teachers when talking to them and this is also indicative of low activity in the myelinated vagus (Porges, 2007) and consequent disinhibition on the SNS, again suggesting a subjective experience of stress for both of them.

PVT suggests that when the SES is active, it contributes to activity in the myelinated vagus. Safe, sociable activities should therefore be encouraged for all children, and isolation discouraged.

My initial idea for carrying out the research was wondering what would happen in children with limited means of resolving distress in their early years of life – would they remain in a state of distress, would there be physiological

adaptations or would they become generally more easily distressed than other children in the future? I initially thought that if young children were unable to resolve distress with their caregivers, then this may have long-term consequences on the development of their emotional regulation skills and hence their ability to manage, and learn effectively in school.

The Literature Review indicated instead that an outcome of early neglectful caregiving is the development of neural circuits that contribute to a hypoactive PFC, and subsequent increased stress reactivity (Blair, 2012).

I have conducted research that has measured stress in children *in school*, and found this to be the case for Minnie and Sally, to a lesser extent for Simon, and probably, for Jeff.

Unfortunately for Minnie, this is interpreted as defiance, refusing to do work and the label of 'behavioural difficulties'. Sally has been referred to CAMHS for possible ADHD and medication has already been mentioned to her mother. Simon's CT and carer expressed concern about his worries and being 'emotional', but no support was available.



## **9.8 Research Question 4: What is the knowledge and understanding held by carers, teachers and social workers about the key ideas in child development, particularly the effects of early neglect and how this is reflected in professional practice?**

Table 6.2 of the Methodology Chapter (p198) states that the data will be analysed for:

- The perceptions and understandings of adults about the effects of neglect on child development (Q study) and classroom observations of child-teacher interactions.
- The comments made by adults during meetings about reasons for a child's needs and how these should be met.
- Any comments made by adults during meetings about behaviour of the child and what should be done if it is unsatisfactory.
- The ideas proposed for the Personal Education Plan / any school planning documents for the educational progress of the child.

### **9.8.1 Q study**

The Q study was carried out with teachers, carers and social workers, but I did not have enough volunteers from the latter two groups to carry out a meaningful analysis. It was a very rewarding activity for everyone, because it enabled people to reflect about their professional practice, the children and families they had known over the years, and it provided a time to think more deeply about their own beliefs and experiences. The Q concourse provides a set of ideas, a way to think about a certain topic, although after the sorting process, questions can be asked of the respondents, such as 'Could you elaborate a little about why you hesitated with that card?' or, 'Why is that a

statement that you strongly agreed / disagreed with?’ or, ‘Is there anything that was left out?’ (see Section 7.9.1 p243 for details).

Neglect was conceptualised as both physical and emotional; a lack of a special person to take a personal interest in the child’s welfare. Neglected children were therefore seen as more likely to underachieve due to the lack of support at home, but most teachers could think of children who had ‘beaten the odds’ and these children were unanimously described as being verbally skilled. The most common problem teachers perceived to arise from neglectful caregiving was related to social difficulties, and children gravitating towards other vulnerable children, or groups of children who take advantage of them, because there is a strong desire ‘to fit in’ and be part of a group. Neglected children were very unlikely to have rewarding, reciprocal friendships with same age peers. Teachers thought it was possible to provide opportunities for neglected children to mix with other children so that friendships may begin, for example in group work, but this was often unsuccessful in promoting friendships, because neglected children found it more difficult to contribute. One teacher thought that it was not possible to ‘engineer’ friendships (unless it was in Nursery, where children are less judgmental) because children recognised in other children the potential to be their ‘one true friend’ (Table 8.22 Statement 27 p343). A foster-carer commented that she tried to encourage her child to ask children home for tea, but he always seemed to choose people like himself (vulnerable). A social worker recalled a teenager who had become best friends with an ‘ordinary’ child, but this was because in primary school, the friend’s mother had

recognised the difficulties that the child had, and had encouraged her own son to befriend him.

The ERA study (Kreppner *et al*, 2007) identified inattention and social vulnerability to be a difficulty for the adopted children. It also identified that those children who had been more verbally able upon entry to the UK had done better in school.

Two teachers made reference to the effects of *early* neglect, such as 'being left in front of the TV all day' and how this translated to difficulties in both learning and social skills (Statement 15 p341). A head teacher commented that neglected children who start school behind their peers fall further behind because they are unable to take advantage of the educational opportunities afforded them (Statement 17 p 341), and this has been noted elsewhere in the research: Rimm-Kaufman, Pianta & Cox, (2000b) reported that half of kindergarten teachers surveyed in a United States nationally representative sample thought that at least 50% of their children had difficulties (such as self-regulation), that particularly hindered their ability to take part in learning activities. Walberg & Tsai (1983) have described the observation of initial disadvantage in educational achievement leading to further disadvantage, as the 'Matthew Effect'.

With regards to behaviour, there was no universal agreement about children having behavioural difficulties as a consequence of early neglect, with many teachers showing more concern for the 'quiet' neglected children, because it

was more difficult to access psychological services (educational and CAMHS). The 'language of choice' is often used in classrooms (including Minnie's to encourage him to speed up and complete work) but teachers did not think that neglected children choose to misbehave, "They didn't choose to be in a position where they have difficulties making the right choice" (Statement 32).

With regards to mental health issues, emotional issues and identity, all teachers considered these to be characteristic of neglected children and the main child-related factor in low achievement – the children are not motivated to engage in learning activities, and this is partly related to self-esteem. Therefore, the support needed to address these interconnected difficulties has to be holistic (point 6, p331), addressing loss, self-esteem and motivation as well as academic skills.

Although there was no single statement that mentioned 'self-regulation' in the Q study (it was addressed through separate statements relating to behaviour, emotional state and learning skills), it was clear that all the teachers did perceive neglected children to have difficulties in self-regulation. However, they considered that unless the difficulties were severe, that they could be helped in school with the right support, and this support should be directed at improving emotional / motivational skills.

Nobody mentioned early neglect being related to changes in brain development and this being linked to difficulties in memory or concentration.

Unsurprisingly, the effects of neglect on child development were restricted to what could be observed, and not being taught these skills (such as attention).

Despite only having 8 Q sorts for teachers, I did conduct a factor analysis of all the Q sorts via the Ken-Q website (<https://shawnbanasick.github.io/ken-q-analysis-help/index.html>). One main viewpoint (with an eigenvalue above 3) and one minor viewpoint emerged (Appendices 8 & 9) when considering the distinguishing statements (marked by circles). The main view was quite personal (Factor 1) with these respondents worrying more (about neglected children), often feeling a little out of their depth, and treating the children differently (because they knew of their circumstances). The minor view (Factor 2) tended to reflect a teacher who felt more confident, who treated the children 'the same' as others, who slightly disagreed that they should be in a nurture group, but who noticed that neglected children were more likely to have social and emotional difficulties.

Both viewpoints strongly agreed that neglected children have mental health difficulties and both were ambivalent about neglected children being developmentally delayed.

### **9.8.2 Evidence from observations**

Observations were carried out in the classes of the two CT who completed the Q study.

#### Minnie

In class, he was often slow at completing literacy work, but not mathematics. The CT's response to him not completing literacy work was to give him a choice, "Do it now, or stay in at break to finish it" (Observation 3 / 4 p303/7). Ostensibly, this seems as though the assumption that the teacher is making is that Minnie can do the work, but he is choosing not to. However, during the Q sort, she explained that she was worried about treating him leniently now, and if she did not make him complete his work in a timely manner, it would be worse for him in the future (Results Table 8.2, Statement 48 p348)

Minnie's CT also believed that disorganisation at home contributed to low achievement (because he did not read at home) and to him feeling moody, which also hindered his ability to maintain focus in class (Table 8.18 p296). She thought that spending extra time with him would be beneficial, but was prevented from doing so by an over-burdened curriculum (p334). She explained that she would like to listen to 'News' and hear Minnie talk, but said there is rarely the time to do this either, thus reducing opportunities for him to develop language skills and self-confidence.

Given the major viewpoint in the Q sort analysis of the previous section – that teachers feel concerned about children who have experienced adversity, and

want to spend more time with them, as Minnie's CT has articulated, then it seems that government targets and the national curriculum work against the personal values and beliefs of the teachers. Teachers want to spend more time with the children, but are unable to, due to curriculum pressures (Statement 45 and points 2/6//7, p347/8).

### Jeff

Jeff's CT and TA thought that his early neglect contributed to a great deal of difficulty listening, maintaining focus and subsequent underachievement. Interventions to help him catch up in literacy and numeracy were provided in small groups, but these were not individually evaluated. Jeff was disappplied from SATs.

### **9.8.3 Evidence from meetings and school personal education plans**

Apart from the two CT who each attended one feedback meeting, the professionals who attended the meetings did not complete the Q sort, so this data-set reflects a different source of evidence and viewpoints, this time from school staff, external consultants and social care professionals.

### Minnie

The meetings held for Minnie (Table 8.18 p296) contain a range of comments and assumptions about the effects of neglect on child development made by different professionals. In Minnie's case, the school staff commented on:

- his moodiness;

- his defiant behaviour (refusing to do work, or do as he was asked);
- his 'mean' / aggressive behaviour towards other children;
- his low achievement (due to not reading at home).

These were attributed to past neglectful caregiving and current difficulties in the family. The Behaviour Policy (Meeting 1) was deemed appropriate in helping Minnie to change his behaviour, with the implicit assumptions that he could control it, he was deliberately choosing to behave in a particular way, and punishment would reduce the likelihood of him repeating the undesirable behaviour. His problematic behaviour was not linked to differences in development. The assumptions seemed to be that he was the same as every other child and poor behaviour (e.g. not doing his work) was a choice, often to gain control and a feeling of power.

In November, following an outburst, the school made provision for Minnie to attend specialist provision for two days a week, which supported children with social and emotional difficulties. His assessed needs were described by school staff on his Personal Education Plan as 'fairly consistent disruptive behaviour physically, with resources or with other pupils'. His 'needs' were therefore described in terms of his behaviour, with an unspecified reference to social and emotional difficulties, rather than his development, skills and knowledge. No reference was made to language, writing or literacy and these being contributory factors. This suggests that the knowledge and understanding of the school staff about the effects of neglect on development, and what could be done in school to remediate it, and how long this might take, was limited. Behaviourist principles about ways to change behaviour



were given primacy over considerations of the effects of early neglectful caregiving. However, the school assigned the trusted TA to be with Minnie following his outburst; the importance of relationships was known and valued, as the school continued to provide full-time TA support for him.

### Jeff

There were fewer meetings for Jeff and at the Social Care reviews his PEP was unavailable. School staff mentioned his difficulties with maintaining attention and this was the main outcome of early neglect to be discussed.

### **9.9 Conclusion for Research Question 4 (the “social standpoint”)**

This question examines the ‘social’ standpoint. The knowledge and understanding held by teachers was focused on the observable aspects – they noted attention difficulties, social vulnerability, and increased likelihood of mental health issues, expressing concern for children exhibiting withdrawn behaviour. Attachment Theory, the basics of which were well-disseminated in the research schools, has I think, contributed the idea of the importance of relationships / a ‘secure base’ to child development, with many teachers commenting that neglected children need personal encouragement, to support their self-esteem and their consequent motivation to engage in school activities.

The teachers noted the problems to be holistic – that if there were difficulties in one area, such as learning, then there were also difficulties in other areas, such as friendships, behaviour and mental health (points 2/6 p329/331)

Mostly, teachers that took part in the Q study thought that children did not ‘choose’ to misbehave and that the school behavioural policy could contribute to a neglected child’s sense of failure, reinforcing anxiety and the feeling that they are not ‘good enough’.

What was largely unknown is the effect of an early neglectful caregiving relationship on brain development, with subsequent difficulties in executive functioning, (including emotional regulation and inhibitory, behavioural control) and changes in the stress response system. These were not considered to be

contributory factors to a child's difficulties in class, for example in completing work or behavioural difficulties.

These aspects of child development were not considered however by professionals in Minnie's planning meetings; rather than looking at why a behaviour was occurring in the first place, and perhaps how early neglect might be related to this, they tended to focus on behaviour as an 'outcome', under the child's conscious control, without really questioning where this behaviour originates, beyond acknowledging current family circumstances.

Development was largely viewed as linear, with the child's aptitudes or choices 'causing' their difficulties, for example being able to maintain focus (Jeff) or completing work (Minnie). The environment was acknowledged to be important (Minnie's school provided a trusted TA when things were difficult), but it was really viewed at a structural level of organisation (Hollenstein, 2010), rather than contributing in any meaningful way to enduring child development, and self-identity. In fact, how the child *felt* was rarely taken into account, although this was noted by some teachers who completed the Q sort (p336 and Statement 42). They thought that not enough time was spent trying to fully understand the child's perspective when completing PEPs and that difficult circumstances at home was largely ignored when teaching: there was more concern about whether or not the child was making the expected progress.

Complex dynamic systems theories of child development definitely do not seem to have trickled down into schools; there was absolutely no suggestion, anywhere, that the school context inseparably forms part of the child's identity, and that identity developed over time contributes to child behaviour. Behaviour was seen as within-child, specific, isolated acts, not connected with other acts through time.

## **SECTION 2 – Research Question 5 “The Synthesis of Wholes”**

Individual standpoints can only be understood in the context of the ‘whole’ (Overton, 2013); holism being an epistemological first principle. This section integrates the findings of the psychological, biological and school (social) standpoints (Research Questions 1, 2, 3 and 4) to understand the dynamic developmental trajectory and progress of two research children. The complexity inherent in the RDS framework demands that quantitative findings are thoroughly integrated with qualitative findings, to understand development from multiple perspectives and at multiple levels (McClelland *et al*, 2015). The cornerstone of dynamic systems perspectives is time, and understanding that history is part of development, behaviour and learning, is essential.

I became involved with Minnie & Jeff half-way through Year 2, having gained ethical approval in March. I saw them each week in school for approximately six weeks, whilst I carried out the child assessments. If it was convenient, I also observed them in class and at break times. I held a ‘feedback meeting’ with CT and the DT in school in May / June and we devised an intervention plan for the children (Section 8.6 p291).

## 9.10 Minnie

The trajectory of Minnie's progress through school over the year of my involvement will be described in narrative form, and analysed in terms of the 'Synthesis of Wholes' – the coactions between Minnie and the school staff, incorporating Minnie's development (as outlined in the child assessment data and the biological data), the ongoing understandings and responses of the staff (as outlined in the Q sorts, observational data and the meeting notes) and the subsequent effects on Minnie's progress. The following narrative may appear critical, but commensurate with the research aims, it serves to illustrate how ongoing co-actions between teacher and child in a real-world setting influence child development.

In June, the feedback meetings with the DT, CT and consultants (Meetings 1 and 2, Appendix 5) culminated in an intervention plan that reflected the shared understandings about Minnie's strengths and difficulties: enjoyment of maths, severe reluctance to engage with literacy tasks of any sort, and the consequent low achievement, difficulties with self-regulation and EF (e.g. persevering, inhibiting impulsive behaviour), difficulties in talking and thinking, especially with regard to his feelings, negative moods having a detrimental effect on his motivation to engage with learning, and the CT's perception that home life was disorganised, affecting Minnie's progress (firstly because he did not complete reading homework and secondly because he was moody). Staff acknowledged that Minnie was socially accepted in the class and he had some friends, but that he had a tendency to 'hit out', so he was not allowed out to play, because children complained. The counsellor questioned this and

observed that 'rough and tumble play' was his experience of playing with siblings at home, so should he really be punished for something that he regarded as normal behaviour?

Although the school staff (particularly his CT) were aware of and clearly explained the difficulties Minnie had (such as not being able to do his work when he is moody), this was not written into any education plan. In the CT's view, 'being moody' was clearly having quite an impact on his progress<sup>1</sup>, but school staff did not write this down anywhere and no formal discussions were held as to what could be done to help him. He was given counselling once a week, but his moodiness and the effect on his work rate was not discussed with the school counsellor, and she was not timetabled to speak with the CT.

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<sup>1</sup> In response to item 15 of the Q sort (Neglected children have difficulties keeping up, educationally) she observed, "It takes all day to get a sentence out of him. There's nothing he wants to do".

**Table 9.1: Summary of the main points from the first review in July**

<p><b>Developmental needs</b>  <b>(Child standpoint)</b></p>	<p><b>Ideas from the Intervention Plan, or information &amp; suggestions from the two consultants involved with the family.</b>  <b>What actually happened &amp; why</b>  <b>(School standpoint)</b></p>	<p><b>Effect on Minnie's development</b>  <b>(Child standpoint at a later time)</b></p>
<p>Poor social skills. (Rough play in the playground.) Difficulties with language and thinking. (Frequent refusal to do work, slow to finish written work.)</p>	<p>The behaviour policy was held to be important by the DT as it was read out at the beginning of Meeting 1 as a suitable way to address and change Minnie's behaviour. Some of Minnie's 'bad behaviour' in class was overlooked, as his behaviour card was not always turned over from green to amber or red.</p>	<p>His behaviour that school deemed unacceptable, did not change.</p>
<p>Poor literacy skills (reluctant writer) and a reluctant reader. Poor self-regulation skills (difficulties with perseverance).</p>	<p>Being read to daily, with individual precision teaching did not take place, because the TA was placed with other children during SATs, or she was teaching other groups of children. Talking with TA occurred a few times in class.</p>	<p>He fell further behind in literacy, likely reinforcing his sense of failure and strengthening his belief that he cannot 'do' literacy.</p>
<p>Emotional regulation difficulties (being 'moody').</p>	<p>Therapeutic Story work with the TA did not take place (same reasons as above).</p>	<p>He was still 'moody', perhaps because he still had concerns about his family life, dad &amp; difficulties in school work.</p>
<p>Stressful experiences when in school (perhaps due to being unable to complete work).</p>	<p>10 minutes of yoga breathing for children, during registration or break happened a few times, but not on a daily basis, for the reasons above.</p>	<p>This was meant to support the development of Executive Functions, so there was no additional improvement.</p>



<p>Poor social skills (rough play in the playground: may represent a 'stable attractor state' and maladaptive behaviour).</p>	<p>Speak to the lunch-time staff about not always blaming Minnie for disagreements, and address his 'rough and tumble' play by speaking to him and the other children. Allow him to play out at break.</p> <p>The lunch time staff acknowledged Minnie's strengths, but still tended to blame him, rather than understand the origins of 'hitting out'. Other children continued to blame him, so he still remained inside at break times, or attended Gardening Club, or he went to the Reception class, 'to help out'. (In Year 3, he went home for lunch.)</p>	<p>Opportunities to make friends were reduced and social isolation increased.</p> <p>(In Year 3, he did not often see boys who had earlier been his friends.)</p>
<p>A focus on more support for mother at home, particularly to encourage the children to read to each other.</p>	<p>The 'Theraplay' consultant reported that mother was not emotionally strong enough to implement family strategies (Meeting 3). She reported that mother was struggling to manage the behaviour of all the children at home and this had culminated in some rows and on one observed occasion, mother losing her temper, and generally not knowing what to do.</p> <p>The DT (who had supported the family for many years) retired, and there wasn't a planned programme of support or regular meetings put in place by her replacement.</p>	<p>This will contribute to Minnie's worries in school, and some uncertainty, as well as hindering social skills, because there is still a lot of rough play at home.</p>
<p>'Being moody' / low affect was having quite a detrimental effect on his motivation to work.</p>	<p>Weekly counselling.</p>	<p>'Being moody' changed into a refusal to do his work in Year 3.</p>

In late July (Meeting 5, Appendix 5), the counsellor had noted the lack of communication between professionals, with the consequence that the family had their summer holiday family support pulled at the last minute due to the funding being cancelled. She observed, "People say different things to different people, and then the families are let down and this is unethical (because people have not done what they promised)... People say the right things in meetings, but they do not do the right things". Again, not only does this NOT support development, but it works against it, because it promotes distrust between families and school.

In September, Minnie began the year in the Year 3 class that had been planned for him, with some of his friends and a teacher with whom he had spent the last week of term. The trusted TA did not go into this class with him, as she was deployed elsewhere; an advertisement was placed for a TA in the new class. The school's response not to place the trusted TA with Minnie left him without emotional support (the biological data indicate he is experiencing stress in school), or a familiar person on whom he could rely. There was some small group support for literacy, but no systematic intervention with a dedicated focus on improving his writing, reading and spelling, and no-one read with him. The plan that had been written in June seemed not to be in place and neither was it reviewed or discussed by the new DT. The school response meant that there was no improvement in delayed skills, and relative to peers, Minnie fell further behind in progress.

By October, Minnie had been moved to another Year 3 class due to 'behavioural difficulties'. This was not discussed with his mother, who then felt alienated, as no regular meetings had been organised with the new DT. She felt Minnie was being blamed for his behaviour (whereas she blamed the school failing to take action against the children who picked on Minnie and blamed him) and she was concerned that he did not have any particular friends in this class; he was leaving boys with whom he was friendly. The unexpected move of class, as well as his mother's unhappiness, is likely to have a detrimental influence on Minnie's self-esteem and his identity. A person's sense of who they are is formed from reflections from those around us (Cooley, 1902) and this may well have reinforced Minnie's sense of being a boy with 'behavioural difficulties' as well as some social isolation. The impact of this move on Minnie's identity or feelings, was not discussed with him.

In order to reduce the likelihood of further behavioural difficulties, the external consultant, counsellor and myself all recommended a focus on building relationships, between school and mother, and between Minnie and his second Year 3 CT. The CT initially worked hard on building this relationship, giving time to Minnie during lunch-time to play games together. The new relationship worked well for Minnie, who perceived that he was liked; his behaviour was not a major issue for around a month, and his mother commented that he enjoyed school. However, he was still having difficulties in literacy and although I had suggested that the CT and Minnie worked together at the start of literacy tasks, to try and provide reassurance for Minnie and

lower anxiety, Minnie began to refuse to do his work, asking the CT to do it for him, probably thinking that he could not do it himself, on his own.

In the October CSC review, the Learning Mentor had not known about Minnie's very poor literacy skills and seemed unaware that this could have been a contributory factor to his refusal to do school work. Again, there was no reference to the earlier education plan written in July and no evaluation of an intervention for literacy. She believed that Minnie was choosing not to do his work and his refusals were giving him 'a sense of control and power'. She enrolled Minnie in a small group intervention for co-operative behaviour. My thought then was, 'How does this impact on his sense of self?'. Not only are his literacy skills falling further behind, he is also realising that he can refuse to do his written work, and no-one can make him do it (which might later reduce his motivation to engage in literacy interventions). Moreover, he has members of staff telling him that he is making the wrong choices by not doing his work.

In the Q sorts (Results, p328) one teacher thought that not enough time is given to fully understanding the needs of neglected children; listening to them and genuinely trying to understand what it is like to be in their shoes. I thought this applied to Minnie, and contrary to the spirit of the new Code of Practice (DfE, 2014), the PEP, whilst completed with good intentions, was very superficial, adult-led, rather than being child-led, and without **all** staff committed to understanding Minnie's difficulties, implementing mutually-

agreed and regularly-evaluated strategies to support his development and progress.

