

A REALISTIC EVALUATION OF A
COGNITIVE BEHAVIOUR THERAPY (CBT)
INTERVENTION TO SUPPORT AN ADOLESCENT
DIAGNOSED WITH ASPERGER SYNDROME
IN A MAINSTREAM SECONDARY SCHOOL

by

DEAN WOLITER

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ABSTRACT

The use of Cognitive Behaviour Therapy (CBT) as a means to support adolescents diagnosed with Asperger syndrome is gaining interest and has recently been applied in a school setting (Grieg and Mackay, 2005; Sofronoff et al., 2005). The present study explores the use of CBT to support a pupil diagnosed with Asperger syndrome delivered by an educational psychologist in the pupil's school setting. This application of CBT employed a 'formulation' approach in which a programme was written and then adapted in situ to meet the pupil's needs. The CBT programme consisted of 7 weekly sessions of CBT lasting approximately 40 minutes each of the sessions were delivered in school in the morning prior to the start of lessons. The findings of the present study were analysed using a novel application of Realistic Evaluation methodology (RE) of a CBT intervention in addition to the pre and post CBT measures RE as a methodology seeks to consider the context of an intervention and its potential to triggering mechanisms that could facilitate or limit the progress of introduced intervention. The present study is an exploratory case study, employing a single case design within a realist evaluation framework, to describe the role of the context as a mediating or limiting factor on a CBT intervention. A year 8 pupil with a diagnosis of Asperger syndrome, referred to as B, attended a mainstream secondary school in the West Midlands. It was observed that there were changes for B in terms of his reported social communication and in his cognition. The exploration of the CBT intervention by RE analysis suggested that specific mechanisms were triggered in school and contributed to the observed outcomes. Conclusions are discussed in terms of the usefulness of this methodological approach but also for wider EP practice.

DEDICATION

I would like to dedicate this thesis to my wife Anita,
my children Dhanni Hari and Anya Lila
and to my parents Jean and Tony

'Tempora mutantur nos et mutamur in illis'

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CHAPTER 1

OVERVIEW

1.1 Research focus

The research focus of the present study is the evaluation of a therapeutic intervention devised and delivered by an Educational Psychologist (EP) to support an adolescent diagnosed with Asperger syndrome (AS). The title of this research project 'A realistic evaluation of a cognitive behaviour therapy (CBT) intervention to support an adolescent diagnosed with Asperger syndrome in a mainstream secondary school' indicates three particular areas of interest. Firstly, there is a methodological aspect, with a novel application of a Realistic Evaluation model (Pawson and Tilley, 1997) to consider the outcomes of a CBT intervention. Secondly, the use of CBT adapted for an adolescent with AS and employing a formulation based approach as opposed to using a pre-written manual based CBT programme. Thirdly, the delivery of the therapy in a school rather than a laboratory or clinical setting allows an exploration of the potential of an educational setting to influence the outcomes of CBT.

Children with AS are often reported as being of average intelligence and of having well developed language skills, however they experience marked difficulties with social communication and interaction (Attwood, 2006). A common secondary characteristic of AS is anxiety and depression (Tantam, 2000). Children diagnosed as having Asperger syndrome are often educated in mainstream schools, where their difficulties can be a barrier to learning and achievement (Goldstein et al., 1994). Grieg and MacKay (2005), note that Educational Psychologists are increasingly asked for advice about AS pupils by school staff. They argue that EPs can draw on specialist knowledge they have of different therapeutic approaches and

familiarity with school contexts to develop a range of potential interventions that could support individual pupils with Asperger syndrome, as part of their school casework.

There is some emerging evidence that adults diagnosed with AS respond positively to CBT interventions for the management of anxiety (Hare, 1997). Such work with adult clients with AS has led to an interest in using such approaches with children (Attwood, 2003; Bauminger, 2002, 2006a, 2006b; Sofronoff et al., 2005, Grieg and MacKay, 2005; Sze and Wood, 2007, 2008). The Bauminger (2002) and Grieg and MacKay (2005) studies are particularly significant in that they are approaches that have been conducted in school settings. However, both researchers have applied methodologies derived from positivist experimental designs that have been employed to control against or directly manipulate the context of CBT. Early efficacy research into the use of CBT as an intervention for clients diagnosed with AS have focused on the use of randomised control trials (RCT) (Sofronoff et al., 2005; Reaven and Hepburn, 2003). RCTs are an established experimental approach for establishing the efficacy of a programme in the laboratory and clinic. A challenge for the researcher/practitioner applying interventions in school settings is that experimental designs tend to 'play down' the role of the context and setting of an intervention in the observed outcomes. Both Bauminger (2002) and Grieg and MacKay (2005) employ experimental designs and reflect their ontological commitment to a positivist scientific research method. As such a challenge is that both of their research efforts focus on the observed outcomes of the CBT intervention and less on the processes. Therefore, they have less to report about 'how' and 'why' a CBT intervention led to changes for the pupil. My experience as a practising Educational Psychologist, working in schools delivering programmes, is that different school settings impact on the same intervention in different ways with different pupils at different times. Thus the focus of the present study is a consideration of the wider context of the

school setting into which the CBT intervention will be introduced. Therefore a research framework will be explored that allows for a consideration of the contextual features of the setting having a potential impact on the observed outcomes.

An additional focus of the present study will be an exploration of the use of Realistic Evaluation (RE) as a methodological approach to explore what, if any, mechanisms and or processes of a formulation based CBT programme might support any observed outcome of CBT delivered in school. Thus rather than controlling for or manipulating the school context I am seeking to consider the possibility that it may be a contributory factor to the observed outcome of the CBT intervention.

1.2 Research aims

The aim of the research is to reflect on a formulation based CBT programme delivered in a mainstream school, written to support a pupil with AS, and evaluated via Realist Evaluation (RE). RE, it will be argued, is a methodology which enables a robust scientific analysis of phenomena but gives due regard to the contextual setting of an intervention, not as an 'extraneous variable' but as a potential mechanism that can support the observed outcomes of a therapy. Thus an RE approach to the evaluation of a CBT programme in EP casework is considered not only in terms of pre and post therapy measures but also in terms of the mechanisms in the specific setting/context that may have supported the observed outcome, and represents a novel approach to exploring a CBT intervention employed to support an AS pupil in EP casework in school.

1.2.1 Specific research questions

- What are the characteristics of a school based CBT intervention for an AS pupil?
- Can the emerging use of Realistic Evaluation methodology in educational research be applied to a CBT intervention delivered in a school setting to consider the impact of a specific school setting on the outcomes of the CBT programme?

1.3 Research context

The present study was conducted in a secondary school context, as part of an Educational Psychologist's casework in that school. Thus the research is located in the 'real world' setting of a school as opposed to being conducted under controlled experimental conditions. It is increasingly acknowledged that the numbers of people diagnosed with AS are rising and they are also educated in mainstream school (Greenway, 2000). There is also an acknowledgement that those diagnosed with AS are more likely to experience secondary mental health difficulties (Tantam, 2000). In addition interventions for pupils diagnosed with AS and ASD (Autism Spectrum Disorder), although tested in laboratory and clinical settings, are often located in the home or at school (Lord et al., 2005). The use of experimental and pre-experimental research designs used to establish efficacy give very little account of the contextual features of the intervention setting. In the present study the delivery of the CBT intervention is located in the context of Educational Psychology casework in school.

1.4 Rationale for the present study

In the existing literature, which is explored further in Chapters 2, 3 and 4, there is evidence for the efficacy of the CBT approach adapted for children and young people with AS in managing anxiety, anger and social communication and interaction. The focus of existing studies has been on the efficacy of the CBT approach to therapy with an AS 'client' group.

Nascent studies may show that CBT is an efficacious therapeutic intervention; however the majority of studies have been conducted in highly controlled clinical settings. Experimental studies aim to compare a large group of participants; one subgroup does receive CBT and one sub group does not receive CBT and the outcome for both groups is compared. The use of large groups diagnosed with AS makes the assumption that AS pupils are a homogenous group, which is not supported by the evidence and limits the efficacy of any conclusions (Humphrey and Parkinson, 2006). A suggestion in the literature is the need for more interventions that have been individualised for the pupil rather than 'blanket' or 'off the shelf' interventions for those diagnosed with ASD (Salt et al., 2002). In a comprehensive review of services for adolescents with AS in Northern Ireland it was noted that there was a need for more qualitative analysis of interventions that consider the impact of specific educational settings (Jones et al., 2008).

Thus the rationale for the present study is to conduct a CBT programme in school to support an AS pupil and not only to provide an analysis of pre and post measures but also to explore the context of the school as a potential factor in supporting or hindering the observed outcomes. The study commenced with a request from the school for consultation and support for an AS pupil whom they considered was experiencing difficulty in school. An assessment was made of the utility of CBT for this pupil and a programme was written to meet this child's needs in school. A Realistic Evaluation approach based on that developed by Pawson and Tilley (1997) was employed to further explore the outcomes of therapy defined as mechanisms triggered in the school context. The study employs a single participant case study design with a focus on capturing the 'richness' and complexity of the social setting (Yin, 2003) of the school as a therapeutic setting as well as the observed outcomes for the pupil. A description is provided of the context(s), mechanism(s) and outcome(s) of the

therapy and conclusions are drawn about the CBT programme and the utility of the RE approach for this type of therapy in school.

1.5 Overview of the thesis

This chapter has provided a brief overview of the aims and rationale for the study, setting the research in a context and setting out specific research questions. The remaining chapters are arranged around the following themes:

- Chapters 2, 3 and 4 develop a line of reasoning; Asperger syndrome is outlined in terms of its characteristics, prevalence and theoretical accounts in Chapter 2. This is followed in Chapter 3 with a brief explanation of CBT and how it relates to AS children and young people. Chapter 4 concludes the literature review of the thesis with a consideration of the existing research on applying CBT with pupils with AS, and identifies gaps in the existing research which form the research questions of the present study
- Chapters 5 and 6 respectively present an outline of my account of Pawson and Tilley's (1997) Realistic Evaluation approach adapted for the present study, followed by an exposition of my own research design and research tools.
- Chapter 7 is a presentation of the results and findings of the present study, which are presented as pre and post measures with an RE analysis and commentary.
- Chapter 8 is a discussion of the reported findings in terms of the specific research questions as well as considering implications, recommendations and questions for further research.

CHAPTER 2

LITERATURE REVIEW: ASPERGER SYNDROME

2.1 Introduction and context

This chapter will give a brief outline of the characteristics and current theoretical accounts of Asperger syndrome, as these should be the underpinning rationale of any planned intervention to support an AS pupil (Tutt et al., 2006; Cumine et al., 1989). In addition it will report briefly on the educational challenges of AS pupils in the context of a mainstream school. This will set the scene for Chapter 3 which moves on to consider in more detail what a CBT intervention for an AS pupil would look like and how this relates to being delivered in an inclusive school context.

2.2. A brief overview of autism spectrum and Asperger syndrome (AS)

The term 'Asperger syndrome' was coined by Lorna Wing (1981) when referring to a group of patients described by Hans Asperger (1944). Asperger considered the group of children he was observing to have a personality disorder which he described as 'autistic psychopathy' (Attwood, 1998). This was significant for the use of the term 'autistic', since the term had been used by an American psychiatrist, Kanner (1943), to describe children with a very specific range of difficulties. The children labelled autistic by Kanner were characterised as being unable to relate to other people in social situations, having a failure to use language, communicate 'normally' and finally having an anxiety to maintain sameness (Howlin, 2003a). In medical terminology these characteristics form the core 'deficits' of autism. They are often described as a 'triad of impairments' (Wing and Gould, 1979):

- Firstly the social impairment, in which there is delayed interpersonal development, in which the child may not seek to be in the company of others, including family members, and may actively avoid social interaction in general.
- Secondly, communication/language where there is delayed (or no) development of language, but large variations in other aspects of communication such as maintaining eye contact, initiating interaction and awareness of nonverbal cues.
- Thirdly, there is thought/behaviour where there is a rigidity of thought and/or behaviour expressed as a poverty of imaginative thought, ritualistic behaviour, and a reliance on routine and order.

It has been argued that Kanner and Asperger were in fact describing very similar children differing only in the level of cognitive functioning between the two groups (Wing, 1981). Indeed today most professionals subscribe to the notion that autistic-like characteristics exist on a continuum, since there is a great deal of variation in the degree to which individuals experience the triad of impairments (Attwood, 1998; Klin et al., 2000; Howlin, 2003a). In some journals and particularly in American studies AS is often referred to as High Functioning Autism (HFA). The essential difference between these two terms is accounted for by the rate at which the child is observed to acquire language, a diagnostic characteristic of AS being that there is an absence of early speech delay (Mayes and Calhoun, 2003). A full explanation of the differences between HFA and AS is not necessary here, but there is a consensus that the two labels describe the same condition (Attwood, 2006). Both the International Classification of Diseases-10 (ICD-10) and the Diagnostic and Statistical Manual (DSM-IV), the leading psychiatric diagnostic classifications, recognise AS as having its own diagnostic sub category under 'Pervasive Developmental Disorders' (PDD). In May 2013 the publication of the DSM-5 updated the diagnostic criteria from the DSM-IV so that now 'Autism Spectrum Disorder' appears as a single 'condition'. Under this single heading the symptoms are expressed as differing only in the degree of their severity. The classification of the spectrum in this way has removed the necessity for separate 'disorders' such as AS and HFA as subtypes of autism, instead recognising that autism is a single condition (APA,

2013).. However for the present study the difference between AS and 'classic' autism, diagnostically speaking, is that there is less impairment of language in AS. In the present study the term AS will be used throughout unless discussing other researchers' work in which alternative terms have been employed; when doing so this will be made clear.

2.3 Asperger syndrome: Prevalence and characteristics

In the context of an evolving awareness of the distinct nature of AS, it is argued that the characteristics of the syndrome are being more frequently recognised and diagnosed (Frombonne, 2005; Tantam, 2000; Tyson et al., 2006; Myles et al., 2001). Thus estimates of the prevalence of AS in the childhood population vary significantly (Myles et al., 2001) and they range from 10-26 per 10,000 (Wing and Potter, 2002) to 7-55 per 10,000. Changes in classification systems since the 1990s might account for some of the variation, although increasing patterns across samples are consistent (Frederickson and Cline, 2009). Another potential explanation is one of terminology or medical labelling, for example 'autism' is often used to include AS, as is the largely American term HFA (High Functioning Autism), often used interchangeably with AS. Jordan (2007) notes that both the widening of the diagnostic category for AS and the increased awareness of professionals may account for the reported growth in numbers.

Asperger syndrome is characterised by difficulties in social reciprocity and non-verbal communication, in addition to restricted and stereotyped behaviour and thoughts (Attwood, 1989; 2006). AS is often distinguished from autism in terms of language and intellectual functioning, both of which are said to be well developed in AS children. A hallmark of an AS diagnosis is that:

There is no clinically significant delay in cognitive development or in the developmental age of appropriate self help skills, adaptive behaviour (other than in social interaction), and curiosity about the environment in childhood

Diagnostic Criteria (E) for 299.80 Asperger Disorder [DSM-IV, p.77])

This is usually taken to mean that the cognitive abilities of the child are in the normal range, although it is common for this to be inferred rather than empirically tested (Selfe, 2002). In primary education AS pupils tend to perform and achieve well, thus setting up a precedent for secondary school expectations (Portway and Johnson, 2003); there is evidence, though, that as they progress through the school system the social demands of the secondary school curriculum become more demanding for some AS pupils (Attwood, 1998; Goldstein et al., 1994; Barnard et al., 2000). However, social competence is a complex and multivariate social construct and as such it is difficult to assess in a systematic way (Attwood, 2006). Explanation of the difficulties experienced in school by AS pupils are rightly derived from the theoretical explanations of AS, and a brief overview of these is given below.

2.4 Asperger syndrome: Theoretical accounts and current explanations

The exact causes underlying ASDs (in which I include AS) are not yet clear but it is thought that there is a strong biological/genetic component to the observed cognitive and behavioural difficulties (Howlin, 2003a). It may be that there are several causes to autisms, for which organic and genetic causes are firm candidates (Happé, 1994). In terms of AS both discrete areas of the brain (for example the amygdala (Frith, 2004)) and chemical pathways in the brain (dopaminergic pathways (Nieminen-von Wendt et al., 2004)) have been proposed as potential causes. The neurological evidence, such that it is, is thought to be underpinned by genetic factors as yet unspecified (Volkmar et al., 1998). Attwood (2006)

notes that there are reported to be differing biological milestones for children who are later identified as having AS, which implies a genetic link. He goes on, however, to conclude that none of the studies of biological aetiology reviewed are conclusive, and that they only signal the role of biological influences.

This is significant since although such biological factors may figure in the aetiology of AS, diagnosis and practical interventions to support those with AS are often at the behavioural and cognitive level of their functioning. In educational contexts these observable behaviours and cognitions are, in my experience, likely to be the main concerns for school staff and for parents. Schools for their part should be developing inclusive learning environments for all pupils and giving due regard to various forms of good practice guidance for schools about pupils on the autism spectrum. A complete understanding of the aetiology of AS, if this is possible (Nadesan, 2005, is likely to result from studies at different levels of analysis (genetic, neurological, cognitive, behavioural and psycho-social) (Frith et al., 1991).

The aim of this subsection is not to give a comprehensive account of current theoretical perspectives on the aetiology of autism and AS, the contested nature of which is beyond the scope of this research. However, the present study acknowledges that interventions should be underpinned by a guiding rationale from the prevailing accounts and explanations of AS. As in any area of research the explanations for AS reflect the dominant psychological paradigms of the time (Nadesan, 2005). Current explanations for AS are predominantly cognitive:

The cognitive explanations of autism provides the most complete understanding of the cause of this disorder so far.

(Frith, 1991: p.16)

By 'cognitive' in this context is meant the operations of the mind such as memory, perception, thinking and so on. It is suggested that cognitive explanations bridge the gap between observed behaviour and the proposed underlying neurobiology. One way to consider the role of cognition is to see it as information processing, in a way analogous to a computer. Thus we can account for, or explain, observed behaviour such as an 'obsessive behaviour' or 'rigidity of thought' in terms of the way the person has processed or organised the information they have in order to develop their response(s) which we observe. Research over time has considered the role of cognitive factors and concluded that individuals on the autism spectrum have a distinctive cognitive style; one such account of this cognition is referred to as 'Theory of Mind' (ToM).

2.4.1 Theory of Mind (ToM) explanations

'Theory of Mind' is considered to be the innate ability of all people to perceive the points of view of others; in this sense it can be thought of as akin to empathy (Frith, 1985). Difficulties with ToM tasks form a central component of an AS diagnosis, on the basis that ToM skills have not developed as adequately as they could have, compared to non-ASD peers (Baron-Cohen et al., 1985). ToM difficulties are also referred to as 'mindblindness' in that it is postulated that ToM is the ability to have a representation in one's head of others' feelings and motives (Baron-Cohen, 1995). Such ability underpins empathic relationships and has been demonstrated experimentally with tasks of deception (Baron-Cohen, 2003). In such experimental tasks autistic/AS participants were less likely to be sensitive to deception in the tests than non-autistic participants (Baron-Cohen, 1998). The ToM concept has wide acceptance in the literature on autism (Frith, 1985) and has a direct impact for pupils in

terms of social interaction and learning in school, in both the formal and informal aspects of the curriculum (Cumine et al., 1998). For example, pupils may find it difficult in school to anticipate how other pupils and adults might respond to them, or may seek to avoid these situations and therefore reduce their participation in some aspects of school life. Additionally, difficulties in making and sustaining social interaction could lead to difficulties in maintaining friendships or the risk of being labelled 'odd' or being avoided by other pupils.

ToM skills have usually developed by the time a child is 3 or 4 years old; difficulties for ASD children are often noted from an early age and this may be indicative of a biological component (Hobson, 1993). The hypothesis is that failure to develop a recognition of the emotional environment for oneself limits the ability to engage socially or to form emotionally empathic relationships. Jordan and Powell (1995) refer to this as a difficulty in developing an 'experiencing self' and that ToM difficulties have profound implications for secondary education, in which pupils may have to be cued into salient aspects of the curriculum. This sense of experiencing self impacts on a child's ability to experience events subjectively, and this can lead to difficulties in internalising learning and recording events. In such cases visual prompts can be effective in making the event or situation more concrete (Powell and Jordan, 1997). However, the accounts given of ToM theory are not comprehensive and do not cover the full range of observed behaviours in the 'cognitive style' of children with ASD (Pellicano, 2007). Difficulties accounting for behaviours not covered by ToM theories and the weaknesses in some empirical studies (Gallagher, 2004) have led to other cognitive explanations, such as difficulties with executive functions.

2.4.2 Executive functions

The term 'executive function' refers to those aspects of cognition that relate to organisational planning, strategy preparation, evaluation and self reflection. Such skills are recognised from the research evidence to be impaired in children diagnosed with AS (Goldberg et al., 2005; Kleinmans et al., 2005). ToM theories provided an explanation of some key features of autism but found it more difficult to account for repetitive behaviour and difficulties with foresight and planning. Such behaviour could though, be explained by 'executive functioning' (Ozonoff, 1997) which involves preparing for and carrying out complex behaviours. Executive functions can be seen as those proposed mental or cognitive activities associated with planning, goal attainment and managing novelty (Houston and Frith, 2000). The theoretical accounts fit well with the observed cognitive style of those on the autism spectrum such as inflexibility of thought and obsessive behaviours which are deemed to be rooted in neuropsychology (Ozonoff, 1995).

An implication of poor executive functioning in ASD children in school is the potential impact on planning and organisation for individual work tasks, but there are also implications for negotiating the non-curricular aspects of the school day. Executive functions can also lead to difficulties in the classroom with individual tasks, such as knowing when to start and stop on a given task or completing set homework. Again the emphasis is on matching a hypothetical construct of 'mind' to the observed behaviour; another variation of this type of theorising is weak central coherence.

2.4.3 Weak central coherence

Central coherence describes the cognitive ability of being able to focus on an array of information and to then organise and use this information as a meaningful 'coherent' whole

(Frith, 1985). Thus weak central coherence describes the observed behaviour in some AS adolescents who are very good at focusing attention on very small details of information, but are unable to see the whole (Frith and Happé, 1994). A key aspect of this theory is the notion that people with autism process information without synthesising key aspects of the data. This can lead to a situation in which they will focus on small aspects of information, rather than focusing on the whole as an integrative set of parts. This is referred to as 'piecemeal processing' (Hill et al., 2003: p.284). The advantage of this theoretical account is that not only does it account for deficits in ability but can also account for savant features present in some autistic people. The difficulties of experiencing weak central coherence, as described here, have clear educational implications in terms of organising and synthesising academic material (Cumine et al., 1989), for example, challenges organising materials or arguments in class, viewing a problem from a highly individual perspective, or not making the connections between elements of teaching and the whole. In addition to difficulties with compliance, or being aware of the etiquette of the classroom, this can lead to more difficulties in school.

2.5 Educational challenges faced by AS pupils

It could be argued that well developed cognitive abilities could be seen as a protective factor in primary school, where the curriculum rewards memory ability and rote learning of facts. However, the secondary curriculum in mainstream secondary school places more emphasis on conceptual and abstract work delivered in a context of student collaborative learning (Goldstein et al., 1994). Thus, in addition to more general peer relations, the style and delivery of learning experiences in secondary school can be more challenging for AS pupils (Cazden, 1998). Difficulties with social interaction in school can exacerbate any feelings of

failure and rejection which may lead to underachievement (Goldstein et al., 1994; Attwood, 1989; Barnard et al., 2001). It is well reported that AS children experience secondary psychological problems such as anxiety and depression (Attwood, 2003; Attwood, 2000; Tantam, 2000), and it could be argued that social difficulties in school contribute to these feelings. It is also reported that pupils with an ASD diagnosis are 20 times more likely to be excluded from school compared with their non-ASD peers (Barnard et al., 2000). However, social competence is a complex and multivariate social construct and as such is difficult to assess and measure in a systematic way (Attwood, 2006).

2.6 Chapter summary

The rising numbers of AS pupils and the secondary mental health impacts of having AS suggest that Educational Psychologists (EPs) are more likely to be asked for consultation and casework regarding AS pupils (Grieg and MacKay, 2005). In suggesting interventions EPs seek to be evidence based, both in terms of direct case evidence and evidence based in the literature (Ali and Frederickson, 2007). It is also important to consider the current explanations of AS as the underpinning rationale for planning any supportive intervention (Tutt et al., 2006; Cumine et al., 1989). There is a growing interest, perhaps built on the cognitive explanations of AS and on behaviour based interventions, that Cognitive Behaviour Therapy (CBT) could be an effective intervention to support AS pupils (Grieg and MacKay, 2005). The next chapter develops the notion of CBT and AS further and considers the school as a context for the delivery of a CBT programme to support AS pupils.

CHAPTER 3

LITERATURE REVIEW: ADAPTIONS TO CBT FOR CHILDREN AND YOUNG PEOPLE WITH ASPERGER SYNDROME

3.1 Introduction and context

The previous chapter argued that interventions for AS pupils should be based on the most current theoretical explanations; in the case of AS these have been predominantly cognitive. Despite the largely cognitive accounts of the aetiology of AS, interventions for ASD and AS have been predominantly behaviourist in orientation, with approaches education and 'treatment' of autistic children underpinned by behaviourist approaches (Howlin and Rutter, 1987; Howlin, 2003b). It has been proposed that, given their relatively well developed language skills and their level of intellect and education, AS adolescents may benefit from a 'talking therapy' such as CBT (Vermeulen and Vansprange, 2006; Grieg and MacKay, 2005) when such therapies have been adapted for the specific needs of AS (Attwood, 2006). Comprehensive reviews of the literature on interventions to support those with autism suggest that no one intervention approach is likely to meet the needs of all those on the autism spectrum (Jordan and Jones, 1999; Jones et al., 2008). However, CBT affords the opportunity to plan collaboratively with the pupils, and to develop an individualised intervention to support the pupil at school. There is emerging interest in applying CBT with adolescents diagnosed with AS and some of these studies have been located in school settings (Bauminger, 2002, 2006a, 2006b; Sofronoff et al., 2005; Atwood, 2003; Greig and MacKay, 2005; Sze and Wood, 2007, 2008; Reaven and Hepburn, 2003; Wood et al., 2009). In these studies it is significant that the purpose, and the way the CBT is used, are differently focused. For example Bauminger (2002) uses CBT to address issues of social

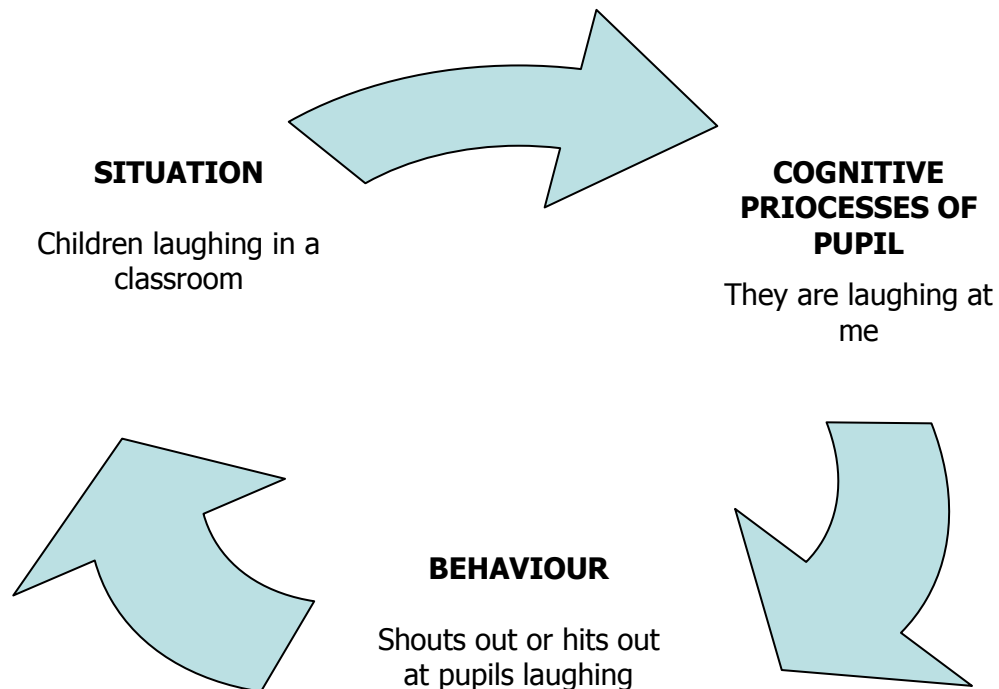
communication, while Sofronoff et al., (2005) employed CBT to focus on recognition of emotions and cognitive restructuring of thoughts.

Developing CBT for adolescents diagnosed as AS is challenging because of the clinical difficulties of AS and accessing language, empathising and using emotional language. However, CBT has been applied because it has been shown to be effective for anxiety and depression in the non-AS population, and through adaption could be used with an AS population (Attwood, 2004a). This chapter will further explore CBT as an intervention strategy in school and how it can be adapted to meet the needs of AS pupils as a means to support them in school. The ways that CBT can be adapted for both young people and those with AS will be considered, as will applying CBT in school, a complex social setting.

3.2 What is Cognitive Behaviour Therapy (CBT)?

Cognitive Behaviour Therapy, or CBT, has its roots in a belief that our thoughts (cognitions), feelings (emotions) and behaviour (responses) are all linked, as part of a unitary system (Curwen et al., 2000). It is also a maxim in CBT work that people are disturbed by their perception of events rather than the events themselves (Beck, 1979). Therefore in any given situation, an event is perceived and we act toward the perceived event based on our understanding of it. The diagram illustrates a possible scenario in school when a teacher observes a pupil hit out at another pupil for 'no reason' in class.

Figure 1: An example of the links between a social situation, a thought and a behavioural response of a pupil in class at school



This figure serves to illustrate a central point: we all bring to a situation a way of construing the world that may not be intrinsically related to the situation itself, but owes as much to our perception of that situation. Beck (1979) developed this idea that thought may lead to emotions and result in behaviour which he explored as an underpinning rationale for a therapeutic approach to working with depressed clients. He noticed that depressed patients tended to think about the world in a more negative way than patients who were not depressed. Beck (1979) developed ways of encouraging clients/patients to explore the 'evidence' for their negative thinking and emotions and so challenge the basis of these thought process. CBT then, as an intervention, is a process of gradually helping or facilitating the client to explore their beliefs and thoughts by examining the evidence base for those

perceptions. This involves the client, in a collaborative relationship with the therapist, exploring those aspects of their perception and practising new thinking and behaviours between CBT sessions as 'homework'. In this way tasks between sessions become opportunities to perform 'behaviour experiments', in which the client tries out new learning or other forms of evidence gathering to inform their perceptions and emotions in order to facilitate changes in both thinking and behaviour. The therapy is judged to be effective when the client makes connections between their thoughts, feelings and behaviours and, in so doing, behaves differently.

A significant feature of the development of CBT is that it is rooted in scientific principles (Kirk, 1982; Glazebrook and Garland, 2005), and although initially developed to treat depression it has been adapted for a range of psychological difficulties (Dunsmuir and Iyadurai, 2006). Given that thoughts, feelings and behaviour are considered to be intricately linked, changes in any one of them will effect change in the others (Greenberger and Padesky, 2005). In this regard CBT is consistent with current theoretical accounts of human emotion (Ekman, 2003) cognitive accounts of autism (Cumine et al., 1989).

Interest in CBT as a therapeutic intervention has been stimulated recently by NICE (National Institute for Clinical Excellence) who, in providing guidelines for the NHS (National Health Service), argue that in provision of support for mental health conditions CBT should be a treatment of choice (NICE, 2004a, 2004b). Children and young people with moderate to severe depression should initially be offered CBT too as their first level of intervention (NICE, 2005). In addition to moves in the Health Service to consider therapy for children, EPs have also been considering their role as mental health practitioners and the therapeutic practices they deliver in schools (Farrell et al., 2006; Rait et al., 2010).

The therapist's role, as I see it, is to provide a context or structure in which the client can identify their challenges as well as setting goals, targets and areas of need. I am clear in my practice as an EP that the aim of CBT is not to 'cure' a pupil but to facilitate the identification of challenges and move toward possible solutions to these. The focus of CBT is on the 'here and now', and how things can be different in the context in which pupils currently experience a difficulty. My aim in employing a CBT programme in the present study will be to support the pupil to develop psychological and practical skills to mobilise their own resources to manage difficult situations in school. Thus the focus is on empowering the individual, with support, to tackle their difficulties and to develop their own skills.

3.2.1 The process of CBT

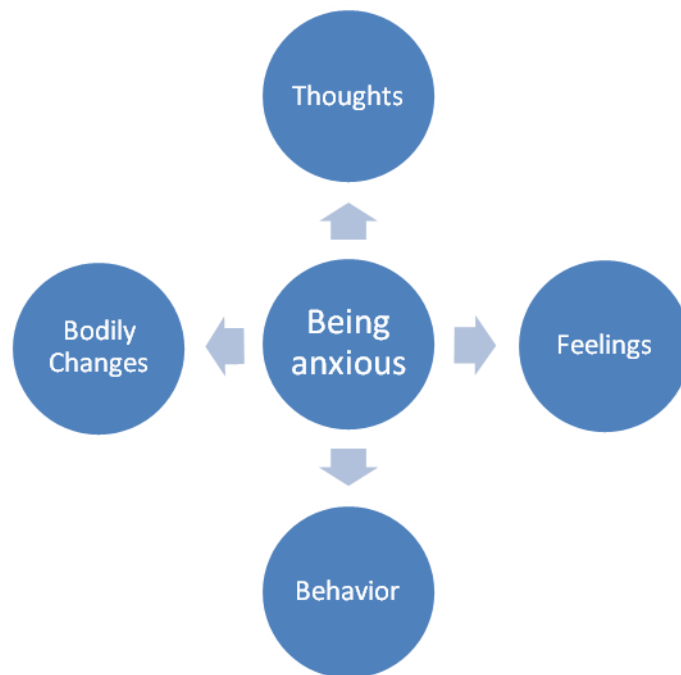
CBT is an overarching term; although it covers a range of individual strategies and therapeutic approaches the process has a recognisable structure. The one below borrows from Stallard (2005):

- **Assessment:** This is the starting point of the process and is associated with a range of appropriate assessment tools that aim to clarify 'the problem'. The point of assessment is to arrive at an agreement as to what the 'problem' is. As the problem is clarified we move toward the formulation stage.
- **Formulation:** Formulation is the refining of the assessment to a hypothesis as to what maintains the 'problem'; a key part of this is to share the hypothesis with the client. Mini formulations can consist of highlighting the links between thoughts, feelings and behaviour; these can be particularly helpful for children (Stallard, 2005). Formulations can have a degree of flexibility in the process of therapy and can therefore change during the process of CBT as the problem is redefined in order to accommodate any changes in perspective and outcomes of behaviour experiments.
- **Interventions:** This is the delivery or working through of strategies to help support the client to move from a 'problem' to a potential solution by way of mobilising the individual's resources to change.
- **Evaluation:** This is an assessment of the degree to which the CBT intervention has been effective in reducing the problem as it was initially conceived.

Underpinning this process in the present study is the notion that I am seeking to come to some understanding of: how the information is being processed by the pupil in the school environment that leads to particular sequences of behaviour described as challenges for him by school staff. By gaining an understanding of the factors that maintain behaviour a plan can be made to reduce certain 'problematic' behaviours.

CBT formulation tends to be based not only on the client's experiences but on factors that may affect how they are feeling; for example Figure 2 below identifies 'being anxious' as having four potential systems that may maintain the client's anxiety.

Figure 2: The 'four systems' of CBT as they might relate to feeling anxious



After Greenberger and Padesky (1995) [*example of 'being anxious' added*]

It has been suggested that the basic four systems approach could be encircled by an all-encompassing factor of the 'environment' (Greenberger and Padesky, 1995). Dummett (2006) has suggested that the manual based approaches to CBT are largely behaviourist in nature and this has come about because there is a lack of generic formulation templates with which to integrate important social perspectives into therapy. She proposes a system that includes looking at family history, school, work experiences, relationships within the family as examples of other wider environmental factors.

3.2.2 Technique focused versus formulation-based approaches to CBT

Formulation is a central process to a CBT intervention, and in the existing research literature on applying CBT for AS pupils there has been a tendency to employ a technique-focused approach. Approaches to formulation in CBT can be said to fall along a spectrum from 'technique-focused' to 'formulation-based' approaches (Grant et al., 2008). Technique-focused approaches are akin to following a treatment manual of standardised instructions and activities and pace for the therapist to follow with the client. An attraction of the standardised approaches is that the same information is delivered in the same way to all those receiving therapy. This is helpful in evaluating large group administrations of therapy as it minimises threats to reliability and validity by keeping delivery and assessment for the group as similar as possible. A disadvantage is that the 'off the shelf' nature of a manual based therapy fosters the assumption that all people will respond in the same way and thus assumes a homogeneity of the AS population. Formulation-based approaches, on the other hand, are more about developing a CBT programme of intervention that focuses on the 'richness' of the individual's experiences and the social (systemic) factors that may influence the child (Dummett, 2006).

In the present study I am adopting the formulation-based approach to developing the CBT programme, specifically because I want to avoid the diagnostic label of AS overshadowing the individual characteristics of the pupil. I am viewing the school as a social system around the child that may be implicated in the maintenance and development of the 'problem', but may also be a limiting or facilitating factor in the therapeutic process. The use of a formulation-based approach to CBT is consistent with focusing on the needs of the individual and can incorporate their interests, needs, strengths and weaknesses.

3.2.3 CBT adapted for children and young people

Until recently it was considered that psychotherapeutic interventions were unsuitable for children and young people (Ronen, 1997). This seems to have been based largely on the assumption that children may not have the cognitive capacity to engage with the therapeutic process (Kendall, 2000 Durlak et al., 1991). However, it has been cogently argued that changes or adaption can be made to the basic CBT process, and particularly the strategies employed, to be better able to meet the needs of children and young people (Ronen, 1997; Stallard, 2002a). Such advocates recommend adapting communication in therapy sessions and employing nonverbal techniques such as cartoons and puppets as an aid to maintain interest and to support verbal communication (Grieg and MacKay, 2005; Stark et al., 1996). There should also be consideration given to the length of the sessions and the degree of structure provided by the therapist, who may need to be more didactic than in sessions for adults. It is also likely that children will have more difficulty 'discussing' and being 'meta-cognitive' about the state of their own and others' emotions. A further consideration is that CBT for children will need to consider the wider social networks on which they are reliant, such as the family system, school system and peers (Stallard, 2005; Dummett, 2006).

3.2.3.1 CBT adapted for children and young people with Asperger syndrome

From the early developments of CBT for depression and anxiety we can see that there have been subsequent and ongoing adaptations to the basic approach. These developments have extended to cover a range of psychological difficulties for which CBT is now successfully employed. Recently there has been interest in adapting materials for use with people who

have AS (Attwood, 1998, 2003, 2006; Anderson and Morris, 2006; Sze and Wood, 2007; Hare, 1999, Hare et al, 2004). A number of adaptations have been suggested, which include:

- Adaptations to rating scales
- Multiple choice answers
- Reducing language
- The use of visual materials
- The use of cartoon characters/visual display
- The use of existing special interests
- A more didactic approach to therapy sessions
- Length and timing of sessions
- Reframing 'homework'

Anderson and Morris (2006) suggest that we also need to consider the vocabulary and language used in the sessions, particularly vocabulary related to emotional states of self and others.

Noteworthy in recent approaches in using CBT for children is the use of significant others in the child's life, other than the therapist, such as peers or teachers who have been co-opted into the therapeutic process (Bauminger, 2002, 2007a, 2007b; Sze and Wood, 2007). This 'environmental' aspect has clear implications for the application of CBT in school settings, if we consider the school as a social setting.

3.3 Applying CBT in school: 'real world' application

... the primary source of intervention for most children is through their families and through the education system.

(Lord et al., 2005, p.226)

Given that interventions for children on the autism spectrum are often located in school there is a potential need to think of the ways in which CBT could be delivered in school settings and the sort of impact this may have for the children. Research exists to suggest that therapist/client relationships can influence the course and outcomes of CBT interventions (Hughes and Kendall, 2007). Research also exists to suggest that CBT is more effective when significant others in the child's life are involved in the therapy, in addition to the therapist (Knight and Ridgeway, 2008; Sofronoff et al., 2005). There is far less research, however, on what impact a particular educational setting may have on a CBT intervention and still less on CBT delivered in school. Educational psychologists who regularly work in schools have a good knowledge of both the organisational systems and the ethos of the school, as well as therapeutic interventions such as CBT. This means that EPs are in a good position to consider how CBT should be written, delivered and evaluated in schools. Early research into the impact of the school environment as an influential factor in CBT interventions delivered in school suggests that there were clear differences in school contexts that influenced the outcome (Cole et al., 2009). This included wider socioeconomic factors such as performance in public examinations and the level of deprivation in the area around the school.

Children with AS face a number of difficulties at school and these can range from challenges accessing the curriculum, sensory difficulties in different parts of the school and, on occasion, challenging behaviour in addition to social and communication difficulties. One way in which schools as communities attempt to support all pupils is by being an 'inclusive' school setting for their pupils. The notion of inclusion is reflected in the school's systems, procedures and culture; inclusive schools operate so that they are open to, and accepting of,

children with a range of difficulties. Well planned and supportive environments can enable AS children to be supported in their mainstream setting and to access their education and may be supportive of other interventions.

3.3.1 Schools as inclusive communities

Inclusion is often confused with integration (Cowne, 2003; Leadbetter, 1999); the latter can be taken to be the degree to which a child can change themselves to fit into a school (Ainscow, 1995). Inclusion, on the other hand, is an altogether more radical proposal in that it advocates that the emphasis for change should be on the school to accommodate the pupil, and thus implies organisational or systemic change on the part of the school. Moves towards inclusion are underpinned by a 'social model' of disability rather than a 'medical model'. Under legislative guidance schools are encouraged to be more inclusive of a range of pupils' needs.

Inclusion, then, is less about the physical location of pupils than it is about the attitudes, ethos and culture created by a school (Cumine et al., 1989). Warnock (2005) notes that children diagnosed with ASD are a group who are vulnerable in mainstream schools and who may require more individual instruction and intervention as part of attempts to include them. Ali and Frederickson (2007) notes that peer rejection is not inevitable for ASD children, but that peer acceptance is a key variable in an inclusive school. Greenway (2000) noted that interventions in school were more successful at supporting AS pupils when delivered in a context of 'an accepting school culture' (p. 481). Under legislative guidance schools should be moving toward becoming inclusive communities (Frederickson and Cline, 2003).

There are a number of guidance publications for schools to follow in relation to the inclusion of children with ASD into their schools settings, for example the *Good Practice Guidance* have been produced (DfES, 2002c). Such guidance suggests that a whole school approach is the most effective way to support pupils and this is in accordance with the move to an inclusive educational setting. The IDP (Inclusion Development Programme) provides resources to help support schools with these developments in their individual settings (Jones et al., 2009). Some of the key recommendations are:

- Policies and procedures written to support pupils with ASD
- Staff awareness of ASDs
- Accessibility of pupil's information in school
- Workable strategies and interventions
- Empathy and support mechanism in school
- Good preparation for transition
- All staff aware of particular needs of children on the autism spectrum
- All staff need to have some knowledge of the reasons that a child's behaviour may be the way it is in school
- All staff to be aware that they can prevent challenging behaviour
- An emphasis should be placed on whole school awareness (this should include all adults at all levels of the school)
- All staff need to be aware of the difficulties that could arise at the unstructured parts of the day
- In addition to involving school staff in supporting children on the autism spectrum, peers and other children should also be considered
- Explicit and clear rules and appropriateness and flexibility in responses.

Effective programmes for inclusion were said to be characterised by:

- A focus on communication (regardless of language)
- Access to a curriculum that does not depend on social communication

- An intervention that involves social interaction
- An approach to managing behaviour that focuses on assessing the function of a behaviour and teaching alternatives.

The guidelines suggest that support needs to be at a whole school level and recommends a collaborative approach between the school and other professionals. When EPs plan an intervention for a pupil in a school context, the ethos and the culture of the school provide a backdrop and setting, not only for the location of the intervention, but as a factor that may influence the course, nature and outcome of that intervention. In a structured and 'autism friendly' environment a child may begin to learn well and be included, but the child may then need guidance and support to develop their own way of managing. Such internal cognitive structures therefore need to be in place before any external structures are removed (Jordan, 2003; Jordan and Powell, 1995), and CBT can provide such a support for 'internal' structures. Interventions to support pupils are always located within an existing social structure and organisation and these patterns of behaviour can potentially influence how the intervention programme is interpreted and responded to. In addition to the social context of the school we also need to be aware of the views of AS pupils, with regard to what they themselves feel are appropriate interventions to support them in managing at school.

3.3.2 The views of adolescents with Asperger syndrome: What support do they say they want in school?

Recent surveys of AS pupils at school suggest that effective strategies are those that take account of the views of AS pupils (Connor, 2000). Research with AS pupils and their parents suggests that pupils found the social aspects of school the most difficult; they reported making and keeping friends to be a key difficulty (Carrington and Graham, 2001). Also the AS participants in Carrington and Graham's (2001) study described being acutely aware of

their not 'fitting in', which they managed by 'masquerading' (p. 54) or hiding their feelings at school and putting on a show. Both parents and children (commenting retrospectively) reported school as a stressful experience. A recent survey of AS attitudes to school noted that AS pupils reported 'feeling different', although it is noted that this is neither a positive or negative aspect for adolescents surveyed (Jones et al., 2007). However, in addition it has been noted that feelings of 'being different' can lead young people to feel inadequate and this in turn could lead to stress (Portway and Johnson, 2003). These feelings of inadequacy centre on difficulty with forming and maintaining social relationships in school, but also relate to anxiety about performing in class and peer interaction inside and outside class (Connor, 2000). When asked how schools could be improved, surveys suggest that AS pupils favour engagement in individual and small group work to support them to be included (Tobias, 2009). In a recent study it was reported how a sample of AS pupils suggested that school could be improved, from the point of view of an AS pupil (Jones et al., 2008):

- The need for school staff to have an understanding of AS
- The need for more support within the school environment
- The need to educate other pupils about AS
- The need to effectively address bullying and create a safe learning environment

(Jones et al., 2007, p. 9)

Systemic level support or changes at the level of policy and organisational structure in school has the advantage of not drawing attention to individual pupils. This is supported by research that suggests AS pupils reported not liking the one to one support offered in school, particularly the visibility of this support in class, as this tended to exacerbated their feelings of difference (Humphrey and Lewis, 2008).

When questioned, the parents of children with AS report that they were in favour of schools employing more individually tailored and discrete support for their children in school (Tobias, 2009). What is clear is that not only is research into AS pupils' school life experiences an underexplored area of research, but that it is crucial in developing the high quality learning experiences and intervention programmes that support AS pupils in school. In the *Autism Education Trust Report* (Jones et al., 2008) there is an emphasis placed on the individuality of the child and not the AS label in planning and developing effective interventions for AS pupils in school. CBT interventions are discrete and may increase the probability that the pupils transfer any learning, which is consistent with what AS pupils say they want from support in school (Humphrey and Lewis, 2008). In addition to this the school setting is a familiar setting into which a CBT programme can be introduced. Schools have also indicated, in a recent review of educational psychologists' roles, that they want the use of more direct therapeutic interventions by psychologists and that they would like more of the therapy delivered in school (Farrell et al., 2006).

3.3.3 Educational psychologists and CBT

Given that in the area of AS research it has been suggested that there is a need for more individualisation of intervention programmes (Humphrey and Parkinson, 2006), and that more account should be given to the voice of the child (Jones et al., 2008) CBT might be a promising approach to realise this (Attwood, 2006, 2004a, 1989; Hare, 2004; Fitzpatrick, 2004). As noted above in section 3.3.1 there are guidelines for schools on good practice in including pupils with ASD (DfES, 2002) and on inclusion in general (Frederickson and Cline, 2009); the issue is the degree to which it is utilised (House of Commons Education and Skills Committee, 2006). EPs have a unique role in school that combines a range of therapeutic skills, detailed training in child development and experience of a range of challenges that

affect children in school setting. They also have a good knowledge of the organisation and culture of the schools they work in and how these might influence the course, nature and possible outcomes of a school based intervention to support a pupil.

3.4 Chapter summary

Adolescents diagnosed with AS are often educated in mainstream schools, and whilst schools attempt to become more inclusive there is evidence that some pupils with AS continue to experience difficulties in mainstream settings. Thus some AS pupils may require support that is individualised to meet their needs, in addition to the inclusive context of the school. In seeking to support adolescents in a mainstream school we need not only to consider the current theoretical explanations of AS (Tutt et al., 2006), but also to consider the views of pupils themselves, and be sensitive to their individual strengths and weaknesses at school. It has been suggested that CBT is a potentially important support for AS pupils (Attwood, 2006) and that it would be consistent both with current theoretical explanations of AS as cognitive in origin (Attwood, 2007; Hare, 2004) and how it can be adapted (Attwood, 2004a).

CBT is often delivered in clinical settings which remove the children from the context in which they are experiencing difficulties, yet if therapy is conducted in school settings children are used to the setting and can practise new skills *in situ*. EPs are in a good position to develop programmes to support AS pupils in mainstream school and could evaluate the efficacy of such an intervention and take account of the school organisation and culture. As evidence based practitioners EPs need to consider the question of the evidence base of the utility of CBT for AS adolescents and particularly its applicability in school settings. It has been suggested that too many interventions recommended in school are not based on

empirical research evidence (Ali and Frederickson, 2007). The next chapter will outline some of the key studies that have attempted to demonstrate the efficacy of CBT with adolescents diagnosed as AS, and will focus on studies that have been adapted for and conducted in mainstream school settings.

CHAPTER 4

LITERATURE REVIEW: EFFICACY OF CBT TO SUPPORT ADOLESCENTS DIAGNOSED WITH ASPERGER SYNDROME

4.1 Introduction and context

It was acknowledged in Chapter 3 that schools have made great strides with inclusion, or adapting their institutional and organisational culture to accommodate pupils rather than expecting pupils to change in order to fit into school. Despite this many pupils still require additional support beyond the inclusive practice of the school. A link was also made between the largely cognitive accounts of AS and the developing interest in the use of CBT with this client group (Attwood, 2007; Hare, 2004; Hare et al., 1999; Lord et al., 1995; Atwood, 2004, 2006, 2003b). Given the emerging interest in applying CBT with adolescents diagnosed with AS there has been a concomitant interest in establishing whether this type of intervention approach is an effective approach to support this group.

This chapter is organised around a consideration of the existing research that has sought to establish the efficacy of using CBT with adolescents diagnosed with AS. Existing studies suggest that CBT is an effective approach (Chalfant et al., 2007; Hare, 1997; Reaven and Hepburn, 2003; Sofronoff et al., 2005; Sze and Wood, 2007; Sze et al., 2008; Bauminger, 2002, 2007a, 2007b; Grieg and MacKay, 2005). However, these studies have tended to be conducted in laboratory or clinic settings rather than in real world settings such as schools. Attempts to consider CBT in such settings may require methodological approaches to evaluating outcomes that can account for the social and contextual features of these more 'open' social settings. The present study is located in the case work of the Educational Psychologists practice in school and represents the researcher/practitioner applying the

emerging evidence base for CBT with adolescents diagnosed AS in a real world context. The small number of studies that have been conducted to date employing CBT in schools have tended to employ experimental research designs akin to those in laboratory studies. The aim of this chapter of the literature review is to critically examine the existing research on applying CBT for adolescents in school contexts. It is anticipated that this section of the literature review will highlight gaps in the current literature and provide the basis for the research question of the present study.

4.2 Interventions and their efficacy

Research on psychotherapeutic interventions with children diagnosed with ASD is sparse, but there is emerging evidence that pupils with AS, particularly, may benefit from this sort of psychological support (Vermeulen and Vanspraghe, 2006). Given that the research pool of studies that focus on AS exclusively are small in number our understanding of what applications work well for AS tends to lag behind that for 'classic autism' (Howlin, 1989). A comprehensive review of interventions used to support pupils with ASDs suggests that there is no panacea (Jordan and Jones, 1999; Jones et al., 2008). It is also important to note, at the outset, that interventions such as CBT employed to support pupils with AS are not aimed at 'curing' AS but are intended to support children and young people to manage some of the secondary difficulties that can arise from being on the autism spectrum in school. Thus the term 'intervention' in this context refers to a systematically targeted support for a pupil based on an assessment of the pupil's needs. A central question therefore is whether the therapeutic approach 'works' or not, a question of their efficacy.

There have been comprehensive reviews of interventions designed to support pupils with AS, which have tended to have a 'what works?' focus (Greenway, 2000). The studies reviewed

by Greenway were overwhelmingly laboratory studies based on experimental and clinical trials which focused on considering the outcome data. Yet Greenway (2000) suggests that of the studies she reviewed, the most effective ones were conducted in non-clinical settings and were underpinned by a 'social constructionist' approach. By social constructionist she means interventions derived from theories that propose that individual mental structures are developed out of cooperation and interaction with others in the child's life; this may mean interactions with significant others such as parents, peers, and teachers with whom they have involvement. However it is not an uncommon pattern for interventions to be tested under laboratory conditions and be accepted as being efficacious before trials are conducted in the real world settings where these social constructionist interactions occur. Educational psychologists, as scientist practitioners, aim to seek to apply interventions in our schools that are based on the most current evidence of that intervention's effectiveness.

Efficacy is a technical term in experimental research, meaning to establish, under experimental conditions, what is deemed to have worked in an intervention to effect a positive outcome (Medical Research Council, 2000). Thus laboratory conditions are a highly controlled or 'closed' setting in which there are few 'extraneous variables'. The therapy itself can be thought of as a variable and this can be controlled for by having a manual or pre written therapeutic programme that has the same session length, same pace, and same materials in the same order for all participants. The efficacy of CBT as a therapeutic approach is well established (Hawton et al., 1989) and increasingly so for children (Stallard and Rayner, 2005). It is customary to evaluate the efficacy of CBT interventions using experimental research designs from the positivist paradigm (Kirk, 1989). The efficacy of CBT for treating non-ASD children has been demonstrated by Randomised Control Trial (RCT), however research for those with AS is still in its infancy (Sze and Wood, 2008). There are a

small number of studies reporting CBT to be an efficacious intervention for use with AS adolescents, particularly those with anxiety (Chalfant et al., 2007; Hare, 1997; Reaven and Hepburn, 2003; Sofronoff et al., 2005; Sze and Wood, 2007). There has also been a growing interest in applying the principles of CBT with children with AS and those with learning difficulties (Sze et al., 2008; Sze and Wood, 2007; Attwood, 2003, 2004a, 2006; Grieg and MacKay, 2005; Stallard, 2005. This emerging efficacy for CBT with AS has been achieved employing methodological approaches derived from experimental scientific approaches and RCT.

4.2.1 Randomised Control Trials (RCT): Efficacy of CBT for Asperger syndrome under 'experimental conditions'

The logic of a Randomised Control Trial (RCT) in research is to sample a group of adolescents with AS, as large as possible, who can then be randomly divided into two (or more) separate groups. The two groups are then treated in the same way with the exception that one group (the experimental group) receives a CBT intervention. The group that does not receive the CBT programme (the control group) can then be compared with the experimental group. In a number of studies the control group is often composed of a 'waiting list' group who have AS and are awaiting CBT, but have yet to receive it. The choice of Randomised Control Trial (RCT) research designs are consistent with the biomedical discourse of much CBT research and writing (Trinder and Reynolds, 2000). It is also consistent with attempts to redress the imbalance of a lack of robust studies of CBT with children (Rait et al., 2010). The RCTs cited above (Reaven and Hepburn, 2003; Sofronoff et al., 2005; Sze and Wood, 2007; Chalfant et al., 2007) all reported that CBT is an effective intervention for managing anxiety in those diagnosed with Asperger syndrome compared with a sample who did not receive CBT.