In early November, there was a major incident in the classroom (discussed in Meeting 7, Appendix 5), when Minnie had come into school clearly in a worried frame of mind (thinking he was going back into care). However, although the staff later recalled his low demeanour, no one had stopped to ask him about this, and after a small incident, he had subsequently lost his temper and thrown things around, before rushing out. Again, this would have had a very detrimental impact on how he thought about himself, and probably contributed to feelings of considerable personal insecurity, as he had lost his temper in school, becoming completely overwhelmed by his feelings, and no-one had prevented or stopped this. It may also have been an extremely traumatising incident for him (as his dad was extremely aggressive and had thrown things around the house). Minnie had run out on the school balcony, very upset, and refused to come in, and my hypothesis would be that he was re-living highly emotional early experiences, (as exemplified by his violent doll-play during the MCAST).

Following this incident, there were then objections from the new TA in class, who felt that there should be consequences for Minnie for this sort of behaviour (reflecting a belief that he could control his behaviour), and not doing his work (reflecting a belief that he was choosing not to). Staff perceived that Minnie was being 'rewarded' for misbehaviour, by being allowed to stay in at lunch time and play games with his teacher. Consequently, the CT's

response was to reduce his time with Minnie, telling me (Meeting 8, Appendix 5) that other children have to see that there are consequences for behaviour, and 'that things are fair'. He stated that, 'other children have said that they were going to be naughty then they could stay in at lunch time, instead of going out in the cold' and therefore, the time with Minnie at lunch was to the detriment of his relationship with the other children.

Following the November incident, Minnie was given a place in a specialised provision for two days a week and he went home for lunch. During his three school days, a member of the SMT made time to see him at the end of each day, with the aim of being able to talk through his day, and staff reported that Minnie enjoyed this relationship.

A new Personal Provision Plan was drawn up and his Assessed Needs were described: "*Minnie presents fairly consistent disruptive behaviour physically, with resources, or with other pupils. He requires adult support to stay on track and to address potential outbursts. This has become steadily more challenging during the course of the academic year.*"

Target: "*To use my hands and feet in a kind way.*"

There was no mention of literacy skills, or how Minnie felt about himself, or his family and how this might influence behaviour. The focus was on 'within child' descriptions of behaviour – Minnie was now, just eight months on, very clearly labelled as a child with behavioural difficulties – this was his 'assessed need'. He was spending less time with peers, with whom he has spent the first

two years of his school life, reducing opportunities for social development and to develop an 'ordinary' identity. Behaviour was seen as an 'output' that the child understands and has conscious choice over. However, Minnie (not least due to his language difficulties) could not articulate ideas such as, 'I'm finding it hard to remember my ideas long enough to write a sentence / I can't think very clearly today / I am worried about (...) and this is making me unhappy, so I find it very difficult to focus on my work / people are being mean to me and this makes me feel angry / I can't spell or write quickly and this is making me feel very stupid in front of my friends / very ashamed / very frustrated / very angry / very worried". When Minnie is having difficulties thinking of ideas, or remembering his sentences, or his spellings, he becomes very moody and he sits under the table, or he snatches other children's pencils, or he kicks them under the table, or he is mean to them, but the understanding of the staff is that this is defiance and moodiness.

In the Spring Term of Year 3, a new TA was appointed to work with Minnie during his three days in school. Following consultations with the counsellor and myself, she is working on developing Minnie's confidence in himself and is supporting the development of his literacy skills and his ability to complete work. She is patient with his set-backs and his testing of her. She recognises the difference between his genuinely being unable to do the work, his problematic 'organised patterns of behaviour' in school (such as rough play, learned at home, and which she corrects), and his deliberate choice to misbehave (which she currently addresses by speaking to him about the effects of this). He has noticed this, and has asked her why she does not get

angry! His behaviour in school has changed once more, and in this analysis, reflects the more positive feelings and beliefs that Minnie is developing about himself.



### **9.11 Jeff**

Jeff's early neglectful experiences were quite different to Minnie's; the caregiving at home was described by school staff as 'chaotic', with his mother not being involved with the (several) children, or the school. However, Jeff does rely on other people for comfort, and he smiles upon the approach of other people. This has engendered social support from older children and from staff, and his own view of himself is very positive (Ideal Self). Jeff finds it extremely difficult to focus and the assessment data indicate notable difficulties in EF. The ABAS-II and CCC2 data illustrate notable difficulties in self-direction and communication. Although I am unsure exactly how the heart-rate data relate to this biologically, the literature reviews indicates that these difficulties have a neural basis, arising from early caregiving experiences.

Jeff was often seated by the CT or on the front table, and next to the TA when engaged in group-work. They often gently tapped his arm and re-directed his attention to the task in hand by asking questions, or giving instructions (Observation 3, p320).

His Year 3 CT is very nurturing towards him, but feels quietly exasperated because he does not sit still for very long and is plainly different from the other children on his (low ability) table, where he finds it difficult to complete work, join in socially, and 'chatter'. Everyone agrees that he does try his best and his foster-carer encourages this. He is very happy at home with his carer and

siblings. He appears happy in school, but is not meeting age-related expectations.

From the social perspective, carer and school are doing their best to encourage him and have successfully promoted Jeff's positive view of himself. Most of Jeff's scores on the SDQ are 'Close to Average' or 'Slightly Raised'; he was the only child not to have a score in the top 5% on the Total Difficulties Scale. The 'Synthesis of Wholes' analysis here indicates that Jeff's progress in school seems hindered biologically, by EF difficulties. The (small) school would find it difficult to fund a full-time 1:1 TA, so he has small group interventions and some individual literacy tuition. Without a wider (LA / government) view of the effects that poor learning skills (school readiness) have on educational progress, with a concomitant view to dedicating evidence-based interventions during the Foundation Stage<sup>16</sup>, it is difficult to see what more the school could do for Jeff.

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<sup>16</sup> e.g. Tools of The Mind (Bodrova & Leong (2007) is based on Luria's (1980) and Vygotsky's (1978) ideas to promote self-regulation and confidence.

### **9.12 The 'Synthesis of Wholes' perspective contrasted with the 'Scientific' view.**

The helpfulness of the 'Synthesis of Wholes' analysis is that it puts the 'parts' back together; only in functioning (co-activity) does the 'whole' have meaning. The holistic analysis facilitates an ecologically-valid, more realistic, dialectical view of development, rather than trying to ascribe efficient causes to behaviour, or to educational progress, both of which can now be understood as *probabilistic*, rather than deterministic.

In Minnie's case, the staff's restricted knowledge and understanding of firstly, the effects of neglect on child development and secondly their linear interactional (not co-actional) view of development meant that the responsibility for behaviour was placed firmly 'within the child'. Staff assumed that children are in control of their behaviour and can make the right choices, if they wish to. However, this view separates behaviour from the rest of child development and the context within which the behaviour occurs and develops. It does not take into account in any meaningful way, Minnie's history.

Contextualism would place Minnie's behaviour in its historical context; his traumatic early experiences including witnessing domestic violence, the effect this has on his understanding of how to play and socialise, and the effect it has on his mother's ability to support his development, including his language, listening and literacy skills. Organicism would relate the effects of early neglectful caregiving to his (biologically-based) difficulties in self-regulation, concentrating, sequencing ideas, remembering what to write, motivation and persevering, illustrated by the low scores he obtained in the Inhibition subtest of the NEPSY, the 'Self-Direction' of the ABAS-II, the Working Memory Index

of the cognitive assessment, and low RSA values. Putting the standpoints together permits an opportunity to predict with more accuracy than statistical models, and more importantly, *understand holistically*, the processes of child development, subsequent progress in school and how best to support it.

The dominant view at the moment, and consistent with the static, mechanistic, scientific view of development, is that the school context, as well as environmental risk factors and protective factors, are understood as 'independent variables', that might 'influence', but not really 'transform' the development of a child. It is not thought, in any meaningful way, that relationships in school contribute to a long-term, intrinsic part of who the child becomes, both in terms of their 'mentally-psychological' development (sense of identity, especially how they perceive themselves and the consequent effect on motivation to engage with learning), and in terms of their long-lasting, 'physically-neural' development – the neural architecture underpinning self-regulation, although brain development continues until age twenty five.

For children like Minnie, behaviour policies in school not only separate behaviour from holistic child development, but they also largely absolve responsibility from the school staff, and their part in influencing child development and academic progress. This is particularly concerning when a child who has experienced early neglect and continues to experience some adversity, is clearly, at a young age, seen to be failing in school and then labelled as having 'behavioural difficulties'. The 'within child' model assumed

by the staff places the responsibility on the child, rather than viewing the child and context as a dynamic, co-acting, co-creating, whole.

I also thought that the positive influence of warm, supportive relationships is underestimated in terms of not just reducing stress, but in ongoing psychological development – what a child thinks about themselves, their identity and their competence. I have not discussed ‘goal-directed behaviour’ from the child’s perspective here; both Whitehead and Pepper described the aim of this as ‘satisfaction’ (Overton 2015, p45). My view is that in terms of autonomic balance, the goal is ‘peacefulness’ or ‘calm’ – mid-level arousal states that support self-regulation and facilitate planning, and perhaps, creativity. Kind words do not stop with the end of a sentence. As Dewey (1916) noted:

*When we experience something, we act upon it, we do something with it, then we suffer or undergo the consequences. (p139)*

From my observations of Minnie in school with kind, non-judgmental TAs, I thought that warm, encouraging relationships become part of who a child *is*. Neural circuits are interlinked loops (Williams, 2017) and activity in one loop influences all the others and the resulting, probabilistic behaviour. This includes memory, identity, emotional experiences, thoughts – all of which contribute to motivation to engage with learning.

Jeff has benefited from this at home and school, and I think this is reflected in his placid approach to learning, lack of aggression, and description of himself as being, ‘the best’.

### **9.13 Strengths and weaknesses in the research**

Case studies aim to examine, in great depth and detail, why, how or in what ways, a curious phenomenon is occurring. I was interested in looking in detail at the strengths and difficulties that children who have experienced early neglectful caregiving demonstrate in school, and identifying the reasons why these difficulties might continue, despite the children often being provided with a great deal of additional support.

In the scientific method, abduction provides initial conjecture about what might be going on, that could potentially explain the curious phenomenon. The Literature Review aimed to summarise and integrate the research that provided potential answers about 'what might be going on': ideas which might help to explain why children who have experienced early adversity tend not to do well in school throughout their school years, despite additional resources. Attachment Theory predicts that a lack of synchronous caregiving and repeated failures to resolve a child's distress in the earliest months of life are highly likely to contribute to impaired development of self-regulation skills, and subsequently what the ERA study team referred to as 'deprivation-specific psychological patterns (Section 4.3.3.2). Theory developed from the findings of research in cognitive neuroscience and brain imaging techniques, proposes that there is a neurological basis to these difficulties and patterns, and that the nature of our earliest experiences creates the 'neural architecture of our brains' and an altered stress response (Shonkoff, Garner *et al*, 2012). The reported research findings have led to hypotheses and

ideas which I have attempted to test empirically, outlined in the propositions of Table 6.2 'Analysis of Data' (p198).

Part of my research (with all six research children) was concerned to see if the findings that relate to the large population of children from the wider literature also applied to my much smaller sample of children. This part of the scientific method is related to the idea of deduction – all the children in my small sample are part of a much larger population of children who have experienced early-life neglect. Do the findings that apply to the larger population also apply to my much smaller group of six children? With regards to difficulties in self-regulation and executive functions (working memory, behavioural inhibition, impulsivity and inattention), I would answer that they do. I have additionally considered a physiological measure of stress in children in school not reported in the literature (RSA), and found that for three of the four research children in whom it was measured, there was evidence for the children experiencing stress. These findings are of importance when considering what should be done in schools, to support the educational progress and social inclusion of children who have been neglected in early life. My data support the findings of the much wider literature and contribute additional evidence.

Induction in the scientific method however, takes small samples from a larger population, and considers the extent to which the members of the small sample are representative of the larger population – can the results be generalised to a much larger population? This is not the aim of a case study, and it is not the aim of my research; I am not trying to generalise properties

found in my very small sample of six children who had experienced early neglect and say that these properties are present in (i.e. their particular difficulties can be generalised to) the larger population of children who have experienced early neglect. Induction is one form of probable inference; abduction is the other. Arguments made on the basis of abductive inference are made on the basis of similarities. Probabilistic inference reflects the idea that other children in similar situations *are likely* to have similar difficulties, and that the findings of what helps and what hinders (generated in the 'Synthesis of Wholes' analysis are also likely to be applicable to other children.

I would argue that it is pragmatic to adopt and test these particular findings, because my findings indicate that there are contextual changes that could be implemented (e.g. warm, responsive, authentic relationships and an appropriate curriculum) to support the educational progress, inclusion and development of children who have experienced early neglect.

Dynamic systems theories do not aim for predictions, as the future is not predictable and is unique (as is the past). Rather, I am trying to understand the nature of the co-actions between child and teacher. I acknowledge that the lived experience of the children in school, the description of their relationships, how they are perceived by the class teacher and the children's own particular characteristics, are unique to them.



Abduction therefore relates also to theory-building. The second part of my research, which was addressed through the Relational-Developmental Systems metatheory and the 'Synthesis of Wholes' analysis examined the co-actional, dynamic relationships between two research children and their teachers, in order to elucidate the factors that contribute to adaptive developmental regulations in school over time (Research Question 5). The ontological realities are process, change, necessary organisation and activity, and it is these that I sought to understand in the unique, particular contexts of each child. I endeavoured to understand, by a study of the relationships between two children and their teachers, through time, the factors which contributed to each child being more successful in school and which factors hindered them, from the combined, holistic psychological, biological and social standpoints.

Abduction here contributes to another cycle of 'the scientific method' because I am seeking to provide potential, but provisional explanations, which can be tested out. Abduction is inference to the best explanation, providing testable *ideas* which can contribute to the wider theory surrounding the educational progress of children who have grown up in adversity (rather than describing *properties* of a few individuals who took part in my research, and considering whether they are typical of the larger population of children who have grown up in adversity). The results contribute to the wider research findings, knowledge and understanding of the effects of early neglect on child development and later educational progress and school inclusion. The factors that promoted educational progress in my research can be tried out in

other situations with other children, via a dynamic analysis, and new insights generated.

Threats to validity in my study concern my own subjective interpretation of why the children have not done well. It was up to me, by detailed, different forms of data collection with teachers and children to seek to understand the child's developmental strengths and differences, alongside the teacher's perspective, and endeavour to understand the ways in which they co-act to produce the observed outcomes for each child. My hypotheses were shared with carers, class teachers, teaching assistants and external professionals, in an attempt to arrive at a more widely agreed, shared understanding. In this endeavor however, we were not seeking after a scientific, absolute 'truth'. According to Howe (1988) 'truth' is a normative concept, "It is what works in practice, for that is how we recognize truth". We reflected on our shared understandings, and with the resources available to us, made new educational plans for the children. The extent to which these supported educational progress and the shared, agreed understandings of why these worked (or did not work), are the contributions to knowledge. It is an incomplete contribution to knowledge however, since different people with different experiences may have other ideas. It is through the recursive application and public sharing of reflected-upon ideas that knowledge is built.

## Chapter 10

### CONCLUSION

“The contemporary scientific understanding of human development is characterized by a commitment to the understanding of the dynamic relationships between the developing individual and the integrated multilevel ecology of human development” (Lerner, 2005, p ix).

#### 10 Introduction

Commensurate with the above commitment, implying complexity, there are several intertwined ideas incorporated into this research in my endeavour to understand why it is that children who have experienced early neglect, and who constitute the majority of children in care, tend not to do well in the education system.

#### 10.1 ‘The Developing Individual’

Firstly, I have returned to the first principles of Attachment Theory - Bowlby’s ideas evolving from his observation that the earliest caregiving experiences are accompanied by the ‘strongest of emotional experiences’ (1951), which are related to future adaptation (1944). He hypothesised that during highly-arousing, synchronous early caregiving experiences, a hierarchically ordered set of control circuits develop between the brain stem, limbic system and the PFC, with the PFC being the ‘Senior Executive’ controlling phylogenetically older (lower) brain circuits, in the service of goal-directed behaviour.

Attachment Theory is not just about the resolution of distress; it is about how, through epigenetic processes, neural circuits are created and connected in response to the particular caregiving environment.

The extensive research evidence over many decades, derived from comparative literature, longitudinal studies, and brain imaging supports Bowlby's theorising, strongly indicating that the 'neural architecture' of the brain develops through dynamic processes, in response to the specific nature of the caregiving relationship it encounters (Center on the Developing Child, 2012). This is a predictive and adaptive response to the current state of affairs and what might happen in future.

The literature suggests that in response to *neglectful* caregiving in the first year of life, the neural circuits that develop are the foundations of compromised self-regulation skills and a concomitant reactive stress response system, adaptive to an early sub-optimal caregiving environment, but maladaptive to a school environment.

Self-regulation incorporates essential skills underpinning children's language development, learning and socialising, creating what has been termed 'school readiness'. Delays in their development contribute to children beginning school at a disadvantage to their peers and unless these delays are recognised and remediated, they are likely to fall further behind, contributing to underachievement throughout their school years.

In this research, I have investigated this idea empirically in schools. I have measured self-regulation holistically, through child assessment, observation, the views of both teachers and carers, and (for the first time), through continuous physiological data collection in school. Consistent with findings

reported throughout the literature, the research children had difficulties in self-regulation and EF across all aspects of measurement.

The research children demonstrated many difficulties in school and at home; three were already significantly underachieving in literacy by the end of Year 2/3. The difficulties of the children were often misunderstood; for Minnie, they were seen not as difficulties in self-regulation, but as difficulties isolated in behaviour, with a view that behaviour was under his conscious control and it should be addressed through the principles of behaviourism. In numerous ways, this further reinforced his difficulties in school. Firstly, his needs were not properly assessed, with a failure to understand his needs historically and personally. He was given an 'adapted curriculum', (including a part-time, *out of school* placement) in order to address 'social and emotional needs'. This reduced opportunities to access what he actually did need, to further develop his self-regulation skills, literacy, language and social skills, and a view of himself as a successful, capable and confident learner.

A teacher commented that school behaviour policies often reinforce a sense of failure, of anxiety, and the feeling that children are not 'good enough'.

Brosschot, Verkuil & Thayer (2017) have proposed that the stress response is a default response and failure to discern a safe environment contributes to generalised feelings of anxiety and stress; children have to learn what constitutes safety, and its predictors. If children do not perceive safety in school (due to learning failure, punishment and lack of a trusted person), then for neglected children, an emphasis on learning many 'facts', a focus on

writing well, and the effects of school behaviour policies, may contribute to feelings of anxiety and chronic activation of their stress response, further exacerbating EF difficulties, hindering more optimal developmental trajectories and contributing to underachievement.

Neglectful early caregiving is not restricted to children in care; the stressful effects of poverty and the compromised caregiving it may engender are widely recognised (Bierman *et al*, 2008; Blair & Raver, 2016). The findings of this research are likely to have relevance to many children growing up in adversity, including children in need, as well as children of depressed parents; children who are similarly recognised as being at risk of educational difficulties (Murray *et al*, 2010).

Thomas (2013) argues that new forms of inclusive education have to incorporate knowledge about the ‘damaging consequences of inequality and poverty’. As a result of conducting this research, I would conclude that the knowledge transfer into schools is very limited, and that this is recognised by the teachers themselves. The downward spiral to educational failure at age sixteen begins at an early age, but when this is recognised, then it is possible to change developmental trajectories, educational experiences and long-term health and life chances for the better (Center on the Developing Child, 2016).

## **10.2 ‘Dynamic relationships’**

Before conducting this research, I had not fully appreciated the extent to which ‘biology’ and ‘experience’ are inseparable, mediated through epigenetic

changes (Lickliter & Hunter, 2015; Meaney, 2016), and that reality itself is a complex *process* (rather than discrete entities subject to external forces, and linear 'cause-and-effect' analysis). I think now that we are conditioned to think in linear, mechanistic ways by our scientific inheritance (Chapter 6) and that this is helpful for science, but distinctly unhelpful when thinking about complex child development, brain development and educational progress.

Child development has traditionally been understood as modular, mechanistic, interactional and transactional, rather than co-actional, dynamic and holistic, with the child's own activity (constrained by the particular opportunities of the school environment), shaping their development. Staff did not conceptualise the school context and relationships as being an intrinsic part of child development (skills, learning, behaviour, identity, motivation and progress); they did not see their own influence and importance in shaping life-long child outcomes. They recognised the positive effects of finding time for children in the development of separate skills (such as language), but they did not always recognise the long-term effects of encouragement, consequences (punishment) and failure on *holistic* child development, and a child's ongoing sense of self, motivation and behaviour.

Hollenstein (2012), Lerner (2015), Overton (2015) and van Geert (2011) propose a paradigmatic shift in the way development is conceptualised, and I would argue that there is nowhere more important for this, than in school. RDS metatheories offer teachers another narrative with which to reflect on their professional practice, and an imperative to remove 'blame' from children

and families. They lend considerable weight to the argument for building strong, encouraging and rewarding partnerships with parents, as soon as children begin school, and for schools being at the heart of communities, supporting children's educational success and mental health.

### **10.3 'In an integrated multilevel ecology of human development': Government policy**

Like the child, the teacher is also part of the wider ecology, with their development co-actional with the government-prescribed educational context and with their own training, influencing for better or worse, their relationships with children.

In the Q sort, teachers regretted the lack of time available to listen to children, to understand their perspective and to develop their attributes and skills. They commented on the unremitting pressure of SATS, and the government 'putting teachers in an impossible situation' - to teach the children to pass examinations at the same time as finding the time to care personally about them, particularly withdrawn children and those children who are falling behind. The importance of high-quality teacher-child relationships to academic success is widely reported (Brown & Lan, 2015; Hur, Buettner & Jeon, 2015; Palermo et al, 2007; Youn, 2016).

In their comments, I saw the participants became teachers because they cared about children having a good start in life; they understood that the children needed holistic support to help them develop learning skills and make



better progress. However, they thought that it was not possible to provide this, due to continual pressures of the curriculum. The impression I formed was that the teachers are working against their own values, articulated quite clearly in their Q sort responses.

The government's drive to raise standards has resulted in a highly prescriptive national curriculum for learning 'knowledge', beginning in Reception and largely based on didactic instruction. This assumes that most children in good physical health have the necessary cognitive, linguistic, emotional, self-regulatory capacities and motivation to learn. Government policies seem to view children as one homogenous group when specifying 'age-related expectations' for the curriculum. This is patently not the case, when national variations in levels of poverty and the subsequent reduced access to health care and early years nursery education associated with poverty, is taken into account.

Contrary to the neuroscientific research outlined in the Literature Review, which clearly demonstrates that early caregiving experiences shape early learning skills, all children are not the same and this difference in school readiness has been noted in national surveys (Rimm-Kaufman et al, 2000). Long-term educational success, good emotional health and wellbeing are far more likely when children have well-developed self-regulation skills, and their needs for feelings of autonomy, competence and relatedness, are being met (Whitebread & Bingham, 2011).