The appeal of RCT research designs remains that they allow the researcher to make causal statements about the intervention programme that can be generalised. In addition, the clear logic and quantitative data provide an easily accessible and logically powerful explanation for policy makers and commissioning groups. Despite the reported success of RCT studies for establishing the efficacy of CBT for work with children and adolescents, and work with AS adolescents, the call for more RCT studies has not gone uncontested (Whyte, 2009). However it has been argued the RCT designs are an inappropriate research methodology for establishing the efficacy of CBT interventions in general (Morrison et al., 2004).

A challenge for RCT studies is the importance of sampling a population size that is large enough to support the reliability and validity of the mathematical techniques used to establish the statistical significance of the results. However, large sample sizes also have the disadvantage of making assumptions about the homogeneity of the AS population that are not supported by the evidence (Jones, 2008). In addition to this the use of a control group or non-treatment group for comparison with an experimental group, or treatment group, is a central feature of the RCT design but can itself be problematic. In a review of RCT studies of CBT with the AS population Whyte (2009) notes that the control groups are often sampled from waiting lists of other AS adolescents waiting for an intervention, who are assumed to be a match for the experimental group. However, given both the low spontaneous recovery rate of AS patients with anxiety and the widespread effects of psychotherapy, he goes on to argue:

... there is no valid reason for their use here other than to fulfil an experimental dogma.

(Whyte, 2009, p. 28).

Another feature of RCT designs is that they seek to control or manipulate variables, thus playing down the potential role of the context of an intervention, so that it can be ruled out of a causal explanation of the outcome. Therefore an assumption is made that having established the efficacy of the intervention in a clinical or laboratory setting, the same approach can be generalised to new settings or contexts. This is particularly relevant to research with an AS population when one considers that those with AS can experience difficulty learning in one context and applying the learning in a new or novel context (Cumine et al., 1998; Jones, 2002; 2007). Whilst acknowledging that the RCT as a research design has made a contribution to clinical research, medicine and practice (Medical Research Council, 2003) through a rigorous scientific approach, the RCT does not on its own form a complete or coherent treatment evaluation; indeed in relation to autism Lord et al. note that:

In general, neither the "autism community" nor most educational researchers, have emphasised RCT standards for design, implementation and reporting of studies.

(Lord et al., 2005, p. 702)

CBT is known to be an effective intervention to support people with anxiety symptoms and, given the highly structured and systematic approach characteristic of CBT and the logical systematic thinking often seen with AS, this implies that CBT would be a good intervention for AS (Grieg and MacKay, 2005). Research employing RCT designs report that CBT is an effective approach for managing anxiety in adolescents diagnosed with AS (Sofronoff and Attwood, 2003; Sofronoff et al., 2005; Sze and Wood, 2007; Sze and Wood, 2008). However, these researchers do not set out the nature and scope of the CBT intervention programmes employed, and by controlling for the environment they decontextualise the individuals from the setting in which they experience most difficulties, for example at school.

It is also the case that for a study to be valid it must be predicated on sound measurement of the variables it is seeking to change, anxiety for example. In studies aimed at reducing anxiety in AS pupils, Whyte (2009) notes that often 'anxiety in disorders' was not checked for in that it was assumed rather than measured, and that Sofronoff and Attwood (2003), and Sofronoff et al. (2005) relied only on verbal reports from parents of the participants as to the level of anxiety of their children in the pre and post intervention phases.

If it is assumed, despite the difficulties, that the measures in RCT studies were an accurate gauge of changes for the children, this raises a further critical point with RCT designs: they focus exclusively on outcomes, with little or no regard for the processes of the intervention that may also combine to influence the outcome. Pawson and Tilley (1997) note that a central difficulty in this regard for RCT designs is the problem of the 'black box'. This refers to the notion that RCTs only describe the outcomes of an intervention and do not explore the 'why' questions of how an approach might have worked. Despite these methodological reservations the emerging evidence is that CBT appears to be an effective intervention to support adolescents diagnosed with AS, on the basis of existing experimental studies. It has been observed that research findings established under highly controlled laboratory conditions are then applied in the relatively less structured social world of the practitioner (Salkovskis, 1995). Thus the initial positive findings on employing CBT for use with AS adolescents seems to have generated interest in applying these techniques in a more 'natural' or 'real world' setting, such as in schools.

4.3 Applying CBT in the real world: CBT to support pupils with Asperger syndrome in school settings

The phrase 'real world' is used to describe the social situations in which people find themselves and where behaviour that practitioner psychologists are interested in is actually taking place. Research in the real world, by contrast to laboratory and clinical trials, aims to study human behaviour in the setting in which it naturally occurs, and for EPs this often means in school. However, social settings are complex and allow for a range of influences on behaviour; in this sense they are a more open system in which to research behaviour. The apparent disadvantage, from an experimental perspective, of losing control of some variables can in fact be considered an advantage, presenting a more 'situated' account of the behaviour. The initial research on CBT for AS lends support to the notion that it may be a useful intervention approach to support adolescents diagnosed with AS. As a practising educational psychologist I am seeking to incorporate CBT into my practise as an evidence-based approach to solve problems in school and family settings. Therefore, although research under laboratory conditions has established a degree of efficacy for using CBT with AS, one has to be sensitive in an applied context to the possibility that the process of applying CBT in school may influence the observed therapeutic outcomes.

An innovative study that seeks to employ CBT in real world settings is that of Bauminger (2002; 2007a; 2007b) who delivered a CBT intervention for AS pupils in school settings. The focus of his CBT intervention was on supporting AS pupils with their social/emotional interaction rather than addressing any secondary characteristics such as anxiety. What is significant about Bauminger's research is that, in contrast to RCT studies, it seeks explicitly to harness the child's school setting as a 'therapeutic agent' rather than playing it down as

an 'extraneous variable'. Bauminger (2002; 2007a; 2007b) based his CBT intervention on an 'ecological model' that suggests that significant others in the child's life might play a powerful role in the therapeutic process, and therefore in the outcomes. Rather than delivery by a therapist, the CBT programme is reported as being embedded in the curriculum of the child's school with teachers and some children being trained to deliver the CBT intervention. In the 2002 study Bauminger employed a sample of 15 children diagnosed with AS (aged between 8 and 17 years) sampled by a government department; all the sampled children attended a mainstream school. The children are described as being from middle class backgrounds and attending schools in a number of urban areas across Israel. The CBT programme for individual pupils is delivered in school by the pupil's class teacher and peers. The CBT programme consists of one three-hour session a week for a total period of 7 months; the class teacher was supported with access to supervision from the researcher. Parents and peers were also co-opted to motivate and facilitate social interaction and provide opportunities to practise session content. Prior to the CBT intervention baseline measures of psychometrics and observer ratings of social/emotional interaction were made and then compared to measures in the post intervention phase.

In the post intervention phase Bauminger (2002) reported a positive outcome in terms of changes in the targeted social skills as a result of the CBT intervention in school. The outcomes are supported as a statistical analysis of the differences in social skills measures that show a statistical difference between the pre and post CBT intervention measures, such that social and emotional skills had improved. This statistical analysis lends support to the causal claims made for the CBT programme's potential to change behaviour. However in the Bauminger study, statistically speaking, the sample size is small and represents a threat to the validity of the results. In addition to this the validity of the concept of 'statistical

significance' as a measure is unduly influenced by both the sample group and its size (Clark-Carter, 2003). One also has to take care when interpreting statistically reported outcomes to note that the statistical significance for a particular group is not necessarily generally useful or appropriate for a given individual (Jones et al., 2008). Therefore a focus on statistical analysis of outcomes, whilst lending scientific rigour to the findings, misses an opportunity to explore and reflect on how the context, setting and processes of CBT may influence observed outcomes. This is significant in that Bauminger (2002) has a stated aim to consider the ecological factors when CBT was delivered in school. However it is clear that Bauminger conceives ecology as a 'variable' to be manipulated in the delivery the therapy, rather than a context in which CBT is located. As such, very few details are provided of the contextual features of the school(s) in which the CBT was delivered, for example, the schools' ethos, development of an inclusive approach, and experience of including pupils on the autism spectrum are not reported in detail. Thus Bauminger (2002) not only assumes homogeneity in the AS population by applying the same programme for all pupils, but also assumes that schools in different parts of the country are essentially homogeneous and that that different settings will not influence the process or outcomes of the CBT intervention.

The Bauminger (2002) study is characteristic of an experimental design of the A-B (pre and post measures) type. However this type of research design has the limitation of having no control group with which to compare the outcomes of the therapeutic intervention. The inclusion of such a group with Asperger syndrome and in similar school situations to the study sample, but receiving no ecological CBT in school would have enhanced the scientific validity of the results. Measures were taken in the pre and post CBT intervention phases and recorded as observer ratings of pupil behaviour defined as 'social interaction' and 'emotional responses' in school situations. An interrater agreement percentage is reported as a measure

of the reliability and validity of the observer ratings, however these percentages are not supported by a 'concordance' measure, which is considered necessary to establish the reliability of an observer's recordings (Bakeman and Gottman, 1997). In addition to this no details are provided of the arrangements for maintaining the standard and consistency (reliability) of the observation schedule employed. It is also significant that the CBT programme employed in the study is not reported to a degree that would make replication possible, or indeed what amendment there had been to the CBT programme to meet the needs of an AS population. Supervision is also reported as being available for the teachers and pupils, but no details are provided of the nature of this supervision or the degree to which it was accessed.

Despite these limitations Bauminger's results are consistent with later studies that suggest that people with whom the child has an existing relationship, such as parents or peers, can influence CBT outcomes for an individual child (Knight and Ridgeway, 2008). Bauminger's findings have also been supported in a recent study by Sze and Wood (2007) who argue in their study that what made the difference to the outcomes for AS pupils receiving CBT were the 'AS specific' adaptations to the CBT intervention programme, as well as the involvement of family and peers in school (Sze and Wood, 2007). They also suggest, like Bauminger, the importance of the support of significant others in the child's life in the course of the therapy.

In an update to the 2002 study Bauminger (2007a, 2007b) conducted a further study with two phases with the explicit aim of improving on the design limitations of the 2002 study. The first design enhancement was to include a 'blind design', in which the data was collected and analysed by individuals who were unaware of the study's aims and objectives, thus being "... more *objective* evaluation sources ..." (Bauminger, 2007a, p. 1595 [emphasis

added])). Such statements reassert the researcher's epistemological commitment to a positivist research approach. The follow up study had two phases in which school staff, parents and peers were trained to deliver the CBT in a school setting. In the first phase of the study a sample of 19, 7 year olds, diagnosed with AS, all attending mainstream school, received a period of individual CBT. Again the focus was on the observed behaviour of the children with regard to their social cognition and social interaction in school, as reported by observers 'blind' to the aims of the study. In the second phase of the study a group-based CBT intervention was delivered by supervised school teachers over a two year period. However of the 11 participants sampled for the study, only three progressed to the second year of the intervention; the details of the pupils who dropped out were not explored, and they were replaced by a matched sample. It was reported that those in the group training sessions showed improvement in recognising both emotions and other people's perspectives, as interpreted from the statistical analysis of the results. Despite the reported improvements of the blind design for reporting the outcomes, again the details of the nature of the CBT programme, the level of supervision and the context of the schools were not explored. This is a significant point given that initial research suggests that the CBT therapist and the nature of a CBT programme can affect therapeutic outcomes (Derisley, 2004). The follow up studies in 2007, like the earlier 2002 study, do not report on the school settings as specific context into which the CBT programme is 'inserted' and the possibility that this existing school culture may be influential in the outcomes of therapy.

Bauminger's (2002, 2007a, 2007b) work locating CBT in school, to support AS and advocating an ecological conception of CBT (CB-E Cognitive Behavioural Ecological) based on Bronfenbrenner's (1979; 1992) ecological model of psychology in which it is suggested that the observed behaviour of an individual is influenced by the social setting that they are in.

However in Bauminger's studies the school as a context and a social organisation in which therapy is located is not reported in any analytical way and assumes that schools are homogenous. This is significant because recent writers have emphasised the role that school may play in the processes and therefore the outcomes of CBT interventions delivered in them (Dusmiur and Lyuandia, 2006). My own practise experience as a psychologist visiting many schools is that there is great variation in the degree to which individual schools adhere to local and national guidance on, for example, inclusion. In a recent survey of inclusion for ASD pupils in secondary school it was noted that in some schools there is a large gap between the 'inclusion rhetoric' and 'classroom reality' (Humphrey and Lewis, 2008). The systemic knowledge that EPs possess of their schools places them in a unique position in terms of planning, implementing and evaluating CBT interventions in schools. In England and Wales a recent review of EP practice suggested that a limited amount of time is spent on individual therapy by EPs but that schools wanted more of this type of intervention (Farrell et al., 2006). Given that CBT is an emerging intervention support approach for AS, and trials have now taken place in school, it is important to consider the role EPs might play in their delivery. Thus there is interest in applying CBT with children diagnosed as having Asperger syndrome '... but they do not address the difficulties of these pupils in school ...' (Grieg and MacKay, 2005, p. 19).

4.4 Educational psychologists and CBT in school

MacKay (2008) has argued that in the 1980s the profession of educational psychology, in the UK, underwent a radical reconstruction, leading to changes in the working practices and the relationship between psychologists and schools. MacKay represents this as a move away from the psychologist having individual casework or seeing pupils one-to one, in favour of

operating at a more systemic or organisational level, in which the psychologist has a more consultative role with the adults in the school, consultation being a form of collaborative engagement between the school and the psychologist which is solution focused and preventative in orientation (Ajmal and Reece, 2001). Such an approach to psychology applied in school is underpinned by models of social psychology. This consultative approach in delivering psychology to schools is aimed at being collaborative and has developed in parallel to schools' moves to change their organisational culture to be more inclusive settings for all pupils:

For consultation to work in a complex context, a paradigm shift is needed from individual models of psychology to these interactionist and systems psychologies.

(Wagner, 2000 p. 14)

Thus the focus for applied psychology in school has tended to move away from a 'medical model' or within child account of children's difficulties in favour of a more 'social model', where the environment or context is seen as critical in shaping behaviour. The social model is consistent with the development of more inclusive school contexts, however it may be more advantageous to see children's difficulties as arising from dynamic interaction between a particular child and social contextual situations (Elliman, 2011). It has been argued that more consideration should be given to casework and individual therapeutic interventions in school by EPs (MacKay, 2008). It can appear from such comments that there is a polemic between EPs working at the systemic level or at the individual level of casework. However, within any particular EP service model it should be recognised that EPs are likely to be working at many different levels with their schools ranging from individual casework to the more 'whole school' systemic level. Work at the systemic level or working to influence the

reciprocal interactions between individuals (their thoughts and the environment) in such a way that any changes in school staffs behaviour may influence the whole school system(s) (Frederickson and Cline, 2003). This systemic approach to applying psychology is clearly consistent with inclusive practise which places the onus on the school community to change its practices to accommodate pupils with a range of individual needs (Ainscow, 1995). However, EPs may also be applying their skills with small groups of children and/or with individual cases, this can be seen particularly when EPs are applying their therapeutic skills (Majors and Sykes, 2008; Atkinson et al, 2011; Squires and Dunsmuir, 2011; Atkinson et al, 2013). Thus it is possible for an EP to be working at all three levels, the systemic, the group and the individual simultaneously in any given school.

In a recent National survey of EPs, of those that responded, it was reported that the majority (92%) were delivering therapeutic work as an integral part of their professional practice (Atkinson et al, 2011). Significantly, although therapeutic techniques can inform an EPs work at different levels in school from the systemic to the individual, by far the most reported use was the application of therapy with individual children (83%). This may be a reflection the guidance on the training of EPs, which has as a central rationale for the three year doctoral training the opportunity to develop and increase the use of therapeutic skills applied with children to support wider strategic developments for the early intervention in education (DfE, 2011). The survey also notes that of the therapies EPs are trained to use CBT is ranked as the second most applied therapy next to solution focused brief therapy (Atkinson et al, 2011; Atkinson et al, 2013).

Individual case work and interventions with small groups of children can on occasion, themselves, lead to training opportunities for school staff to build their capacity in learning

new skills and ways to support other children in their setting. Thus techniques developed in an individual case intervention could be shared with relevant school staff who themselves could employ similar approaches to support a wider number of pupils in school. Some CBT programmes for adolescents with AS are available to be purchased and can be used by those without any specific training or experience in CBT (Attwood, 2004b). Thus materials exist that mean school staff can continue individual interventions in school, ideally with the systemic support of further training and supervision from the EP or other consultants. The value of the EP as caseworker then is not only in supporting an individual pupil but creating the potential and motivation for systemic level developments in school. In addition to this an EP in their role as scientist-practitioner can disseminate their findings to the wider EP community who may in turn employ any effective approaches in their work and thus reaching potentially many more children. This conception of the EP as a caseworker in school underpins the work of Grieg and MacKay (2005) who explored an adaption to CBT to meet the needs of a pupil with Asperger syndrome delivered in mainstream secondary school.

Grieg and MacKay (2005) report an exploratory single participant case study which aimed to evaluate the effectiveness of a novel CBT intervention strategy designed for use with AS adolescents in school by an EP. The strategy is referred to as the 'homunculi' which is a meta-cognitive visual aid designed to assist AS children to problem solve in different situations in school. The 'homunculus' takes the form of a cartoon character that can be 'called upon' in difficult situations to help to solve problems. The character is initially presented as a visual representation in the CBT sessions but is increasingly used by analogy over a number of CBT sessions. A single case study design, though, placed a limit on the potential for statistical analysis of the results, which Grieg and MacKay (2005) solved by

comparing the observed outcomes for the participant with the standardised sample for the psychometric tests employed.

Greig and MacKay (2005) report the comparison of the case participant's therapeutic outcomes with the psychometric sample data as a statistical difference between pre and post intervention results. The authors overcome the difficulties of reporting statistical significance by reporting the effect size (ES) of pre and post intervention scores as a recommended alternative to statistical significance (Robson, 2003). An effect size measure is a way to consider the difference between two sets of score, pre and post CBT intervention in this case, in terms of the mean (average) scores for the two groups of outcome data. The advantage of this statistical procedure is that it gives information about how much difference there is, rather than stating whether it is statistically significant or not (Cohen et al., 2003). Greig and MacKay (2005) report outcomes as effect sizes based on the standard deviation of scores for the standardised sample of the psychometrics employed in the study. The effect sizes obtained for anxiety, depression and stress are reported as being clinically significant, but following the CBT these are reported as being average for the case participant's age when compared against the standard population for the test used. However, it is not clear that the psychometrics tests were standardised for an AS population, which is a threat to the reliability and validity of the results when claims are made for positive outcomes. In addition to this the population sizes are not quoted with the reported ES and makes assessing the value of the ES in the Greig and MacKay (2005) study difficult. This is further complicated because what counts as an ES difference large enough to be 'significant' is also contested (Cohen et al., 2003).

Grieg and MacKay do acknowledge the difficulties of measuring social competence gains with an AS participant and are careful to point out that comparison gains were made with an ASD research sample. However the research sample has not been subject to peer review and cites an ASD population without stating the degree to which this reflects an AS population. Another threat to validity is that the improvements observed in the pre and post CBT phases could have been the result of factors in school other than the intervention. The study supports the use of CBT with AS adolescents but it is not made clear whether it is specifically the 'homunculi strategy' that effected positive changes for the pupil or whether positive gains would have happened as part of general CBT over the time period of the investigation, or could be accounted for by the special interest shown by researchers in the pupil.

The description of the CBT intervention in terms of assessment and formulation of the child's difficulties are not reported in detail, yet reporting such accounts is seen as critical in CBT research (Cole et al., 2009). Significant in the Greig and MacKay (2005) study is that the context of the school is not described or considered as a 'variable' in the potential outcomes of the therapy. However developments towards a more inclusive setting by schools are acknowledged in the discussion by the authors as a potentially important feature in any future research in this area.

The Grieg and MacKay (2005) study is significant in that it highlights the role of the EP in designing and delivering a CBT intervention in a school settings to support an AS pupil. Although the focus of the research is a specific strategy in CBT, the study supports the efficacy of CBT for use with AS pupils in school. The research design employed in Grieg and MacKay (2005) study reflects the practitioner based approach that EPs often employ in school settings. . Although the statistical analysis employed focuses exclusively on the

outcome data alone and gives no regard to the processes of delivering CBT in a school setting, that may have accounted for the observed outcomes. Thus the reporting of the study misses an opportunity to reflect on the dynamic interaction between the school setting and the introduction of the CBT intervention. This is significant because research on CBT interventions suggests that in addition to the therapist and the CBT programme the involvement of significant others in the child's life can impact on therapeutic outcomes (Knight and Ridgeway, 2008).

4.5 CBT based approaches used by teachers in school to support pupils with autism

Emerging evidence suggests that CBT delivered in school is an effective approach to support AS pupils with social/emotional interaction and with anxiety. It has also been argued that significant others in the pupil's life can influence the outcomes of therapy; this includes school teachers and other pupils. In existing studies of delivering CBT in school (for example Bauminger, 2002, 2007a, 2007b) the CBT was delivered by teachers and pupils in school under the direction and supervision of a research psychologist. An interesting and innovative study by Fitzpatrick (2004) reports on an intervention to support a pupil with ASD in school (she does not discuss AS *per se*) in which teachers in the school apply CBT approaches to change behaviour and evaluate their effectiveness. This is a novel approach in the area of CBT used in mainstream school to support an adolescent on the autism spectrum in that methodologically it moves away from the use of positivist/experimental research paradigms characteristic of research in the study of the utility of CBT in a school. It is also significant that it is the teachers in school using CBT approaches in their work to improve their practice and outcomes for the child. The research is less focused on AS specifically, and references are made to 'CBT strategies; rather than therapy specifically.

In this single participant case study Fitzpatrick (2004) explores the use of CBT strategies in a mainstream school with a pupil diagnosed with ASD. The specific strategies and approaches to CBT are outlined in some detail, although any ASD specific adaptations made to the CBT approach are as not developed. The study aims to change the cognitive and emotional awareness of a pupil with ASD using CBT to reduce the incidence of aggressive behaviour displayed in school. The CBT intervention was administered over a four week period in the

child's school by Fitzpatrick, and claims to take account of the pupil's individual difficulties in the school setting. Fitzpatrick describes herself as a teacher of a class of ASD pupils in a mainstream secondary school. A description of the pupil 'Christopher' is provided in terms of his strengths and difficulties at school. Fitzpatrick concludes that the study meets her stated aims of increasing the case participant's self and emotional awareness, and reducing his aggressive behaviour. It was reported that there were reductions in the observed level of aggressive acts and that there were positive developments in Christopher's emotional awareness. The cognitive behaviour strategies being delivered in school are reported as having been advantageous because it was possible to explore actual incidences or difficulties Christopher reported in the context in which they occurred in school.

The Fitzpatrick study is significant methodologically for its action research (AR) approach, that focuses on the way that practitioners apply their craft in a context and seek to promote and develop a better understanding of this practice as a basis for improvements; as Cohen and Manion note, AR is characterised by:

...small scale interventions in the functioning of the *real world* and a close examination of the effects of an intervention,

(Cohen and Manion, 1994, p. 186 [emphasis added]).

Therefore in this type of research study the focus is on the practitioner reflecting on their own work and practise to inform improvements and developments in practice. The notion that practitioners themselves are researchers investigating the form and nature of their own practice is valued for its participatory and emancipatory qualities (Park, 1993). In the Fitzpatrick study the focus is not on the control of variables to establish efficacy of cognitive behavioural strategies but more on the utility of these strategies for class teachers in this context and with this pupil.

From an evaluation perspective it could be argued that Fitzpatrick's (2004) study was effective in the sense that it was driven by the criteria of utility and credibility that the results could have for practice in school.. However judgements about utility are based solely on observations made in school by school staff, which is a threat to the validity of the findings. It is also not reported clearly how these observations were made in school or indeed if steps were taken to ensure the reliability and validity of different raters, or whether they were 'blind' to the study's aims. The form and nature of the cognitive behavioural strategies that make up the intervention are not detailed in sufficient depth to allow for a replication of the study. Also Fitzpatrick's relationship with the case study participant is unclear, and therefore not considered as a potential factor in the observed outcomes, either as compliance of the child or unconscious bias of the observer. Changes in the pupil's behaviour may be related as much to the increased 'special' treatment that the cognitive behavioural strategy sessions offered rather than any process of the cognitive behavioural strategies. It is also not made clear how the individual pupil had been selected for the study, in comparison to other potential ASD pupils in the class. There are also very few details provided as to the context of the school, its achievement rates, the socio-economics of the community, developments towards inclusion and what general accommodations have been made for their ASD pupils.

The evaluation presented by Fitzpatrick (2004) does not report the detail of how the observations were made or what subsequent analysis was made of these observations, qualitative or quantitative. Details of the formulation and preparation of cognitive behavioural materials are not reported in any detail, nor indeed are any specific amendments to accommodate 'Christopher's' needs in school. In considering the outcomes of the case

study in the school the eco-systemic factors which may have contributed to the successful outcome. For example the relationship with the teacher prior to the intervention, are not explored. Thus the reliability and validity of the study is not established to a degree which would warrant replication in school. Although this may not be a challenge from the point of view of an AR study, which is less interested in generalisation, it misses an opportunity to explore which aspects of the intervention were responsible for producing the positive outcome. However, the study does have the advantage of exploring methodological approaches that break with the dominant positivist themes of establishing efficacy in controlled laboratory or clinical conditions, and focuses much more on an intervention situated in the real world context of a school. Fitzpatrick (2004) demonstrates that the utility of the cognitive-behavioural strategies may be related to individual pupils' needs and, although not elaborated in any detail, the social context of the school. A particular difficulty for Action Research is that it has developed without the need for systematic methods of analysis (Atkinson and Delamont, 1997). In addition, the claims for the democratic ideal of AR and its empowering and transformative potential are contested (Kemmis, 1997). Although there are some shortcomings in the Fitzpatrick (2004) study it does show that research paradigms other than those of experimental designs can be useful for evaluating CBT from a practitioner's point of view.

4.6 Gaps in the current literature: The efficacy of CBT employed to support pupils diagnosed with Asperger syndrome delivered in mainstream school settings

It has been suggested that research into AS generally lags behind research for children on the autism spectrum who experience more severe learning difficulties (Howlin, 2003b). In addition it was noted that interventions, largely behaviourist in orientation, developed for children with ASD were then applied latterly to those with AS.

What's not been done in this particular study is look at children who are not statemented: who have a good IQ, are doing reasonably well in school, but may still have communication problems.

(Frith, quoted in *The Psychologist*, September, 2006, p. 517)

The structured interventions that characterise support for 'classically autistic' children often target multiple domains of functioning, in contrast those with AS who are often being educated in mainstream school by teachers who have little or no knowledge of autism or Asperger syndrome and the recommended interventions (Helps et al., 1999).

Humphrey and Parkinson (2006), in a comprehensive review of studies aimed at supporting pupils on the autism spectrum in school, concluded that there was a need for further investigation of interventions to support AS pupils particularly. They also suggest employing methodology that would overcome the weaknesses of the experimental approach in exploring intervention in schools settings. In addition they noted that there was a tendency for such research to be characterised by a positivist approach that decontextualised the child and made assumptions that those with AS form a homogenous group, rather than having a set of individual needs, as they note:

The next logical step is to embark on detailed, systematic, collaborative inquiries which examine how approaches can be developed, combined, modified and implemented in the complex array of educational settings.

(Humphrey and Parkinson, 2006, p. 6)

Yet the dominant research paradigm is the positivist approach, which is less successful when applied in a real world setting where the environment, an 'extraneous variable', is more difficult to control (Cohen et al., 2003). The epistemological position of positivism is that by controlling for or manipulating the environment it can be ruled out as a potential causative agent in any observed changes in the pupil. However, experimental designs focus on the observed outcomes and so miss the potential explanations that may be inherent in the social context in which the intervention is located, or that have been triggered by the presence of the intervention. Positivist research has undoubtedly been effective at demonstrating that CBT, adapted for adolescents with AS, can be an effective intervention, and that this extends to interventions located in school. However, they have not acknowledged the potential of the contextual setting of CBT as a factor in the observed therapeutic outcomes.

4.6.1 The school as a social context

The current research on CBT interventions for pupils with AS in school have not described and explored the school setting as a potential influence on the course and nature of the CBT intervention. Yet EPs often see the school as complex social organisation, having evolved its own culture and ethos. It is into such a culture that the CBT interventions are to be located and delivered. Organisational cultures themselves can be considered to be socially constructed (Huczynski and Buchanan, 2001) directly by the activities of the staff working in the school. Goffman (1969) explores this idea, seeing organisational cultures as a team of performers who cooperate to give an enduring definition to a situation. As the members of

the school go about their business they are also shaping the school culture and its reproduction (Legge, 1995). As Bruner notes:

... schools can never be considered culturally “free standing”. What it teaches, what modes of thoughts and what speech registers it actually cultivates in its pupils, cannot be isolated from how the school is situated in the lives of, and the culture of its students ... the chief subject matter of the school viewed culturally, is the school itself.

(Bruner, 1999, p. 28)

The notion that the school is a complex organisation, and that it can change to be more inclusive and in so doing reduce the barriers experienced by some pupils in accessing the curriculum is exemplified in the *Good Practice Guidance* (DfES, 2002c) and IDP (Inclusion Development Programme, 2009) which is aimed at influencing the whole school culture to support pupils on the autism spectrum in mainstream school.

4.6.2 The potential challenges of mainstream secondary school for those with AS

The existing literature suggests that the well developed cognitive abilities of AS pupils form a protective factor in the primary school years, where they may achieve academically, but that this is more difficult to maintain in secondary school (Goldstein et al., 1994). For one, secondary aged pupils are more aware of the emerging differences between themselves and their peers. In addition to this, in secondary school the demands of the curriculum change with a greater focus on comprehension and conceptualisation of academic material, rather than rote learning. There is often an emphasis on working in groups to co-construct meaning and to solve problems (Goldstein et al., 1994). For example, curriculum content in secondary school has embedded in it language devices aimed at summarising conceptual material

(Cazden, 1998; Falk-Ross et al., 2004). Therefore AS pupils may face challenges with both social and academic progress that could be hypothesised to exacerbate feelings of social rejection and/or feelings of failure with regard to academic work. Indeed Barnard et al. (2001) has shown that pupils with ASD are 20 times more likely to be excluded from school than their non-ASD peers. According to Tantam, AS pupils:

...have problems in classroom situations and consequently have practical difficulties that may lead to failure to perform satisfactorily in classroom tests.

(Tantam, 2000, p. 53)

Retrospective studies of AS pupils' experiences of school have a common theme of feeling different to others and having feelings of inadequacy (Carrington and Graham, 2001). At the same time it is possible that school staff do not recognise the difficulties that AS pupils face, and treat them accordingly. Grieg and MacKay (2005) report that 65% of AS pupils have clinically significant levels of anxiety; there are also reports of high rates of depression in addition to anxiety (Hare, 1997 Green et al., 2000). These secondary mental health difficulties are thought to derive, in part, from the challenges faced by pupils with AS in their social communication and learning in school (Tantam, 2000; Attwood, 2007). Emerging research evidence has suggested that school variables, such as schools academic performance and the socio-economics of the school's catchment area, correlate with reported outcomes of therapy delivered in school (Cole et al., 2009). This raises the question of a growing need to explore the school as having the potential to influence the outcomes of therapeutic interventions. Thus, in addition to knowing that an intervention is effective, it is significant to assess when applying such research findings what impact a particular educational setting might have on the outcomes of an intervention (Jones et al., 2008).

What are the active ingredients in an effective intervention? What mechanisms are triggered (if any) by the introduction of the intervention into a given school setting?

4.7 Next steps: closing the gap

Emerging evidence suggests that CBT is an efficacious treatment for adolescents with AS, under clinical conditions. However, when the studies have been conducted in school settings there has been little attention given to the school context in which the research is conducted as a potential influence on the outcomes. We know less about the factors in specific social contexts that may influence the outcomes of CBT in school. Therefore, a next step would be to apply a methodological framework that has scientific rigour that can account not only for the observed outcomes of CBT, but also for the impact of any mechanisms triggered by the delivery of therapy in the social complexity of school.

The results of positivist research have tended to focus on answering the question 'did it work?' and in so doing overlook the opportunity to consider a more fundamental and potentially helpful question for practitioners: why or how the intervention worked. The Realistic Evaluation methodology (Pawson and Tilley, 1997) is a framework that explores the 'how' and 'why' questions of research, offering a scientifically rigorous approach in addition to giving due regard to the social context of the intervention. Realistic Evaluation approaches are being used increasingly in educational psychology research (Timmins and Miller, 2007, in both case work and consultation (Matthews, 2003, 2009). In the area of evaluating CBT to support AS pupils in school settings, the use of RE represents a novel application of realist methodology to research. There is very little research into the type or nature of CBT that would best benefit children (DoH, 2004). In addition to this the existing research literature presented here has tended to employ a manual or 'technique-focused' approaches to CBT, in

which a pre-existing manual of resources is used to deliver the therapy; this is often a constraint of the experimental designs' need for control. Realistic Evaluation, it is anticipated, will allow a CBT intervention designed for an AS pupil and delivered by an EP delivered in school to be evaluated in terms of the observed outcomes of the therapy, and also the mechanisms triggered in a particular educational setting that underpin those outcomes, so addressing the need to be more reflexive about interventions located in school.

4.8 Research aims

The aim of the present study is to consider the potential impact of the school setting when delivering a CBT intervention to support an AS pupil in a mainstream secondary school. Therefore the present study seeks to describe those 'active ingredients' or mechanisms and to consider their causal potential in any observed therapeutic outcomes. A methodological approach, Realistic Evaluation, will be employed that moves beyond the positivist/constructivist dichotomy of research designs, and while retaining a robust and scientific approach gives due regard to the social context of the intervention as a potential limiting or facilitating influence on the outcomes (Pawson and Tilley, 1997).

It is anticipated that a view can be arrived at on the efficacy of applying CBT, in the real world context of a school, to support an adolescent diagnosed with Asperger syndrome. The application of a Realistic Evaluation framework represents a divergence from the existing research studies and will allow the outcome to be considered in terms of the school context. Therefore rather than diminishing the influence of the environment and context on the outcomes of therapy it seeks to explain the impact of the educational setting. The research

should offer new insights for both schools and educational psychologists working collaboratively to support and include children with AS in mainstream educational settings.

4.8.1 Research questions

- What are the characteristics of a school based CBT intervention for an AS pupil?
- Can the emerging use of Realistic Evaluation methodology in educational research be applied to a CBT intervention delivered in a school setting to consider the impact of a specific school setting on the outcomes of the CBT programme?

4.9 Chapter summary

The lack of consideration of how and why the CBT works in specific educational contexts to support pupils raises the possibility of missing the potential facilitating (or limiting) factors inherent in school contexts and their influence on observed outcomes. When interventions are applied in particular school settings we should consider the school as a complex social setting which may influence our work in both our assessments and interventions (Code of Practice, DES, 2001). I have argued that EPs are well placed to do therapeutic work in school and that they have the skills and training to evaluate interventions contextually. The Realistic Evaluation approach to a CBT intervention in school is a novel research approach to the evaluation of a CBT intervention delivered in school to support an AS pupil, and offers the opportunity to explore the school as a potential mechanism in effecting changes for the pupil after therapy, thus closing the gaps in the current research on CBT delivered in mainstream school settings. The next chapter will give a more detailed account of the theoretical underpinnings of RE and outline the way in which the realist model will be employed in the present study.

CHAPTER 5

METHODOLOGY: REALISTIC EVALUATION

5.1 Introduction and context

The literature reviewed in Chapter 4 reported on the use of CBT to support AS adolescents and demonstrated that there is emerging evidence that it can be an effective intervention. It was also reported that there is a growing trend to locate therapeutic interventions such as CBT outside clinic settings and apply them in 'real world' settings such as schools. Where experimental and non-experimental approaches have been employed to consider the efficacy of such interventions these have failed to give an adequate account of *why* or *how* an outcome has been observed, thus missing a vital aspect of developing practitioner-based evidence for the delivery of therapy (Clegg, 2005).

The present study seeks to evaluate an intervention based on CBT procedures which is located in a school, the outcome of which would traditionally have a scientific evaluative framework (Kirk, 1982). Given the limitations of the experimental designs applied to studies in the 'real world' the current study seeks to employ a methodological framework that would enable it to have a degree of scientific rigour but also give due regard to the school setting as a potential mechanism in supporting observed outcomes. This chapter will outline and describe a methodological approach based on Pawson and Tilley's (1997) 'Realistic Evaluation' which will be employed to consider the CBT intervention delivered in school. What follows in this chapter is a consideration of realism and the Realistic Evaluation (RE) methodology and how this relates to the research aims and questions of the present study.

5.2 Critical realism

The dictionary definition of realism is:

The view ... that Universals ... have a real substantial existence, independently of being thought ... realism ... reaffirms the stand point of common sense.

(Dictionary of Philosophy, p. 299)

Realism is often associated with positivist theory and experimental design in the natural sciences and it is often referred to as 'naïve realism'. Naïve realists postulate that reality is directly observable and therefore accessible to those making the observations. Thus knowledge can be acquired directly by observation and measurement of this 'reality'. However, there are many different variants of realism, for example 'critical realists', in opposition to naïve realists, argue that 'real' structures are independent of thought but that we can only access them through the circular relationship between the perception of reality and our discourse about these perceptions (Madill et al., 2000). Positivist research is underpinned by a naïve realism which is suited to laboratory testing, observation and measurement; however research in school may require a more critical realist approach to research, which argues that the context of a study can influence our perception of reality.

5.2.1 The challenges of positivism

In laboratory and clinical settings it is important to control for the environmental setting of an intervention in order to establish the cause of the observed outcomes by ruling out the context. Yet in an applied psychology context practitioners need to be very sensitive to the context of an intervention and to its potential for supporting or hindering the planned intervention and any observed outcomes (Pawson and Tilley, 1997). Not to consider the

context in an applied context risks reducing what we can usefully know about an intervention in a given setting, as Boon and Gozna (2009) note in their discussion of experimental approaches in real world settings:

In effect adopting this approach [*positivist experiments*] in psychology means we get to know more and more about less and less until we know pretty well everything about nothing of psychological significance whatsoever.

(Boon and Gozna, 2009, p. 763)

Despite this critique the results of experimental studies are assumed by researchers to represent constructs and knowledge about the objects of the world based on measures taken in controlled situations. However this objectivity, this independence of the social world from its context is contested. It has been argued that epistemological (knowledge) claims are always made in the context of a culturally and collectively held view of the world (Foucault, 1973) including that of an EP practice context in school (Moore, 2005). Thus scientific and experimental studies are themselves historically and culturally situated, and as such, reflect the values and perspectives of the researcher/practitioner rather than any genuinely 'objective' knowledge, since:

... every ontology and epistemology is itself culturally specific, historically located and value-laden. 'Scientific method' is therefore not an abstract set of logical rules ...

(Usher, 1996, p. 14)

There are of course sound reasons for having highly controlled experiments for testing new and novel approaches, but as the evidence from such research is applied in different contexts there is a need to consider the role of different methodological strategies that can account for the applied context. Thus, although the experimental approach is valuable in

clinical and medical research, it does not, on its own, provide a comprehensive treatment, development and evaluation approach (Lord et al., 2005).

In addition to not considering the contexts of an intervention as a potential influence, a central difficulty with experimental studies is their focus only on the outcomes of research, which misses the opportunity to explore why it is that certain outcomes are observed (Pawson and Tilley, 1997); arguably a more useful research outcome from a practitioner's point of view. This point has also been made with explicit reference to research into intervention outcomes for autistic children (Salt et al., 2002). Researching groups of individuals and then applying statistical analysis to the group data raises the potential of missing any 'unintended' consequences of an intervention, such as the attention and focus of being a study participant. In research on AS there is often an assumed homogeneity of the challenges faced by those with AS, so potentially overlooking the individuality of the children and their circumstances. The present study rejects the positivist experimental approach because it is less useful for explaining how and why interventions work in school contexts. An alternative paradigm to positivist experimental research is that of 'interpretivism' which tends to be much more concerned with the individual experiences of the participants in a given setting, thus revealing a 'lived' perspective or 'rich picture'. However, interpretivist approaches to social research in complex social settings are not without their challenges.

5.2.2 The challenges of interpretivist research approaches

Interpretivism is a research paradigm that rejects the positivist notion that 'knowledge about the world can be established by empirical means, that is by direct observation and measurement of phenomena. Interpretivists, by contrast, focus more on the representations people hold of the world as they experience it, and argue that these experiences are

personal and unique and, as such, are not measurable in any objective sense. These representations of the world are important because they manifest themselves as behavioural orientations or actions and interactions in the social world. Interpretivism has been popular in social research, as it is built on the idea that it moves away from positivist notions of considering research as seeing human behaviour as passive in a social context; as Robson notes:

People unlike the objects of the natural world, are conscious, purposive actors who have ideas about their world and attach meaning to what is going on around them. In particular, their behaviour depends crucially on these ideas and meanings.

(Robson, 2003, p. 24)

Interpretivists argue that research is a subject-to-subject relationship in which people's behaviour can be seen in relation to personal motivations, intentions and individuality and these may change depending on the context. It is also recognised that this applies equally well to the motives of the researcher as it does to the researched, and requires that the researcher be reflexive about their role in research. Reflexivity is the development of a level of awareness by the researcher of their potential contribution to the construction of meaning in a given situation that they are researching. Thus interpretivists are interested in establishing a sense of the social world not as objective reality but as a subjective experience for those in that particular context. The focus is much more on the specific situational context relevant to those in that setting rather than a concern to establish 'law like' rules that are trans-situational. Thus interpretivist approaches, taken together, represent a rejection of the positivist paradigm (Robson, 2003) an approach favoured in the existing research in the area of CBT interventions for AS. A more interpretivist approach to investigating the efficacy of CBT used with adolescents diagnosed with AS would go some

way to meet the gaps identified in the current literature reviewed in Chapter 4 of this thesis. Specifically, in order to start to fill these gaps, more consideration should be given to the qualitative aspects of research into AS, in addition to considering the potential impact of specific educational settings on the outcomes of interventions (Jones et al., 2008). Such an approach would also move away from the experimental designs that have tended to focus exclusively on outcomes, and not on the processes of interventions in school settings (Humphrey and Parkinson, 2006; Humphrey and Lewis, 2008).

For more extreme interpretivists 'reality' does not technically exist as an external phenomenon that is observable and measurable; there exist only our personally constructed 'realities'. For extreme interpretivists there is no external reality at all; it is, for them, a matter of the discourse that exists between people about their versions of reality. As Bruner notes:

Language permits the construction and elaboration of that network of mutual expectations that is the matrix on which culture is constructed.

(Bruner, 1999. p. 164)

Thus an interpretivist approach, rather than seeking to be value free in research, actively attempts to tap into the situatedness or the embeddedness of the actor(s) and the social situation they are in, and this is often explored through qualitative research tools.

However, the reported strengths of the interpretivist approach, such as developing a rich picture of the social setting from the point of view of those working in it, are also cited as a central weakness. Interpretivist methodologies produce data that are local, specific, and not amenable to generalisation. This has been referred to as the 'problem of relativism' (Burr, 1996, p. 60) or the notion that every individual viewpoint, including those that are

diametrically opposite to the researcher's, is equally valid and has the profound epistemological consequence that no perspective is true or false. This is a particular difficulty if we want to say that CBT, for example, could be a useful approach, since there is an absence of any 'objective' criteria against which to make any definitive claims. Thus, while an interpretivist approach is helpful in establishing the perspective of those who work in the social setting, it lacks scientific rigour that can establish a causal relationship between the intervention and the outcome.

5.2.3 Moving beyond the positivist/interpretivist dichotomy: For realism

Methodological considerations and the choice of method in the research process are not simply technical decisions made by a researcher in some abstract or detached way, but represent deep-seated features of a researcher's ontological perspective. In an age of burgeoning research paradigms it is important to be clear about the philosophical underpinnings of the chosen research methodology and to be a reflexive researcher, but also to have regard for the implications for the interpretation of the research findings (Bettis and Gregson, 2001). In rejecting both positivist/experimental and interpretative methodological approaches in the present study, a research framework derived from Pawson and Tilley's (1997) Realistic Evaluation model will be employed. This section will outline the rationale for the realist approach to this research and thus frame the researcher's ontological and epistemological approach to research in the present study.

Critical realism, which underpins the RE model, differs from both positivism and interpretivism sitting, one could argue, somewhere between these two dichotomous views. In critical realism 'reality' is conceived by the human mind directly (by observation or

measurement), as in naïve realism, but there is an acceptance of a subsequent degree of interpretation and construction of this 'reality' by individuals. The realist approach is an attractive research option for the present study because it offers a third way between the positivist and interpretivist paradigms, while capitalising on both their strengths. It accepts that experimental approaches and methodologies are valid, but that the context of an intervention may influence the outcome by triggering mechanisms that support the observed results. Thus it allows for the use of the best method to answer the question posed, be it qualitative or quantitative. Critical realism, as espoused by Bhaskar (1978), is a philosophy of science in which ontology (what is there, or exists, to be studied) is given priority over epistemology (our knowledge of the world). That is an acknowledgment that there may be many more connections between events that make for an observed outcome (the ontological) than we can know about (the epistemological) in a given research investigation. Thus outlining the philosophical underpinnings of a research methodology gives due regard to the ontological and epistemological position of the researcher and accords with a reflexive need to give clarity of the philosophical perspective of the research paradigm that has been employed.

5.3 Philosophical underpinnings of critical realism

Philosophically, realists make a metaphysical assumption that any regularity in the world exists independently of people's thoughts about those regularities; they are not relative to the observer, but are 'real'. Reality is thus defined as being related to enduring and underlying structures and processes (Searle, 1995; Cromby and Nightingale, 1999; McEvoy and Richards, 2003), which includes both social interactions and individual viewpoints (Timmins and Miller, 2007). A key premise of a realistic research approach based on critical realism is that we cannot come to know reality fully through observation and measurement,

because our perception of reality is always framed by our existing constructs of it (Sayer, 2004; Jenner, 2005; Parker, 1999). Thus knowledge is always local, provincial and context-dependent and what we can access is the relationship between reality and discourse about reality (Madill et al., 2000), in which discourse shapes our perception reality (Parker, 1989; 1999). Realistic approaches therefore can be seen as a radical alternative paradigm to both positivism and interpretivism (Houston, 2001; Woliter, 2004; Thistleton, 2005, 2008). For realists, facts are not universal truths but are conceived of as theory laden and conceptually relative, but are still integral to a realist approach (Searle, 1995). Thus in social science and applied practice, such as EP, the notion from a realist perspective is that social structures (such as a hierarchy in school) do not exist independently of the activities (control of the curriculum or access to resources, the ethos of the school) of the individuals in those social settings.

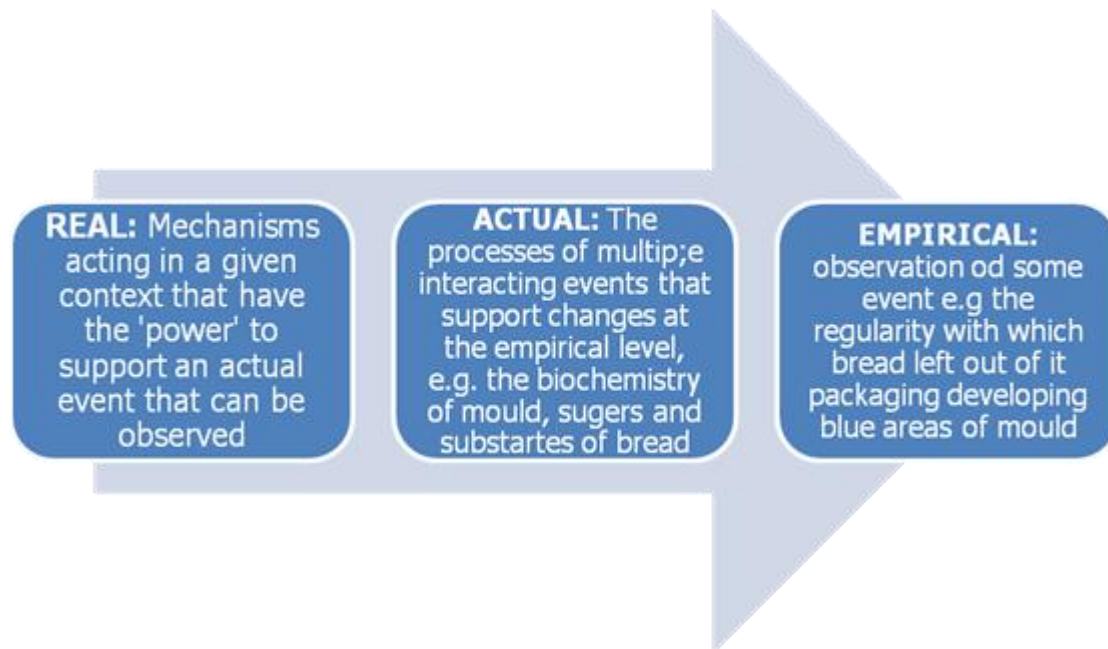
5.3.1 Ontology and epistemology

Ontology refers to 'what exists' or the essence of a thing that can be studied and therefore what can be 'known'. Those who favour a positivist tradition express the view that the world is objective and therefore knowledge about these objects can be derived from our perception, or measurement of them. For interpretivists the world only exists as we interpret it, so there is no objectivity or 'truth' but rather flux, transience and relativity. Consequently our knowledge of the world (epistemology) from a positivist position is that the world exists independently of our thoughts and behaviour, it is enduring, stable and 'universal'. However, for interpretivists the world only exists through our understanding of it and the mental constructions or representations that we personally make of it; what Parker (1989) refers to as the 'relativist – realist' split. However, Sayer (2000) argues that realism offers a way to bridge this philosophical divide, because it acknowledges that there are

different dimensions of knowledge. Realism, then, differs significantly from the interpretivist view that there is no objectivity, and from the positivist view that knowledge about the world can be constructed about the way we see it. For a realist, things may exist whether we see them or not; when we do see them, however, our construction of them makes a difference for us in terms of our personal meaning and any subsequent behaviour (Bhaskar, 1993; Jenner, 2005).

An example may serve to illustrate the ontological levels of an investigation and how they relate to observation and empirical data. If we were to leave a loaf of bread out of its packaging, over time we will observe that the bread begins to mould. We would 'know' that it is mouldering because we observe a change in the colour (blue) of the bread on parts of its surface. Magnification of the area of the 'blueness' on the bread will further refine our observations and may reveal microspores on the surface of the bread. These microspores represent a complex set of biochemical processes that involve many and varied interconnected and interdependent chemical reactions with the bread. The air around the bread and the bread itself both appear to have the potential to support mouldering and this support can be characterised as an unseen mechanism that underpins the observable formation of mould on the bread. Figure 3 below indicates the ontological stratification in this example, and that seen in realist research approaches; we can see that we may observe a positive result to the use of CBT but not observe the mechanism that supports the changes that occur.

Figure 3: An illustration of the relationships between the observed event, the event and the mechanisms underlying these



The empirical level in the figure 3 represents the observed 'results' obtained from the experiments to establish the efficacy of CBT interventions for AS; whilst there are a small number of studies they all show some positive effects, representing a regularity of outcome. However, these do not explain *why or how* the CBT is having the observed empirical effect; in order to consider this we need to consider the 'real' and the 'actual' ontological levels to explore what mechanisms are supporting the observed CBT outcomes; put another way, when a CBT study is introduced into a school what mechanisms, if any, are brought into play in that context that underpin and support the how and why of the observed empirical data.

An advantage of the realist approach for the present study is that it seeks to acknowledge the setting of the school when considering CBT intervention outcomes (Pawson and Tilley, 1997). Realists view the objects of study as being made up of structures that exist at different levels (see Figure 3 above) or as having a 'stratified ontology' (Jenner, 2005).

Realist researchers thus attempt to isolate and or observe the mechanisms that have the 'power' to support an observed outcome in an investigation. These mechanisms can be hypothesised from our existing knowledge (the existing literature) and from direct work in a research setting such as the use of interview data. Thus a realist account of a CBT intervention looks at the 'actual' and 'real' influences in a setting that support the empirically observed outcomes and so gives a deeper understanding of how the outcomes are achieved in a given school context. The present study is a novel application of Realistic Evaluation and addresses the identified gaps in the literature for delivering CBT in schools to support AS. Thus there will be a focus on processes as well as outcomes in the present study, as well as a consideration of the educational setting in considering the efficacy of the CBT delivered in school. By way of summary, and to highlight the differences between positivism, interpretivism and realism, table 1 highlights the salient features in regard to key research decisions.

Table 1: Research paradigms and the conception of social reality

Dimensions of comparison	Positivism	Realism	Interpretivism
<i>Ontology and epistemology</i>	The world exists and is knowable as it is. This conflates ontology and epistemology and plays down questions of epistemology.	Reality exists independently of the observer. Because our understanding of the world might change it does not mean that the world actually changes. Ontologically the world is stratified and we can know things at different levels.	There is no objective reality, since reality can be constructed through a conceptual system such as language. This conflates ontology and epistemology and plays down ontological questions.
<i>Role of social scientist</i>	Discovery of universal laws of behaviour and social interaction.	Proposing theories to explain the regularities in the real world and testing these theories by rational criteria.	Discovering how different people interpret the world in which they live.
<i>Research</i>	Experimental or quasi-experimental approaches aimed at validation of theory.	Explanation is concerned with how mechanisms produce outcomes in given circumstances.	The search for meaningful relationships and the discovery of their consequences for action.
<i>Human behaviour</i>	The social scientist is an observer of social reality. People are seen as objects, subjects and sources of data.	Observable human behaviour is characterised by underlying intention and choice. Understanding this is part of the research process.	The importance of viewing the meaning of experience and behaviour in its full complexity is stressed.
<i>Research methods</i>	Quantitative methods.	Mixed methods. The researcher chooses the best method to fit the investigation.	Qualitative methods.

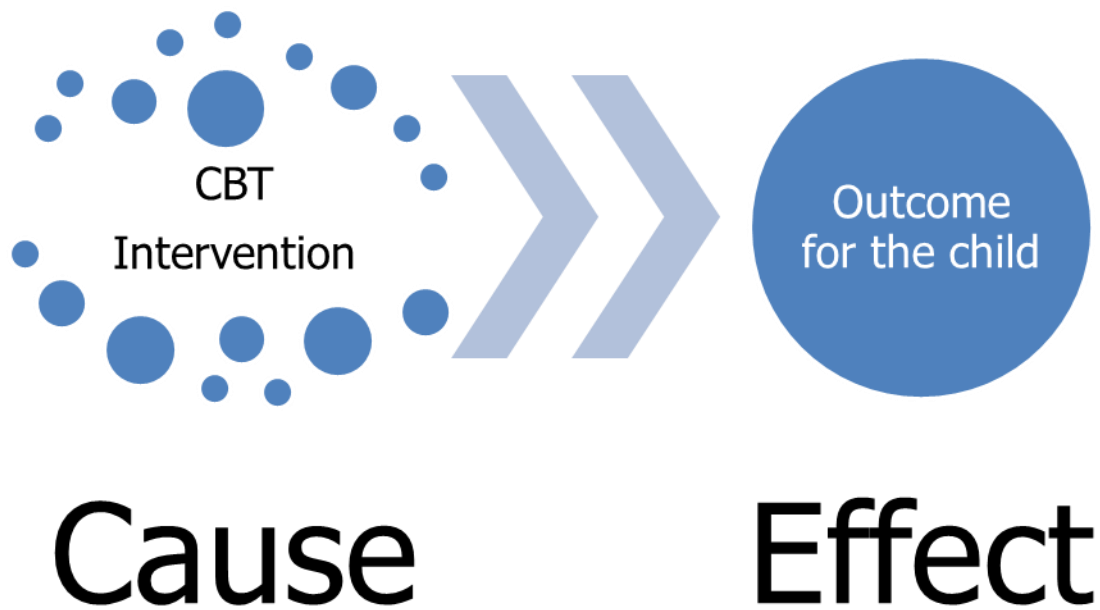
(From Thistleton, 2008 p. 49)

The present study is framed then in a realist methodology in which the aim is not to generate universal laws but to understand an intervention in the complexity of a social setting (Jenner, 2005; Parker, 1998). The focus of the present study is to have a deeper and richer understanding of why and how the CBT intervention works in a particular school with a particular pupil and to what degree the school as a context for the intervention at the 'real' and 'actual' levels underpins the observed outcomes of therapy for the pupil. This enables a discussion of what causal factors are supporting any changes for the pupil, and informs future interventions in schools.