In government policy, school readiness is conceptualised more in terms of learning literacy, numeracy and 'facts', rather than skills and motivation for learning. Young children are taken through what teachers described as an 'overwhelming' curriculum between Reception and Year 2. The children who are unable to keep up (often including children in care and children in need) or who for various reasons (including dyslexic tendencies) need more practice, are left behind. They are moved on through the curriculum when they have not consolidated or learned, the basics. Then, failure is reinforced. Rather than taking developmental issues into consideration, such children are often enrolled on small group interventions, for example in literacy once or twice a week, but in this research, these tended to be 'one size fits all' and they are often not matched to the individual child. Neither are they evaluated - in this research (and in my professional experience) this tends not to be thought about and interventions were often seen as a 'tick box exercise'. Children were assessed again at the end of the half term or module, but if progress was not enough, then it was seen as a wholly 'within child' problem, not the responsibility of the school. Concern was expressed in the Social Care Reviews, but nobody stopped to question why the children were not making progress, or whether anything else could be done. Another teacher observed that the viewpoint of the child is not taken seriously, that the PEPs are adult-led and not child-led.

One reason for this may be the way Special Educational Needs are thought about in school. Like behaviour, they are seen as separate from the context,

even though Vygotskian principles are well-known and taught in initial teacher-training.

Context shapes the way we think, and the context is 'government-led targets' to move every child up to 'age-related expectations'. Professionals in meetings rarely stopped to consider or think about the children's self-regulation, 'learning skills' or the effects of their home circumstances on their motivation to learn, because in one sense, they are not there to be 'thought about'. Class teachers were more likely to think about such things, but were largely powerless to effect change.

It seems as though the wider pressure to meet targets works against the very objective the government is trying to achieve. Under the wider government policy of 'austerity', there are cuts to public services, and in the research schools a concomitant squeeze on staffing. There is an increasing number of children beginning school having spent their early years in situations of psychosocial adversity and neglect – who show development differences and whose needs should be properly and holistically identified, with remediation programmes provided.

Rather than ascribing 'efficient causes' to behaviour or developmental trajectories, what would be more helpful and hopeful, is the understanding that context and relationships matter, for both teacher and child.

The research suggests, as many others have also suggested (e.g. Lynch *et al*, 2017; Shonkoff and Garner, 2012) that the educational focus in the early years should be on ‘development’ – on supporting the skills that the children need to learn. Holistic interventions, which target teacher training, classroom practice *and* child development have been developed elsewhere<sup>1718</sup>. The research strongly suggests that it would be of great benefit to children growing up in adversity if similar programmes were adopted in the United Kingdom, and an Early Years Curriculum based on the latest developmental research, provided.

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<sup>17</sup> Chicago Schools Readiness Project (Raver, Li-Grining, Bub *et al*, 2011)

<sup>18</sup> Head Start REDI programme (Bierman, Nix *et al*, 2008)

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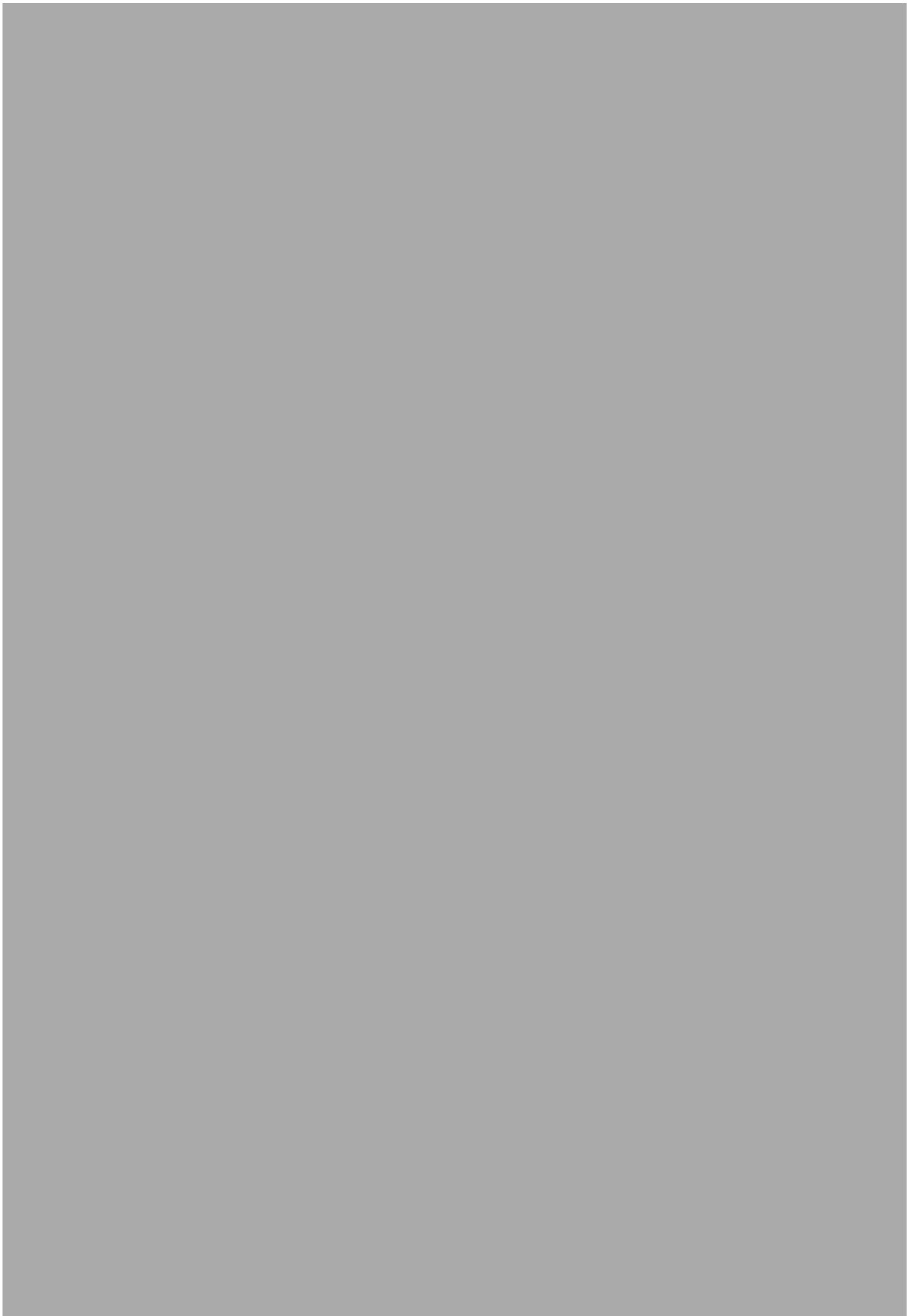
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## APPENDICES



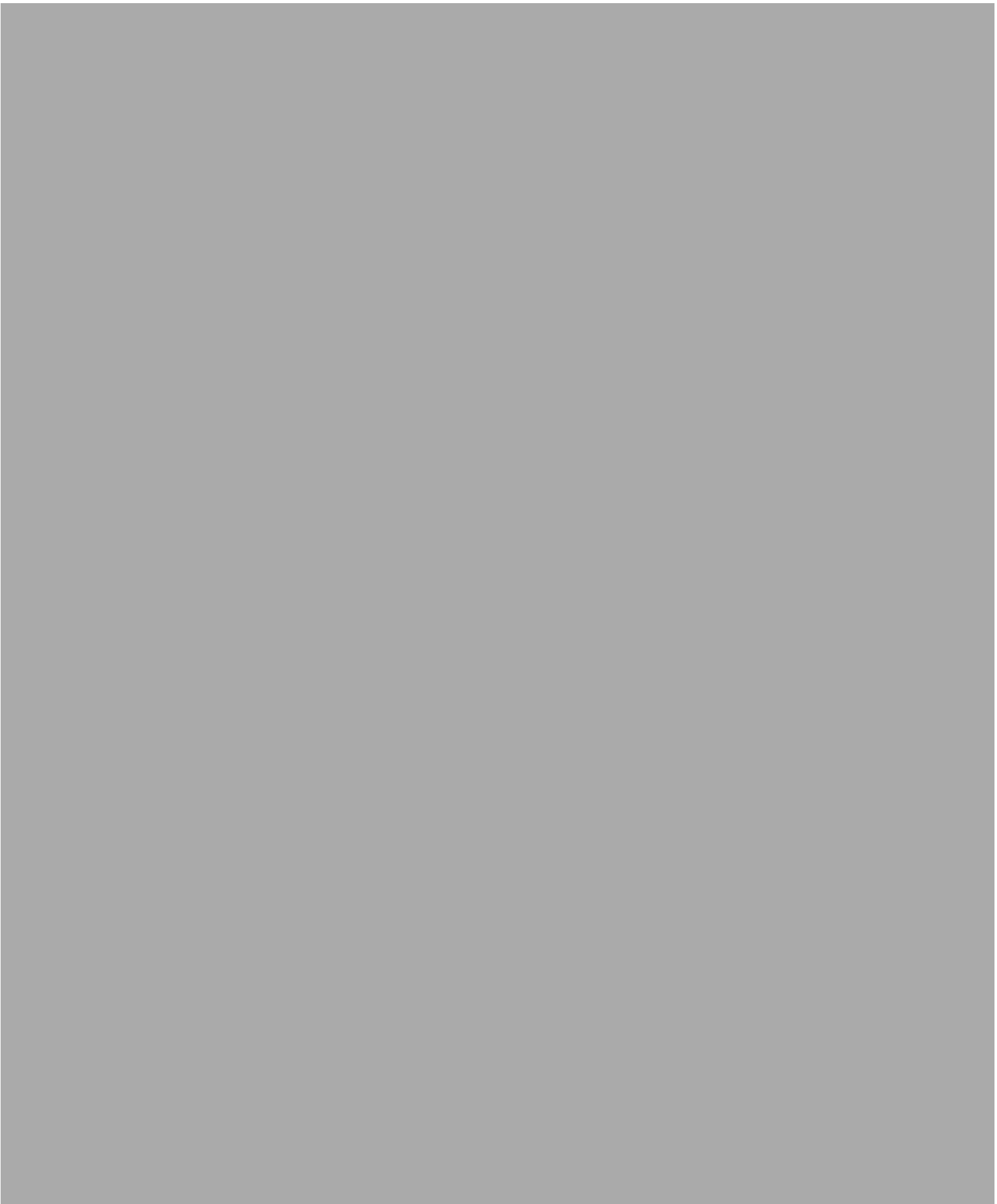


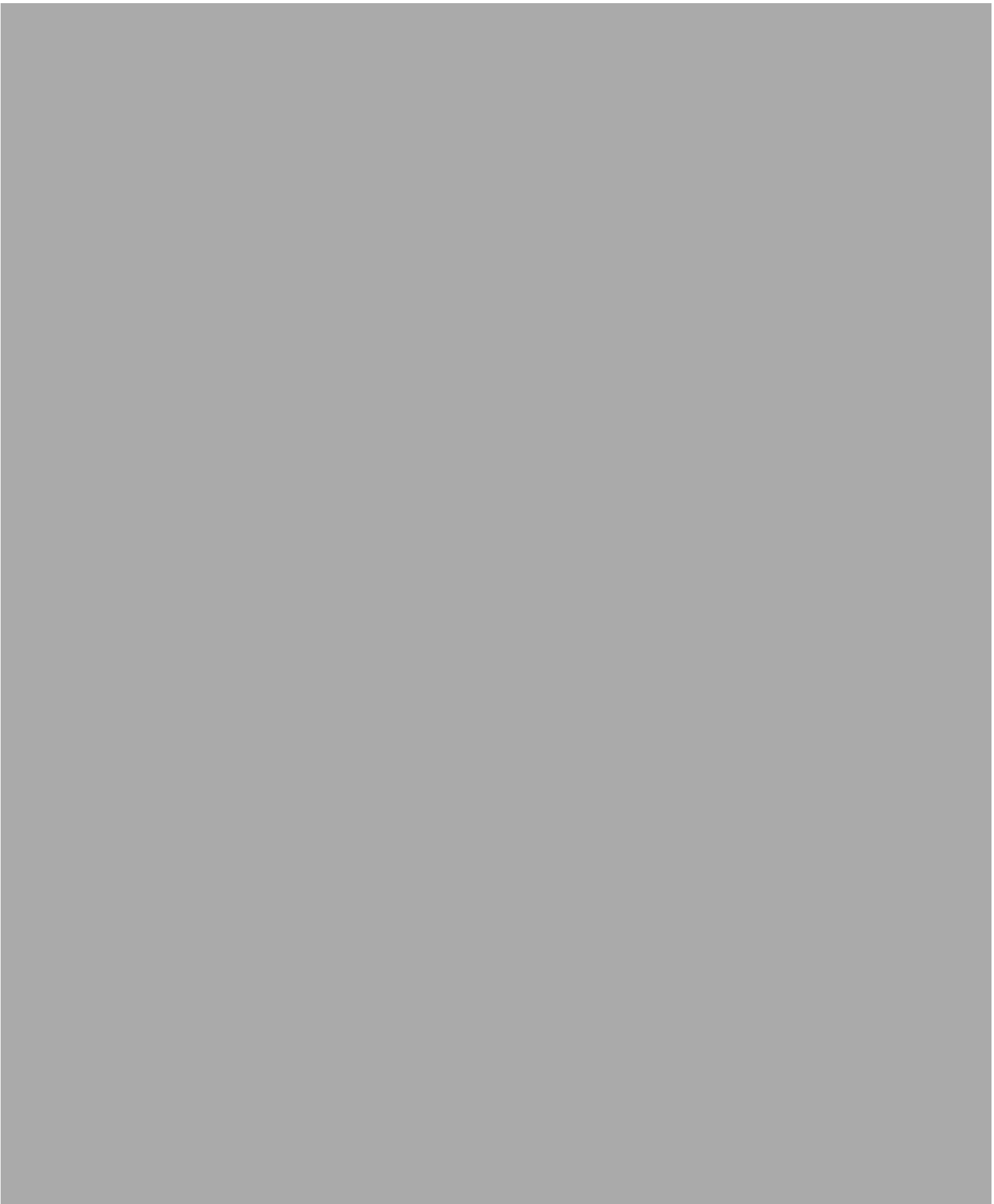


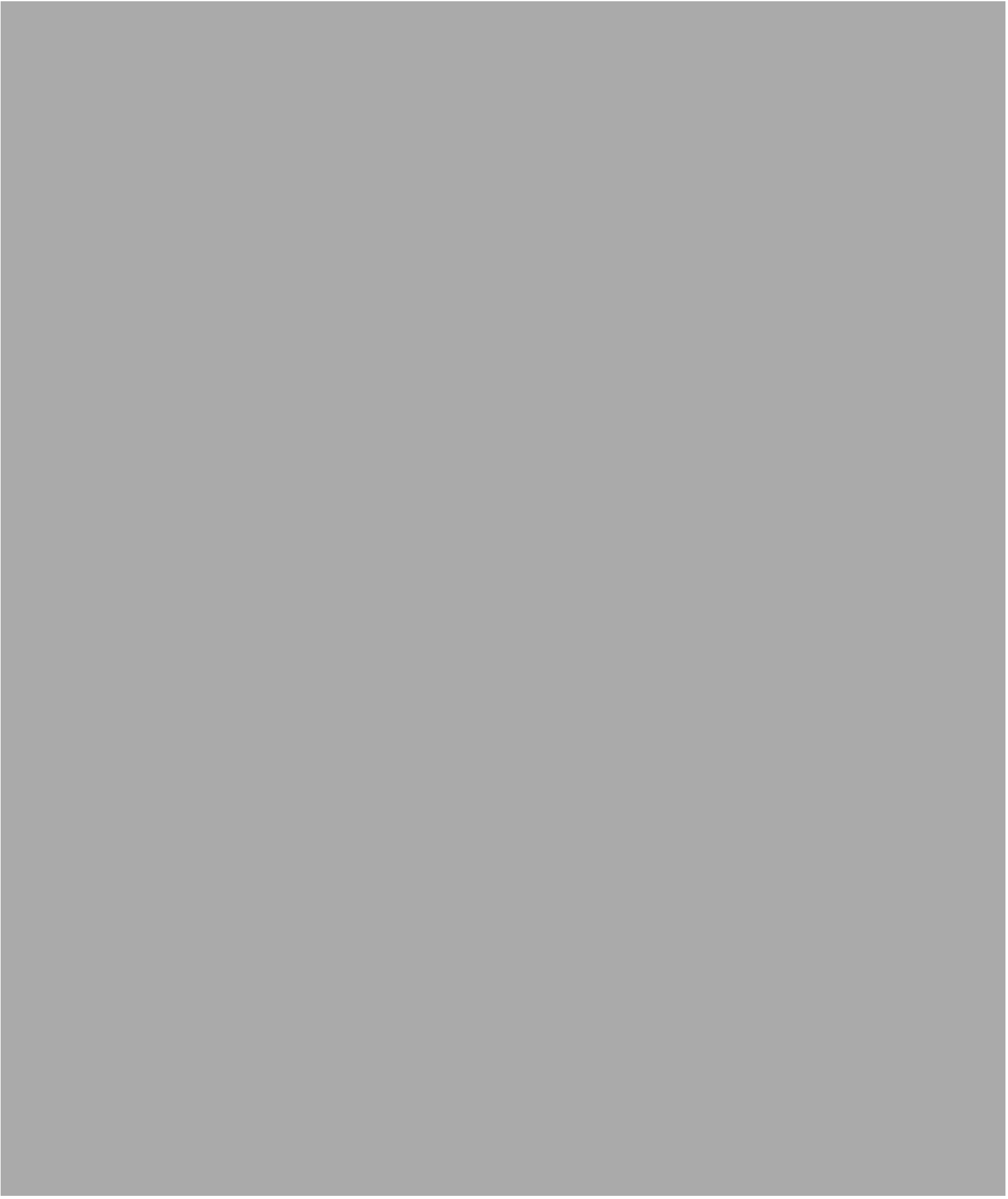








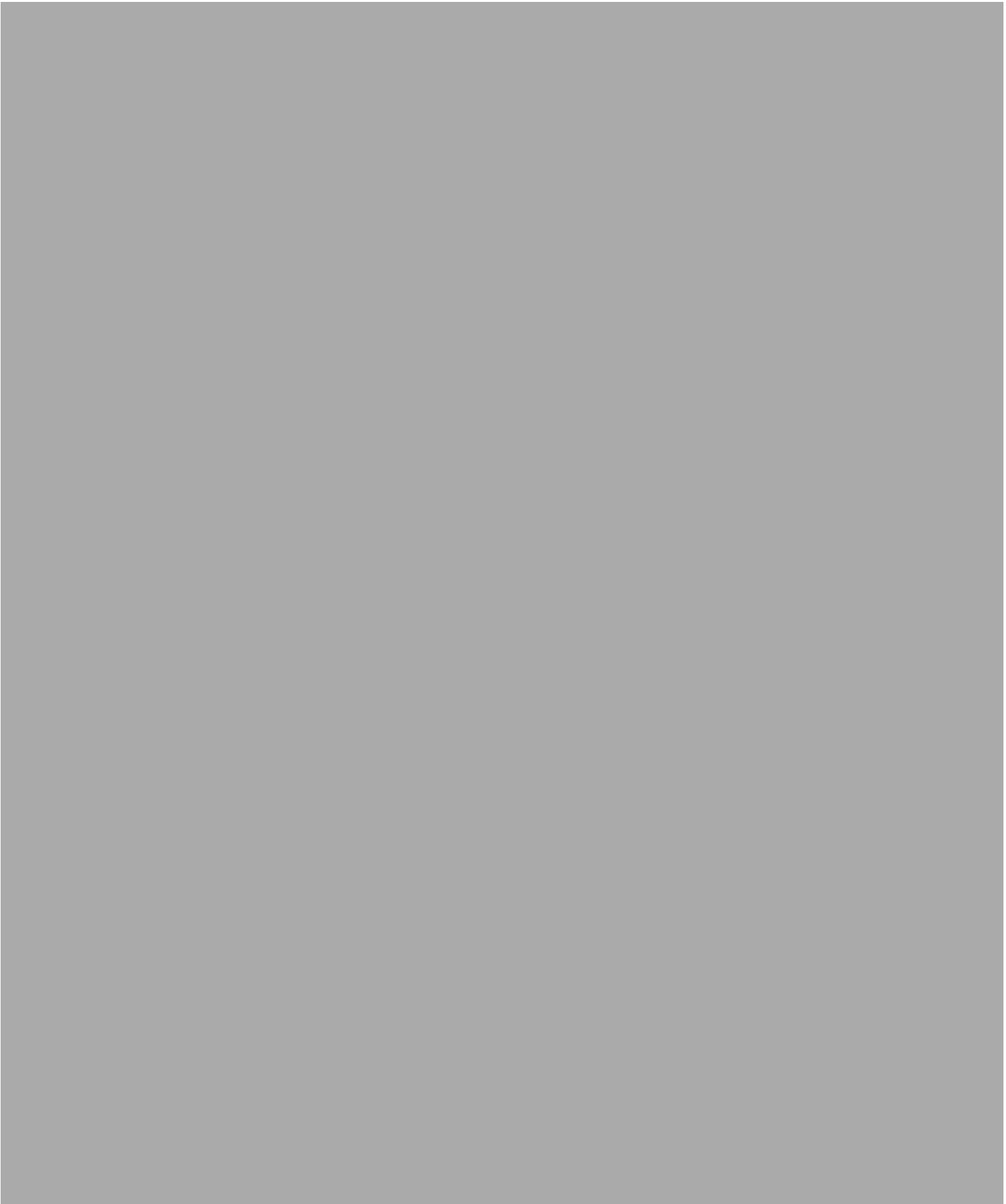


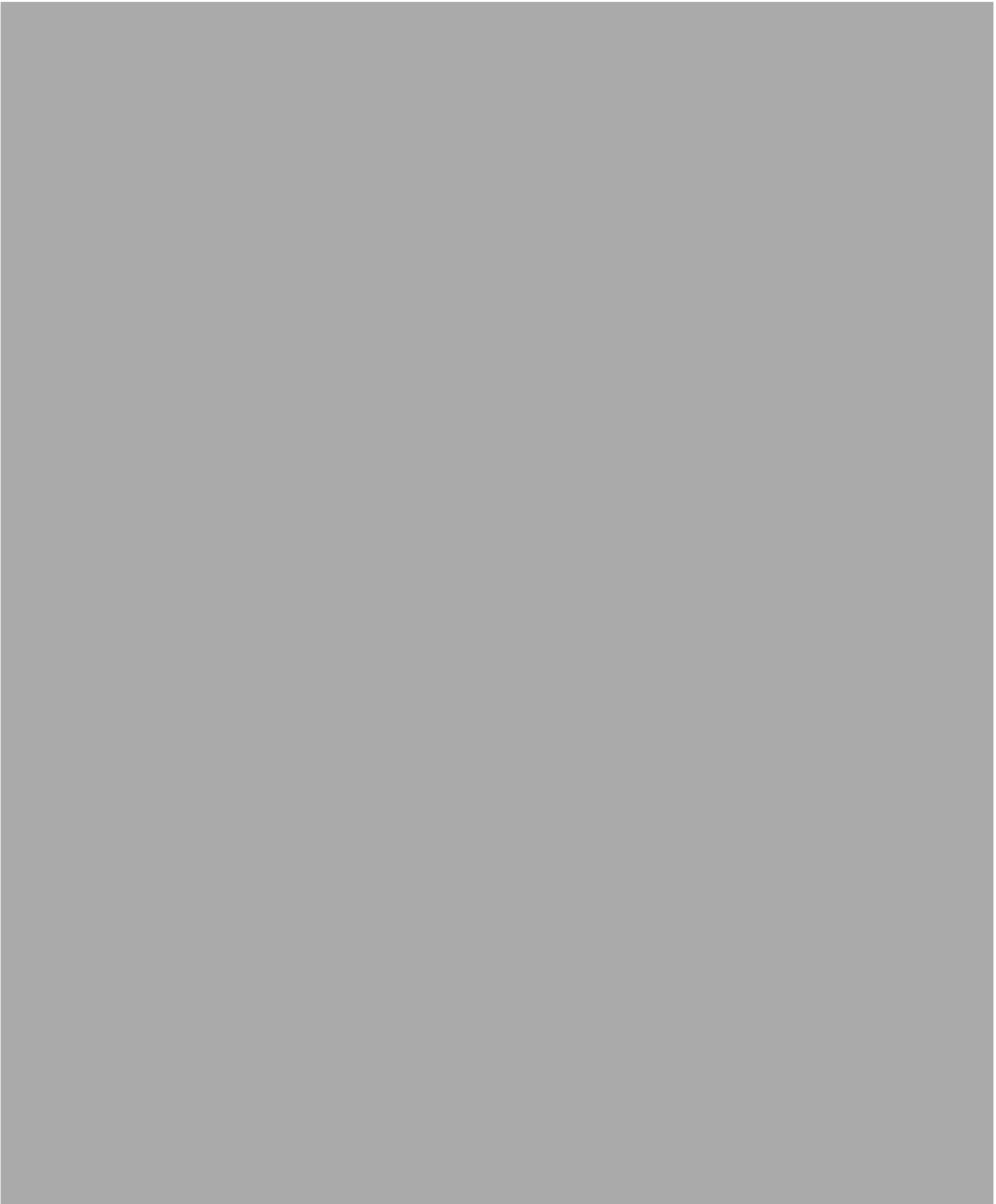




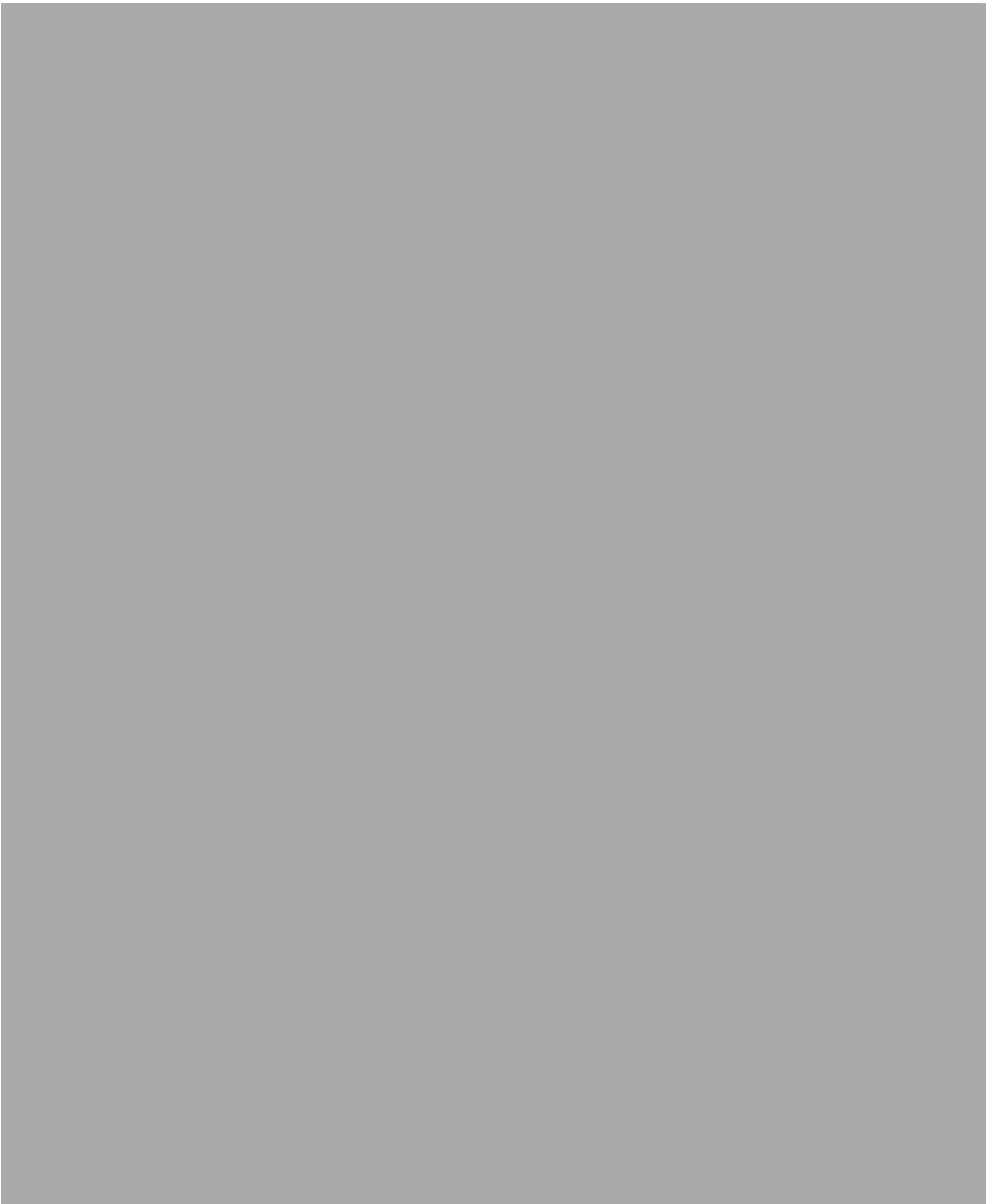














































## **AER - List of Appendices**

- A** List of 40 Q-Sort questions for teachers and social workers
- B** California Child Q Sort questions (Omitted – not used)
- C** Letter to school outlining the nature of the research
- D** Information for Foster-Carers, with details of research project
- E** Informed Consent for Foster-Carers, with details of research project
- F** Informed Consent for Foster-Carers, with details of assessments
- G** Information about whole-class experiment and Informed Consent for children to wear heart monitors
- H** Additional Information and Consent for volunteer children to wear heart monitors for extra days and give saliva samples
- I** Informed Consent (Carer) for their child to take part in the Manchester Child Attachment Story Task
- J** Letter to child before the research begins
- K** Informed Consent for child (verbal transcript)
- L** Information Leaflet for Social Workers & Teachers, with details of research project and my contact details
- M** Informed Consent (Teaching staff / Social Care staff / Foster-Carers) to take part in the Q sort activity
- N** Postcard, with information to withdraw
- O** Proposed Observation schedule
- P** Information & Informed Consent for Parents

## Appendix A – Q Sort Statements relating to Neglect

<b>Knowledge</b>	<b>Category</b>	<b>Permanent (long term)</b>	<b>Temporary (short term)</b>
1. Neglected Children are developmentally delayed	Development	N/A	
2. Neglected Children show a difference in their development	Development	N/A	
3. Neglected Children can catch up developmentally, with the right support	Development		x
4. Neglected Children are always going to need support in school	Development / Education	x	
5. Neglected Children have difficulties relating to peers	Social	N/A	
6. Neglected Children have difficulties relating to adults	Social	N/A	
7. Neglected Children who have social difficulties can be helped with the right support	Social		x
8. Neglected Children have behavioural difficulties	Behavioural	N/A	
9. Neglected Children who have behavioural difficulties can be helped with the right support	Behavioural		x
10. Neglected Children will always have behavioural difficulties	Behavioural	x	
11. Neglected Children who have mental health difficulties can be helped with the right support	Mental Health		x
12. Neglected Children have good mental health.	Mental Health		x

13. Neglected Children will always be behind in their educational achievements	Educational	x	
14. Neglected Children who have educational difficulties can be helped with the right support	Educational		x
15. Neglected Children have difficulties keeping up, educationally	Educational	N/A	
16. Neglected Children find it more difficult to learn	Educational	N/A	
17. Neglected Children learn just like other children	Educational	N/A	
18. Neglected Children find it more difficult to pay attention	Attention		
19. Neglected Children find it more difficult to keep themselves calm	Em Regn		
20. Neglected Children take longer to calm down after something has upset them	Em Regn		
21. Neglected Children are more sad than other children	Em Regn		
22. Neglected Children are more angry than other children	Em Regn		
23. Neglected Children lose their temper more easily than other children	Em Regn		
24. Neglected Children have more difficulty controlling their emotions	Em Regn		
25. Neglected Children are emotionally immature	Em Regn		
26. Neglected Children are more vulnerable			
27. Neglected Children are more likely to choose the wrong friends			
28. Neglected Children are indistinguishable from other children			

<b>Attributes &amp; Beliefs about children</b>	
29. Neglected Children struggle with their identity	
30. Neglected Children have little sense of what is right and wrong	
31. Neglected Children NEED the attention they seek	
32. Neglected Children choose to misbehave	
33. Neglected Children enjoy the attention they receive when they misbehave	
34. Neglected Children behave badly because it gives them a sense of control	
35. Neglected Children should be educated full-time in a mainstream classroom	
36. Neglected children should attend a small class such as a nurture group for some of the week	
37. Neglected Children should have a specialist teaching assistant	
38. Neglected Children need extra help compared to other children	
39. Neglected Children are more likely to end up in the criminal justice system	
40. A Neglected Child has been dealt a poor hand	
<b>Feelings &amp; Competency relating to Neglected Children</b>	
41. I worry more about Neglected Children than other children	
42. I feel able to understand the needs of Neglected Children	
43. I often feel out of my depth in knowing how to meet the needs of Neglected Children	

44. Neglected Children affect me more than any other type of child	
<b>Behaviour</b>	
45. I spend more time with neglected children	
46. I would spend more time with neglected children if I was able to	
47. I treat neglected children differently	
48. I treat all children the same, no matter what their background	



## **APPENDIX C**

### **Letter to Head teacher / Special Educational Needs Co-ordinator**

(Head teacher)  
(Designated Teacher / Special Educational Needs & Inclusion Co-ordinator)  
Primary School,

Dear X and Y

As you probably know, I am proposing to carry out a doctoral-level research project regarding the effects of neglect in the first year of life, on subsequent child development and school achievement.

Over the years, when working with looked-after children in schools, I have noticed that these children, particularly those who have, for one reason or another, suffered neglectful care-giving in the first year of life - struggle at school. I am interested to look at the reasons why this might be the case.

I am therefore looking to see if there are schools and families who would be willing to be part of this research. I would like to study the development and achievement of children aged 6-8, who have suffered neglectful care-giving in the first year of life (but who have not suffered sexual abuse) and who are looked after, either by foster-carers or by kinship carers. I am willing to be involved in staff training during this time, so if there are any questions about child development and learning, I would be happy to answer questions from anybody. There is quite a lot of information here, so if you are interested, having read it, please would you contact me in the first instance, to discuss it with me and then you have more information to help you decide whether or not you would like to take part.

This is what the research would involve:

I propose firstly to carry out a set of standardised developmental and achievement assessments similar to the ones I and speech therapists would typically carry out in your school, to gain a good, very detailed in-depth picture of a child's strengths and difficulties. These would mostly be with the child (such as cognitive and achievement assessments) but three are checklists answered by the teacher and by the carer (for language, adaptive behaviour and a strengths / difficulties questionnaire) and one is a sorting activity related to the regulation of emotions. I would also wish to carry out some observations in school for the day. I anticipate doing some observations 3 or 4 times, once every 3 weeks, on a Thursday or Friday.

One of my main hypotheses about why it is that children who have suffered neglect in the first year of life do not always do quite so well at school is because they have not yet adequately developed the skill of 'emotional regulation'. Because this skill is usually learned with the child's care-givers in the years before they begin school, a child whose carers have not always been (for one reason or another) available for them, may find it difficult to regulate their emotions – they may for example be easily over-excited or they may be quite 'depressed'. In order to test out this particular idea, I would like to do some additional assessments.

The first of these is a video-recorded story task, called the Manchester Attachment Child Story Task. I begin telling an 'attachment' story using 2 dolls in a dolls house

and the child completes it when I hand the dolls over. This helps me to understand a child's relationships with other people.

The second of these is to look at a child's level of internal, biological arousal. To do this, I have been lent some specially-designed, very small, children's heart-monitors, developed from the wireless technology of Formula 1 motor racing. They are stuck onto the child's chest with a plaster. I would like to present this as a class activity alongside the teacher, related to KS1 numeracy teaching. The monitors record a child's heart rate and breathing rate (like a smart phone fitness App does) and I can download the records at a later time. The quickest and slowest heart rates can then be put on a bar chart in class. Alongside this, I would also like to collect some saliva (spit) from some of the children, during the times they are wearing the heart monitors.

Following this, I would like to implement an intervention plan, in conjunction with the child's class teacher and carer and to put this in place for one term, with the review at the end. This would however, require some dedicated 1:1 teaching assistant time (for a minimum of one hour on a daily basis), for the child I am working with, and the time of the class teacher for two meetings with myself and the carer. Following the intervention plan and review, a summary Report containing an evaluation of the action plan will be produced. A copy will be given to the carer and a copy given to school.

The final activity I would like to do is a 'Q sort' with the class teacher and carer. It will also be done with social workers. The adult sorts a set of 48 descriptive statements about neglected children generally into different piles, according to whether or not the sorter agrees or disagrees with the statement. This lets me understand a bit more easily, what the understanding is of different professionals, about the effects of neglect on child development.

If you are interested in being involved with my proposed research, and there is a child in your school between the ages of 6-8 who has suffered neglect in the first year of life and who is looked-after, I would very much appreciate it if you could contact me, when I would be happy to answer any questions you may have. If you are still interested following an initial discussion, I would ask you to discuss this firstly with the potential child's class teacher, to ascertain if he / she is happy to take part. There will be some time commitment to this and I understand completely if this is not something that they are able to do or want to do at the present time. If however, the class teacher is willing, I would be grateful if you would then discuss this project with the potential child's carer – please feel free to show them this letter.

I would very much like this to be seen as a collaborative exercise and for you to benefit from this too - I will be available throughout the research to answer any questions / discuss aspects about children's learning in general.

If the potential child's carer is interested, would you please ask the carer for their contact details (name and telephone number) and a time when it would be convenient for me to call and discuss it with them?

If this is something that you are interested in, but just not at the present time, then this is fine - please do not feel under any obligation to take part! If you would like to ask me any further questions – please do not hesitate to call / email.

Best wishes,

Bridget Carroll  
Postgraduate Researcher + (Contact telephone number/ contact email)

## Appendix D

### General Information about the Research Project, for Carers who potentially may wish to take part

#### Who I am

I am Bridget Carroll, a postgraduate research student at the University of Birmingham. I am also a Chartered Educational Psychologist and I am registered with the Health & Care Professions Council (Registration number: PYL00274) to work as an Educational Psychologist. I work part-time in Y Local Authority and part time as an Independent Educational Psychologist and you may have seen me at your child's school. I have Enhanced DBS clearance.

#### Why am I doing this research?

In recent years, I have been doing much reading about the effects of neglect on child development, because I have noticed that children who suffer from adverse circumstances, such as poor parenting early in their life, even when their parents love them, are often referred to me because they are finding some aspects of school life quite difficult. They are referred to me at any age – from Reception all the way through to the end of secondary school.

I am interested to see if I can develop a set of activities and assessments for children under the age of 8 that would help me, teachers, carers and social workers understand early on what a child's developmental and educational needs are, to try and prevent difficulties later on in school life and to help children make good progress in school.

As you are a carer for a child who has experienced difficult parenting in the first one or two years of their life, I was wondering if you would be happy for you and your child to take part in my research.

#### This is what it would involve:

1. If you were agreeable to take part in my research, I would firstly carry out a set of developmental and achievement assessments with your child. This would probably take place over two or three mornings in school and they would give me a picture of your child's current strengths and difficulties in school. The assessments will be related to cognitive skills, language development, social skills, ability to concentrate & listen in class, how your child gets to feel calm again when she / he is upset, literacy skills and numeracy skills. I will also ask you and the class teacher to complete some short questionnaires about your child's language skills, your child's behaviour and about strengths and difficulties in general.

2. I would also be coming into school to observe your child's class three or four times for things such as how well children listen. I would also like to organise an activity for the whole class and everyone else will be asked to join in, including the teacher. All the children will be asked to volunteer to wear a small, wireless heart monitor under their t-shirt for a day in school. This is very small and thin and is stuck to a child's chest with a plaster. It records a child's heartbeat rate and breathing rate (like a smart phone fitness App does). The children can measure their fastest and slowest heartbeat and make a chart. There is no risk in doing this. I will provide an information sheet for everybody about this, at the time.

I would like to ask six children in the class to wear the heart monitors again on a volunteer basis, during my next two or three school visits (one whole day each) and

also over a weekend. Your child may or may not volunteer for this. If they do, I will ask you to keep a little diary of the sorts of things they have done and how they have been - whether they have been over-excited or look a bit 'down'. (They can peel it off at any time if they don't like it and also when they shower. If you like, I can give one to you too!) If your child is happy to do this again, I would like to ask if your child would be happy to wear it again for one last time for a day in school when I come back after one term to see how your child is doing, and again, if they don't mind, for 48 hours over the weekend. If at any time, they want to take it off, they can do.



Heart rate measures are thought to be a good indicator of how worried or anxious a person is and from this, I would like to find out if certain sorts of school activity lead to children feeling a little bit more worried than usual and whether I can match this to observations in class, that would help a teacher recognize when a child is feeling anxious about something. It might also help me find out the sorts of things that a child might worry about and what they do to help themselves feel calm again.

3. I would also like to collect some samples of saliva (spit) from a few volunteer children in the class, on the days when the heart monitor is being worn! Cortisol is a natural chemical that everybody makes and it is found in saliva. I would like to see if the levels of this change at the same time as any changes in heart rate. To do this, I would ask six children to volunteer to (unobtrusively) spit into a small plastic tube during their break times. The saliva is sent away to be analysed. You can have these results if you would like them.

4. The last thing is a 20-30 minute video-recorded activity of something called the Manchester Child Attachment Story Task. This is used a lot in research to work out how a child relates to significant people in their lives. It involves me beginning a story using 2 small dolls in a dolls house and then I give the dolls to the child and they finish the story. I will provide an information sheet about this too.

Then, I will ask you to meet me in school (at a time that is convenient for you) and with the class teacher and we will jointly plan an "intervention" (action plan) lasting for one term, for your child, to help him / her make good progress at school. We will use my ideas from the results of all the assessments, your ideas (as you know your child very well) and the class teacher's ideas. This plan is written down **by me** in a table and is called an Individual Education Plan (IEP). You will be given a copy of this.

The school has agreed to provide a teaching assistant for some part of each school day, to help with this plan, for a term - and you also would need to read to your child each day (as far as possible) for a minimum of 5 minutes every day. After a term, I would then repeat some (but not all) of the assessments again with your child in school, to look at the progress your child has made and I will ask you to do some of the questionnaires again. We will then meet once more with your child's teacher and we will record the areas of progress, what has helped and what we could do differently next time. A new intervention plan, (IEP) will be written again to help your

child continue to make good progress in school. My involvement will now end, although I will continue to provide advice by telephone to school for another half-term.

You will receive a written record of the assessment results (before and after), what we tried, what worked and what we would do differently. You will also receive a copy of the second IEP for the next term, which this time, will be monitored by the school as I will have finished. The school will also have a confidential copy of the results, which they will not share with anyone, unless Children's Social Care agree to it.

I am hoping from doing this research that we would all have a better understanding of how to support the educational progress of children who have had difficulties in their early life and reduce the likelihood of problems developing for them, later on.

As a final piece of research, I would also be asking you (and at a different time, the class teacher, other teachers, your child's social worker, and other social workers) to do a card-sorting activity relating to the needs and development of children who have experienced neglect; how far you agree or disagree with the statements on each card. These are anonymous too and no-one can be identified. This takes about 45 minutes to an hour and can be done whenever and wherever it is convenient for you.

I would also give you my telephone number and you would be able to call me Monday to Friday to ask me for advice during the term that I am involved with your child at school.

I am hoping to carry out this research with three children. For practical purposes, I could not do this with more than 3 children. When I have finished, I would share with you the results of this research and I will arrange to meet you at a place and time that is convenient for you and share what I have learned. You will then have an opportunity to ask me questions and discuss the research with me, and perhaps ask me what I am going to do next! You are welcome to bring your child / any family members for any or part of this, especially your child, if you think they would like to be involved.

#### Changing your mind about taking part

Because this is a research project, you and your child are not under any obligation whatsoever to continue with it all the way through to the end of the term; it is entirely voluntary and you are completely free to say at any time that you do not wish your child to continue. You do not have to provide any reason at all – participation in the research is really up to your child and you and he/she/you can leave it any anytime you wish. Any information that I have about your child will be destroyed and no records will be kept anywhere. You can do this by:

1. Telling your child's class teacher, and/or
2. Phoning me and letting me know, and/or
3. Writing to my supervisors using a stamped, addressed postcard that I will provide.

#### Where will the information be published?

I will write up my research into what is called a 'doctoral thesis'; it's like a book. All doctoral theses are kept in the University of Birmingham's library and online in their library catalogue. Since I am hoping that I will learn about how to help children who have had adverse early life experiences make good progress in school, I will try and publish my work in academic journals and by giving training to other educational psychologists, carers, teachers and social workers.

Confidentiality – can your child be identified when someone reads my work?

Any information that I write in the dissertation for my doctoral thesis or published afterwards will be anonymous; nobody will be named. Neither you, your child, your child's school, or the Local Authority can be identified.

My supervisors at university will read my work as I write parts of it, but they will not know who has taken part. Only I will know. Any assessment material will be kept by me in a locked filing cabinet in my home and only I will have access to it. Anything I write will be on a password-protected / encrypted laptop and backed up on the University of Birmingham's servers and it will be kept for ten years (this is quality assurance, in case anyone wants to look at my results), following which it will be securely destroyed.

Local Authority Consent

The University of Birmingham's Ethics Committee has approved my proposed research. The University Ethics Committee has a VERY detailed set of criteria and standards that my research ideas have to meet. I have also been given permission to do this research by the LA and the birth parents of your child, because they have Parental Responsibility.

Please take some time to read this information again and discuss it particularly with your social worker, child and with other family members. If, having thought about it and discussed it, you are interested in being part of the research, and you think your child would be happy to do the proposed activities, then please give your contact details and a time when it will be convenient for me to talk to you, to X (SENCo). Please make a list of any questions you may have and we can discuss these further.

Thank you for reading this!  
Bridget CARROLL  
Postgraduate Researcher



## **APPENDIX E**

### **Informed Consent for Foster-Carers – All Research Details**

Dear Mr / Mrs / Ms X,

**Re: Research Project: The effects of neglect on child development and school achievement.**

Thank you for meeting with me and for agreeing to take part in the research project. Before I start any research, I have to be sure that you know exactly what is involved and how you can opt out if N or you decide you no longer wish to take part. You are being asked because you are N's Foster Carer and able to talk about the research with N. It is important that N enjoys and benefits from being included in the research and it is equally important that if N decides that he/she does not wish to take part any more, that there is an easy way to say so. Several ways are provided for N to say that s/he does not want to take part and an important one is you. You are also being asked because you are a very important part of N's life and you know him / her well and support his / her progress in school. This letter sets out what is involved in the research project; it is called an 'Informed Consent' form. It should be read together with the General Information leaflet that you were given at school.