5.3.2 A note on causation ('retroduction')

A key feature of experimental positivist approaches to research is that they claim to be able to demonstrate a causal relationship between the CBT intervention and the observed therapeutic outcome. The logic of causal explanation is characteristic of inductive reasoning, in which extrapolation is made from a pattern of observations of an event in which outcomes are similar to generalisations about that intervention in future situations, in which the pattern is assumed to continue. Any patterns in the observed outcomes thought to be causally linked to the intervention then form the basis for making a 'universal law', like predictive statements about efficacy at different times and locations in the future.

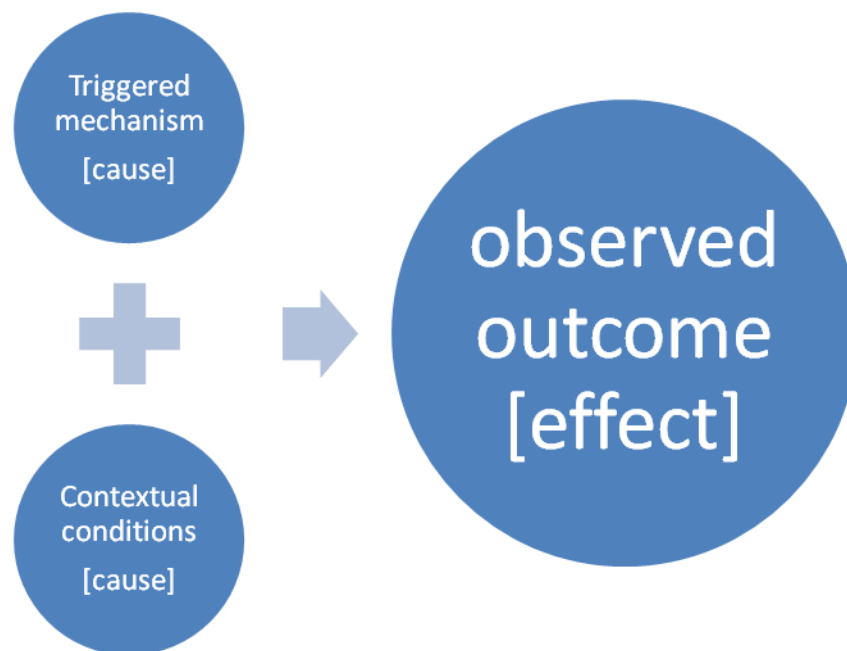
Figure 4: A representation of positivist links between cause and effect



While the present study chooses to reject positivism and inductive reasoning, the usefulness of experimental studies as a valuable way of collecting meaningful data is not contested. This research focuses on the mechanisms that underpin the observed outcomes of a study, that enable statements to be made about the 'actual' and 'real' mechanisms operating to support outcomes. The mechanisms identified have an important role in establishing causation in a realist study. Realist researchers do not subscribe to a one-to-one correspondence between cause and effect, arguing for a more complex explanation of cause, founded on 'causal powers' in which explanations are dependent upon identifying causal mechanisms rather than simply gathering outcome data on regularities (Sayer, 2000). One reason for rejecting positivism was that it is better suited to 'closed' systems, in which all variables are tightly controlled and accounted for. Interventions using CBT to support a pupil in school, by contrast, represent an application of therapy in a complex social situation which could be considered an 'open system', in which causation is far more difficult to establish.

Critical realism recognises the role of experiments in demonstrating constant conjunctions of events but seeks to move beyond this to consider the cause of the outcomes in terms of underlying structures. A model for realist causation or 'retroduction' can be seen in Figure 5 below.

Figure 5: A representation of a realist explanation of causation



Critical realists apply retroduction, which can be considered as a 'transcendental argument' in that it moves beyond empirical observation of outcomes (Danemark et al., 2002). 'Transcendental' arguments seek to describe the 'actual' and the 'real', or what must be present to support an observed phenomenon; as Bhaskar notes:

When a structure of reality has been adequately described the next step consists in the discovery of the mechanism responsible for behaviour at that level. The key move in this is the postulation of hypothetical entities and mechanisms when reality can then be ascertained.

(Bhaskar, 1998, p. 66)

Thus we start the research process with a hypothesis, expressed as a configuration of the context into which the intervention is delivered and mechanism(s) triggered in the setting and the observed outcome, and work backwards ('retro') from empirical observation to test the theory that outcomes are linked with contexts and mechanism(s). Retroduction moves beyond the level of empirical observation to hypothesising the underlying structures or mechanisms that might account for empirical data. Therefore realism offers a way to account for the social complexity of a school and the individual variables of the child as a potential causal mechanism(s) underlying observed outcomes. Thus a range of research tools will reflect the need to capture the richness and complexity of the mechanism(s) operating in school during the delivery of therapy that can be triangulated for reliability and to actualize the retroduction process.

5.3.3 Triangulation: Applied retroduction

Triangulation as a concept has its origins in cartography in which the view of a geological feature can be considered from different perspectives, or angles, which can then be 'overlapped' or 'triangulated' to form a composite view. This general conceptual approach has been usefully employed in social science research (Bryman, 1992; Lincoln and Guba, 2000) producing the concept that social phenomena can be viewed from different vantage points, changing our conceptual map and therefore our understanding of the social situation. Triangulation in social science research can have an important role in the establishment of the internal validity of the research methods employed. However, in addition triangulation allows for the comparison of different methods to test theory from different perspectives, and so test for mechanisms; it is therefore a useful tool for critical realists (Sayer, 1992).

There are different types of triangulation (Thermond, 2001) which will be discussed in more detail in section 6.6 in Chapter 6 below. This subsection focuses specifically on methodological triangulation and its centrality to the application of a critical realist research.

Methodological triangulation, or 'mixed methods', involves using at least two different data collection methods in the research process (Lincoln and Guba, 1985). The present study will employ both qualitative and quantitative data collection strategies. It is argued that methodological triangulation is a desirable approach in the social sciences as it reduces the threat to validity (Lincoln and Guba, 2000). However, triangulation does not go uncontested: positivist researchers tend to reject triangulation on the grounds that methods, for them, need to conform to the paradigmatic need for objectivity. Similarly, triangulation can be rejected by interpretivists because of the philosophical commitment that social phenomena cannot be measured or controlled. However, for critical realists the use of triangulation is central to the process of retrodution and accommodating a stratified ontological position in explaining outcomes in research (Danemark et al., 2002).

Having a commitment to any one particular type of methodology means that the researcher is more likely to commit what Bhaskar referred to as the 'epistemic fallacy' (Bhaskar, 1978, p. 16). This is the process of conflating the subject and object, or prioritising our knowledge of events over the ontology of an event. For example, when frying an egg, the white of the egg changes from translucent to white in the pan. This change of colour and consistency of the egg white will happen at a specific time and while I am wearing certain clothes, say a Pink Floyd tee-shirt. Of these events that occur simultaneously, therefore, some are related (the molecular and atomic changes to the egg) while others are not (the time of day and the attire of the cook). This demonstrates that there can be a connection between a mechanism

and an event (the egg whitening) that is independent of our knowledge of it. Thus seeking (research) connections in terms of our knowledge puts knowledge before ontology: the 'epistemic fallacy'.

In this study qualitative methods will be used to elicit the views of the stakeholders in the school and to present these as an expression of the context of the intervention. Some quantitative data collection will also be employed in terms of pre and post CBT intervention measures. The data from the qualitative and quantitative methods will be triangulated, and one would predict a degree of concordance in the qualitative and quantitative results from the present study. If a degree of concordance is observed it would not only provide a measure of internal validity, but also enable the researcher to trace backwards from the observed results to explore them in terms of contexts and mechanisms (Pawson and Tilley, 1997). Thus the purpose of triangulating in the present study is to support the process of retrodution in which we move from a description of an event to discussing the likely causes in terms of underlying mechanisms (Bhaskar, 1994). The challenge for the researcher, then, is to go from philosophical principles of realism to an applied methodology in a given context. It is argued that this is best achieved through the application of a research model for realism based on the work of Pawson and Tilley (1997), who articulated a Realist Evaluation paradigm to be used in a social setting to investigate policy and programme developments.

5.4 From philosophy to practice: A realistic study

A rationale has therefore been established for a realist approach which offers a rigorous scientific methodological paradigm that will also account for the role of the context of a school based CBT intervention. The approach developed for evaluation research by Pawson

and Tilley (1997) for conducting this RE will be drawn upon; below is an outline of Pawson and Tilley's (1997) model and how it relates to the present study, coupled with a position statement on why schools are complex social settings and finally how a specific realist evaluation will be developed for the present study.

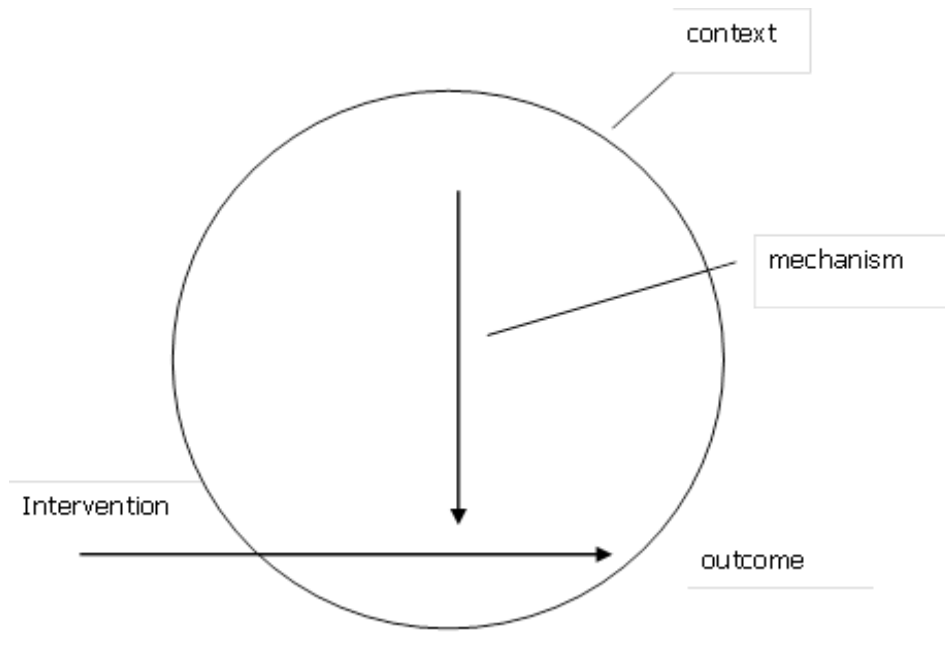
5.4.1 A model for realist research: Pawson and Tilley's 'Realistic Evaluation'

The subsections above outlined a rationale for realism and gave a detailed account of the philosophical underpinning of realist research. 'Evaluation' is a broad attempt to investigate or assess the value or worth of something; Robson (2003) argues that in fact most science is an evaluation of some sort.

The Realistic Evaluation (RE) model proposed by Pawson and Tilley (1997) is developed out of a research cycle which follows the same basic approach as that adopted in the natural sciences. The original cycle consists of a period of theory development, followed by hypothesis generation, observation, and empirical generalization (Wallace 1971: cited in Pawson and Tilley, 1997). However, in the RE account of this cycle the theory development stage conceives theory as a context, mechanism and outcome (CMO) configuration. Thus the conception of the theory at the outset of research is framed in terms of the contextual setting, and proposed mechanisms are triggered by the intervention and the observed empirical outcomes. A model for developing realistic evaluations is provided by Pawson and Tilley (1997), which has recently been applied in educational research (Timmins and Miller, 2007; Thistleton, 2005, 2008; Woliter, 2004). The model proposes that interventions are designed by practitioners and are then applied in an existing social system, which is summarised in Figure 6 . Which shows that when we are considering the outcome(s) of an

intervention in terms of being able to explain them, we must have due regard to the context or setting into which the intervention is to be introduced. That is to consider the possible mechanisms that the intervention may trigger in any given context. For example, if an intervention to raise maths attainment is introduced to a mathematics department in a school then any outcome(s) of this intervention, in terms of maths attainment, should consider what (if any) mechanisms may have been triggered by the interventions being employed in that particular mathematics department. The contextual features of the mathematics department then provide a setting in which mechanisms are potentially triggered, for example a change in teacher attitudes or ethos in the department. Thus the intervention triggers mechanisms in a given context from which we can observe an outcome, and this outcome can be explained causally in terms of the mechanisms triggered by the intervention in the given setting.

Figure 6. A representation of how an intervention located in a context may activate mechanism(s) that in turn influence the outcome of the planned intervention



(After Pawson and Tilley, 1997, p. 58)

5.4.1.1 The context: Defining the school as a complex social organisation

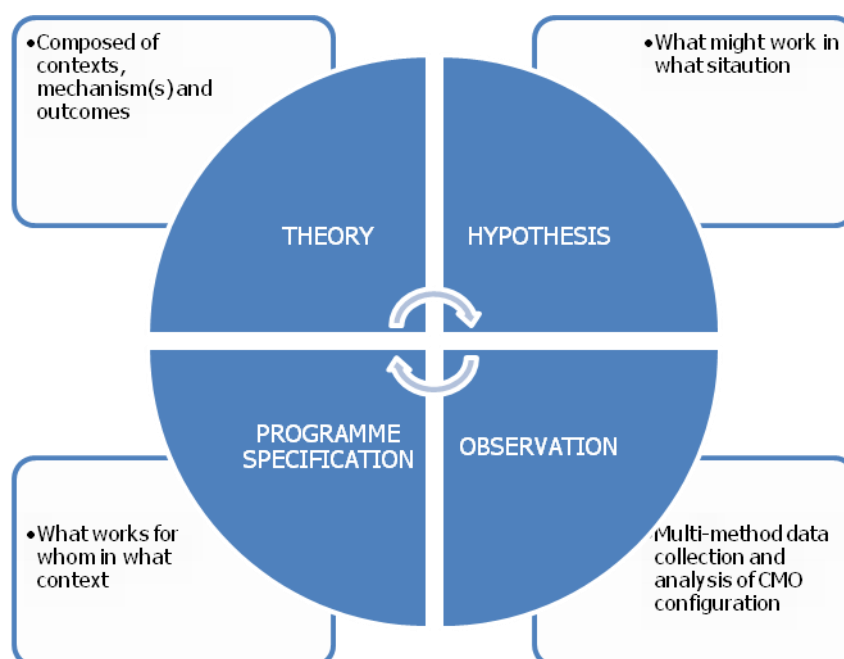
The realist position, then, is that when an event takes place (such as a therapeutic intervention in school), mechanism(s) are triggered within that context which influence observable social behaviour (Keat and Urry, 1982). The social structure of the school thus imposes a potential constraint or limitation on what may happen during the course of an intervention. Research suggests that CBT is more effective when parents or significant others in the child's life are involved in the therapeutic process (Stallard, 2005) and thus there may be mechanisms in the school that influence the course and nature of the therapy. In the present study the school will be considered to be a social organisation (Jenner, 2005) that may influence CBT outcomes.

It is this awareness of the need to account for the environmental and contextual setting that makes RE an attractive option for the present study, as it is founded on sound scientific principles (Bhaskar, 1978). In addition it also addresses the gaps identified in the existing literature that indicates that when CBT is applied in school, the school setting is often controlled for or directly manipulated. Indeed Bandura (1997) notes that behaviour is often determined by a reciprocal interaction between cognitive, behavioural and environmental factors, which is a dynamic relationship. Thus apparently individual behaviour could be defined as an interaction between the person and their environment (Lewin, 1936). For this reason it is important to consider not just the therapy but also the environment in which the therapy is conducted; specifically, in an educational context, how much progress a school has made toward becoming an inclusive setting and what experience they have of including children with AS. Children develop in a range of complex systems: the family, peer group, the local community and school, to name but a few. Recent research has suggested that these systems have a potential impact on the efficacy of CBT interventions (Cole et al., 2009). EPs as part of their work in school are often in the position of considering school systems and asking what is it in the school situation that is maintaining a given behaviour (Miller, 2003; Gillham, 1978). EPs are also best placed to bring this 'system knowledge' of individual schools to the planning, implementation and evaluation of CBT interventions in school (Rait et al., 2010).

5.4.2 The order of things: A research cycle

In their account of a research cycle Pawson and Tilley (1997) note that they do not deviate in their approach from what would be considered a conventional approach to research. However they define 'theory' operationally as being composed of an outcome, a mechanism and a context that are linked together at the outset of research, and this cycle is shown in Figure 7 .

Figure 7: A representation of the Realistic Evaluation research cycle



(After Pawson and Tilley, 1997, p. 85)

Pawson and Tilley (1997) suggest a process of theory development at a relatively abstract level, from which testable hypotheses are generated. It is at this point that realism

distinguishes itself from traditional research in proposing that context is important in determining outcomes, which is a central rationale for the choice of this methodology in the present study. Having established a hypothesis Pawson and Tilley (1997) suggest that this can be tested empirically and conclusions can be drawn as to what worked for whom in that particular social context. They suggest that several revolutions of the research cycle may enable a refined conception of the object of study to be made. The current study will follow the research cycle shown above, while below is an outline of the researcher's thinking at each stage in the cycle. However it is important to note that in the present study this cycle is applied to a case study, rather than a social programme or policy implementation.

5.4.2.1 Developing a theory

Existing research questions on the efficacy of CBT for AS adolescents focus on the question 'does it work?' In contrast to this position, RE asks the question 'how does it work?' and so redirects the researcher to consider what the 'active ingredient' of the CBT intervention in school might be, acknowledging that this may involve aspects of the school setting as well as the CBT programme. The process starts by articulating what we consider will be an outcome of the intervention and then linking this to what mechanisms may be operating with observed behaviour in the social setting (Williams, 2003; Potter and Lopez, 2003). Thus we can develop our theories further by considering them in terms of the 'contexts', 'mechanism(s)' and 'outcomes' which can all be empirically tested. Pawson and Tilley (1997) suggest that theory be defined as a context, mechanism, and an outcome (CMO) configuration.

5.4.2.1.1 Context (C)

In broad terms a context is a set of prior values, norms, or pattern of relationships, which may limit (or facilitate) a proposed intervention (Pawson and Tilley, 1997). The context, therefore, is not a fixed variable that can be measured but a dynamic interaction between people and their environment. Given this, there could be an exhaustive list of potential interactions between the context and any triggered mechanisms; Table 2 below therefore listed the contexts that according to the literature, are relevant to the present study.

The context of the current study is a large urban mainstream secondary school; a complex social organisation (see 5.4.1.1 above) into which the intervention will be introduced. A premise of Realistic Evaluation (RE) is that all human behaviour takes place in a setting or context, and those social interactions are always conducted in an existing social network. It is also the case that contexts can be seen as ontologically stratified or viewed at different levels, for example from the policy level to the classroom practice and teacher culture.

5.4.2.1.2 Mechanisms (M)

In the present study a mechanism is defined as a resource that is brought about or triggered in a given context and that supports or underpins the observed outcome. It should be made clear that a mechanism is not the same as a 'variable' in an experiment, to be manipulated or measured. Indeed mechanisms may be unobservable, for example, in the biological processes that underpin the appearance of mould on bread, we see the blue mould but not the process of becoming mouldy; however mouldering can still be deduced by observing its effects:

This proposition - *causal outcomes follow from mechanisms acting in contexts - is the axiomatic base ...* [original emphasis]

(Pawson and Tilley, 1997, p. 58)

Mechanisms can be difficult to isolate in practice (Woliter, 2004) and they may overlap with features of the setting or context. The present study is guided in its choice of mechanism identification by Sayer (2000) who advises using the following questions for eliciting possible mechanisms:

1. What does the practice presuppose?
2. What is it about the object that enables it to do the thing it does?

For realist researchers outcomes are defined not simply as the observed outcome of a study but as a complex set of interactions between mechanisms and a given context (Pawson and Tilley, 1997). In the present study the outcomes will be recorded in a conventional way as differences between pre and post CBT measures. These outcomes will then be explored in terms of the underpinning mechanisms and contexts through triangulation of data. From this an analysis of links between CMOs can be carried out for the pupil in the given setting with the CBT programme that has been devised for him. The present study has also been guided by Pawson and Tilley (1997) who suggest that mechanisms can be elicited by interviewing stakeholders in the setting, who can contextualise from their working knowledge of the setting.

5.4.2.1.3 Outcomes (O)

The table below will list the context(s), mechanism(s) and outcome(s) that will be tested for in the present study. The list is not meant to be exhaustive, but represents the key features and different levels identified from realist interviews and from the literature. Taken together,

theories can be expressed as configurations of CMOs that the form the basis of testable statements, as shown in Table 2 below.

Table 2: The CMO configurations at the level of the whole school, potentially to be tested by observation

Context	Mechanism	Outcome
The school has an inclusion policy that includes reference to ASD, AS and the challenges they may face in school.	<p>The school has a well articulated policy on inclusion that pays due regard to ASD pupils.</p> <p>School staff are confident at including and supporting pupils on the autism spectrum.</p> <p>School staff report being well supported in their efforts to include ASD pupils by school.</p>	School staff work collaboratively with their EP to support a CBT intervention in school for an AS pupil.
School staff consider their school environment and spaces within school to be an important support for inclusion and for interventions.	<p>A room and resources are available for the therapist to use in school, to administer the CBT sessions.</p> <p>The school perceives it has a good working relationship with their EP as an essential aspect of support in school.</p>	School systems or organisational features in the setting support the collaborative working of the EP and the school to support a pupil with AS.
Teachers receive the idea of therapy being planned and delivered by their EP in school positively.	<p>Individual teachers work collaboratively to support the CBT therapy in school.</p> <p>School staff perceive that the CBT intervention alone is an effective way to reducing challenging behaviours in school.</p> <p>Teachers participate and support delivery of specific behavioural experiments during class time between CBT sessions.</p>	Teachers participate and support delivery of specific behavioural experiments in class time, i.e. they are involved with the delivery of therapy and do not leave the EP to work independently. This enables B to practise techniques/strategies in and around school.

Context	Mechanism	Outcome
The school staff work with agencies external to the school with the aim of including children with ASD/AS in school.	Regular visits are made to the school by the EP and the planned CBT intervention is seen in the light of previous positive collaborative work in school.	School staff and EP work collaboratively to develop a programme of CBT.
Individual characteristics of the pupil such as their cognitive ability, and level of language development will support their engagement with the CBT programme delivered in school.	B's ability to engage with and participate in therapy.	Pupil acts on session information and changes are observed in salient behaviours and cognition.
The CBT programme is developed out of a formulation-based approach and is written specifically for B, based on his needs in school, not based on a generic manual for AS pupils.	Adaptations made to meet the CBT needs of AS adolescents will facilitate B's engagement with therapy sessions.	Pupil engages in therapeutic sessions and participates in activities in and between CBT sessions.
Locating CBT in school focuses on solutions to problems in the situations in which the problems are reported to occur.	<p>A reduced 'distance' between the learning of a skill and the application of it in a context may reduce the difficulties some AS pupils may experience in generalisation of learning.</p> <p>A CBT intervention in school has the potential to change the attitudes and behaviour of the school staff as they work with the pupil on the CBT intervention.</p>	Increased opportunities to apply information learned in CBT sessions and consequent observed changes in behaviour at school.

5.5 Observation and analysis

Collectively, the CMO configurations that make up a theory represent hypotheses that detail what might work for the pupil, in this school, at this time, with this CBT intervention. Data can be qualitative or quantitative; the rubric is to employ the best method to answer the questions raised and so is not dependent on rigid application of methodology but instead suggests triangulation of a multi-method, multiple research tool approach.

The present study will employ a design in which data from pre intervention measures will be compared to post CBT intervention measures. However the focus will not be on the analysis of these outcomes alone, but on a realist account of the influences of contexts and mechanisms. The case study will be described in more detail in the next chapter and RE provides a way to give a deeper analysis of the case study data.

5.6 Summary

In this chapter the argument has been made for the use of a Realist Evaluation model, based on that developed by Pawson and Tilley (1997), which can be used to evaluate the outcomes of a single participant case study of a CBT intervention used in school to support a pupil diagnosed with AS. This is based on a rejection of the positivist experimental designs that characterise the research in the field, and the limitations of an interpretative approach as an alternative experimental design. The philosophical underpinnings of the research approach have been articulated and linked to the literature review, to provide an account of the influence of the educational setting on therapeutic outcomes. In addition to considering what might work for an individual in a given setting, the analysis in the present study will draw on what the 'active ingredients' supporting the outcome of an intervention might be.

The next chapter will consider the research design and tools to be employed in achieving this aim.

CHAPTER 6

METHODOLOGY: METHODS AND DESIGN

6.1 Introduction and context

In Chapter 5 an alternative research methodology to both positivism and interpretivism was outlined, and a Realistic Evaluation approach was argued for, based on that outlined by Pawson and Tilley (1997). Having given this outline the challenge is to move from the philosophy and principles of realism and put them into practice. This chapter will be organised in terms of a justification for the use of a single participant case study design, followed by an overview of the sample and procedures of the current study. A chronology of the research activity will also be provided, as will an outline and justification of the research tools employed. This chapter will conclude with a reflection on the key ethical considerations of the present study.

6.1.1 Aims and research questions

Existing research under laboratory or experimental conditions suggests that CBT is an effective intervention approach to support AS adolescents, and it has been applied in school settings. The present study acknowledges that the educational setting could have an impact on the outcomes of a CBT programme delivered in school. Therefore it seeks to describe those 'active ingredients' or impacts of the setting and to consider any causal role they may have in any observed outcomes. This requires a robust and scientific approach but also a need to give due regard to the social context of the intervention as a potential limiting or facilitating influence on the CBT outcomes. This reference to the contextual setting was identified, in Chapter 4, as a gap in the current literature on research into employing CBT

with AS adolescents in school. The methodological approach to be employed in the present study to meet the aim of exploring this gap is a Realistic Evaluation, based on the approach developed by Pawson and Tilley (1997) and detailed in Chapter 5.

It is anticipated that a view can be expressed as to the efficacy of applying CBT in the real world context of a school to support an adolescent diagnosed with Asperger syndrome. The application of a RE framework represents a novel application of RE to a CBT case work in school to support a pupil with AS. Any observed outcomes of therapy can be traced back 'retroductively', via triangulation to the proposed mechanisms activated by the CBT intervention. An advantage of the RE approach is that it avoids the decontextualising features of positivist research, but also avoids the relativism of interpretivist approaches. This should enable discussion not only of the outcomes of the CBT but the characteristics of the programme and the school setting that limits or facilitates the outcomes.

The present study is an exploratory investigation using a novel methodological approach to consider the outcomes of a CBT intervention delivered in school to support a pupil with AS. A single participant case study will be employed to explore the CBT intervention in school.

6.1.2 Research questions

- What are the characteristics of a school based CBT intervention for an AS pupil?
- Can the emerging use of Realistic Evaluation methodology in educational research be applied to a CBT intervention delivered in a school setting to consider the impact of a specific school setting on the outcomes of the CBT programme?

6.2 A single participant case study design

Outcome measures for CBT interventions are traditionally judged as effective in terms of the comparison between the pre and post intervention measures, and in large sample studies statistical analysis can be applied to establish statistical significance. In the present study outcome measures as pre and post measures will be reported, but the focus will be on a conception of outcomes as composites of both mechanisms and contexts acting together to produce the observed outcome. Thus the approach is from a functional perspective rather than a normative one, placing value on the outcomes in terms of perceived utility for the school and child, rather than statistical probability of a group. Therefore this investigation has employed a single participant case study as a way to provide an in-depth examination of an educational psychology case in the real world setting of a school, rather than the breadth of a large sample study.

Experimental single-cases (or N-of-1) provide a scientific approach to the study of individuals, capable of testing hypotheses, analysing data and making scientific advances.

(Hadert and Quinn, 2008, p. 20)

Single participant case study designs are well established in clinical and experimental psychology and are used explicitly to explore the effects of interventions (Morley, 2007). However in the current study the case study has not been linked with a specific hypothesis, since the hypothetico-deductive model of positivist experimentation has been rejected in favour of a realist approach to research that builds theories out of CMO configurations; as Yin notes in relation to case studies:

... you would use the case study method because you *deliberately wanted to cover the contextual conditions* - believing that they might be highly pertinent to your phenomenon of study.

(Yin, 2003, p. 13 [emphasis added])

In a case study design the 'case' is the phenomenon under study which is always situated, in a physical and social setting (Robson, 2003; Gillham, 2000; Miles and Huberman, 1994). Yin (2003) outlines a number of different types of case study each with its own research rationale:

Table 3: A case study rationale grid

RATIONALE	DESCRIPTION
Critical case	Used to test a well established theory, to confirm, challenge, or extend a given theory.
Extreme or Unique case	When the case or conditions are very rare.
Representative or Typical case	Aims to capture the circumstances of the everyday or commonplace situation.
Revelatory case	The investigator has opportunity to analyse a previously inaccessible phenomenon.
Longitudinal case	Studying the same case at different points over time.

(After Yin, 2003)

In the present study, given the time constraints of both the length of time available for the research project and the researcher time available in school, a longitudinal study was ruled out. It is also clear from Yin's (2003) classification that the present study is not a revelatory case. With reference to the table above the current study is also not considered as a unique case. However, the present study can be considered a critical case in testing an established CBT approach, adapted to support adolescents diagnosed with AS. The single participant case design in the present study could also be considered to be representative of EP. The aim of the current study is to explore the idea that the contextual features of a school setting may affect the process and outcomes of the CBT intervention and to explore an RE

methodological approach to achieve this. Therefore the use of an N-of-1 design is consistent with attempts to extend and further explore our knowledge of the use of CBT to support an AS pupil in a mainstream school. Thus this represents a significant contribution to the emerging research on the efficacy of CBT to support adolescents with Asperger syndrome, when applied in school settings.

6.2.1 An experimental case study (AB): A critical realist perspective

The simplest form of experimental design is the single case experiment which is often referred to as an AB design or repeated measures design. When employing this type of research design a baseline measure is taken at a point prior to the intervention (A). The intervention is then introduced (B) and further observations are made in the post intervention phase; any changes in the participant(s) behaviour or other measured variables in the post intervention phase are deemed to be as a result of the intervention, all other variables being controlled for. This type of AB design is being employed in the present study as it can be useful in the early modelling of an intervention or novel approach and because it allows for the refinement of theory. Designs which aim to study large groups of individuals and consider the outcomes of an intervention as group averages can find it difficult to establish causal links between observed outcomes and the intervention. This is because group designs can overlook individual differences in responses to interventions that are not detected by statistical analysis. Such experimental group designs also make assumptions about the homogeneity of the AS group being investigated, which may not always be justified. The strength of a single participant case study (N-of-1) is that it enables the intervention programme to be explored from the point of view of the participant. Thus an advantage of the single participant case study design in the present study are that it is

typical of EP casework in school and a single case can be explored in more depth than a group design. It is also a cost and time effective strategy to employ in a real world setting. It also affords a more flexible approach to the design and delivery of a CBT programme to be used in the complex social setting of a school.

The Realistic Evaluation approach to the case study design supports the view that case studies seek to deliberately explore the contextual features of the phenomena under study (Yin, 2003). The advantage of the RE approach in the present study is that it enables outcomes to be defined as being contingent on the school context, and not on the CBT intervention alone.

6.2.2 Case study design

Having established a rationale for the use of the single participant case study, the design of the case study was considered with reference to the following table.

Table 4: A case study research design grid

	Single case	Multiple case
Holistic (Single unit of analysis)	A case study situated in a given context	Multiple cases situated in multiple contexts
Embedded (Multiple units of analysis)	A case study located in a single context which has more than one embedded unit of analysis.	Multiple cases in multiple contexts each of which contains more than one embedded unit of analysis.

(After Yin, 2003)

With regard to Table 4 , the present study will be employing a single participant case study design because the CBT investigation represents a critical test of existing theory and practice, but located in a school context, and a novel research methodology will be applied

to investigate the findings. It is also intended to collect data from a number of 'subunits' or perspectives (ontological levels) within the case study and represent what Yin (2003) referred to as an 'embedded design'. The data from different subunits will be employed as a way of triangulating the collected data, to attempt to represent different levels of the complex social structure of the school and to provide a way to realise retrodution which will reveal the mechanisms that have supported the observed outcome(s). The single participant case study design is justified therefore in terms of the present study's stated aims of being both exploratory and employing a novel methodological approach. It is also a conducive design for providing a deep and rich picture of a CBT intervention programme and the outcome for an AS pupil in school. Hence the present study seeks to explore and describe the potential impact of the educational setting in terms of the observed outcomes, and thus includes the context of the therapy rather than controlling for or manipulating it, as is the case in a clinical trial.

6.2.2.1 Sample and procedure

As a practising EP, the researcher notified secondary schools with which he worked that he was interested in conducting research on the use of CBT to support pupils with AS in mainstream school. Schools were also asked not to find a sample, but to alert the researcher at the appropriate psychology planning meeting that a particular pupil may benefit from such support. Schools were given the information verbally at their planning meetings (planning meetings for psychology referrals are held in every school three times a year) in the January 2009 round of planning meetings, with reminders at subsequent meetings. In September 2009, at the first planning meeting of the academic year, one of the schools raised a pupil for support and it was agreed to explore further the use of CBT to support this pupil.

The planning meetings between school staff and external support services are designed to have a consultative focus in which the school staff raise children they have concerns about with service representatives. Consultative in the context of the planning meetings refers to professionals coming together to solve 'problems' collectively. The framework for the inclusion planning meetings is designed to be collaborative, solution oriented and preventative (Wagner, 2000). B was a pupil raised at the schools planning meeting and following consultation it was agreed to support B with a period of CBT delivered in school. B is a male, year 8 pupil who has a medical diagnosis of Asperger syndrome. B is reported to be making progress academically in school, however difficulties with behaviour (for example, not staying in his seat in class, not following class protocols) and difficulties with social skills are reported as becoming a challenge for him, and are reported to restrict his access to the curriculum.

Other participants in the study were B's mother, who participated in a session of 'psycho-education' (the aim of which is to explain and clarify what CBT is and how it will be used) prior to the delivery of the CBT programme in school; she also completed rating scales and questionnaires. B's school tutor, who had an overview of B's progress in school, also completed rating scales on B's social skills and behaviour in school. The school's SENCO (Special Educational Needs Co-ordinator) also participated in completing questionnaires, a realistic interview and a post intervention questionnaire. A main grade class teacher (science) and a non-teaching support worker also completed questionnaires and participated in the realistic interview. In the present study teachers, the SENCO (as a member of the senior management team), and a member of the non-teaching staff were interviewed to reflect the division of labour/expertise in school. This enabled data to be collected from those

working in school who are potentially more sensitive to the mechanisms in an investigation than they are to the wider contextual variables.

6.2.3 Research tools

What follows is a summary of the research tool that will be employed in the present study to collect data.

6.2.3.1 ASD Audit tool

The ASD audit tool employed in the present study was initially developed and piloted by an autism inclusion team (including the researcher) in my Local Authority. The tool was employed for two purposes by the inclusion team firstly, to identify a schools 'inclusivity' for ASD pupils and secondly, to identify focus areas for development and training. The document was edited regularly by the autism team to take account of any local or national developments regarding the inclusion of ASD children in mainstream school settings.

The audit tool is presented as a series of comments and statements that relate to whole school practice in relation to the inclusion of ASD children. Respondents are required to give their views on the statements as they perceive them in relation to their school context under five headings, 'focusing', 'emerging', 'developing', 'establishing' and 'enhancing'. This degree of differentiation allows for an analysis of the areas of strength and weakness in the school with regard to including pupils with ASD. The response categories can also be assigned a numerical value from 1-5 to form a likert scale which facilitates the use, if needed, of statistical analysis. However a potential threat to reliability is that one can never be sure that the statements or the rating labels have been interpreted in the way that the researcher had intended. School staff who reported feedback during the piloting of the audit tool by the inclusion team, suggested that this interpretative challenge could be reduced by encouraging

the respondents to give specific examples from their own school context for clarification. It is anticipated that the resulting data from the audit will give information on the whole school approaches to the inclusion of pupils with autism spectrum and in this research setting provide a description of the context into which the CBT intervention is to be located. This supports the development of the RE research methodology by providing data about the context of the school for the CMO configurations that will be hypothesised.

6.2.3.2 ASD profile

The ASD profile was initially developed by an autism inclusion team at Coventry City Council and was later employed with adaptations by the autism inclusion team in my present Local authority. The profile is made up of 53 individual statements presented as a list, each of which can be rated in relation to a particular named pupil, on a scale from 0-3 (where 0 is 'no difficulty' and 3 is 'extreme difficulty'). Each of the statements are grouped under headings for 'social communication', 'social interaction', 'behaviour', 'learning and organisation', and 'sensory difficulties', and so relative strengths and weaknesses can be identified under these heading for a pupil. The profile was employed by the inclusion team in order to make comparisons about a pupil's progress in school between pre and post inclusion team involvement. In the present study the profile was employed to consider B's strengths and weaknesses in school and to identify areas of focus for the CBT intervention. In the current study it is planned to have more than one rating of B on the profile to establish a degree of triangulation. Thus any changes in the pre and post CBT ratings can be discussed in terms of changes observed by others in school of B's behaviour, and so form part of the outcome analysis of the hypothesised CMO configurations.

6.2.2.3 Personal construct Psychology (PCP): Butler Self Image Profile (Butler, 1994)

One way to demonstrate the potential impact of a CBT intervention is to observe and note any changes observed in the recipients behaviour, and in parallel to this any changes in their thinking (cognition). In the present study changes in B's cognition were analysed through discrepancies in pre and post administrations of the Butler self-image profile. The profile consists of a set of self-descriptions (20 in all) or 'constructs', for example 'confident', 'shy', kind, down the left hand side of the sheet, these items 1-20 are then considered by the pupil in terms of 'how they think they are now' and how they 'would like to be'. The Butler profile can be used to examine a pupil's self-concept as well as self-image, and a standardised form of the profile is available. However, in the present study the tool is not being employed to give a measure of self-image or self-concept, and the test has not been standardised on an AS population.

There has been an increasing interest in supporting children on the autism spectrum with approaches based on PCP, including an explanatory model of autism spectrum and therapy applications (Procter, 2001). In clinical assessment settings drawings have been used to elicit the personal constructs of children (Moran, 2005) and the approach has been further explored in educational settings with children on the autism spectrum (Williams and Henke, 2007). The advantage of the self-image profile in the present study is that it has a visual representation and there is no concealed scale onto which scores will be converted the data obtained is that of the pupils ratings and it is against these ratings that post CBT analysis will

be made. Personal construct theorists note that validity in personal construct work is superfluous to the usefulness and any increased understanding an approach might bring to work with a person (Bannester and Fransella, 1986). Thus if the profile is meaningful to B and some analysis can be made of the resulting pre and post CBT intervention ratings then it has served a purpose and is thus valid. In this sense the profile in the present study was not systematically piloted but had been used with pupils on the autism spectrum before and a judgement was to be made during the CBT sessions with B as to its utility in supporting the recording of cognitive changes for B.

6.2.3.3 Wechsler Intelligence scale for children (WISC-IV-UK)

The WISC-IV-UK is a well-established standardised test for measuring the cognitive processes of children and can be used to give a measure of 'intelligence' as defined by the test as an IQ (Intelligence Quotient). The WISC –IV-UK test is composed of a series of individual subsets who's scores can be grouped into composite data that reflect distinct areas of cognitive skills in children, for in language there is the 'verbal comprehension index', for reasoning skills there is 'perceptual reasoning', for memory there is 'working memory' and for visual processing there is 'processing speed'. Taken together these scores can be group to give a full scale IQ, however in the present study the primary purpose for using the WISC was to consider the cognitive profile of B and his suitability for a CBT programme (Stallard, 2005), thus the WISC assessment will be employed as part of the formulation process CBT. The test has the advantage that it has been startdised on a population of AS children against which B's scores can be compared.

6.2.3.4 Beck Youth Inventories (Second Edition) for children and adolescents (Beck et al., 2005)

The Beck youth inventory is a widely used standardised psychometric test used with children and is composed of five separate scales (self-concept, anxiety, depression, anger and disruptive behaviour). Each of the separate scales consists of self-report questionnaire, the scales can be employed separately or they can be used in combination to establish the degree to which a child or adolescent is or is not experiencing one measured categories. The questionnaires are designed for use with children in the age ranges 7-18, they are quick to use and provides a standardised sample with which to compare and individual child's rating. The test scales have statistically established reliability and validity, however they have not been standardised on an AS population. The test was employed in the present study as part of the formulation for the CBT programme as an assessment of b's possible anxiety given that the schools had a hypothesis that anxiety may underpin B's difficulties in school. This is consistent with the literature that suggests that the rates of anxiety in the AS population are higher than they are for the general population (Tantum, 1991; Klin et al, 2000). Thus although the test is not standardised for the AS population it would give an indication of whether anxiety management should form a part of the CBT intervention.

6.2.3.5 Resiliency scales for children and adolescents: A profile of strengths (Price-Emery, 2007)

The resiliency scales are a set of well established, standardised measures of resilience in children and are designed to measure the factors or qualities of an individual that are protective when they are facing challenges or difficulties. An advantage of the scale is that it acknowledges the child's environment or context as a limiting or facilitating force in the development of these resiliency factors. The assessment comprises a series of self-rating questions that that can be used to compare pupils against a standardised population to compare their relative degree of resiliency. Theoretically and empirically the scales are based on the notion that resilience is underpinned by social interaction and social communication

(Price-Emery, 2007) both of which are also hypothesised to central to some difficulties experienced in school by those with AS (Tantum, 2000). The test has not been standardised on an AS population, but scores will provide a means to explore resilience in relation to social interaction and social communication as expressed by B. Although a further threat to validity is that the test is an indirect measure of social interaction being based on perception and self-report rather than actually observed behaviour in context. The test also requires that responders have a degree of self-awareness of their own emotional states which are acknowledged to be a challenge to varying degree for children on the autism spectrum (Howlin, 2003a; Jordan and Powell, 1995).

6.2.3.6 Post CBT questionnaire: pupil

The post CBT questionnaire employed to record B's views was not designed specifically for the present study and is used as an integral part of my psychology work in school. The questions are highly structured, have a visual component and are presented in a way which pupils can indicate their views on a line between two poles from 'yes very well' to 'no not at all'. This introduces a degree of sensitivity and differentiation to the pupils responses that could be lost on a closed 'yes-no' questionnaire format. The questionnaire had the advantage of using a scaling procedure that was consistent with that to be employed in the CBT work and so would be familiar to B. The questionnaire had also been used on previous occasions in different settings and with pupils of different ages and intellectual abilities.

6.2.3.7 Post CBT questionnaire: parent(s)

The questionnaire was designed to record parental views about the CBT programme and was designed specifically for this purpose in the present study. Following initial dichotomous 'yes-no' questions designed to elicit a direct response which could then be explored in greater detail in the following questions. Subsequent questions were therefore 'open ended'

questions aimed at prompting honest, personal comment, and as such it is anticipated that they may contain information that could have been missed on closed questions. The use of open questions are deemed an appropriate way for smaller scale studies to question participants as they invite personally reflective answers from the respondent (Cohen et al, 2003). The questionnaire was not piloted prior to the research and a threat to validity and reliability remains that the wording of the questions, had not been refined by a piloting process, thus practicability of the questionnaire had not been established.

6.2.3.8 A realist Interview

In a RE evaluation methodology the in formulation of CMO configurations the researcher is attempting to identify potential mechanisms that may be triggered when an intervention is introduced into a particular context. One of the ways to explore what the mechanisms in a study could be is to employ a realistic interview technique. A realistic interview differs from 'traditional' interview because it has an explicitly critical realist conception of the process of interviewing participants. A critique of the traditional interview approaches is that they are or can be what is referred to as being 'data driven' (Pawson and Tilley, 1997: p.155). By this it is meant that the focus of a traditional interview is on what the respondent's report about their behaviour, which can be noted and recorded and thus becomes the 'data' from the interview.

Realist interviews by contrast have a more 'theory driven' (Pawson and Tilley, 1997) approach in which the interview is conducted so that the researcher presents their theory about the proposed intervention to the interviewees who can then comment on it. An advantage of the realistic interview is that it acknowledges that the interviewees have a degree of expertise about the context into which the intervention is to be introduced. The responses to the researcher's theory from the interviewees 'on the ground' perspective may

reveal potential mechanisms that could operate to influence the outcome of a planned intervention. Thus the interviewees themselves are not the subject interview; a realistic interview is seen as interplay between the researcher's theory and the interviewee's consideration of it. Out of this interplay may come mechanisms not anticipated by the researchers from their literature review and represent the potential dynamic of the intervention and the context for the point of view of those that make up the context.

To conduct the realistic interview a script was developed which could be read to the interviewees, and gave a description of the planned intervention and the theory held by the researcher. The interview script employed to collect the data was not piloted prior to its use in the present study, although the format of the interview script followed a procedure that had been used previously by the researcher. The script was followed by a number of open questions designed to stimulate discussion on behalf of the interviewees, the script and the questions being an aide memoir to facilitate discussion. Firstly a paragraph was written out summarising the planned CBT programme, which will be read to the interviewees, followed by any questions or clarification that may be needed. The aim of the interview is to facilitate discussion about the CBT programme from the point of view of those working in the setting. The respondent's comments to the questions about the script will be recorded and transcribed, the transcripts will thus provide data from which any potential mechanisms may be identified and which can be linked with the data on contexts to the CMO configurations.

6.3 Overview of research activity: Procedure

Activities following approval of research proposal at University

January 2009

An initial meeting was held with school staff giving details of the research project scope, duration and key dates in addition to making an initial request for a suitable participant.

Development of CBT programme materials based on available evidence as to what aspects of a CBT programme to adapt for use with an adolescent with AS.

Questionnaire content and structure considered but not finalised.

Assessment and Formulation tools considered and selected.

February/March 2009

Pilot of the ASD audit tool (x2 primary schools)
Modification and proofing of audit tool.

Rewrite ASD audit tool to take account of pilot comments.

April/May 2009

Trial of some of the CBT resources with pupils on the autism spectrum,
Realistic interview script written,

June/July 2009

Questionnaires, assessment tools and CBT materials finalised.

August 2009

Realistic interview script altered to include longer exposition from researcher,
Consent form for parent finalised,

Request from school for Educational Psychology support for a pupil with AS

September 2009

A request, made by school, for support with a pupil (B) diagnosed with AS experiencing difficulty in school.

Consent was sought from B's parent for the EP to be involved.

A discussion with B's mother to outline the planned intervention/research process of the study, in terms of its scope, aims and ethical considerations and to gain consent for the CBT intervention. Psycho-education (brief explanation of the process and psychological ideas underpinning a CBT intervention) was also discussed with B's mother.

An initial meeting was held in school with B by way of introduction to the EP.

September/October 2009

The ASD audit was conducted in school with the SENCO

A period of assessment and formulation

Assessment was conducted to determine the appropriateness of a CBT as an intervention to support B in school.

Formulation of the challenges for B in school:

ASD profile completed by B's school tutor (who has an overview of B's performance and behaviour across school)

ASD profile completed by B's mother

Suitability of B for CBT

WISC IV (UK)

Psycho-education with B in school

Beck Youth inventory

Discussion and Psycho-education

A CBT programme was altered to reflect the needs and abilities of B as derived from the assessment and formulation

Evidence suggested that B's verbal comprehension skills were generally low for his age on the WISC IV (UK) and a sampled AS normed group on this psychometric test. Therefore resources on emotional language were adapted to make language sheets that could be used as a quiz with visual reinforcement. Visual reinforcement and repetition were also used to counter potential difficulties with short term memory difficulties.

Table 5. The scores B obtained on the WISC IV (UK) and the composite scores for the AS population of the same test

Scale	Sum of Scaled scores	Composite score	Percentile rank
Verbal Comprehension	24	89 (106)	23
Perceptual reasoning	26	92 (102)	30
Working memory	15	86 (95)	18
Processing speed	20	100 (86)	50

B's scores are expressed as 'scaled scores' which have been converted from B's raw test scores and compared to the standardised population. Composite scores, those made up of aggregates of individual tests are also compared against a standardised population, they have a mean (average) of 100 and two-thirds of the population

would be expected to score in the range 85 to 115; the AS population scores are shown in brackets next to B's scores under the composite scores heading. The percentiles scores indicate the percentage of children of a similar age who would be expected to score at the same or a lower level than B, percentiles scores range from 1 to 99.

A realistic interview was conducted with school staff in school

November/December 2009

The realistic interview was planned for an after-school meeting, but on the day the school was closed due to snow; a second meeting was organised at lunch time at the school, to which there was a poor turnout. The realistic interviews were then conducted individually rather than as a group as planned.

Baseline (A) measures were conducted in school with the participant B

Beck Youth inventory (Beck et al, 2005)
Resiliency scales (Price-Embury, 2007)
Personal constructs (Butler and Green, 2007)
Scaling activities/emotional language quiz
ASD profile administered to B's mother and school tutor

SENCO completes the 'ASD Audit'

January 2010

CBT Programme delivered as outlined and implemented over a seven-week period in school.

Post intervention (B) measures taken in school

Beck Youth inventory (Beck et al, 2005)
Resiliency scales (Price-Embury, 2007)
Personal constructs (Butler and Green, 2007)
ASD profile (school tutor)
ASD profile (parent)

Post intervention interview with questionnaires issued to parent, pupil and school staff

February/March 2010

Results analysed in terms of changes between pre and post intervention and realist analysis of the potential impact of mechanisms in school that may have influenced the observed outcomes.

Feedback given to school and parent as to the outcomes of the therapy

The school which is the setting of the present study is a mainstream secondary school in the West Midlands of England. The school is described by OFSTED (2003) as having a pupil population drawn from a socioeconomically deprived catchment area and is characterised by lower than average academic achievement outcomes. The case study participant B, the pupil for whom the CBT programme was written, was identified at a termly planning meeting. Thus an opportunity sample was employed in the present study, the rationale being to have a consultation request from a school that represented a real or authentic piece of case work in that school. Opportunity samples are consistent with the use of multiple and single case study designs (Cohen et al., 2003). It should be clear that the case study does not represent any other case than the one presented, and there is no intention to generalise the results beyond those obtained here. The RE approach, with a retroductive analysis of data, does enable a discussion of what Lincoln and Guba (2000) have referred to as 'transferability', in which practitioners can take effective practice in one setting to what they deem to be a similar setting.

6.4 The CBT programme employed in the present study

In seeking to move away from a manual-based approach to the design and delivery of CBT, a formulation-based approach was employed in which sessions were planned to respond to the needs of the pupil more dynamically. The formulation-based approach was derived from Dummett's (2006) systemic CBT formulation model, which seeks to incorporate the systems around a child as key contextual factors in the child's life that should be considered in the formulation of therapeutic programmes and interventions.

6.4.1 CBT formulation

A 'formulation' in CBT refers to the process of gathering data on which an understanding can be reached as to what the 'problem' is for a client, and then sharing this with the client as the basis for potential problem-solving to reach a resolution. Thus the aim of this data gathering is to identify what may be maintaining the problematic behaviour and to understand any antecedents and consequences of this behaviour.

In the present study formulations will not be held in any absolute sense, in that following the formulation it will not be followed rigidly but instead will be deemed to change during the course of the therapeutic work. It is also suggested, when working with children, that modifications need to be made to formulations to assist children in their understanding of the CBT process (Stallard, 2005). In addition, careful identification of the key information is important, as is the need to keep the formulation simple. In this regard a recommendation of Stallard has been adopted, to use 'mini-formulations' (Stallard, 2002a, p.26) in which the challenges faced by the pupils are presented as an association between two or three elements (thoughts/feelings/behaviour) of the CBT cycle. The initial formulation suggested that the principal difficulties for B in school were behaviours in the classroom and social communication difficulties. An outline of the CBT programme is shown in table 6:

Table 6: A brief summary of the content and homework 'behaviour experiments' of the CBT programme written for B and delivered in school*

CBT Session	Content	Between session activities
<u>WEEK ONE</u> Assessment/psycho-education.	The link between thoughts, feelings and behaviour. Naming emotions and using emotional language.	Collecting emotions from visual sources such as magazines. To maintain a feelings diary of different events.
<u>WEEK TWO</u>	Discussion of scenarios in school	Diary of two events in

Affective education/rating scale for feelings (Psycho-education)	that caused difficulty. Using 'in session' visualisation and rating scales	school that have been difficult. Rate feelings and identify thoughts.
<u>WEEK THREE</u> Social language /social skills. Effective coping skills.	Share formulation. Discuss review Non Verbal Communication. Conversation skills. Role model conversation skills.	Observe soap opera and discuss conversation skills.
<u>WEEK FOUR</u> Automatic thoughts. Cognitive behavioural restructuring.	Thoughts feelings and behaviour. Socratic questioning. Specific situations in school. Social mapping, visualisation.	List pros and cons of how to improve behaviour in science lessons. Try Behaviour experiment.
<u>WEEK FIVE</u> Effective coping skills	Thoughts feelings and behaviour related to social map.	Behaviour experiment in science.
<u>WEEK SIX</u> Problem solving skills	Review of the social map and links with structured scheme to solve social problems	Use problem-solving scheme to analyse a situation in school.
<u>WEEK SEVEN</u> Overview application and the future	Review of session's emphasis on thoughts feelings and behaviour. Developing an action plan. Sharing successes celebrating progress. Closing activities.	Course summary

**NB. Although the activities and sessions were planned prior to the delivery of the CBT intervention programme, the above table is only a skeletal structure onto which changes could be made. In keeping with a formulated approach, a high degree of flexibility was written in to the CBT programme. The aim of the flexibility was to be responsive to the needs and potential challenges an AS pupil might face with CBT sessions rather than applying a rigid manual or protocol based programme. A more detailed outline of the programme can be seen in Appendix A.*

6.5 Data collection and analysis

Having established a rationale for a single participant case study and having outlined the CBT programme to be employed, it is necessary to consider the research tool that will be employed to assess the efficacy of the programme. In the table 7 the research questions are re-stated and linked these to specific research tools; a rationale is also given for their use in each case.

Table 7: showing the research tools employed in the present study, their rationale and analysis

Research question	Type of measurement	Research tool	Rationale for research tool	Method of analysis
1. What are the characteristics of a successful school based CBT intervention for an AS pupil?	Pre and post intervention	Self image profile (Butler, 1994 cited in Butler and green, 2007)	Used to consider changes in salient personal constructs revealing any cognitive changes between pre and post measures.	Comparison of pre and post measures by visual comparison of line graph.
		Beck Youth Inventories (second edition) for Children and Adolescents (Beck et al., 2005).	Formulation to check for anxiety and depression and to review any changes in these measures in the pre and post CBT intervention phase.	Comparison of pre and post measures when significant levels of depression or anxiety are present.
		Wechsler Intelligence Scale for Children (WISC-IV UK)	The WISC-IV UK is a psychometric test that provides a measure of intelligence in children and young people. The purpose of the test in this study is not to obtain an IQ score, which can be used as the basis of predictors to interventions (Lord et al., 2005; Attwood, 2007), but to consider a profile of skills and suitability for CBT and to inform the writing of the CBT programme.	The scores were compared against an AS sample and used to consider B's strengths and weakness in terms of processing information.