My contact details and the contact details of my supervisors, in case you ever have any questions, are provided at the end of this letter. Please do not hesitate to ask questions, throughout the research, however small they may seem.

#### **Research Project – What will my child & I be doing?**

I will be asking you to complete some questionnaires about N. I will be asking N to take part in some activities with me and as part of a class activity in school.

- I will come into school for a morning to help out as a general helper, then all the children get to know who I am; I can help all the children in the class and no-one will be singled out.
- N will then do some standardised assessments with me. I will come in two or three times both to help in class and also to carry out the assessment activities with N. This will give us a good, very detailed in-depth picture of N's strengths and difficulties. I will give you a separate Consent Form to sign for this and this will contain the list of all the assessments.
- I will then come back into school once every two or three weeks (as I hope there will be three children taking part in the research) and spend a day observing (not helping) in class and at break times.

As I mentioned, one of my main hypotheses about why it is that children who have suffered neglect in the first year of life do not always do quite so well at school is because they have not yet adequately developed the skill of 'emotional regulation'. Because this skill is usually learned with the child's care-givers in the years before they begin school, a child whose carers have not always been (for one reason or another) available for them, may find it difficult to regulate their emotions – they may for example be easily over-excited or they may be quite 'low'. In order to investigate this particular idea, I will be doing some additional activities:

- The first of these is a videoed story task, called the Manchester Child Attachment Story Task. I begin an 'attachment' story with N, using 2 dolls in a dolls house and N completes the story when I hand the dolls over. This helps me to understand N's relationships with other people.
- The second of these is to look at children's level of internal, biological arousal and this will be done with the whole class, as a science and maths activity. To do this, I have been lent specially-designed, very small, thin, children's heart-monitors; one for each child. It is stuck onto a child's chest with a plaster and left on for the day. The monitor records N's heart-rate and breathing rate (like a smart phone fitness App does), and I download the records at a later time when she / he takes it off. Some of the data will be given to the teacher and she/he will draw bar charts from it, with the whole class. The data will also be analysed by me, to see if I can spot any patterns in it that might indicate when a child is a bit worried. Every parent / carer will be given an information leaflet and consent form for this.
- Alongside this, I would also like to ask 6 children to wear their heart monitors for another 2 or 3 days when I am in school and over the weekend, and then once more, a term later. All children will be asked to volunteer for this, and a random draw will take place. If N would like to take part, she/he will definitely be included.
- I would also like to look at a chemical in spit, called cortisol. The 6 children who wear the heart monitors on extra days will be asked if they would be happy to spit into a plastic tube! This will be: first thing in the morning, last thing at night and during break times at school. Nobody has to do this, if they don't want to – they might change their mind at the last minute and that is OK.
- I will also ask you to keep a diary if N volunteers to wear the heart monitor at home.

As I mentioned when I saw you, we will meet together after all these activities, in school, at a time suitable for you. I will go through the results with you and you can then ask me questions. N's class teacher (and perhaps the SENCo) will then join us and together, the 3 of us then think of ways in which we can help N make good progress in school. I will write up the details of what we have all agreed and you and the school will have a copy. This is called an 'Individual Education Plan' and we will let this run for one whole school term.

Following this, I will do several of the assessments again (including 6 children wearing the heart monitor for a day / weekend if they are happy to – but they don't have to) so I can evaluate how N is getting on and we will meet again to discuss N's progress over the term and to think about what has helped (or not helped) and why.

I am hoping that by this time, we will all have a good idea of what N needs to help him / her make good progress in school and N's class teacher will carry on the educational planning after this. Following the review, I will also write a Summary Report that summarises what we said and with the repeated achievement assessment results. You will have a copy of this and so will the school. At this last meeting, you will be asked to think about the confidentiality of this Report Plan. It will be kept confidential and nobody (i.e. me or the school) will be allowed to give any copies to anyone else. Only Children's Social Care (through N's Social Worker) will be able to give permission to do this.



If you have any questions about the Individual Education Plan, or about your child's progress at any time the research is going on, please ring me – contact details and times will be provided at the end of this letter.

I will put the results into my research, but nobody will be able to be identified – you, your child, the school, or the Local Authority.

At the beginning and end, I will also ask you to do a sorting activity with some hypothetical statements about children who have had neglectful care-giving in the first year of life. This will show me whether your views about what the needs of neglected children are, have changed over the course of the research. This takes about an hour and it will be done at a time and place that is convenient for you.

Is it confidential? Will people know my child is taking part in your research?

Everything I write is anonymised. In my written research results, your child will be known by a number or letter (I am hoping there will be 3 children who will take part) and only I know which number refers to which child, so your child cannot be identified from my writing. No personal details anyway that could possibly identify your child, your child's school or the local authority in which you live, will be included in my writing.

The results of N's assessments will be made known verbally to the class teacher, SENCo and Head teacher, as they are involved in the educational planning for N, but unless Children's Social Care agree to it, they cannot share this information with anyone else and it will be kept securely.

What happens at the end of your research?

I will write up my research into a doctoral thesis and a copy of this is kept by the University of Birmingham. I am hoping that the results will help me understand why it is that neglected children may underachieve in school, and if this is the case, I would like to share this information by writing articles for journals, to be read by other Educational Psychologists, researchers and people who work with neglected children. I may also deliver training relating to this. Please be assured that N will not be able to be identified from anything that I write or say.

All the research notes and data I have collected during my research has to be kept for 10 years in case people from the university want to look at it. Electronic data (anonymised) will be kept on the University's computers and the files will be deleted after the 10 years are up.

Any paper data (for example assessment results) and the camera memory card, are kept securely by me, in a locked cabinet. Again, after 10 years, they are securely destroyed.

If, in the future, another Educational Psychologist becomes involved with N, you will have the Individual Education Plan to give to them, so please keep this safe. I will not pass on further copies of this Plan or share any information about the assessments unless Children's Social Care (through N's Social Worker) agree at the time someone requests it. If anyone asks you, you will need to ask N's Social Worker. Any data collected as part of this research belongs to me and the university. It is not part of Local Authority work and other than the Individual Education Plan and the confidential Summary Report in school, the Local Authority will not have any records.

What if my child & I change our minds about taking part?

You can withdraw from the study and opt out of any further participation, at any time. I will give you a stamped, addressed post-card and if at any time, you decide that you don't want to be involved any more, then just send the postcard back to me.

Alternatively, you can tell the school or you can call me. You do not have to give any reasons; participation is entirely voluntary. Any records or notes that I have made about N will be destroyed. If it is during the early stages, after I have done the initial assessments, Children's Social Care, school and you can still receive the achievement results. Only they will have these results, no-one else will, including me. All the data I have relating to the assessments will be securely destroyed. Thank you for reading this information!

Contact details

Principal Researcher – Bridget Carroll (Chartered Educational Psychologist, HCPC registered: Registration number PYL00274)

Tel: xxxx

Available: Monday-Thursday 8am-6pm; Friday 8am-4pm

Supervisors:

1. Sue Morris, Director of Child & Educational Psychology Training, School of Education, University of Birmingham, Birmingham B15 2TT

Tel: [REDACTED]

2. Neil Hall, Lecturer, School of Education, University of Birmingham, Birmingham B15 2TT

Tel: [REDACTED]

**INFORMED CONSENT: Research participant 1**

Name of Researcher: **Bridget Carroll**

**Contact telephone number: 000**

1. I confirm that I have read and understand the information above and in the General Information leaflet relating to the research project.
  -
2. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
3. I understand that I may opt out at any time and I know how to do this. If I would like my child to withdraw from the study I understand that this will not affect my child's educational planning in any way.
4. I agree for me and my child \_\_\_\_\_ to participate in the study.

Signed \_\_\_\_\_ (Carer)

Date \_\_\_\_\_

## **APPENDIX F**

### **Informed Consent Form for Research Assessments**

A set of developmental and achievement assessments will be carried out with your child, in school. The full list is provided, below. The purpose of these assessments is to give us an in-depth picture of your child's strengths and difficulties. They will give us an idea of what your child finds easy, what they find difficult, what they enjoy and what they don't enjoy.

1. The results will be discussed with you first of all and you will have the opportunity to ask me questions. Any meetings will take place in school and as far as is practicable, in school-time, so you do not need to arrange child-care. You are also very welcome to bring a family member or friend along with you, if you like.
2. Then, we will meet with your child's class teacher and the results will be discussed again. Together, all of us will think of things that we can do, to help your child make good progress in school. The school has agreed to provide an hour of teaching assistant time each day, to help with this.
3. I will write this up into a table format. This will be called an Individual Education Plan and it will say what we hope your child will be able to achieve in one term's time. I will write how this is going to be achieved and who will do it. It might for example, say that the class assistant will teach 10 high frequency words to your child for 15 minutes a day over a week and you might agree to read with your child for 15 minutes every night. It will also include the assessment results.

A copy of the Individual Education Plan will be given to you, which you can discuss with your child, if you wish. A copy will be given to school to work from and I will have a copy. Anything written is confidential and cannot be shared without your consent.

At the end of one term, your child's progress will be reviewed. I will do some assessments again (the ones that have a star \* next to them cannot be repeated) and I will meet with you again to discuss these results. Like the first time, we will then meet with the teacher and talk about what has helped (and why) and what has not made much difference (and why). We will then hopefully have a better understanding of how to help your child continue to make good progress in school. We will make another Individual Education Plan, but this will be under the direction of the class teacher from this point onwards – my involvement will stop.

I will write a Report after the review meeting and this will give a summary of the assessments at the start and finish. It will give a summary of what we tried and the things that were helpful. The school will be given a copy and you will be given a copy. No-one else can see it unless Children's Social Care and you give your permission for them to see it – the Report belongs to you. In the future, if another professional, such as your GP, or an Educational Psychologist asks for it, this will be up to you to let them see it. If anyone asks me for a copy, I will ask your permission first. The school will have a copy, but it will not be kept anywhere else, such as in the Local Authority files for example. This is because it is my research, carried out with the University of Birmingham and not the Local Authority.

If you have any questions, or you want to discuss the assessments with me after they have been done in school, then please feel free to contact me – the contact details will be provided at the end of this form.

ASSESSMENTS:

- v. Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV) to assess cognitive skills\*.
- vi. Wechsler Individual Achievement Tests, Second Edition (WIAT-II) to assess language skills, literacy & numeracy skills,
- vii. NEPSY- Second Edition (NEPSY-II) to assess Social Perception, Executive Functioning / Attention, Language, Memory & Learning, Sensorimotor Functioning and Visuospatial Processing\*.
- viii. Clinical Evaluation of Language Fundamentals, Fourth Edition (CELF-4) Pragmatics Profile to assess the social use of language.
- ix. The Ideal Self drawing activity.

With teachers and you:

- x. Children’s Communication Checklist – Second Edition (CCC-2) [Dorothy Bishop], to assess communication strengths and difficulties.
- xi. Adaptive Behavior Assessment System – Second Edition (ABAS-II), to assess adaptive behavior generally.
- xii. Strengths & Difficulties Questionnaire, a brief behavioural screening questionnaire.
- xiii. Emotion Regulation Q Scale, derived from the California Child Q set (Block & Block, 1980) to assess emotional regulation.



Observations

I will come into school every 3 weeks, for one day, probably a Thursday or a Friday and stay with your child in school, in their classroom, to see how they are getting on. I will sit at the side of the classroom and make some notes during this time. I may ask your child some questions, but I will do this with other children too, so your child cannot be identified as a child who is taking part in research. Children are very curious and they often ask me questions when I am in class – so if your child wishes to do this too, then that’s fine! I will also be outside at play-time and for part of the lunch hour. I will let you know when I am coming in to school, so if you wish to speak to me at the end of the day, this can be arranged.

**Contact Details:**

Bridget Carroll, Postgraduate Researcher / Educational Psychologist  
Tel \*\*\*\* Times to contact: Mon-Thu 8am-6pm; Friday 8am – 4pm  
If I am unable to answer the phone at the time you call, I will ring you back as soon as I can.

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I do / do not give consent for my child \_\_\_\_\_ to take part in the assessments and observations listed above. I have read and understood the information above. I understand that I will be given a written Report relating to these assessments, which belongs to me, but a copy will be held in school.

Signed \_\_\_\_\_ (Carer)

Date \_\_\_\_\_



## APPENDIX G

# Class Project: Healthy hearts!



**Dear Parents / Carers,**

In association with Bridget Carroll (researcher and educational psychologist) we are planning to carry out a class project about the importance of exercise in having healthy hearts. This will include a class experiment to measure heart rate. We are going to do this using some nifty little technology developed by the McLaren Formula 1 motor racing team! They have developed wireless technology to monitor the engines of Formula 1 racing cars during a race and this technology has now been used to make remote sensors that children can wear. We have been fortunate enough to have been lent some of these and we can use them to measure heart rate, to support learning in the science and numeracy targets.

### What's involved?



Sticking a plaster on your child's chest for the school day. Under this is the heart monitor.



### What if my child does not want to do it?

No problem! Each child will be asked before it is stuck on.

### What if my child wants to take it off?

Just give the plaster back to Mr / Ms X (class teacher) or Ms Carroll, at any time.

### What is measured?

Your child's heart rate and breathing rate.

### How?

The sensor under the plaster stores information about how fast your child's heart is beating. It is downloaded later and we will look at the fastest beat rate (at play time) and the slowest beat rate (when sitting down in class).

### Then what?

We will use this to draw a bar chart of everyone's fastest heart beat and slowest heart beat, to support Key Stage 1 numeracy targets.

### Is there a risk?

No, unless your child is allergic to plasters.

### Any questions?

Please ask Mr / Ms X or Bridget Carroll (tel number), who will be more than happy to give further information and answer any questions you may have.

Just one more thing!

Bridget would like to ask 6 children to wear their sensors for 24 hours from first thing in the morning until they get up the next day, as she would like to collect some information about how heart rate changes all through the day. She would also like to collect some samples of spit! If you are happy to take part in this extra bit, please tick the box below. Just because you have ticked the box though does not mean that your child cannot change their mind! Participation is entirely voluntary and the plasters can be taken off at any time in the day / night and put back in their box. A small toy / chocolate will be given to say thank you if your child is happy to do this, whether or not the plaster stays on all the time. If more than 6 children are happy to do this, Mr / Ms X will draw names out of a hat to choose 6 children and Bridget will then arrange to meet you to give you the plasters the night before, give further information about collecting some spit and answer any questions.

---

1. I do / do not give permission for my child \_\_\_\_\_  
to wear the sensor-plaster during the school day.



2. I am happy for my child to wear the sensor-plaster  
1. \_\_\_\_\_  
for the whole day.

3. I confirm that my child is not allergic to plasters. (If your child is allergic to plasters, they will not be able to wear the sensor.)

Signed:

\_\_\_\_\_

Name:

\_\_\_\_\_

Tel Number:

\_\_\_\_\_

Date:

\_\_\_\_\_

## **APPENDIX H**

### **Additional Information & Consent for Heart Monitor and Saliva samples**

#### **What is the purpose of the research?**

In the past, a few researchers have used heart rate measures to try and work out what a child is feeling, but not in the classroom. When we are feeling calm and relaxed, our heart rate and breathing rate tends to be quite slow. Sometimes, however, children look calm on the outside, but inside, they might be feeling a little bit worried, perhaps when they are not sure about what to do, or a teacher asks them a question. I am trying to do some research to see if this 'worry' can be picked up by changes in a child's heart rate and breathing rate – when we are worried or anxious, our hearts beat a little faster and we breathe a little faster. By recording a child's heart rate and breathing rate, and by watching in class, I am hoping to be able to identify the times and the activities that help a child to feel calm and the times and activities that might cause them to feel a little bit worried (that we might not normally know about).

Knowing about these things might then help us to reassure children and help them avoid becoming worried in the first place.

#### **Where does it go and how big is it? Is it uncomfortable?**

These are new monitors and they are very small – the protective plaster is a few cm long. The monitors are stuck onto a child's chest by means of this plaster. They are very thin and your child should not notice much difference between wearing this and wearing any plaster. The technology has been developed by McLaren Formula 1 racing team, using the same technology that sends information from the engine of a racing car to the control room!



#### **How long does it have to stay on for?**

In the class activity, the children will be wearing the monitors just during the school day. You have very kindly agreed that your child can wear it for 24 hours - a full day 8am-8am. This will include the day in school, the evening and overnight. If, at the end of the class experiment, your child would be happy to wear the monitors again, then I would like to ask if they could do this 2 or 3 times more, once every 3 weeks, over the next 6-9 weeks. During the day, I will be in school with the class and I will carry out some general observations, such as making a note of the times when a teacher is asking questions, or what the children are doing at play time, or when the children are sitting still, working. After, I will then try and link changes in heart rate to particular activities and times.

At the end of my research in about 3 months' time, I may ask your child to wear it once more for 24 hours or over the weekend.



### Are there any risks?

There are no risks associated with wearing the heart monitors.  
I will check with you that your child is not allergic to the plasters.

### What happens to the information?

The information is stored in the heart monitor – its battery lasts for 48 hours. I will download the results later into my computer. Your child's name will not be linked to this data. The results will also be kept on the University of Birmingham's computers, as a back-up. As part of the process of doing research, they have to be left there for 10 years, in case anyone related to the university wants to check my data.

### **Saliva (spit) samples – why are you collecting these?**

I am collecting these for the same reason as monitoring heart-rate. When we feel a bit worried, there is a chemical (cortisol) that is found in our saliva and I would like to see if this changes at the same time as heart-rate changes. Cortisol is a chemical that everyone makes normally, all through the day and night.

### What's involved?

On the days in school when the heart monitors are being worn, your child will be asked to spit into these tubes at six different times! The first will be when they get up and the last will be when they go to bed. I will give you 2 tubes, one for the morning and one for the evening. I will collect the evening ones the next day – your child will need to take them to school in the morning. The other four times will be in school and I will organise this.

### What happens to the saliva?

I will send the samples away and the levels of the chemical will be measured in a laboratory. I will be given the results and they will be stored as above.

### Confidentiality

Your child cannot be identified from the results; the tubes are numbered and I am not collecting names.

### What if I, or my child, changes our mind?

Not a problem! Just say so when we meet up – it's entirely voluntary and you do you do not have to take part – you can say 'no' at any time. Your child can also say – at any time –that they don't want to take part. They will be given a box and if at any time, they want to peel off their plaster, that is perfectly OK; they can just give it back to me or their teacher and no-one will mind. I will also watch for any non-verbal body signals at school that indicate they have changed their mind and I will check whether or not they are happy to carry on or whether they want to stop.

### **Contact Details:**

Bridget Carroll, Postgraduate Researcher / Educational Psychologist  
Tel 00000 **Contact email address:** [REDACTED]

Times to contact: Mon-Thu 8am-6pm; Friday 8am – 4pm

If I am unable to answer the phone at the time you call, I will ring you back as soon as I can.

INFORMED CONSENT: ADDITIONAL DAYS FOR HEART MONITORS / SALIVA SAMPLES:

Name of Researcher: **Bridget Carroll**

**Contact telephone number: 0000**

**Contact email address:**

1. I confirm that I have read and understand the information above relating to heart monitors and collecting saliva (spit). I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I agree for my child \_\_\_\_\_ to participate in this part of the study.

Signed \_\_\_\_\_ (Carer)

Date \_\_\_\_\_

Thank you for your help!

# APPENDIX I

## Manchester Child Attachment Story Task – Parental Consent

### What is it?

The Manchester Child Attachment Story Task is a story-telling task, but acted out using 2 small dolls (one of whom represents the child and one of whom will represent a carer of the child's choice) and a dolls house.

### What will my child do?

I will begin a short story, such as a child eating a meal, or a child playing in the garden, then falling over and hurting their knee. After a few minutes, the child is handed the two dolls and asked to finish the story, using the dolls.

As it is play, the task is easily used with children who have difficulties with talking or who are a bit shy at talking.

Because there are 5 stories, the whole task is videoed, so I can look back later and remember what the child said and did.

### Confidentiality

As it is university research, I need to keep the videos securely on the camera's memory card for 10 years following the date of the task. Following this they will be securely and completely destroyed. The camera memory card will be kept in a locked safe that only I have access to. The results are usually seen only by myself, but I may have to ask a university lecturer for some advice. If this is the case, the identity of the child will not be disclosed.

I may use short clips from the videos for training. If this is the case, any faces (mine included) will be pixelated and no-one will be able to identify the people in the video.

If you have any questions, please do not hesitate to ask.

Thank you,

**Bridget Carroll**

Contact tel number: 0000

-----

I do / do not give consent for my child \_\_\_\_\_ -  
\_\_\_\_\_ to take part in the Manchester Child Attachment Story  
Task.

I have read and understood the information above and been given the opportunity to ask questions and have them answered, to my satisfaction.

Signed \_\_\_\_\_ (Carer)

Date \_\_\_\_\_

## APPENDIX J

### Introduction letter to Child

Dear

I hope that you are looking forward to seeing me soon.

Sometimes, I may just see how you are getting on in class, whilst sitting in your lessons, and sometimes, I will be helping out in class with Mrs A (Class Assistant).

At other times, we will do some activities and work together on our own. Although some of these will be fun, others will be challenging as I need to try and find out what you are good at, as well as finding out what is not going quite so well at the moment. Everybody finds some things easy and some things a bit tricky.

An important thing for me is to meet you and find out from you, what your views are, what you are good at and what you may need more help with. When we have done our work and activities together, I will meet with Mr/s A (Class teacher), Mr/s B (Class assistant) and Mr/s C (Carer) and we will all think about what is best for you. We will make some plans to help you get on well at school and you will be part of this.

Remember, if you don't want to take part, you don't have to. You have a little card and you can give this to Mrs A, B or C, or me at any time and this is OK!

I am really looking forward to meeting you and being in your class.

Best wishes,

Bridget

INSERT PHOTO:

## **Appendix K**

### **Informed Consent for Standardised Assessments – Child: My Verbal Transcript**

“Hi, I’m Bridget, I have been in your class this morning; I see you were doing... what did you think about that?” (*General chat about the class activity.*)

*Continue - at this point, I usually ask the child if they have remembered my name. If they haven’t, I joke about it and say, “Bridget – rhymes with fidget!” – as pretty much every child knows the word, ‘fidget!’*

I spoke with you and (Your carer) this morning/yesterday; you have kindly agreed to help me with some work I am doing about how to help children get on well in school and enjoy school. So, I am going to ask you a few questions and we are going to do a few things together, that help us see what it is that you find easy and what it is that you find a bit tricky – because everyone finds some things easy and some things a bit tricky – even grown-ups! Is this alright? (If the child shows any signs (verbal or non-verbal) that it is not alright, we will not continue.)

*I will also say to the child, “I hope you will enjoy doing the activities with me, but if at any time you would like to stop, or go to the toilet, or if you want a drink (if they haven’t brought their water bottle), then just tell me, it’s fine, or just slide one of these cards across the table to me”. (I give 3 coloured cards to the child that shows the 3 options and I explain to them that the red card with group of people on = stop & go back to class; the blue card with glass printed on = get a drink of water, and the yellow card with toilet on = go to toilet. See symbols below.)*

I will ask the child some questions about school and these are asked in a ‘curious’ way. I will ask questions such as “*What is it you like best about school? What do you enjoy? What things make you feel a bit happy? And is there anything that you don’t enjoy quite as much? Is there anything you find a bit hard? Are there any times in school where you might feel upset? Can you tell me about those?*”

I will let the child know that I am going to record their views: “*OK, I’m going to write some of that down, because now I’m getting older, I forget stuff. I will read it back to you, so you know what I have written and you can see whether I have got it down right, and if I haven’t, I will change it, so you are happy with it.*

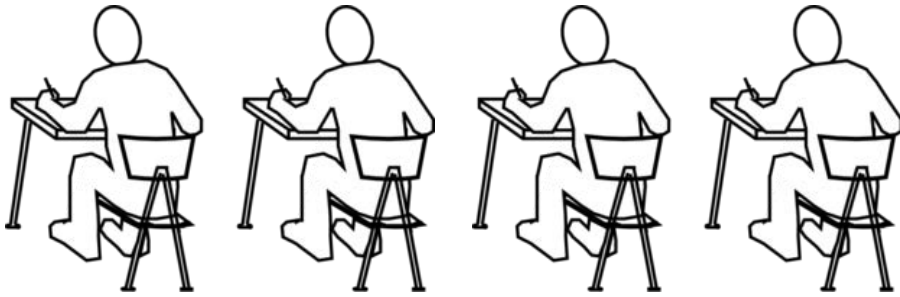
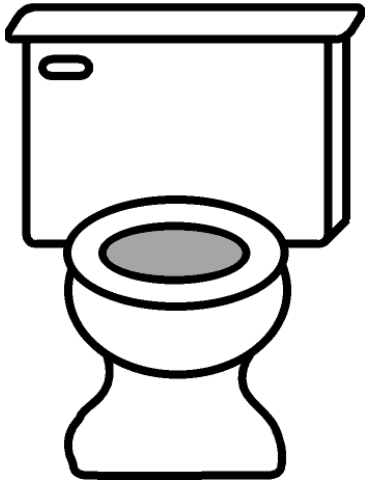
*At the end, I will have to write a report for CT (name of teacher) and FC (name of carer) about what we have done, but we will decide together what goes into it; I will check that you are happy for me to write that and for CT and FC to see it. If you are not happy, I won’t write it. Is that OK?*

Remember, at any time, you can stop me and say, 'Bridget, I've had enough, I would like to go back to class now' – or you can slide me a card - and that is completely fine, we will stop straight away and you can go back to class. Is this alright? I hope you enjoy the activities that we do together, and I will watch to make sure that you are OK.

If there is anything that you want to ask me, at any time, just stop me and say, 'Bridget!' and ask me anything and if I can answer it, I will do. If there is something you're not sure about, anything that you don't understand, then again, just ask me, it's fine. We're doing these things together.

OK, we will start now, we will be together until (e.g. break time / when the big hand gets to (number on the clock if there is one)) and then if you are happy to carry on, we will probably carry on until lunch-time. But remember, we can stop at any time and that is perfectly OK, nobody will mind.

The 3 Card Symbols:



## APPENDIX L

### **The effects of neglect on child development – proposed research by Bridget Carroll. Post Graduate Researcher**



#### **I would like to invite you to be part of my research project!**

For a long time, I have been interested in why it is that children who are looked-after, do not seem to do as well in the school system as other children. Over the last couple of years, I have been doing a lot of reading in the research literature, as to why this might be the case.

I have a few ideas that I would like to research. I propose to carry out some very in-depth developmental assessments with 3 children under the age of 8 who have suffered neglect in the first year of life and who are looked-after. These will include cognitive skills, attention skills, memory skills, social skills, language skills as well as literacy / numeracy skills. I will also carry out an attachment assessment (the Manchester Child Attachment Story Task). Finally, I hope to measure their heart rate, with small, wireless children's heart-rate monitors, to see how this changes throughout the school day.

I will collect the views of the child's teacher, their carers as part of this, but I would very much also like to collect the views of other social workers, teachers and foster-carers who are interested in this subject. I would like to do this through a sorting activity, called a "Q Sort". In this, you are given a set of 48 statements about neglected children, and you sort them into 11 piles, according to how much you agree or disagree with the statements. This will probably take up to an hour and I may ask you some short questions afterwards about your thoughts during the activity. (These will be recorded, but only if you are happy for me to do this). During the research project, lasting approximately 9 months, you will then have the opportunity to talk to me about my research and this might be helpful if you have children who are struggling in school. The results will be written up into a doctoral thesis, and it may be published. This activity is completely anonymous – nobody can be identified from it.

**If you would like to take part, please email me at xxx or call me on xxx and I can provide further details. Thank you**



## **APPENDIX M**

### **Information & Consent for taking part in the Q Sort** **Carers, teachers & social workers**

#### What is the research about?

I am interested in why it is that children who have suffered neglect in the first year of life tend not to do as well in the education system, as other children.

#### Why have I been asked?

You have been invited to take part as a teacher or a carer of a child who has experienced neglect. If you are a social worker, you have volunteered to take part!

#### What will I do?

I will give you a set of 48 cards. On them, will be written a statement about a child who has suffered neglect in the first year of life. You have to sort these cards into a pre-set pattern that I will explain to you, on the basis of how strongly you agree, or disagree, with that statement. Alternatively, you may have no particular views about that statement, in which case, it will go in the middle. I can stay with you whilst you do this, or you can do this on your own I will also ask you a few short, follow-up questions about the activity. These will be recorded on a smart-phone voice memo app only if you are happy for me to do this. I will delete this recording however at any time if you ask me to. All of this will take around one hour.

#### What happens afterwards?

I will make a note of your pattern of responses, and your pattern will be given a number. I will not make a note of your details, apart from the professional category you belong to – carer, teacher or social worker. The activity is completely anonymous, even I will not know who completed which particular sort. I will then compare everyone's responses to see how they are the same or different.

#### What if I change my mind about taking part?

You are free to say at any time that you have changed your mind. There is no obligation at all to take part; it is entirely voluntary. Please be aware however, that if you do the Q sort and then decide that you do not wish your data to be included, I will not be able to delete your particular set of results, as I will not know which sort was completed by a particular person.

#### Will the information be published?

I will write up my results and publish them as part of my thesis. This will be kept at the University of Birmingham. I am hoping that I will learn about how to help children who have had adverse early life experiences make good progress in school, in which case, I would like to publish my work in academic journals and perhaps give training to other educational psychologists, carers, teachers and social workers.

#### What if I have any questions?

I can be contacted by telephone (000) or by email [REDACTED]. You are more than welcome to ask me about my research and what I know about the effects of neglect on child development and on school achievement. If you are a social worker, you can also often find me on Tuesday afternoons in the offices on the [REDACTED].

I also have two supervisors at university whom you may also contact if you have further questions. They are:

1. Sue Morris, Director of Child & Educational Psychology Training, School of Education, University of Birmingham, Birmingham B15 2TT  
Tel: 0000

2. Neil Hall, Lecturer, School of Education, University of Birmingham, Birmingham B15 2TT  
Tel: 0000

### **INFORMED CONSENT: Taking part in the Q-sort**

Name of Researcher: **Bridget Carroll**

Contact details: Tel 0000

Email: [REDACTED]

I confirm that I have read and understand the information above relating to the Q sort activity. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

I (please print your name) \_\_\_\_\_ agree to participate in the Q sort activity.

Signed \_\_\_\_\_

Date \_\_\_\_\_

Contact details \_\_\_\_\_

Please circle one option relating to your profession:

Teacher / Carer / Social Worker

Thank you for your help!

## **Appendix N**

### **Post card – right to withdraw**

I would like to exercise my right to opt out of the research. I understand that all research notes and data relating to my child and I will be securely destroyed.

TO:

Ms B Carroll,

Please delete one of the following options:

1. I do not wish to receive an Educational Psychology Report and I understand all records relating to these assessments will be securely destroyed.
2. I would like to receive an Educational Psychology Report and I understand that the records relating to these will be kept securely by Bridget Carroll for 6 years from the date of the assessments.

C/ O Mrs S. Morris / Mr. N Hall  
School of Education,  
University of Birmingham,  
Edgbaston,

Birmingham B15 2TT

## APPENDIX O

### Proposed Observation schedule

DATE & TIME:

FINISH:

TYPE OF ACTIVITY + notes	TIME ON TASK			EMOTIONAL REGULATION			
	Alone	Pair	Small group	Social Regulation	Self Regulation	Effectiveness	How was emotion signalled?
Visual							
Verbal							
Hand-on							
Writing							
Reading							

<b>Social Interaction</b>	<b>TALLY</b>	<b>Aggressive?</b>	<b>Prosocial?</b>
Initiated			
Received			
Notes			

## Appendix P

### General Information about the Research Project, for parents.

#### Who I am

I am Bridget Carroll, a postgraduate doctoral research student at the University of Birmingham. I am also a Chartered Educational Psychologist and I am registered with the Health & Care Professions Council (Registration number: PYL00274) to work as an Educational Psychologist. I work part-time in Y Local Authority and part time as an Independent Educational Psychologist. I have Enhanced DBS clearance.

#### Why am I doing this research?

In recent years, I have been doing much reading about the effects of neglect on child development, because in my every day work, I have noticed that children who have been brought into care, who have experienced difficult circumstances early in their life, even when their parents love them, often find some bits of school life quite difficult.

I am interested to see if I can develop a set of activities and assessments for children under the age of 8 that would help me, teachers, carers and social workers understand early on what a child's developmental and educational needs are, to try and prevent difficulties later on in school life and to help children make good progress in school.

The University of Birmingham's Ethics Committee has approved my proposed research. The University Ethics Committee has a VERY detailed set of criteria and standards that my research ideas have to meet, so that nobody comes to any harm, everyone knows what I am doing and what they will be doing, nobody can be identified and the data is securely kept, and eventually, destroyed. All participation in research is voluntary, including the children, so they can easily leave the research project at any time they want to.

As you are a parent of a child who has been brought into care it is important that you know what is involved in my project and - if you are happy for your child to take part in my research – then to 'give consent' – this means that you agree that it is alright for your child to take part. I have designed the research so that hopefully, everybody will benefit from taking part, but even so, there is no obligation at all for anyone to take part – it is entirely voluntary.

#### This is what it would involve:

1. If you were happy for your child to take part in my research, I would firstly carry out a set of developmental and achievement assessments with your child. This would probably take place over two or three mornings in school and they would give me a picture of your child's current strengths and difficulties in school. The assessments are related to cognitive (thinking) skills, language development, social skills, ability to concentrate & listen in class, how your child gets to feel calm again if she / he is upset, literacy skills and numeracy skills. I will also ask their carer and the class teacher to complete some short questionnaires about your child's language skills, your child's behaviour and about strengths and difficulties in general.

2. I would also be coming into school to observe your child's class three or four times for things such as how well children listen. I would also like to organise an activity for the whole class and everyone else will be asked if they would like to join in, including the teacher. All the children will be asked if they would like to volunteer to wear a small, wireless heart monitor under their t-shirt for a day in school. This is very small and thin and is stuck to a child's chest with a plaster. It records a child's heartbeat rate and breathing rate, much like the smart phone Apps do. The children can measure their fastest and slowest heartbeat and make a chart. There is no risk in doing this.

I would like to ask six children in the class to wear the heart monitors again on a volunteer basis, during my next two school visits (one whole day each) and possibly also over a weekend. Your child may or may not volunteer for this. They can take it off at any time if they don't like it. I would like your child to wear it again for one last time for a day in school when I come back after one term to see how your child is doing, and again, if they don't mind, for 48 hours over the weekend.



Heart rate measures are thought to be a good indicator of how worried or anxious a person is and from this, I would like to find out if certain sorts of school activity lead to children feeling a little bit more worried than usual and whether I can match this to observations in class, that would help a teacher recognize when a child is feeling anxious about something. It might also help me find out the sorts of things that a child might worry about and what sorts of things help them feel calm again.

3. I would also like to collect some samples of saliva (spit) from a few volunteer children in the class, on the days when the heart monitor is being worn! Cortisol is a natural chemical that everybody makes and it is found in saliva. I would like to see if the levels of this change at the same time as any changes in heart rate. To do this, I would unobtrusively ask six children at break times whether they would mind spitting into a small plastic tube for me! The saliva is sent away to be analysed.

4. The last thing is a 20-30 minute video-recorded activity of something called the Manchester Child Attachment Story Task. This is used a lot in research to work out how a child relates to significant people in their lives. It involves me beginning a story using 2 small dolls in a dolls house and then I give the dolls to the child and they finish the story.

Then, with the child's teacher and carer, we will plan an "intervention" (action plan) lasting for one term, for your child, to help him / her make good progress at school. We will use my ideas from the results of all the assessments, everyone else's ideas, including those of your child. This plan is written down in a table and is called an Individual Education Plan (IEP).

The school has agreed to provide a teaching assistant for some part of each school day, to help with this plan, for a term. After a term, I would then repeat some (but not all) of the assessments again with your child in school, to look at the progress your child has made. I will then meet once more with your child's teacher and carer and we will record the areas of progress, what has helped and what we could do differently next time. A new intervention plan, (IEP) will be written again to help your child continue to make good progress in school. My involvement will now end, although I will continue to provide advice by telephone to school for another half-term.

I am hoping from doing this research that we would all have a better understanding of how to support the educational progress of children who have had difficulties in their early life and reduce the likelihood of problems developing for them, later on.

I am hoping to carry out this research with three children. For practical purposes, I could not do this with more than 3 children. When I have finished, if you like, I can share with you the results of this research and I will arrange to meet you at a place and time that is convenient for you and share what I have learned. You are welcome to bring family / friends with you and you will then have an opportunity to ask me questions and discuss the research with me.

#### Where will the information be published?

I will write up my research into what is called a 'doctoral thesis'; it's like a book. All doctoral theses are kept in the University of Birmingham's library and online in their library catalogue. Since I am hoping that I will learn about how to help children who have had difficult early life experiences make good progress in school, I will try and publish my work in academic journals and by giving training to other educational psychologists, carers, teachers and social workers.

#### Confidentiality – can your child be identified when someone reads my work?

Any information that I write in the dissertation for my doctoral thesis or published afterwards will be anonymous; nobody will be named. Neither your child, their carer, your child's school, or the Local Authority can be identified.

My supervisors at university will read my work as I write parts of it, but they will not know who has taken part. Only I will know. Any assessment material will be kept by me in a locked filing cabinet in my home and only I will have access to it. Anything I write will be on a password-protected / encrypted laptop and backed up on the University of Birmingham's servers and it will be kept for ten years (in case anyone wants to look at my results), following which it will be securely destroyed.

#### Local Authority Consent

I have been given permission to do this research by the Local Authority – they are responsible for the safety and wellbeing of your child. Your child's carer and school also have to be happy and agree to take part in the project before any research can begin.



**Please take some time to read this information again and discuss it with friends / other family members. If, having thought about it and discussed it, you would like to meet me to ask further questions, then please contact me via the number below. It might be helpful to make a list of any questions you may have.**

**If however, you are happy for your child to take part in the research, and you do not wish to meet me, then would you please write your name below and sign and date it. There will be two copies, one is for you to keep, so you can contact me if you like, the other is a copy that I will need to keep.**

**Thank you for reading this.**

**Bridget CARROLL**  
**Postgraduate Doctoral Researcher**

**INFORMED CONSENT: Parent**

Name of Researcher: **Bridget Carroll**

**Contact telephone number: \*\*\*\*. Email:** [REDACTED]

1. I confirm that I have read and understand the information above relating to the research project.
  -
2. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
3. I agree for my child \_\_\_\_\_ to participate in the study.

Signed \_\_\_\_\_

Date \_\_\_\_\_

-----END OF APPENDICES FOR AER-----

## **APPENDIX 2**

### **Legislation pertaining to Child Neglect**

Children Act 1908

Children and Young Persons Act 1933

Children Act 1948

Children and Young Persons Act 1963 (amended 1969)

Local Authority Social Services Act 1970

Child Care Act 1980

Children Act 1989

United Nations Convention on the Rights of a Child (ratified 1991 in UK law)

Protection of Children Act 1999

Leaving Care Act 2000

Adoption and Children Act 2002

Education Act 2002

Children Act 2004

Adoption and Children Act 2006

Safeguarding Vulnerable Groups Act 2006

Children and Young Persons Act 2008

Apprenticeships, Skills, Children and Learning Act 2009

Education Act 2011

## APPENDIX 3

### Protocol for placing the Lifetouch© sensors

1. A user QR code provided by Isansys was scanned to the camera on the tablet PSE.
2. The QR code on a Lifetouch© sensor packet was scanned to the camera on the PSE. The data and a code number for the child was typed in on the PSE screen by me, or the child or the class teacher who helped.
3. The blue plastic strip separating the battery from the smart patch sensor was removed, so the Lifetouch© sensor was active and connected wirelessly to the PSE.
4. The child's chest was cleaned with the medical swab provided. The Lifetouch© sticky pads were placed with one sticky pad uppermost and towards the sternum and the second sticky pad lower and further round the rib cage, approximately over the apex of the heart\*.
5. The age of the child was selected from the options available on the PSE screen.
6. After a few seconds, the child's heart rate appears as an electrocardiogram (ECG) pattern on the PSE screen and this allows me to check that I have placed the Lifetouch© sensor correctly – if it is placed over the child's heart, then the typical ecg wave pattern with a spike and a smaller trough are observed on the PSE screen.
7. After a minute or two, the heart-rate and breathing rate appear numerically and also as two bar charts one above the other on the PSE screen.
8. Comfort with the child was checked and they were reminded not to press on it, and that they could have it removed if they no longer wished to wear it. A sticker with the child's initials on it was placed on their PSE screen, so they knew which screen showed their data.
9. When the Lifetouch© is removed, the option to 'stop monitoring' is selected from the PSE screen. The sticky pads are carefully peeled off and the Lifetouch© sensor placed in a sealed bag for recycling.

\*Training in how to place the Lifetouches© were kindly provided beforehand by the nurses at Birmingham Children's Hospital, where the Lifetouches are used clinically in research and to wirelessly monitor children's vital signs. The first time I placed a Lifetouch with a child, the positioning and ecg trace was very kindly checked via by Facetime by Sugrah, a nurse from the cardiac ward.

## APPENDIX 4

### Protocol for collecting saliva

Alder Hey Children's Hospital (AHCH) kindly provided 40 commercial 'salivette' tubes.

1. I labelled each tube with a three-letter code for each child, the date of collection and the numbers 1-4 to indicate collection times (for the carers).
2. I explained to both child and carer what to do; the carers were also provided with instructions of how to collect the saliva typed on a card, in case they forgot, along with my telephone number in case of questions.

#### Instructions

The tubes contain a cotton wool swab and the child is asked to tip this into their mouth and chew for several minutes, until the swab is soggy. They then spit this back into the tube and close the lid. Collection times were:

1. Immediately upon waking
  2. Thirty minutes after waking
  3. 11.30am
  4. Just before bedtime
- 
3. Children were instructed to chew the swab before they brushed their teeth for the morning and evening collections to avoid blood contamination.
  4. They were asked not to eat for the thirty minutes prior to any collection.
  5. If the collections were done at home, the carers placed the tubes in the freezer. If the collections were done in school at 11.30am, I supervised this, then placed the tubes in a sealed bag in the school freezer, with permission.
  6. I collected all tubes from the carers in a frozen gel bag, stored them in the freezer at home (-25<sup>0</sup>C) prior to taking them to AHCH, again in the frozen gel bag.
  7. They were kept frozen at AHCH until the next assay run.

Staff at AHCH kindly emailed me the results in an Excel spreadsheet.

## **APPENDIX 5**

### **MEETINGS FOR MINNIE**

#### **Meeting 1 Minnie: External Support Staff & Inclusion Co-ordinator (June)**

**Attendees:** External Specialist (Theraplay); External specialist (school counsellor) & the school Inclusion Co-ordinator (INCO), with responsibility for Looked-After Children

#### **Purpose**

To share our knowledge and experiences of working with Minnie in order to formulate a plan of action to help his inclusion in school.

#### **Reports**

##### **1. INCO**

INCO outlined the school's 'Protocol for behaviour' strategy:

- Each classroom has a Behaviour Book, with misdemeanours recorded in this.
- If 3 or more incidents per week are recorded, then a detention is issued at break time.
- If this happens for 3 consecutive weeks, then parents are called in and Behaviour Targets are drawn up, for lesson and break time.

Also

- In class, there are coloured cards with each child's name on. Every card starts off at Green. If a child misbehaves, then it is turned to Amber. If they misbehave again, it is turned to red, the highest level.
- Every child can have their card colour changed to a lower level colour through good behaviour.
- The teaching staff all have a set of criteria that they use when deciding whether a child's behaviour is serious enough to warrant a colour change on their card. For example, there are criteria for physical behaviours – if a child kicks another child under the table, then this would turn their card to a higher level colour.

The INCo said that there are currently 3 children on 'Red Alert' (whose parents have been brought in and whose card is usually red). Two of these children are on the SEN register and one of them is the research child, Minnie.

She said that the system does not really work for Minnie, particularly as he has a name amongst his peers, so they might complain about him, just to get him in trouble. This is particularly true at lunch-time, where children often complain to the Lunch Time Assistants. They have reported that he is often very rough with other children. They have also said that he craves adult, supportive attention.

We discussed this and thought it was based on certain assumptions:

- Children are intrinsically motivated to learn.
- Children are misbehaving on purpose / they have conscious control of their behaviour.
- Children can change their behaviour through willpower.
- When they are given a punishment (detention) this will change their behaviour and make it less likely that they will do the same (wrong) thing again.

## 2. School counsellor

The school counsellor works with the four children of Minnie's family who currently all attend the same primary school. He is the second youngest of five children, although the eldest child lives with maternal grandparents.

- She commented on Minnie's behaviour at home. She explained that 'rough and tumble' behaviour is commonplace at home and is therefore regarded as 'normal' and not 'naughty' by Minnie.
- She observed that all the children have witnessed ongoing domestic violence in the past.
- She thought that the next two oldest children judge their mum and say rude things about her and her capability as a mother and this undermines mum's confidence to deal with the children's behavioural issues.
- She asked whether the oldest child could read with Minnie (and I asked whether Minnie could read to his youngest sibling) as a way to improve all their literacy skills, which are low.
- She highlighted the somewhat aggressive (and sometimes unkind) communication styles between the siblings.

## 3. External Specialist (Theraplay)

She echoed the family observations of the school counsellor and similarly observed that the children fight with each other and mum does not always know what to do about this, appearing overwhelmed at times. She said that mum does try, but there are times when it all gets too much and she shouts. She thought that the relationships between the children could be characterised as 'competitive' rather than 'co-operative and caring'.

She said that they have agreed to try reading audio books, snuggled up together on the sofa. She thought it unlikely that the oldest sibling would read with Minnie, or that he would read to his younger sibling.

## 4. Researcher

I outlined the difficulties Minnie had in class with sitting and listening and with any writing activity. However, he did enjoy listening to stories and he did enjoy (and was good at) maths.

## **Plan**

- Precision Teaching daily for High Frequency words (Fifteen minutes - researcher to plan with TA).
- Mum would be asked to read to Minnie daily.
- INCO would buy his favourite comic and read to him every Friday afternoon. When he is confident, he could choose a small section to read to mum, to give him a chance to show off and a chance for mum to say 'well done' and notice his progress.
- The INCO suggested using class time to practice story-telling with the TA during literacy tasks. When his language skills and confidence have improved, his story would be recorded on a Dictaphone and Minnie could write a story from this.
- Maths is a particular strength and Minnie should continue to be given plenty of praise for completing tasks.