Research question	Type of measurement	Research tool	Rationale for research tool	Method of analysis
	Realistic Evaluation to triangulate different measures.	<p>Resiliency scales for children and adolescents: A profile of personal strengths (Price-Embury, 2007)</p> <p>ASD profile – a set of statements relating to ASD that can be rated so as to express the perceived level of difficulty for the child from the rater's perspective.</p> <p>Post Intervention Questionnaire: for parent(s).</p>	<p>Subsets of mastery and relatedness were employed to consider the sample case participant social interactions and communications as well as senses of mastery over events.</p> <p>ASD profile provided a rating of the pupil's behaviour and social skills in context from the perspective of those regularly observing B's behaviour in school.</p> <p>To explore how well the intervention had met their aims for their child.</p>	<p>There is no reported AS sample for this test so there is no norm referenced data. Comparison of pre and post measures by visual analysis of bar graphs.</p> <p>Considering the score for pre and post measures CBT compared on a line graph to show which behaviours had reduced in difficulty.</p> <p>A comparison was also made between the two different observers post measure ratings to compare for consistency of agreement in reduced behaviour difficulties. Which gives a measure of reliability and validity of the behaviour data that has been collected. Parental statements used to support or challenge other data sources in triangulation.</p>

Research question	Type of measurement	Research tool	Rationale for research tool	Method of analysis
		<p>A realistic interview.</p> <p>ASD audit tool.(Walsall autism inclusion team)</p> <p>Triangulation of different data sources.</p>	<p>Realistic interview was employed to present the researcher's theory to school staff so that they can comment on it. This enables 'mechanisms'.</p> <p>To collect data that would indicate the degree to which the school as a 'context' was addressing inclusion issues relating to pupils diagnosed with ASD, giving a picture of the ethos and culture of the school in relation to ASD.</p> <p>Triangulation of different data sources to operationalise 'retroduction' which can be employed to demonstrate the causal powers in the CMO configurations. This data can also be used to demonstrate reliability and validity of data.</p>	<p>Comments and responses to the theory presented to interviewees were used to generate potential mechanisms to be tested in CMO configurations of the RE analysis.</p> <p>Ratings were converted to a numerical scale and expressed as a percentage representing to what degree aspects of the audit were in place.</p> <p>Data from multiple research tools collated under the CMO configurations to test for the presence of mechanisms triggered in that context.</p>

Research question	Type of measurement	Research tool	Rationale for research tool	Method of analysis
2.Can the emerging use of Realistic Evaluation methodology in educational research be applied to a CBT intervention delivered in a school setting to consider the impact of a specific school setting on the outcomes of the CBT programme?	Realistic Evaluation in which potential outcomes are expressed as a CMO configuration so that outcomes can be seen as contingent on the school context and the mechanisms triggered in school by the CBT intervention.	Triangulation of multiple data sources to demonstrate evidence that a mechanism(s) was triggered in the school/therapeutic context that supports the observed outcomes. Researcher reflexivity.	To consider the appropriateness of the RE approach to explore causal links in a single participant case study design for CBT in school. To consider what mechanisms(s) are triggered by the CBT intervention delivered in school that might underpin the observed outcomes of CBT, including those as a result of being researched.	Triangulation of qualitative and quantitative data. Retroductive analysis of the outcomes to show that they were supported by mechanisms triggered in the context. Reflection on the experiences of using the approach. CMO configurations written out with the supporting evidence cited in relation to each statement.

6.6 Triangulation of data

Triangulation can be defined as the use of more than one data collection method in a given study (Cohen et al., 2003). The aim of triangulation is to provide information or data from different perspectives on the same phenomena. An RE designs allow for the use of mixed methods as a strategy for exploring the different ontological levels of a complex social setting (Pawson and Tilley, 1997). Denzin (2006) defines triangulation as the deployment and consideration of multiple sources to investigate phenomena, a process that enhances the rigour of the study. Triangulation can be classified into four different types (Robson, 2003), three of which are employed in the present study and are outlined below.

6.6.1 Observer triangulation

This refers to having more than one observer to report on the phenomena under study so that their observations can be compared and referenced in terms of any patterns between independent observations. A degree of concordance between different observers of the same phenomena reduces the threat to validity posed by observer bias. A related aspect in the current study is the schools staff's feedback on changes in behaviour, which is an indication of 'social validity' or customer feedback (Kazdin, 1977), that the intervention achieved the goal(s) the school and parents were expecting. Thus, participants' views of the outcome were as important as the measured outcomes. To reduce the threat to reliability and validity in the form of a biased positive response a comparison was made between the outcome data collected from B's school tutor with those from his mother, using the same research tool. It is anticipated that there will be a degree of concordance between observers that would suggest that any observed changes in B's behaviour are independent of the observers which suggest a degree of reliability and validity of the research tool.

6.6.2 Methodological triangulation

This approach involves the use of mixed methods, allowing for the use of qualitative and quantitative measures to be employed to answer the research questions. It was noted in Chapter 5 that such an approach is consistent with a realist methodological approach, in which importance is attached to using the best method to answer a question, rather than being driven by a methodological paradigm. In the present study quantitative data collected on the pre and post CBT were used to establish changes in salient behaviours and cognition, while qualitative data explored how the processes and context of CBT may have influenced the outcomes.

6.6.3 Data triangulation

This type of triangulation refers to the use of more than one data collection method to describe the same phenomena. Using more than one data collection method to explore the delivery of the CBT strengthens the validity of the present study by reducing the threat posed by only using one account of the behaviour in school, which could be biased.

From a realist perspective, all methods are considered to be fallible; the issue for a realist is therefore how valid an account can be given of a particular phenomenon when there is no guarantee of an account's certainty. In the present study this is addressed by the employment of methodological triangulation to explore the CBT intervention from different perspectives in school. Triangulation is important in the present study because the multiple data sets will be used to apply the realist concept of retrodiction, or tracing from the outcomes to establish the mechanisms that caused them. Triangulation also allows comparison of different result sets, establishing concurrent validity.

6.7 Reliability and validity

Both reliability and validity are important features of a research study as they represent how consistent and replicable the study is and to what degree the research tools employed have measured what they claim to have measured. The reliability of a research project is concerned with how consistent and replicable the studies and the findings are. Validity, on the other hand, refers to the extent to which the research tools employed in a study provide the data that they are intended to. Without being valid a study, by definition, has no value, and if the measures are not reliable then we cannot answer the research question(s). In the present study, with a realist perspective on the CBT intervention, the focus is on providing a valid account of a phenomenon and is less concerned with providing law-like certainty. In addition, Cohen et al. (2003) argue that in qualitative research the notion of validity should be seen as a matter of degree rather than as an absolute. The present study employs the term 'reliability' to refer to the exploration of as broad and as deep an understanding of the processes of CBT as possible, adapted for an AS and delivered in school. A stated premise of the current study is that the contextual features of a school setting may influence the course, nature and outcomes of a CBT programme.

With regard to validity we can make a distinction between the internal and external validity of a given study (Cohen et al., 2003). Internal validity refers to the explanation of a phenomenon being consistent with the data that is used to describe it. External validity is more to do with the degree to which the study outcomes and findings can be generalised to other situations. In the current study a threat to internal validity could be the changes in B's behaviour as reported on the ASD profile in the pre and post intervention phases, as it relies on observer reports rather than direct observation. This threat was reduced by comparing

the observations of more than one observer and recording the degree of concordance between them. It was also possible to compare a section of the profile, 'sensory difficulties' which, it was predicted, would not change in the pre and post measures. Both observers reported their observations independently of each other but used the same rating scale. The use of observers who have commissioned the intervention also seeks to increase the social validity of the study, in that it recognises the views of those who have initially raised the concerns and reflects what has been termed customer satisfaction (Kazdin, 1977). Another aspect of validity in the present study is the reflexivity of the researcher or the awareness of the ways in which the researcher's background attitude and approach influence the research process. In the current study the researcher entered the social system of the school both as researcher and as the school's existing EP, thus the attitude and approaches of the researcher and the perceptions of those in the school of the CBT intervention all form part of process and outcome of the intervention.

External validity refers to the degree to which a study may be generalised to a situation beyond the context in which the study is currently conducted. The present study considers the possibility that the school context may influence the outcomes of a CBT programme delivered in school. By employing an RE design it is proposed that any observed outcomes of the CBT intervention can be expressed as a configuration of the school context and any triggered mechanisms in that setting. The present study has a highly specific setting and context for the CBT intervention and this represents a threat to the potential generalisability of the findings. The notion of external validity is an important one, since a single participant case study design can be critiqued on the basis that it may not be representative and therefore have limited generalisability and, by implication utility. However, experienced practitioners are able to make explicit comparisons between the school settings in the area in

which they work, the nature of therapeutic interventions and different types of pupil. For example, EPs know that on their 'patch' (of schools) even if an intervention works in school A it may well not work in school B, but comparison would suggest it may work in school C. Therefore, rather than generalisation of findings, Lincoln and Guba's (2000) concept of transferability is used in the current study, in which research findings are always viewed as 'working hypotheses' rather than 'facts', arguing that we can aggregate data from similar settings. Thus a single participant case design can be the basis for designing interventions in different settings, and thus increases the potential utility of the findings of the current study for EPs and practitioners in school.

In the present study a potential threat to validity may have been introduced during the collection of data, with the use of interview methodology. This represents a potential threat to validity in that interviews are researcher led and also represent a social encounter between the researcher and the researched. Various social and cultural influences such as status, social class, gender differences and power relations that may therefore potentially bias the interviewee's responses to the questions and thus the reported outcomes of the interview. However in the present study a realistic interview technique was employed, that rejects the traditional approaches to interviewing which are underpinned by an assumption that:

... formal structured interview, the informal, open ended interview, the semi-structured interview the multi method approach to data collection are all *data-driven* strategies ... they are thus all constructed under the working assumption that *the subject and the subject matter of the interview are one and the same thing*.

(Pawson and Tilley, 1997, p. 155 emphasis in the original)

In a realist interview the subject matter of the interview is the theory of the researcher or what mechanisms might operate to bring about an outcome the interviewee can validate or

invalidate the theory presented to them. So the views of the stakeholder are captured as they express their perspective on the theory presented to them, in this case as to whether they feel the delivery of a CBT programme for the pupil would be successful in their school. A potential threat to validity, as respondents are reporting their views to the researcher, could be that they give answers they feel the researcher would like to hear. However, a reflexive view of the researcher's existing relationship with the school suggests that this threat would be much reduced. 'Reflexivity' in research means acknowledging that the researcher brings with them an identity, both professional and social, that can influence the course and nature of a study (Robson, 2003). The researcher's existing relationship with the school in the present study was more of an advantage than a threat to validity. This is because being familiar with, and to, school staff may have militated against what Lincoln and Guba (1985) refer to as 'reactivity'. Reactivity is the notion that the researcher's presence in the researched community influences the behaviour of those involved, so that their behaviour, as recorded by the researcher, could be argued to be untypical. However, given ongoing work with the school this is less likely to influence the reactivity of school staff because they are used to the researcher's presence in school and are used to expressing their opinion. Thus it can be argued that being the researcher and the EP is likely to reduce the potential for bias, since respondents may have felt more comfortable reporting their views, critical or otherwise, rather than saying what they thought was wanted.

Both the ASD profile and the ASD audit were piloted prior to the present case study, with the aim of refining any problematic aspects of the format in terms of language, number of questions and type of rating scale. There was a preference in the piloting phase for the ASD profile in an A4 format; it had initially been in an A3 format. On the ASD audit document respondents preferred a descriptive scale and more space to express their own interpretation

and evidence to expand the points raised. A potential threat to validity in a small case study is that the small number of respondents could represent a skewed sample. However, the present study was more concerned with recording what respondents could see in B's behaviour, and considering the degree to which this matched other respondents' views, than it was with statistically significant samples. In addition it aimed to provide an account of the process and contextual influences of the school setting and mechanisms that underpin the CBT intervention, rather than just considering the observed outcomes. The data obtained from the different research tools will be triangulated to provide different perspectives on the CBT process and outcomes. Triangulation of data also actualised the retrodution in the realist analysis of the present study and provides a degree of reliability and validity of the measures employed.

6.8 Ethical considerations

The consideration of the ethical implications of the current study have been guided by the British Psychological Society's *Code of Ethics and Conduct* (2006); it was anticipated that the several ethical issues would need to be addressed, and these are discussed in detail in this section.

6.8.1 Communicating the objectives of the study

Before the research began, meetings were held with the main stakeholder groups: the child, the parent(s) and school staff, to explain the aims and procedures not only of CBT but also of the investigation, to ensure that all those participating had a clear understanding of the objectives of the study.

6.8.2 Consent

Consent was sought from those involved as per the Local Authority protocol but in addition to this parents were contacted directly by the researcher. They were given further detailed information about the CBT programme and the aims of the research, and asked to give signed written consent. The researcher met with B in school to outline the investigation in terms of its aims and objectives, and following this B gave his consent. Despite B's diagnosis of Asperger syndrome, the researcher was satisfied that he had reliably established B's understanding of the research. Records were kept of the consent obtained, and when and how consent was obtained.

6.8.3 The right to withdraw

At the start of the investigation all parties concerned were informed of their right to withdraw from the study, at any time and without consequence. There were also reminders given of this right to withdraw, which would apply retrospectively.

6.8.4 Confidentiality

In the initial meetings all those concerned in the present study were informed of their right to confidentiality under the Data Protection Act 1989. They were assured that any information provided will be treated as confidential and will be made anonymous in the written communication of any information provided during the investigation. Any details of individuals, school or local authority that are reported will be made anonymous, in such a way that descriptions of the individual, organisation and local authority could not be identified. B was reminded that if a disclosure was made at any point during our sessions

that the researcher felt was serious, in terms of being illegal or harmful, that he would be obliged to notify another party of this.

6.8.5 Debriefing

All stakeholders were debriefed following the investigation via a consultation meeting in which the participants were provided with any information needed to complete their understanding of the nature of the research. In addition, as part of the evaluative nature of the investigation, the participants' views and experience of the research were sought via questionnaires.

6.9 Concluding comments

This chapter has provided a rationale for a single participant case design for the present research study and considered the threats to reliability and validity of such a design. In addition, an account and justification was given of the research tools to be employed. As well as a description of the CBT approach employed as well as considering issues of reliability and validity. The application of a RE of a CBT intervention in school to support a pupil diagnosed AS represents a novel way to consider the outcomes of CBT delivered in school settings. The next chapter deals with the presentation of the findings of the CBT intervention that has been discussed in this chapter.

CHAPTER 7

OUTCOMES AND FINDINGS

7.1 Introduction and context

In the present study the research aims are to provide a description of the characteristics of a CBT intervention written for an adolescent with AS and delivered in a mainstream school by an EP. The CBT programme was delivered by an EP, the researcher, over a seven week period, there being one 40 minute session per week completed in the morning just before morning registration. The previous chapter set out a rationale for the use of a single participant research design to be employed in this investigation along with the research tools used for collecting data. This chapter will present a summary of the results of the CBT intervention, expressed as the difference between the pre and post CBT intervention measures to show the impact of the CBT. Secondly, it will outline a RE analysis of the CBT outcomes presented as consecutive sets of CMO configurations, each presented with the corresponding supporting quantitative and/or qualitative evidence, which will be triangulated.

7.2 CBT outcomes

The formulation of the challenges faced by B in school were derived from assessment with B, his mother and school staff, who all suggested that 'behaviour in class', and 'social interaction' were the most significant areas of difficulty. B is a year 8 pupil attending a mainstream secondary school in the West Midlands of England; he lives in the catchment area of the school with his mother and stepfather. The school draws from a catchment described as being a lower socioeconomic group (Ofsted) and the school's academic performance is lower than the National average attainment. In consultation with the school SENCO it was reported that B was at School Action Plus (SAP) of the Special Educational

Needs Code of Practice (SENCoP), which means that B was in receipt of support in school that is additional to and different from the majority of his peers. It was reported that B had come to secondary school at SAP from his primary setting under the care of a speech and language therapist. In year six of his primary education following a period of assessment and evaluation by his paediatrician B was given a medical diagnosis of Asperger Syndrome, the diagnosis predates the current practice of multiagency assessment as outlined in the current NICE (2011) guidelines.

In secondary school the SENCO reported that B had made a good start and that he was achieving academically in line with what would be predicted from his baseline academic profile on entry from primary school. B's SAP support in secondary school consisted of attendance at a pragmatics group designed by the speech and language therapist but run in school by trained school staff. B had received this support initially in year 7 and was enrolled for further repeat sessions of the same course with a different cohort of pupils in year 8. It was reported that toward the end of year 7 that B was experiencing difficulties in school principally associated with his peer group in terms of making and keeping friendships. In addition to this B was reported to have been 'flagged up' on the schools monitoring system for increasing incidences of poor behaviour 'more challenging to teachers' and 'temper tantrums' which were increasing both in intensity and frequency. Guidance on inclusive practice and meeting the need of an AS pupil was communicated from the SENCO regarding planning to avoid these difficulties in the form of differentiation and the availability of a 'cool off' room. The SENCO's view was that the behaviour could be attributed to a build-up of frustration and tension which was then released at inappropriate times in the classroom, these were behaviours such as 'temper tantrums' that were reported as not being proportional to the requests being made of him.

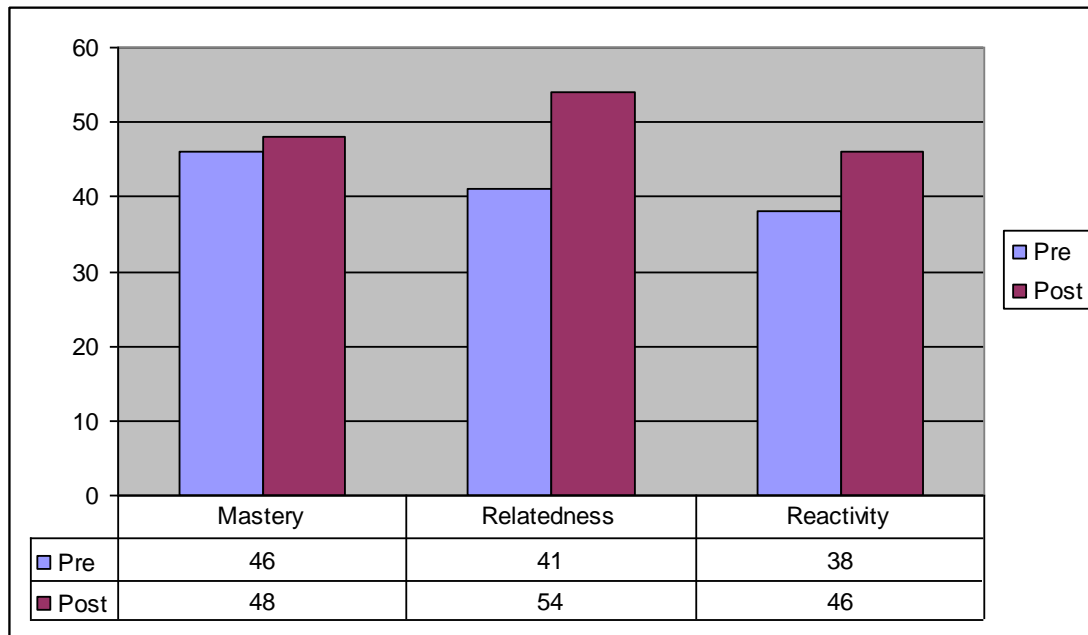
On administration of the Beck Youth Inventory Scales there was no evidence that B was experiencing anxiety, depression, or difficulties with self-esteem at the time of the formulation and therefore these factors did not form part of the focus of the CBT programme. The programme was written specifically for B to address issues of social communication, social interaction and 'behaviour in class'. The following data relate to attendance and completion of the therapy sessions and 'homework' (practising techniques between CBT sessions) which were reframed as 'behaviour experiments'. The participant B attended 100% of the 7-session programme in school, in the same room, at the same time, with a break at week 3 for a holiday; otherwise the sessions were consecutive. B completed 85% of the 'homework' tasks.

The data presented below represent a summary of the pre and post intervention measures for resiliency, personal constructs, and observed behaviour changes on the ASD profile.

7.2.1 Resiliency scales: Pre and post measures

Prior to the start of the CBT intervention a baseline measure was taken of B's mastery, relatedness, and reactivity as measured on the Resiliency Scales (Price-Embury, 2007). The graph below shows the standardised scores (which have a range of 0-100 and a mean average score of 50) for B on the Resiliency Scales in both the pre and post intervention phases of the CBT.

Figure 8: Scores obtained on the Resiliency Scales by B in the pre and post CBT intervention phases.



It can be seen in Figure 8 that there are improvements in all areas of measured resiliency, but that the post intervention changes are greatest in the Relatedness Subscale. The Relatedness Scale is a measure of an individual's internal cognitive perspective on relating to others and a general measure of ability in relating to others. The CBT programme was written to address social communication and social interactions as well as behaviour in class, and so improvements in this subscale could represent changes that had been specifically addressed by the CBT programme.

The Relatedness Subscale was investigated further by considering its constituent scales which, when taken together, make up the Relatedness score. A consideration of the subscales of relatedness enables a further refinement of the specific factors that have changed in the pre and post intervention phases for B, and is shown in Figure 9.

Figure 9: Scores obtained for B on individual subscales that make up the Relatedness Scale score in the pre and post CBT intervention phases.

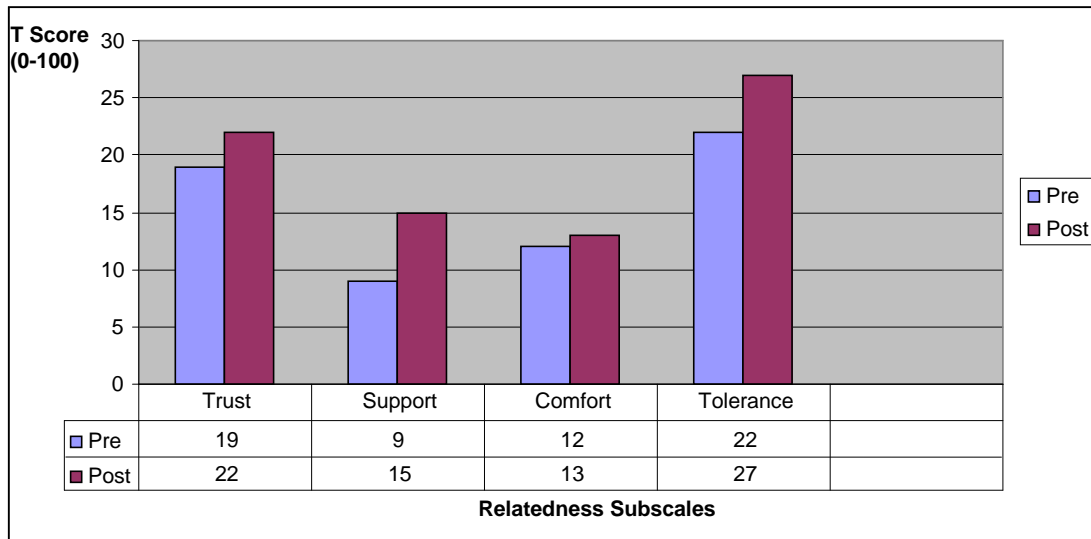


Figure 9 shows that B's level of trust and comfort changed the least between the pre and post intervention measures. However, both of these subscales would only be expected to have changed significantly with the passage of time. Trust, for example, represents not only cognitive and emotional factors but would also be underpinned by more prolonged social exposure, a known difficulty for B. The comfort subscale represents being comfortable with others which reflects to some extent the child's existing life experiences and it is unlikely that this would have changed over the period of time of the present study. The pre and post measures data in the support subscale, a measure of perceived access to support which is related to psychological well-being, could in this instance be related to the introduction of the therapy itself. Tolerance of others, a measure of assertiveness, shows the greatest change between the pre and post measures and given the structured behaviour experiments

may reflect B's view of his ability to managing social interactions more confidently or in a more structured way, based on the behaviour experiments.

The measures presented above in Figures 8 and 9 suggest that B has improved his relatedness to others with changes to his perception of the level of support he receives and of his ability to manage in social situations. This is also triangulated with parental comments that suggest evidence of some generalisation, as post intervention reports from his mother note:

- "For example he has been very pleased recently with a piece of music he has written and has been talking about this at home. Another example is a recent school trip, initially B did not want to go because he did not know many of the people going, it was out of his comfort zone – but then he agreed to go on it saying "I'll try it" which was a real surprise to me – he couldn't go because he got the date wrong!"
- "He has also been using more small talk and 'chit chat' which is surprising to me but it's pleasant!"

There is clear evidence, between pre and post intervention measures, of specific changes in behaviour for B, reported by his tutor and his mother, that are supported by the pre and post measure data for relatedness on the Resiliency Scales and by comments made by B's mother. In addition to the changes in behaviour those for cognition or personal constructs were also measured in the pre and post-test CBT intervention phases, which are reported below.

7.2.2 Changes in personal constructs

B's personal constructs were recorded in both the pre and post CBT in school on the Butler Self Image Profile (Butler 1997 cited in Butler and Green, 2007). The profile requires the participant to provide two ratings, '*as I am*' and '*as I would like to be*' against a number of

constructs presented to the child. Each individual construct, for example 'shy', is then rated on a scale from 0 (not at all) to 6 (very much so). In the pre intervention phase B rated '*as I am*' and '*as I would like to be*' and then rating '*as I am*' in the post intervention phase. The summary data is shown in Figure 10.

Figure 10: The scores obtained on the Butler Self Image Profile (Butler, 1994) prior to the CBT intervention (*As I am* and *As I would like to be*) and those obtained for *As I am* in the post CBT intervention phase

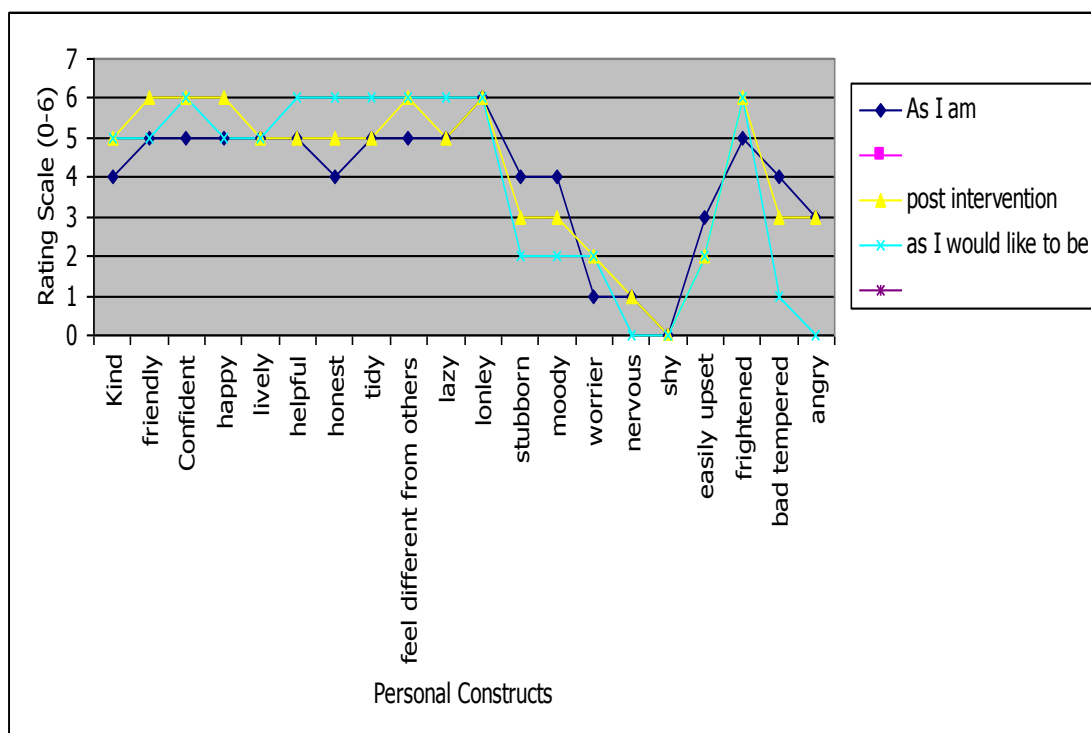


Figure 10 shows that there are changes in B's ratings of his personal constructs in the post intervention phase, compared with the pre intervention measures. This represents a change in the way that B sees the world, or a change in B's cognitions. The graph shows that a significant number of the constructs that did change were related to the aims and activities of the CBT intervention. It can be seen that some constructs did not change in the pre and

post measure, and they were constructs that B had considered he did not want to change (**lonely, lively and shy**). It is also significant that some behaviours (**tidy, lazy, helpful**) are recorded as not having changed; this would be predicted, as they are behaviours that are unrelated to the formulation of his difficulties in school; this factor provides a degree of validity of the research tools. The graphical representation clearly shows that B rated his personal constructs (**friendly, happy, and confident**) as having changed in the post CBT phase, and this can be related to the CBT intervention aims. The result suggests that in addition to reported changes in behaviour, B is beginning to change the way he construes the world. This suggests that there were cognitive changes occurring in parallel to the observed changes in behaviour.