This was written up by the INCO as a Personal Provision Plan (June), to run until September.



## **Meeting 2 Minnie: Class Teacher & Inclusion Co-ordinator (June: next day after Meeting 1)**

**Attendees:** Class Teacher & the school Inclusion Co-ordinator (INCO), with responsibility for Looked-After Children

### **Purpose**

Following yesterday's meeting, to share our knowledge and experiences of working with Minnie in order to formulate a plan of action to help his inclusion in school.

### **Reports**

#### **1. Class Teacher (CT)**

CT outlined her view of Minnie's difficulties

- He can't verbalise what he is feeling. If something has set him off, he can't say what it is.
- He has an aversion to K (child with SEN). K takes up a lot of my time. He doesn't like K getting the attention. There are a lot of needy children in class.
- Homework is 'hit and miss'. It's set on Thursday night and there is a Homework Club on Monday to help. However, mum's organisational skills and maybe mum's reading skills – (are not great) and this means that homework is not done.
- There's pressure at home and maybe not the support at home to help him do his homework. Another child 'snitches' (tells me) about what it's like at home (and there is a lot of pressure).
- Minnie sees his dad on Fridays and does fun things with him. Mum does not get to do these things – all her time is taken up with managing the children.
- 
- I've found that when he is not doing his work, when he's moody, what works best is to give him a choice. I ask him to choose whether he wants to do his work now, or do it later at break time.
- When he was in Foster Care, he was more settled, because he knew he'd get the attention. There was a predictable routine: He'd get in from school, have a snack, sit at the table to do his homework, clear away, set the table for dinner, eat dinner, then it would be the 'bed-time' routine. Everyone (the children) at home now is disappointed with the way things turned out (the way things are) now they've gone back home. I can see that mum is really caring; she gives the children hugs, but she's worried. (Maybe about the Care Plan?)

## **Plan**

The main problem from the CT point of view is that Minnie cannot articulate his feelings and when he is moody, this prevents him from doing his work.

- The TA knows the family well and is very empathic. I discussed the 'Therapeutic Story' books (Margot Sunderland) with the TA and she thought the activities would help Minnie. She will do this each day for thirty minutes, and talk about how Minnie is feeling with regard to his experiences. (This has also been discussed with the school counsellor, who uses these books.) The aim of this is to provide a low-key, and hopefully enjoyable way for Minnie to talk about his feelings, and re-conceptualise his experiences in a way that means it will be less likely that he feels low, moody or angry and reduce ability to concentrate on his work. It's an opportunity for him to talk and reflect about what is going on for him. It may also support the development of his reflective, verbal skills.
- 
- Heart-rate variability can be improved by rhythmical breathing activities, such as yoga breathing techniques. The TA has watched the yoga breathing video for primary children, kindly provided by the Special Yoga Foundation (yoga activities for children with special educational needs) and she has agreed to do this as often as she can and ideally 10 minutes each day in the morning with the whole class.

## Meeting 3 Minnie: Informal meeting between me and an External Specialist to review our involvement (June)

**Attendees:** External Specialist (Theraplay) & Researcher

### **Purpose**

To share our thoughts about what is happening overall for Minnie and the progress he is / we are making.

To think about whether there is anything else we could be doing as an informal 'team'.

### **Reports**

#### **1. External Specialist (Theraplay)**

- She reported that Minnie will not read from the iPad at home.
- She reported that mum does not seem emotionally strong enough to implement family strategies, and we discussed whether Counselling via the GP might be an option, to support her and give her a chance to offload and also feel good about herself. We also wondered aloud about the Samaritans – but would mum rather use her own family network, rather than go to outsiders?
- There is a lot that has happened in the past, and mum is doing well to keep meeting each week, but the External Specialist reported that she says one thing and does another, and she does not always appear engaged in the session. We tried to understand this, in order to do things differently and think how we might best support mum to support the children.
- The children had also not engaged well in the Theraplay session.
- It all seemed to be connected – was this linked to more contact between the children and their dad?

### **Plan**

- I would ask about the Precision Teaching and the use of audio books that read aloud
- We would speak to the school counsellor for further ideas

### **Thoughts**

Our thoughts were that there were some things that were very difficult to fix! How far are we responsible for parent motivation, or for their circumstances? Wouldn't it be better to establish a parent support group, with outside specialist involvement, then the responsibility did not fall on one person? We can just do the best we can with the time we have, and hope to increase the probability that things will be better because we are teaching new ways to look at things, think about things and do things.

The financial cost of counselling for parents who have experienced depression? We all need other people to help us feel good about ourselves and counselling is helpful as a professional support, particularly when family support may reinforce the problems (e.g. reminiscing about the past, grumbling about what is happening now).

## **Meeting 4 Minnie: Social Care Review (mid July)**

**Attendees:** External Specialist (Theraplay); internal specialist (school counsellor), the school Inclusion Co-ordinator (INCO), with responsibility for Looked-After Children, Social Worker, mum.

### **Purpose**

Update of progress and next steps

### **Reports**

#### **1. Social Worker**

The children are now seeing their dad more often – the three youngest children go to their paternal grandmother’s house on Friday and Saturday nights. Dad now lives there too, so they obviously see him. The two youngest children sometimes stay, but it was really only Minnie that wanted to stay. They also go for dinner on Monday. She said that the two youngest children had told her that their dad had recently mentioned getting a flat and they might have bedrooms there.

Staff reported that Minnie really looks up to his dad and they wondered whether this relationship was having an effect on his behaviour in school.

#### **2. INCO**

- She named Minnie’s new class teacher next year (female). The other Year 3 class teacher is a male and they were hoping that he could take on a mentoring role in view of the fact that Minnie looks up to his dad. The male teacher also does football, which Minnie enjoys, so the INCO hoped that he could be encouraged into more social activities.
- She reported that Minnie’s behaviour in school continues to be of concern.
- She explained that family activities via an external support agency are planned for the summer holidays.
- She said that Minnie is very reluctant to read and although his phonics is good, he is falling behind in his literacy. He attends a small class for extra literacy support.
- She explained that his maths is good.
- She explained that he loves gardening and goes to the gardening club.

#### **3. School counsellor**

Mentioned the positive benefits of a particular support programme, which included some Life History work.

#### **4. Researcher**

I said that I still thought that his literacy difficulties were associated with much of the ‘behaviour difficulties’ and now it was getting towards the end of term, it would be a good time to spend more time each day on improving literacy skills (precision teaching) and enjoyment of reading. I suggested overlooking as much of the ‘bad’ behaviour as possible.

#### 5. Mum & External Specialist (Theraplay)

There was encouragement for mum from the External Specialist, who noted that Minnie is very loving and well-mannered. Mum said that she understood where Minnie is coming from and she wanted him to be happy and settled at school.

## **Meeting 5 Minnie: Informal meeting between me and an External Specialist to review our involvement (late July)**

**Attendees:** External Specialist (Counsellor) & Researcher

### **Purpose**

To share our thoughts about what is happening overall for Minnie and the progress he is / we are making.

To think about whether there is anything else we could be doing as an informal 'team'.

### **Reports**

#### **1. External Specialist**

Observed that people seemed to be saying different things to different people in terms of the support for the summer holiday programme, which was frustrating for staff.

This had now been scrapped as the funding had been pulled at the last minute. She observed that this was very unethical, as the family had been promised the support.

Reflected on how behaviour problems had been prevented in past years:

- Children were observed in Nursery / preschool.
- Parents were invited to the preschool playgroup, where the staff got to know the families and relationships were built - "we all worked together".
- Making partnerships with the parents is really important.
- Circle Time, relaxation sessions and nurture sessions took place every week. These were all supported by many pastoral layers / relationships and were very helpful in different ways.
- They used to have 'emotion faces' on the wall; starting points for children to say how they were feeling and why. "It gave them some sort of equilibrium."
- It was hard work, but it paid dividends, as it was all about getting the best from the children and their families.
- The current Year 6 had not benefitted from this and they were an extremely difficult group.
- People said the right things in meetings, but did not do the right things. She had observed teachers shouting at children who in their view had misbehaved or not been compliant, clearly and obviously conveying the message that they did not like the child.
- Senior staff might understand the child's difficulties, but feel under pressure to appease the teacher, who strongly felt the child should be punished. She gave the example of one very distressed child she had seen under a table in class and refusing to come out. The teacher shouted, tried to grab the child or push him out. The child was crying and appeared to be seeking a safe place. The teacher was angry that the child had embarrassed her in front of the class by not coming out from under the table and wanted punishment / consequences for the

child for refusing to obey. The teacher could have just said something like “Y is having a hard time today” so we have to understand that right now”. (However, this is difficult if you are a teacher with an authoritarian mindset.)

She thought that school policies did not reflect the lived experience of children living in poverty and stress: many children had to learn to put on a ‘hard front’ or ‘bravado’ as this is what they are taught at home. She thought that this definitely applied to Minnie, as these were his dad’s values and he looked up to his dad. He copied this behaviour in school – she had recently seen him deliberately tread on another boy who had fallen over in the corridor.

In this community, she had known a lot of violence and aggression as an ordinary part of everyday life. She had known people to put fireballs in through letter boxes, people with machetes threatening parents, older siblings or cousins in prison, relatives being deliberately run over. She observed, “If I’d seen those sorts of things, I’d be traumatised”. She explained that the counselling is to help the children holistically, it’s not just about good behaviour and bad behaviour in school, but staff don’t always see that – they don’t understand the concept of therapeutic work.

One senior teacher had remarked that staff were being too soft on the children and the children ‘were playing on this’ (people’s soft sides) and there should be more control over the children.

(The External Therapist for Theraplay had also recently said that a Head teacher in a nearby school told her that ‘Attachment is just another excuse for poor behaviour’.)

## **Meeting 6 Minnie: Social Care Review (October)**

**Attendees:** External Specialist (Theraplay); Senior Learning Mentor in school, Social Worker, Mum, Family Support Worker, Nurse.

### **Purpose**

Update of progress and next steps

### **Reports**

Minnie had changed class from having a female teacher to the male teacher, due to his challenging behaviour at the start of term. There were some good friends in his old class, whom he was upset to leave, but there were a few children in the new class that he gets along with. The school staff were adopting the advice of building a supportive relationship with the new class teacher, who stayed in at lunch time with Minnie, to play games with him.

Previously, Minnie was not allowed out at break times, due to behavioural issues (hitting other children) but he has now been allowed to choose a friend to play with at break time. They have been given a large box of 'Lego' and play with this.

### **1. Learning Mentor (LM)**

- Minnie is still showing challenging behaviour in school. For example, he refuses to do things, he has learned that he can say 'no' and he has learned that he can be defiant. She commented that it's very hard to ignore that behaviour, for example following an incident of disruption in class, he was asked to leave, but he refused.
- Yesterday, he was in a good mood, he was more relaxed and he was calmer. He gave her a big hug and this was spontaneous and natural.
- A "Your child has done well" card was sent home and Minnie was "absolutely made up" with this card.
- He listened to BBC Soundbites through headphones and he liked this and responded well to it.
- He enjoys maths and can't wait to show off what he's done.
- He has small group support for literacy and this works well when he's in a good frame of mind.
- He seems to enjoy learning and he enjoys school. (Mum commented then that she never had any problem getting him up in the morning.)
- Minnie's behaviour is good when he feels good about himself and his class teacher plays games with him each lunch time.
- He's been doing 30-60 minutes of literacy each day and he has recently done a good piece of work with the head teacher.

### **2. External Specialist (Theraplay)**

- The process of managing Minnie's behaviour has changed. He seeks out attention, because doing (things that way) is all he's known. Everyone is giving him nurture and praise, rather than sticking to the



behaviour policy. He might be feeling a bit uncertain and a bit insecure in school, and he might misbehave to gain attention, because that's worked for him in the past. When he's sulky, he gains attention.

- In the last few weeks, there has been a spike of poor behaviour in school, when the teachers are trying to teach, he throws things around.
- Minnie has experienced trauma as a young child. When his behaviour is poor, it probably means that there has been a trauma trigger. We should backtrack a little and try and find out what has happened; what was the adult doing just before it happened.
- When Minnie gets to know his new class teacher (CT) better and knows that he cares, he won't want to upset him, because he values him and wants that relationship. When Minnie genuinely feels loved and cared for, he will do his best not to upset his CT. There will be ups and downs, but don't give in and don't feel disheartened when things go badly. Keep responding positively – provide unconditional positive regard and his behaviour will change.

LM commented that it's been helpful to have a new way of looking at things.

- The weekly sessions with her, the children and mum have gone well and there is a big improvement in (particularly) the second oldest child's relationship with mum. She discussed the family matrix; how people feel about each other and said this has improved. The family have all gone through some very difficult times together, but they are feeling more love for each other now. Initially, the children blamed mum for the fact they went into foster care. They have been helped to see that mum was in a hard place and that she does care for them.

### 3. Social Worker

- The plan is to discharge the Care Order.
- School will open a CAF, as there is no need for a 'Child in Need' plan.
- The school will still be entitled to Pupil Premium as the children have been Looked After this year and this can be used to fund additional support, but (LA managers) have to approve the funding and this will continue until next year.
- There will be a referral to Changing Lives for family support, as the funding for family support via Theraplay is time-limited and would cease in January.

### Information and Reflections after the meeting

- The LM was surprised that Minnie was struggling so much with his literacy, and did not seem to know this was a big issue.
- It seems as though we do treat all children as an homogenous group, and there is not the time in the school day to look in depth at those children who have experienced neglect, or whose families currently are living in situations of stress and psychosocial adversity and think about how this affects their development.
- They need support to come to terms with what is happening in their every day experiences. Do the school staff have time to ask, 'What is it

like for these children to be having a difficult time at home, witnessing domestic violence, then be taken away from their mother, then brought back to their mother having experienced foster-care? Do the school staff have the time to stop and think about how the family dynamics might change as a result of this enforced separation, and how this might affect what the children are thinking about in class? (And hence affect concentration and motivation to learn.)

- Do we think what it must be like for the mother – does she feel judged? Does she doubt her capability to look after 4 children, and oversee their homework, and their out of school activities?

## **Meeting 7 Minnie: Informal meeting between me and an External Specialist to review child's progress (mid November)**

**Attendees:** External Specialist (Counsellor) & Researcher

### **Purpose**

To share our thoughts about what is happening overall for Minnie and the progress he is making.

To think about whether there is anything else we could be doing as an informal 'team'.

### **Information from school staff provided to counsellor**

The trusted TA who had been with Minnie in Year 2, and who had been doing some of the Therapeutic Story with Minnie is an experienced TA, with specialisms at delivering a range of interventions throughout the school. Due to these teaching commitments elsewhere in the school, when Minnie had moved class, she had been re-assigned responsibility for the specialist interventions and the school had funded a new full-time TA. This did not seem to have been overly successful and the new TA had become upset at Minnie not being given consequences for his 'bad' behaviour and she had been commenting that 'he was getting away with things'.

There had been a serious incident of disruptive behaviour in school, approximately a month after the October meeting. Minnie had come into school one morning in a clearly angry and distressed frame of mind. He had trashed the classroom in response to a seemingly uncontentious request and thrown bins around, before running out onto the balcony, a place of potential danger.

A later 'unpicking' of this had revealed that Minnie and his siblings were aware that there was an imminent court case (to discharge the care order, but they heard it as 'court case'). That morning, on the way to school, Minnie had seen his foster-carer and it seems that he had then assumed and thought that the combination of the words 'court case' and seeing the foster-carer, meant he was returning to foster-care.

Although his demeanour upon arriving in school had been obviously worried, nobody had stopped to ask what was wrong.

### **Information from the External Specialist**

She thought that 6 weeks (from the start of changing class) had not been a very long opportunity for a 'turn-around'.

She explained that the new TA was upset with Minnie's behaviour, particularly following the incident with throwing things round the classroom, where to the TA, there seemed to be few consequences. Minnie had probably sensed this disapproval, as his relationship with the TA rapidly deteriorated. She had then complained about his behaviour again, and this complaint had seemed to involve discussion with the CT and the other TA in the class in encouraging them all to express general feelings of dissatisfaction with Minnie's behaviour

and alarm at his aggressiveness. She then went on sick leave, related to these complaints.

The view of the external specialist was that it seemed that the new TA had tried her best, but had really appeared to 'want something back'. "If the child does not give you back what you expect – gratitude – then it doesn't work. The child has to have safe parameters when he knows that the adults are in charge of him and he is not expected to give anything back". The TA appeared to need something (to be appreciated and 'rewarded' by the child), but Minnie could not give her this, he is not able to understand the whole situation or express appreciation for what she's done or trying to do for him, because he is too young to see it this way.

It appeared that the TA wanted 'a return on her investment', but the external specialist thought that when dealing with traumatised children, then the investment should carry through, whatever the circumstances. She recalled seeing the TA nagging and lecturing Minnie, "I've done this for you and you've not done anything".

We thought that you have to match a TA to the child and this was later echoed by a member of senior management who commented, "You can't teach empathy. You have to have it and you either understand a child, or you don't". The external specialist thought that the senior management team (SMT) were in a difficult place. The SMT member above certainly understood Minnie's difficulties and how this contributed to his refusals and 'poor behaviour' in class. However, the SMT member also had to back the staff and it was a delicate balance of having to explain child behaviour to the TA (and other classroom staff who had also begun to grumble) and why Minnie was behaving in this way, at the same time as being seen to support the staff. This member of the SMT had also recently had to ask Minnie to leave the class following an incident at break time that she wanted to investigate. On this occasion, he had refused and it became apparent that eyes of all the children were on Minnie, in shock at his refusal to obey a senior member of staff. Fortunately, she had the skills to see that he was upset and although she later said that the thought that passed through her mind was, 'I've now lost all street-cred with this class', what she actually did was to say, "I can see that you feel upset now Minnie, so we will leave it for now, but we WILL talk about it later". She did not see it as a challenge to her authority (which the TA probably would have done).

The external specialist explained that Minnie had also recently refused to go out of class to a group teaching intervention. We also wondered why this was, and why he did not want to go to a group activity? Is it because that in this case (unlike the example above where he was upset) it gives him 'street cred' – "Look – I can do what I want?".

We discussed this and thought it was a balance between 'prevention and cure'. We have to have the good relationships in place so that behaviour does not escalate (prevention). Minnie is a child, like other children, who does want to please. He needs to have a member of staff that he knows fundamentally cares about him, so that if he 'tries it on' (as in refusing to go out for a group

intervention), this person can put appropriate consequences in place and Minnie will accept them, because he does not want to displease the teacher (the cure – being firm and teaching authority).

For a child to feel secure in school, he has to know that if a member of staff tells him to do something, he has to do it; he has to know that a trusted member of staff will physically and psychologically keep him safe – he won't make him look small in front of his peers - and he will praise him and appreciate him publicly, in a way that makes him feel good about himself and build confidence.

The external specialist also thought that Minnie was gaining more control at home, as his mum was struggling again and this was not helping in school. His mum was currently finding it difficult to have control over Minnie's behaviour. He needed boundaries and a trusting relationship; he can spot 'apprehension' a mile off. She thought that Minnie was thinking to himself, "You can't manage me, so I'm just going to do what I like". Mum had previously completed the Solihull training and we both remembered that she had found this helpful.

- Would it be possible to do this again and run a parent group?

**Meeting 8 Minnie: Informal meeting between me, Y3 class teacher and Learning Mentor to review intervention plan and strategies (late November)**

**Attendees:** Senior Learning Mentor in school, Class Teacher & Researcher

**Purpose**

Review of progress and next steps

**Report from Learning Mentor**

Minnie had been given a new Personal Provision Plan. Following the misunderstanding / outburst at the start of the month regarding foster-care, and the subsequent departure of the TA on sick leave, a new TA would be appointed. The plan included:

- Minnie would be attending a local, external site 2 days a week. This was specialist provision to support a small number of children with social, emotional and behavioural difficulties.
- The trusted TA would deliver a literacy intervention each morning as Minnie arrived in school.
- A member of the SMT would have a 'check in' with Minnie at 3pm each day and talk about the day. This had begun and is valued by Minnie.
- Weekly counselling with the External Specialist to continue.

On the Personal Provision Plan, the 'Assessed Needs' were described as follows:

*"Minnie presents fairly consistent disruptive behaviour physically, with resources or with other pupils. This can vary, depending on the particular lesson. At all times, he requires additional adult support to stay on track and to address potential outbursts. This has become steadily more challenging during the course of the academic year. The impact is now showing upon his academic achievement, which has further compounded his negative approach to starting and completing recorded (written) work".*

Target: "To use my hands and feet in a kind way."

**Report from Class Teacher (CT)**

The CT had accepted Minnie into his class, knowing of his difficulties. He said that he had been making extra time for Minnie at lunch-time on a one-to-one basis, and this extra time had not been conditional on good behaviour.

(In a previous discussion, it had been suggested that if Minnie misbehaved, then the lunch-time games should be stopped, as a punishment. However, both myself and the External Theraplay specialist had thought that the time together at lunch time should continue, whatever Minnie's behaviour, because it helped to build a trusting relationship between Minnie and the CT. It had been our view that Minnie's behaviour would improve with time, because he would not want to displease his CT. This had been supported by Minnie's mum, who reported that Minnie really looked up to his CT, and he could 'do no wrong' in Minnie's eyes.)

Minnie had been with the CT now for 2 months. The CT reported that the lunch time games had been viewed as a reward by other children, who knew

that the CT and Minnie spent time together at lunch time. The CT said that the other children saw Minnie being defiant in class and then later saw him being 'rewarded' at lunch-time with games. He stated, "Twenty-nine other children are outside in the cold and they see him inside, in the warm. Even though he's being naughty, he's given this reward". The CT saw the building up of the relationship with Minnie as being to the detriment of his relationship with the other children in the class. He said that "if Minnie goes out with (the trusted TA) then no-one else knows that he is having this reward with her, but they do when he stays in with me".

He stated that the other children have to see consequences and that things are fair.

He also thought that the LM had more authority over Minnie than he did, as she 'has that relationship with parents; she has the upper hand'. Minnie knows that if she gives him consequences, they will be enforced, and this works.

### **Discussion**

The LM thought that Minnie's dad was being missed out of the discussions in school about Minnie's behaviour. She thought that Minnie looked up to his dad and after contact / staying over, he was then copying dad's aggressive behaviour in school, and using defiance or aggression, to get what he wants. She said that if he did not want to do the work, then he has perceived that he does not have to do it, and he gets sulky.

She stated that the Pupil Premium is not enough to support Minnie – to fund the external placement two days a week and a full-time TA three days a week.

She also said that the school have been trying really hard to be understanding about Minnie's behaviour. However, the Head had sent him home on one occasion after an incident of poor behaviour and this had "made him think twice about doing it again" as he did not want to be sent home.

I had observed that the external school counsellor knew Minnie and his family circumstances well and that it might be an idea to timetable some time so that she and the CT could share ideas. However, this takes time and planning.

We discussed Minnie's dad not being involved and wondered if he could be. As paternal grandmother picked up the children from school one day a week, perhaps this would be a good time. The possibility of a parent support group was also discussed. The school have previously done literacy / numeracy classes for parents and if the LM could organise this, and attend in order to have informal conversations and see how things are, then this might help to build trust and provide an opportunity for parenting support, particularly for homework / reading.