7.2.3. Changes in behaviour

Both B's school tutor and his mother completed a rating of B's behaviour using an ASD profile covering a range of behaviours. The ASD profile records the views of the respondents on the level of difficulty experienced by B, as observed by his mother and school tutor, on a scale from 0 (no difficulty) to 3 (significant difficulty), based on their observations. The profile was administered for a second time in the post intervention phase, allowing a comparison between pre and post intervention scores. The table below represents the views of B's pastoral tutor's ratings, expressed as a percentage change between pre and post intervention ratings. The percentages presented in Tables 8 and 9 represent the difference between the respondent's rating of B's behaviour in the pre and post CBT programme. For each statement on the profile the pre CBT rating was compared with the post CBT rating and a note was made of any differences which were recorded, as either increases in difficulty, staying the same, or decreasing in difficulty. The number of ratings that showed a reduction in difficulty was totalled for each category and expressed as a percentage of the total for

that category. The process was repeated for the each of the categories of social communication, social interaction, behaviour, learning, and sensory, and is presented in table form below.

Table 8: Percentage changes in B's observed level of difficulty in school, as reported by his pastoral tutor, on the ASD profile on the pre and post CBT intervention measures

School tutor's ratings	Social communication	Social interaction	Behaviour	Learning and organisation	Sensory difficulties
Difficulty reduced compared to pre CBT measures	50%	41%	75%	12.5%	44%

It can be seen from Table 8 that the school tutor reports that the area of greatest improvement is in the 'behaviour' category. This category is defined as classroom behaviours (e.g. staying in his seat, following school rules) and shows a 75% reduction in difficulty. The result in table 8 suggests that a significant number of behaviours have changed, as observed in school in the post CBT phase. The school tutor's observations also suggest a significant decrease in difficulties with social communication in school, such difficulties reducing by 50%. Social interaction is also noted to have seen a reduction in difficulty. The overall pattern is for B to be reported to have reduced his level of difficulty in social communication, social interaction and behaviour, as observed and reported by his school tutor. Learning and organisation remained a difficulty for B.

B's mother also completed an ASD profile, rating her observations of changes in B's behaviour in the pre and post CBT intervention phases. The results are presented in the

table below expressed as percentage changes i.e decreases in the perceived difficulty of specified behaviours.

Table 9: Percentage changes in B's observed level of difficulty in school as reported by his mother on the ASD profile on the pre and post CBT intervention measures

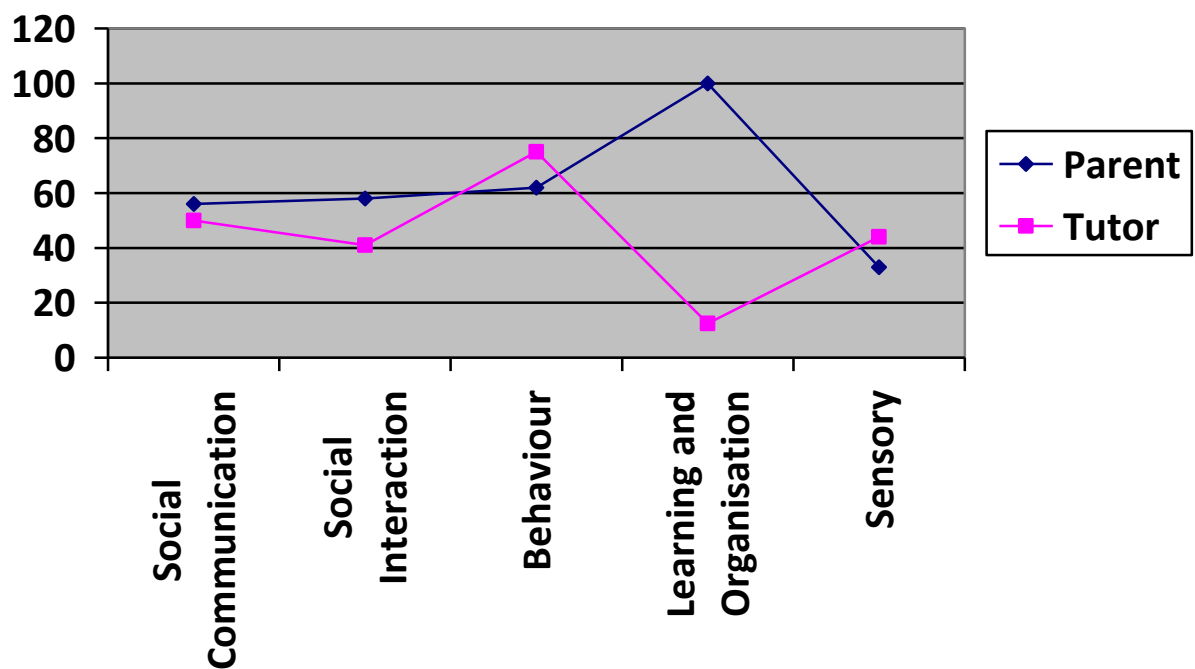
Parent	Social communication	Social interaction	Behaviour	Learning and organisation	Sensory difficulties
Difficulty reduced	56%	58%	62%	100%	33%

It can be seen from Table 9 that B's mother considered that B had made most progress on the ASD profile with his 'organisation and learning' in school. In discussion she reported that this was in relation to being more prepared for school in terms of getting his school bag and equipment ready before leaving for school. She also reported that Bs 'behaviour' was improved on the post CBT intervention with a rating of 62% reduction in difficulty. She also notes that there is a significant reduction in difficulties with social communication and social interaction, which were both reported as substantially reduced in the post intervention measure.

By way of considering the reliability of the two observers' ratings and the validity of the research tool a comparison was made of the school tutor's and parent's responses to rating behaviour change for B in the post intervention phase. In the category for 'sensory experience' the majority of the statements were reported as having stayed the same in both tutor's and parent's post intervention rating; this would be predicted as no therapeutic input was specifically focused on this area and sensory difficulties could be argued to be physiological in nature. The Figure 11 shows the percentage changes in rated level of

difficulty for B, reported by both his school tutor and his mother in the post CBT phase, allowing a comparison/concordance to be observed.

Figure 11: An illustration of the degree of concordance between parent and school tutor's ratings of B's reduction in difficulty of behaviour following the CBT intervention



It can be seen from Figure 11 that there is a substantial degree of agreement on the reduction of difficulties for B at home and school. For social communication the reduction in difficulty reported by parent and school tutor are very similar, as are those for social interaction. There is a large discrepancy between school and home ratings with regard to 'learning and organisation' in the pre and post measures, but at home the difference is reported as being much greater after the intervention. This may be due to the individual interpretation of these category statements, or more opportunities for observation at school. On the sensory issues there is again a consensus and agreement between home and school

that there was little reduction in sensory challenges, which would be predicted and suggests a degree of reliability as both observers report similar accounts independently.

7.2.4 Pre and post measures: Concluding comments

It can be seen from the graphical results presented above in Figures 8 to 11 that there was a change in both B's thinking and behaviour in the post CBT condition. The CBT intervention was designed and written for B based on an assessment of his needs in school, thus avoiding the need to use manual based CBT intervention. The CBT was delivered in school and made no attempt to control or manipulate the environment as a variable, and the results reported above show that the outcomes of the CBT intervention are positive changes for B.

The positive outcome of the intervention suggests strongly that the CBT intervention was effective in realising the aims of the therapy. However, in the present study focuses on *how* the positive outcomes reported above were supported (or limited) in the school setting, and considers the impact of the educational context on the reported outcomes; a RE design based on Pawson and Tilley's (1997) approach was employed to achieve this aim. The next sub-section reports on the results of the RE analysis of the outcomes as being contingent on the context and mechanisms triggered in that setting.

7.3 ASD audit: Exploring the school context for ASD pupils

The context of the school as an inclusive setting in relation to ASDs was considered using an audit tool completed by the school's SENCO to identify strengths and weaknesses in the school's implementation of their inclusion policy. Defining the context of the intervention is a central aspect of realist research, as it represents the setting into which the intervention is to be introduced and the context and the intervention may trigger mechanisms that influence the outcome(s). In the present study the context was explored by employing an ASD audit tool to collect the views of the SENCO about the approaches employed in school to support pupils on the autism spectrum. The audit was designed to highlight the school's strengths and weaknesses with regard to maintaining an inclusive environment for pupils. The audit tool consists of a set of statements under broad headings relating to ASD pupils in school, 'system for early identification', 'whole school approaches to inclusion', 'pastoral support', 'SENCO role' and 'the school curriculum'. Under each of these broad headings are a number of specific questions, for example, 'Are there systems in place for early identification of AS pupils in school?' and these are followed by any number of specific points related to that main question. All of the main questions and supplementary comments are based upon what is considered good practice guidance for supporting children on the autism spectrum in mainstream school settings, and are responded to on a scale ranging from 'no evidence' to 'achieved'. Thus numerical values can be attached to the SENCOs responses and these values can be presented as a percentage of relative achievement across the scale for that audit question areas and their corresponding comments. A range of areas was explored and the results are summarised below. The data presented in the following sub-sections shows the degree of development towards achieving each of the sampled areas of good practice.

Table 10: The percentage degree to which each statement section of the ASD audit was reported to have been completed, or not

	No evidence	Some evidence	Well on the way	Achieved
'A system for early identification and assessment of children with ASD'	25%	50%	25%	50%
'Whole school approaches and inclusion'	0%	0%	30%	70%
'Children's personal and social development (pastoral support)'	0%	0%	0%	100%
'SENCO's (SEN co-ordinator) role in school in relation to ASD'	0%	0%	0%	100%
'The school curriculum'	0%	0%	40%	60%

The summary data suggests that the SENCO role and the pastoral care of pupils with autism spectrum are well developed and embedded in school culture. It also suggested that whole school approaches to inclusion and the adaption of the school curriculum are areas of need for further development. Systems for early identification of pupils who may be identifies as autism spectrum are the least well developed on the SENCOs reporting.

7.3.1 Statements relating to: 'A system for early identification and assessment of children with ASD'

The statements in this section of the audit refer to the clarity of referral pathways for children suspected of being on the spectrum, teacher's awareness of their role under the

SEN code of practice, communication in school and dissemination of information. The results suggest an area for development in this section of the audit is that of referral pathways for those children suspected of being on the autism spectrum. An implication of the results shown in Table 9 above is that difficulties experienced by the child may escalate significantly in school before they can be addressed. It is also acknowledged that the communication network between SENCO and the teaching staff is not fully developed. Class teacher awareness and SENCO knowledge of ASDs are reported as being well developed. The results suggest a school context in which knowledge of ASDs is well developed across the school but that action to support those pupils may lag behind the reported expertise and be hampered by poor communication.

7.3.2 Statements relating to: 'Whole school approaches and inclusion'

The focus of the statements in this section relate to inclusion policies, staff understanding of impairments to learning, and awareness of the individual needs of the pupil. The section also focuses on communication networks about individual pupils, and to what degree the school environment supports pupils. There are also statements relating to teaching strategies and ASD communication.

The results in this section show that the majority of statements are reported as being well developed in school. Those areas are:

- Teaching staff being aware of the individual difficulties of pupils,
- A good understanding/recognition of the impact of the triad of impairments on learning in school,
- The coordination and exchange of information about ASD pupils is maintained.

However, significant areas for development were also reported such as:

- School staff not able to implement responses to behavioural problems,
- School time is not allocated for planning and supporting pupils,
- Parents and peers are not involved in ASD awareness training events,
- A need to improve risk assessment for ASD pupils in school,
- A need to fully implement an organised and structured set of signs and symbols in the school environment to support communication around the building and rooms,
- Lesson planning is not written in such a way that an ASD pupil can check where they are up to and that communication is carefully considered to avoid metaphor and overlengthy explanations.

There are significant areas for development that reflect classroom context and the class teacher's efforts at inclusion.

7.3.3 Statements relating to: 'Children's personal and social development (pastoral support)'

This section of the audit statements referred to the way in which the school organises support for pupils in school, such as monitoring bullying, providing mentoring/buddy schemes and having a named person in school to support with challenges. All aspects of this section of the audit were reported as being achieved and therefore in place in school, they include the following:

- Named adults in school to whom a child could take difficulties and who could prompt the pupils with timetabling and school equipment needs,
- There is an awareness of the potential for AS children to be targets for bullying and that there are support mechanisms in place that are monitored to reduce the risk of bullying,
- Well developed pastoral support in school and links with external agencies to reduce the risk of disengagement with school from feeling alienated from the learning process,
- The school has in place strategies to foster positive relationships between the child and their peers in school.

7.3.4 Statements relating to: 'SENCO (SEN co-ordinator) role in school in relation to ASD'

This section of the audit contained statements regarding the role of the SENCO in the inclusion of children on the autism spectrum in school. The statements refer to the SENCO's record keeping about ASD pupils and communication links with their parents. They also make reference to the SENCO's knowledge of local support services and the degree of liaison with them. A key statement refers to ensuring that the child is accessing the school curriculum. All of these statements were reported to have been achieved.

7.3.5 Statements relating to: 'The school curriculum'

In this section of the audit the statements related to the way teaching is organised and planned, including arrangements for homework of those on the autism spectrum. It also makes reference to the arrangements made by the school for public examinations and the degree to which the school organises, plans and facilitate the social skills of pupils with ASDs.

Under the achieved category the school perceives itself to:

- Have achieved the implementation of strategies that are effective at managing any issues ASD pupils may experience in relation to school homework,
- Have implemented approaches in school that adapt the curriculum to meet the ASD child's needs (be that as Statement of Special Educational Needs or not),
- Having implemented and established systems that ensure a focus on an ASD pupil's social needs and special interests.

However, the data presented in Table 9 suggests that there are areas of relative weakness in adjustments to the school curriculum relating to classroom based teaching and learning.

- Responses suggested that more work is needed in preparing children with ASDs for curriculum based test and assessment situations in school,
- A significant weakness is the need to implement or improve adaptations to communication in lessons such as providing predictable patterns and structures to working routines in lessons.

7.3.6 Comments on the ASD audit

The results suggest that staff at the school perceive themselves to have achieved the implementation of effective strategies for the support of pupils on the ASD spectrum in school. These include strategies to support:

- Personal and social development in school,
- Communication and dissemination about ASDs in school,
- Support relating to bullying,
- Support with accessing the curriculum in school.

However the school reported being less well developed in the following areas:

- Early identification of pupils who may have ASD and appropriate referral pathways to access support,
- A need was identified for improvement of the whole school approach to inclusion,
- A need to consider time for teaching staff to plan and respond to behaviour challenges in school,
- A need to improve the visual and other communications sources such as signs and symbols in the communal areas of school and the classroom areas,
- Need to improve communication in class to explain concepts and to enable pupils to monitor their progress in their learning tasks and activities.

Overall the audit suggest's a well developed system of communication and social support of pupils, but that there are challenges for individual classroom teachers in implementing 'ASD friendly' approaches. It is within this school context that the CBT intervention was delivered in the school. A realistic evaluation was used to further explore the positive outcomes reported in terms of both the context and any triggered mechanisms to explore the observed outcomes.

7.4 Realistic Evaluation: An analysis

The results reported above suggest that there were changes both in observable behaviour and cognition between the pre and post CBT intervention measures triangulated between school staff, pupil, parent and therapist. However, in the present study the aim was to

consider the CBT adapted for an AS pupil conducted in a real world setting, and to explore the potential of this educational setting to support the positive outcomes of therapy.

Realistic Evaluation, as employed in the present study, frames theory/hypothesises as configurations of CMOs or, put another way, proposes that outcomes are contingent on a context and a triggered mechanism in that context. The CMOs in the current study were generated from the existing literature on CBT for AS, from the researcher's experience as a practitioner and from the feedback in the realistic interview responses. The initial configurations were outlined in Table 2 in Chapter 5. What follows below is an analysis of the CMO configurations in terms of the evidence collected.

7.4.1 Testing context, mechanism and outcome(s): CMO configurations

The following CMO configurations are presented either because the data in the present study strongly supports them or because they raise important points, based on the literature explored. The list below is in no way meant to be exhaustive but instead is intended to be indicative of patterns in the evidence that was collected. Each CMO configuration will be supported by a link to the appropriate evidence/data presented beneath it. This formalises the process of retroduction in which the study data is triangulated in relation to each individual CMO.

7.4.2 CMO configurations with supporting evidence

Presented below are a series of numbered CMO configurations; the numbers are for reference only and do not relate to any hierarchy of importance. Each configuration consists

of a context, mechanism and outcome, all of which are presented with, where applicable, the supporting evidence.

CMO configuration 1

Context (C1): The school has an inclusion policy that makes reference to ASDs, and the difficulties pupils may face in school.

Evidence (C1a): ASD AUDIT

On whole school strategies it is reported that these are 75% in place. (Appendix Qii).

Children's social and personal development is seen as 100% achieved. (Appendix Qii).

However

Teaching staff do not have time allocated to plan and prepare to be inclusive (Appendix Qii).

Evidence (C1b): TEACHER COMMENTS

"I think the school are still grappling with inclusion" (CT3, Appendix I).

"Some staff are much better than others ... most people here are good ... staff difficulty is 'how you actually do it!' (CT2, Appendix, H).

"... difficulty is knowing what goes on exactly in each class; we only tend to hear of things when they are not going well! – communication is a real difficulty." (CT2, Appendix H).

Mechanism (M1): The school has a well articulated policy on inclusion that pays due regard to the challenges faced by ASD pupils.

Evidence (M1a): TEACHER COMMENTS

"I think that the school is still grappling with inclusion ... In my lessons I have made a number of changes to accommodate B in the class ..." (CT3, Appendix I).

"I have had no specific training to date on managing ASDs in class ..." (CT1, Appendix G).

"I think the problem is how you do it (inclusion) ... you have training and resources but how do you implement it? ..." (CT1, Appendix H).

Mechanism (M1i): School staff are confident at including and supporting pupils on the autism spectrum.

Evidence (M1ia): TEACHER COMMENTS

Average rating of school staff response to how inclusive they feel they are, is 4.6 on a scale 0-10 (10 is highly inclusive).(average of ratings given in responses CT1, Ct2,and CT3 Appendices G, H, and I)

"... in more general terms I don't think other staff would have time to do this, I have time from remission" (CT3, Appendix I).

"Probably better in primary school where teaching is more focused on the child, here they see themselves as delivering academic subjects" (CT2, Appendix H).

Evidence (M1ib): TEACHER COMMENTS

"I'm not sure we are as inclusive as we ought to be" (CT2, Appendix H.

Evidence (M1ic) INCLUSION RATINGS (by school staff)

Rating on scale 0-10 (10 is totally inclusive).

CT1 = 4

CT2 = 6

CT3 = 4

Evidence (M1id) ASD AUDIT

Clear links are made in classroom between visual and verbal information for subject matter and lesson activities and transition (see Appendix Qii).

Evidence (M1ie): ASD AUDIT

Staff are rated as not being confident on planning and managing the behaviour of AS pupils in their classes (see Appendix Qii).

Mechanism (M1ii): School staff report being well supported in their efforts to include ASD pupils.

Evidence (M1iia): TEACHER COMMENT

"I was unaware of the CBT programme ... It would have been useful to have been in the loop I would have no objection to being a co-therapist as long as I had some training or support, so that I was confident that I was doing it right".(CT3, Appendix I).

"... the difficulty is knowing what exactly is going on in each class" (CT2, Appendix H).

Outcome (O1): School staff work collaboratively to support a CBT intervention in school for an AS pupil.

Evidence (O1a): TEACHER COMMENT

"In my lessons I have made a number of changes to accommodate B ... doing the experiments means that I have further developed my relationship with B" (CT3, Appendix I).

Evidence (O1b): TEACHER COMMENTS

"I did work on the behaviour experiments but did not know that they were part of a CBT programme ... Have changed seating and the way I deliver instructions to B in class." (CT3, Appendix I).

Evidence (O1c): FORMULATION

Staff and parents answer questions and inventories to establish central concerns in school (See Appendix N).

B is able to complete classroom based behaviour experiments with the support of some teaching staff.

CMO configuration 2

Context (2): School staff consider the school environment and spaces within school to be an important aspect of support for both inclusion and for interventions for ASD pupils.

Evidence (C2): ASD AUDIT

Quiet rooms are not routinely available for pupils; there was a need to improve risk assessments to take account of the lack of pupil awareness of some hazards in school by some pupils.

There was a need to improve the access around the building with signs and symbols to support communication in communal and teaching base areas.

There was also evidence of a need to improve on the structure with which routines, transition and arrangements for events in school, for example, assemblies, community activities and sports days.

Mechanism (2): A room and resources are available for the Educational Psychologist to use in school, to administer the CBT sessions.

Evidence (M2): EP's Reflections

Room was not able to be booked for regular CBT sessions in school, thus the same room at the same time each week was not guaranteed by the school but is considered important in reducing stress for those with AS.

B's mother agreed to release B from a form activity on the morning of the CBT sessions. Arrangements could not be agreed on about which lesson B could be released from to attend CBT. Time available in the school day for CBT was a difficulty.

EP availability for CBT in school at different times in the week was limited by a 'time allocation' service delivery of psychology to school. In time allocation the psychologist has a specified number of visits to the school.

The school had a firm view of when CBT could be delivered in school time. The timing of the delivery of the CBT programme in school was agreed to take place during a morning registration session, all other times were reported to impact on curriculum activities.

B reported being reprimanded on one occasion for being late for registration despite agreement that he could attend CBT sessions.

Mechanism (2i): The school perceives a good relationship with their Educational Psychologist as essential to a positive outcome for the intervention.

Evidence (M2i): TEACHER COMMENTS

"A key aspect seems to me to be the relationship with the EP ... Collaboration with the EP is needed" (CT2, Appendix H).

Outcome (2): 'Systems' in school support the collaborative working of the EP and school staff to support a pupil with AS.

B had a good attendance rate at CBT sessions. The school staff questioned supported the CBT intervention in their classrooms, although there is evidence that poor communication systems in the SEN department of the school meant that not all staff were sure that the CBT intervention was happening and what, if anything, their role might be. Thus it appears to be good will and a desire to support the pupil that maintained school staff involvement, rather than a formal role as part of the research study.

CMO configuration 3

Context (3): Teachers receive the idea of CBT being conducted in school positively.

Evidence (C3): TEACHER COMMENTS

"I think doing therapy in school is a good idea, it would cut down on the DNAs (did not attend) ... also ... opportunity for the learning to be linked with real life situations ... they may be more likely to apply any learning." (CT1, Appendix G).

"Linking therapy with challenging situations in school and with their specific difficulties could be a good thing, they may not remember things discussed in clinic ... the EP will have been seen in school before ... Also in school settings it will be easy to meet with other staff and to corroborate evidence and practice." (CT2, Appendix H).

Mechanism (3): Individual teachers work to support the CBT intervention in school.

Poor communication meant that school staff were not aware of the CBT intervention and were thus given no information about the intervention from which they could support the pupil. However support was given despite the lack of information. One teacher reported that she would like to have been involved as a co-therapist and would have liked more information about the therapy.

Evidence (M3): TEACHER COMMENTS

"I was unaware of the CBT programme ... It would have been useful to have been in the loop ..." (CT3, Appendix I).

Mechanism (3i): School staff perceive that the CBT intervention alone is an effective way to reducing 'difficult' behaviours in school.

This would be indicative of a 'medical model' approach. No evidence was collected that suggested that this was evident in the school staff sampled. Indeed the mechanism seems to be one of working collaboratively to support the pupil.

Evidence (M3i): TEACHER COMMENTS

"... things in school can get watered down and become less effective ... we are inclusive but we cannot do everything" (CT2, Appendix H).

Mechanism (3ii) Teachers participate and support delivery of specific behavioural experiments during class time.

Evidence (M3ii): BEHAVIOUR EXPERIMENT COMPLETION RATE

86% experiment completion rate.

Evidence (M3ii): BEHAVIOUR RATING

School staff rate changes in B's behaviour between the pre and post CBT intervention phases.

Class teachers also reported that there were changes in their own thinking and behaviour as they became involved in and learned more about supporting B in class with specific behaviour experiments.

Outcome (3) Teachers participate and support delivery of specific behavioural experiments in class time, and do not pass responsibility to the Educational Psychologist.

School staff expressed that they needed the support of external agencies such as Educational Psychologists to shape their inclusive practice. However they also commented that training staff in school to deliver interventions was generally perceived as being less effective than the same interventions delivered directly by the EP. An example was given of a recent speech and language therapy initiative not working because it was delivered in school.

Involvement of school staff was in part dependent on communication in school between the SENCO and departments/individual teachers. Good will and a desire to help the individual pupil supported the intervention, rather than a formal 'allocated' role for school staff.

Evidence (O3): TEACHER COMMENTS

Staff report being unaware of the CBT intervention therapy going in school although one teacher reported that they would want to be more involved but expressed concerns about issues of time pressure and competence.

"I would have no objection to being a co-therapist as long as I had some training or support, so that I was confident that I was doing it right." (CT3, Appendix I).

"Collaboration with the EP is needed" (CT2, Appendix H).

CMO configuration 4

Context (4): The school staff work with external support agencies to include pupils with ASD in school.

Evidence (C4) ASD AUDIT

Audit report suggests that links and collaborative work with external agencies are well developed.

Mechanism (4): Regular visits are made to the school by the EP and the CBT intervention is seen in the light of previous positive collaborative work with the EP.

Evidence (C4): TEACHER COMMENTS

"I think doing therapy in school is a good idea, it would cut down on the DNAs (did not attend) ... also ... opportunity for the learning to be linked with real life situations ... they may be more likely to apply any learning." (CT1, Appendix G).

"Linking therapy with situation in school with their specific difficulties could be a good thing, they may not remember things discussed in clinic ... EP seen in school before ... Also in school settings it will be easy to meet with other staff and to corroborate evidence and practice." (CT2, Appendix H)

Evidence (M1): TEACHER COMMENTS

"I would need to have worked with the EP before and to have confidence in them" (CT2, Appendix H).

Outcome (4): School and EP work collaboratively to deliver a CBT programme in school.

Evidence (O4): TEACHER COMMENTS (appendices G,H, and I)

School staff participate in formulation and some school staff support behaviour experiments in class observations and progress of B are reported on by school staff.

Challenges with communication prevented the development of an effective support for individual teachers, who reported that they 'helped' with the intervention but were not aware it was a CBT intervention in school.

"Collaboration with the EP is needed – the resources in school are limited in of lots of different groups running in school such as pragmatics groups, self esteem groups. The issue in school can be that things get watered down and eventually become less effective, we saw this with precision teaching, and therefore the key issue is the skills of the EP. We are still inclusive if we use the EP to deliver the therapy but we are helping the child too." (CT2 Appendix H).

CMO configuration 5

Context (C5): Individual characteristics of the pupil such as their cognitive ability, language skills will support their engagement with CBT.

A CBT programme involves the active engagement of the client with the therapy sessions and between session tasks behaviour experiments' CBT has to be adapted for children (Ronen, 1997) and for use with AS adolescents (