### **Reflection afterwards**

I thought that Minnie did not have too many friends in his new class – his best friends were in the other Year 3 class. It might well be true that the other children had to play out, but I had not heard any of them complaining about

the cold, and I wondered who had actually said this – was it the TA who had complained?

I also thought that the CT could explain his time with Minnie to the class. He could say something along the lines of, 'Minnie has had a difficult time at home and this has upset him and it continues to upset him in school and we can all see this when he becomes down, or angry. So, to encourage him a little bit, I am spending some time with him at lunch time, just for 15 minutes and we have a bit of time together and we can talk over what he is struggling with'. It's not about what actually takes place, it's about how it is presented to the class.

I thought that although I had worked hard to instigate empathy in the class teacher at the start of the half term, that this seemed to have been undermined in some way.

The assumption again is that Minnie is 'choosing' to behave badly, and that he has conscious control over what he does. Again, at the start of term, we had discussed this. We had discussed the importance of helping a child to feel safe, and that this helped them physiologically, to feel calm. When they feel calm, they can listen more easily.

We had discussed how Minnie's difficulties in literacy undermined his self-confidence and led to him probably feeling stupid in front of classmates when he couldn't do the work, and he was likely to subsequently refuse to do it – so he would need additional support, as well as some intensive literacy support to help him catch up - he really hates reading and writing.

We had talked about the skill of the teacher being to know the difference between when he was refusing to do the work because he could not do it and when he was refusing to do the work because he was 'trying it on' and simply did not want to do it. In the latter case, consequences would be appropriate, but they would have to be thought about in advance, and both rewards and consequences planned with Minnie for completing / not completing work. It's about being 'firm but fair' and the child knowing where the boundaries are in school.

This is clearly a very difficult balancing act. It takes time to sit and think and plan in advance what to do and say when things happen, and time is something that teachers do not have much of in the day.

It's also clear that family events are having a big impact on Minnie's behaviour in school.

I felt a bit dismayed at the Target, 'To use hands and feet nicely'. Shouldn't we be looking at developmental targets? What did this mean anyway? Does this mean that if Minnie is more aware of what his hands and feet are doing, then this will improve things? Shouldn't we be thinking why he uses them unkindly in the first place?

Also, the comment, 'Being sent home made him think twice'. In this case, we are trying to change behaviour through adding consequences / punishments. Isn't this a topsy-turvy way to go about it? Shouldn't we be asking 'why does he do this in the first place?' What is rewarding for him about this pattern of



behaviour? What unhappy or negative feelings does he avoid by not doing what is asked?

In terms of 'dynamic systems, we are changing the output, but we are not changing the internal organisation of thoughts, feeling and memories that contribute to this organised pattern of behaviour in the first place. How complicated would it be, to sit down and make a list of all the troubling things and try and figure out what has happened in the past experience of a child and what is happening in his current experience, to try and work out what is going on in his mind, and consequently, what we should be doing about it? The answers won't be simple or easy, either! They'll be multi-level activities.

## **Meeting 9 Minnie: Social Care Review (January Y3)**

**Attendees:** External Specialist (Theraplay); Senior Learning Mentor in school, Social Worker, Mum, Family Support Worker, Nurse, Head Teacher

### **Purpose**

Update of progress and next steps

### **Reports**

Although the Care Order had been discharged in November, the Judge had recommended a Child in Need Plan.

#### **1. Learning Mentor (LM)**

- Minnie is attending the specialist placement 2 days a week and enjoying it. He is learning about taking turns and sharing. He goes on trips to the museum and to the farm.
- In school, his physical and violent behaviour has subsided, but it is still difficult at lunch and break time.
- Everything is still on his terms – if he doesn't want to do it, he refuses and this is a big problem. He likes to be in control, he likes to think he's the boss.
- He still likes to play games at lunch-time with the Class Teacher.
- He also goes with a friend to the Reception playground.
- He still sees the (trusting TA). She has a good relationship with him and she's very firm. She is helping with the transition with the new TA for him.
- He has not had any more exclusions. The exclusions (being sent home) worked, because he didn't like it.
- We have asked for a full-time place at (the local specialist provision for primary children with Emotional & Behavioural Difficulties) but this has been refused because Minnie does not have an Education & Health Care Plan. We have asked for an assessment place, but this is not possible.
- We would like his emotional needs assessed. The level and type of support that he needs is specialist, and is not a form of support that we can supply. He has to be supervised constantly.
- He is still not at a level where he could work independently in class.
- The Pupil Premium funds the 1:1 support Monday to Wednesday, the external placement Thursday-Friday and weekly counselling in school.

#### **2. Mum**

- He enjoys school so much more now and I can really see a big improvement in Minnie – he loves school.
- He comes out totally different to what he used to.

### 3. Headteacher (in response)

- We've changed the way he ends school. He goes to see (SMT member) and he talks about his day. He doesn't want to disappoint (SMT member). These last 30 minutes are a really calming influence and we understand that he has started to read at home, whereas it used to be a battle.

### 4. External Specialist (Theraplay)

- I've been doing Theraplay for one year now and my involvement is due to end. I have seen a big improvement in the relationships between mum and the children, and also between the children and each other.

### **Reflections afterwards**

I spoke with the External Specialist (Theraplay) afterwards. She said that there are still some issues in the family – for example, mum had been in a fight with a family member at a party and the children knew about this. Secondly, there is still some distrust between school staff and mum. There had been an incident where Minnie had been sent to the external placement on a different day because the CT was going to be off and a supply teacher brought in and they did not want Minnie with a supply teacher. Mum had come into school to collect other children and seen the CT there and that there was an Ofsted practice. She thought that Minnie had been packed off deliberately and complained. (The CT was due to be off, but the event he was off for had been cancelled.) The school pastoral staff were upset that after all they had done for mum, she had complained and accused them of something they hadn't done. The specialist observed that the staff found it difficult to see that mum did not trust people, due to all her previous experiences.

I was surprised at the mention of specialist provision and at the school's perception of not being able to cope – that they were not specialist enough. The external specialists and I had thought that additional teaching in literacy, the lunch-time games with the CT, the 3pm meeting and the 'firm but fair' approach would work well. We still thought this!

It sounds like Minnie is still behind and not confident with reading and writing, and that the staff were finding it difficult to implement a 'firm but fair' approach, as he was still able to refuse to do work.

## **Meeting 10 Minnie: Two Teaching Assistants and Researcher (March Y3)**

**Attendees:** Two Teaching Assistants

### **Purpose**

To review progress and inclusion

### **Information provided by the Teaching Assistants**

- If he doesn't like the work, he won't do it. If he does like it, it's OK.
- He has not done any precision teaching.
- He lacks confidence in literacy and says 'I can't do it'. He doesn't read and he needs guidance and help.
- As soon as he sees a literacy task, he puts the barriers up and point blank refuses to do it.
- His reaction is both extreme and aggressive.
- When he sees the other children doing it correctly, he tries to distract them. He kicks the table and tries to grab their pencils.
- We've tried to give him easier work to do, but he sees that it's easier and refuses to do it. He picks and chooses.
- It often very much depends what type of mood he's in – if he comes in in the morning in a good mood, he works hard and we get through the day. If he's in a bad mood, then nothing gets done.
- He enjoys maths.
- He hates writing, so he has a computer and he types out the alphabet on it. He has completed some work on that.
- In the last 2-3 weeks, he's been coming in in a very poor frame of mind. He's been spending more time at his dad's and we think there is a teenage cousin there, who picks on him. His dad's side of the family seem quite violent and we think Minnie is afraid. However, he can't say this to his dad, because he has to be strong and not cry. We think he is afraid of this cousin. When he comes into school, he picks on other children. There's a child in the class who has special educational needs and Minnie picks on him and intimidates him.
- He's embarrassed when he hurts himself and won't cry.
- He won't apologise, although we know that he is sorry.
- He has to have this 'macho' image to live up to.
- He struggles to make reciprocal friends. He goes home at lunch-time, which he likes, but he does not see his old friends C&T who used to be a good influence on him. They are in the other Y3 class, so they don't see much of him.
- We think mum is emotionally drained and she looks tired.

### **Ideas**

- We discussed ways to improve literacy – teach Minnie to touch type (10-15 minutes a day practice on a children's programme) then let him word-process all his work.
- Read to him every day and encourage an interest in stories. Read with him to an audio book.

- Precision Teaching reading and spelling for the high frequency words, 5 a week.
- Aim to build his confidence – sit and do his work with him.
- Draw up a list of motivators and use these for when he has completed work.
- Bear in mind his difficulties with listening, remembering and compensate.
- Speak to nan and/or dad about the potential bullying by the cousin.

### **Thoughts**

- He's been going home at lunch-time, so the time with his class teacher has obviously stopped.
- This is increasing his social exclusion, as the friends who were great with him in Year 2, he doesn't see any more.
- Do the 2 days in another place also increase social exclusion?
- Literacy is still at the heart of much of his problematic behaviour in class.
- The staff have still been unsuccessful in implementing boundaries in terms of completing his work.
- Coming into school in a bad mood seems to be the start of a pattern for the day. Could they drop the learning activities and work through some of the things that are causing him worries, then give him a school task he enjoys, such as maths, then start on the work?
- He has not learned alternative patterns of behaviour with respect to being aggressive – it's still a solution to help him feel good and it's being reinforced at home. Therapeutic stories??
- I think the staff have some good ideas about what to do, but it appears difficult to change what they do and plan an individualised curriculum – for example to help him catch up in literacy, and also plan a series of learning activities throughout the day that are fun, achievable, done with somebody and of which he can feel proud. It seems as though the curriculum is still dictating what can be done.
- I think the staff understand that Minnie's bullying the other child, refusing to apologise and his 'macho' image are due to family experiences with his dad – they have reasons for it and are not giving him 'within-child' labels. However, there seems to be some helplessness about what they can do about it.
- Child development as an holistic activity is not related to behaviour. It's still about responding to the behaviour and providing consequences, rather than more in-depth thinking.

## APPENDIX 6: PERSONAL PROVISION PLAN: MINNIE

<b>Personal Provision Plan</b>			
Names. Minnie	Date of Birth	Class/Tutor	
Date started: June YYYY		Review date: September YYYY	
<b>ASSESS</b>			
<u>Assessed Needs</u> To reduce anxiety and stress about Literacy. To increase his confidence in his ability to read, write and spell. To foster his love of books. To read for 10 minutes each day. To feel good about himself and liked in school.		<u>Desired Outcomes</u> Minnie to remain calm in literacy. Minnie to be a confident reader and writer. Minnie to access books that are about his favourite things. Minnie to read daily to his mother. Minnie to know that he is a lovely little boy.	
<b>PLAN</b>	<b>DO</b>	<b>REVIEW</b>	
My Targets	Who will help and what will they do?	What have I achieved?	
1. I will be able to have a go in literacy without being worried.	Class Teachers. Write key words on a whiteboard. Repeat words back to Minnie to use in his writing. Dictate story to iPad when in a group to use as a prompt. Adult to use "WE" in reminders. Precision Teaching and daily reading. Pair with a peer who can support Minnie in his writing.		
2. I will be able to be more confident about my writing and reading.	INCO, External Specialist and Mother. Weekly 10 minute meetings between Minnie and INCO to read favourite books/comics together.		

	External Specialist in her sessions with the family will introduce audio books to read together. Minnie to choose a section to read to mother and daily reading.		
3. I will read every day at home.	External Specialist, mother. External Specialist in her sessions will encourage mum to read with Minnie each night for 10 minutes.		
4. I will feel that I am liked and know that I can be good.	All staff. Overlook the minor things and encourage Minnie to recognise the positives. Celebrate the positives. Inform all dinner ladies to distract him on the yard to prevent an escalation of behaviour. INCO to develop verbal stories to increase his ability to express himself. School counsellor to provide opportunities to express his feelings verbally.		
Pupil Signature	Parent Signature	Teacher Signature	

## APPENDIX 7

### MEETINGS FOR JEFF

#### Meeting 1 Jeff: Feedback Meeting (April)

**Attendees:** Class Teacher & the Designated Teacher with responsibility for Looked-After Children

#### **Purpose**

Following my assessments, to share our knowledge and experiences of working with Jeff in order to formulate a plan of action to help his inclusion in school. Thirty minutes of TA time had been agreed.

#### **1. Researcher**

- I had planned to ask for the PEP targets and discuss these with school staff. However, no targets were available (& I did not ever see Jeff's targets).
- DT said however, that I could set a target for literacy.
- I thought of two targets – firstly to attain a standard score in reading and spelling, of 90 and secondly, to remain engaged in a writing task without being distracted from it, for 3 minutes.
- I had planned to ask if I could go through Jeff's Numicon folder, to see where he was making good progress, or slow progress, and provide some ideas from there, particularly ideas for the Foster-Carer, who is keen to support his progress. However, this was not really met with an enthusiastic response.
- I asked for 15 minutes of yoga breathing each day, having previously discussed this with the TA, who was happy to do it. Again – not met with an enthusiastic response, I think because the school staff thought that Jeff was already involved in a lot of interventions.

#### **2. Class Teacher (CT)**

She discussed the hours of the TA – and we agreed the 30 minutes of her time.

#### **Plan**

- I agreed to do a baseline assessment of the first 100 High Frequency words and the first 40 Common Exception words and plan a Precision Teaching programme from these results, with the designated TA. This would be shared with the Foster-Carer – I would buy a small exercise book and the TA would write the words in each week.

#### **Thoughts**

This definitely did not go as I anticipated. It was clear that the senior DT had agreed to Jeff taking part in the research without fully reading it all. It was also clear that the CT had not been asked, although the interest and agreement of the CT is an essential part of the research. I felt very uncomfortable at asking



for any of her time in order to discuss Jeff's progress and I emailed her later to explain the research and to reiterate that if she did not wish to take part in the research, that was completely fine, because the consent of anyone taking part has to be freely given. I said that the research could stop at any time and no-one would mind. She replied to say that she was happy to continue. I appreciated that it is SATs time and there seemed to be a lot of pressure. I knew some of the staff that worked in the school and I knew an external consultant who visited. She explained that the staff were under more pressure that when I had last been there a few years ago and several staff had left due to this.

## **Meeting 2 Jeff: Social Care Review (April)**

**Attendees:** Social Worker, Foster-Carer, Learning Mentor, LA person with responsibility for Looked-After Children.

### **Purpose**

Update of progress and next steps

### **Reports**

#### **1. Social Worker**

Asked for Jeff's progress in literacy, numeracy and his emotional needs.

#### **2. Learning Mentor**

- Educational progress – all 3 siblings of primary age are below their age-related expectations.
- Jeff has been given interventions, but he has not made as much progress as expected and he is still below his age-related expectations. (CT has previously told me that he will be dis-applied from SATs.)
- Interventions include a weekly small group session with a specialist literacy teacher and daily reading on a 1:1 basis.
- Jeff is doing 'Good to be me' with the Learning Mentor.
- LM said that Jeff enjoys reading / being read to.
- He attends the homework Club on Mondays and Wednesdays, after school.
- He takes his book bag home on Fridays, to practice HF words

No PEP targets were discussed, or provided.

### **Meeting 3 Jeff: Social Care Review (October)**

Jeff has moved school and begun a new school at the start of Year 3.

**Attendees:** Social Worker, Foster-Carer, Designated Teacher from school

#### **Purpose**

Update of progress and next steps

#### **1. Social Worker**

Asked for Jeff's progress.

#### **2. Designated Teacher**

- Jeff is always smiling, and he is a happy boy.
- Jeff is still finding his feet and making friendships. The older boys in Year 6 fuss over him (e.g. give him piggy backs on the field).
- In class, he is quite restless and he has a lot of difficulty in focusing.
- He struggles to learn and 'access the curriculum'. He below all his age-related expectations.
- Jeff benefits from the Read, Write, Inc. programme every day.
- He loves being read to and he loves stories and characters.
- He is enthusiastic and he asks questions; he has lots of lovely ideas.

#### **3. Foster carer**

- He doesn't struggle to think of ideas
- His reading has become more involved and he reads more.
- She thought the precision teaching programme at his last school had gone well. She thought Jeff had got into the habit of spelling words wrongly or phonetically and he was now having to think about how to spell them correctly, and this was helping him remember.
- When he is writing longer pieces of work, she thought that he becomes very focused on his spelling and then he loses the thread of what he was thinking (to write).
- His older sister (who lives with them) had said that Jeff did not talk much as a young child.

### **Meeting 4 Jeff: DT and class teacher – April Y3**

- He finds it very difficult to focus in class and often gets up and wanders round.
- He is not highly motivated to complete work, and appears to be in his own little world.
- If you tell him you're pleased with him, he is absolutely chuffed to bits.
- He suddenly appears next to you!
- He has phonics, reading and precision teaching every day, but he interrupts all the time when you're giving instructions.
- He needs an adult to keep him on task and give him encouragement.
- If he works in a pair, he doesn't really contribute; the other child does it all.
- He doesn't display any unhappiness or 'wanting'. Other children come in with things, but he doesn't ever say that he hasn't got this or that. Other children are desperate to go on the iPads, but he never asks. He potters around.

## APPENDIX 8

Q Sort Teachers Factor 1

-5	-4	-3	-2	-1	0	1	2	3	4	5
<p>◼◄ 48. I treat all children the same, no matter what their background</p>	<p>12. Neglected Children have good mental health.</p>	<p>32. Neglected Children choose to misbehave</p>	<p>8. Neglected Children have behavioural difficulties</p>	<p>21. Neglected Children are more sad than other children</p>	<p>20. Neglected Children take longer to calm down after something has upset them</p>	<p>46. I would spend more time with neglected children if I was able to</p>	<p>○► 35. Neglected Children should be educated full-time in a mainstream classroom</p>	<p>► 36. Neglected children should attend a small class such as a nurture group for some of the</p>	<p>7. Neglected Children who have social difficulties can be helped with the right</p>	<p>3. Neglected Children can catch up developmentally, with the right support</p>
<p>◼◄ 10. Neglected Children will always have behavioural difficulties</p>	<p>◼◄ 13. Neglected Children will always be behind in their educational achievements</p>	<p>30. Neglected Children have little sense of what is right and wrong</p>	<p>◼◄ 17. Neglected Children learn just like other children</p>	<p>37. Neglected Children should have a specialist teaching assistant</p>	<p>◼◄ 43. I often feel out of my depth in knowing how to meet the needs of Neglected</p>	<p>◼◄ 44. Neglected Children affect me more than any other type of child</p>	<p>38. Neglected Children need extra help compared to other children</p>	<p>29. Neglected Children struggle with their identity</p>	<p>11. Neglected Children who have mental health difficulties can be helped</p>	<p>26. Neglected Children are more vulnerable</p>
	<p>28. Neglected Children are distinguishable from other children</p>	<p>23. Neglected Children lose their temper more easily than other children</p>	<p>○◄ 4. Neglected Children are always going to need support in school</p>	<p>33. Neglected Children enjoy the attention they receive when they misbehave</p>	<p>2. Neglected Children show a difference in their development</p>	<p>◼◄ 24. Neglected Children have more difficulty controlling their emotions</p>	<p>○► 16. Neglected Children find it more difficult to learn</p>	<p>18. Neglected Children find it more difficult to pay attention</p>	<p>14. Neglected Children who have educational difficulties can be helped with the right support</p>	
		<p>◼◄ 22. Neglected Children are more angry than other children</p>	<p>◼◄ 6. Neglected Children have difficulties relating to adults</p>	<p>○◄ 42. I feel able to understand the needs of Neglected Children</p>	<p>27. Neglected Children are more likely to choose the wrong friends</p>	<p>◼◄ 15. Neglected Children have difficulties keeping up, educationally</p>	<p>○► 40. A Neglected Child has been dealt a poor hand</p>	<p>9. Neglected Children who have behavioural difficulties can be helped with the right support</p>		
			<p>1. Neglected Children are developmentally delayed</p>	<p>◼◄ 5. Neglected Children have difficulties relating to peers</p>	<p>◼◄ 34. Neglected Children behave badly because it gives them a sense of control</p>	<p>◼◄ 31. Neglected Children NEED the attention they seek</p>	<p>◼◄ 47. I treat neglected children differently</p>			
				<p>25. Neglected Children are emotionally immature</p>	<p>19. Neglected Children find it more difficult to keep themselves calm</p>	<p>◼◄ 45. I spend more time with neglected children</p>				
					<p>○► 39. Neglected Children are more likely to end up in the criminal justice system</p>					
					<p>◼◄ 41. I worry more about Neglected Children than other children</p>					

**Legend**

- Distinguishing statement at  $P < 0.05$
- ◼ Distinguishing statement at  $P < 0.01$
- z-Score for the statement is higher than in all of the other factors
- ◄ z-Score for the statement is lower than in all of the other factors

## APPENDIX 9

Q Sort Teachers Factor 2

	-5	-4	-3	-2	-1	0	1	2	3	4	5
	47. I treat neglected children differently	32. Neglected Children choose to misbehave	41. I worry more about Neglected Children than other children	10. Neglected Children will always have behavioural difficulties	23. Neglected Children lose their temper more easily than other children	35. Neglected Children should be educated full-time in a mainstream classroom	38. Neglected Children need extra help compared to other children	40. A Neglected Child has been dealt a poor hand	9. Neglected Children who have behavioural difficulties can be helped	18. Neglected Children find it more difficult to pay attention	14. Neglected Children who have educational difficulties can be helped
12. Neglected Children have good mental health.	44. Neglected Children affect me more than any other type of child	45. I spend more time with neglected children	21. Neglected Children are more sad than other children	30. Neglected Children have little sense of what is right and wrong	1. Neglected Children are developmentally delayed	2. Neglected Children show a difference in their development	42. I feel able to understand the needs of Neglected Children	11. Neglected Children who have mental health difficulties can be helped	24. Neglected Children have more difficulty controlling their emotions	3. Neglected Children can catch up developmentally, with the right support.	
	43. I often feel out of my depth in knowing how to meet the needs of Neglected Children	34. Neglected Children behave badly because it gives them a sense of control	28. Neglected Children are distinguishable from other children	27. Neglected Children are more likely to choose the wrong friends	15. Neglected Children have difficulties keeping up, educationally	31. Neglected Children NEED the attention they seek	46. I would spend more time with neglected children if I was able to	7. Neglected Children who have social difficulties can be helped with the right	48. I treat all children the same, no matter what their background		
		39. Neglected Children are more likely to end up in the criminal justice system	8. Neglected Children have behavioural difficulties	36. Neglected children should attend a small class such as a nurture group for some of the	16. Neglected Children find it more difficult to learn	20. Neglected Children take longer to calm down after something has upset them	19. Neglected Children find it more difficult to keep themselves calm	26. Neglected Children are more vulnerable			
			33. Neglected Children enjoy the attention they receive when they misbehave	37. Neglected Children should have a specialist teaching assistant	25. Neglected Children are emotionally immature	29. Neglected Children struggle with their identity	5. Neglected Children have difficulties relating to peers				
				13. Neglected Children will always be behind in their educational achievements	4. Neglected Children are always going to need support in school	6. Neglected Children have difficulties relating to adults					
					17. Neglected Children learn just like other children						
					22. Neglected Children are more angry than other children						

### Legend

- Distinguishing statement at  $P < 0.05$
- Distinguishing statement at  $P < 0.01$
- ▶ z-Score for the statement is higher than in all of the other factors
- ◀ z-Score for the statement is lower than in all of the other factors



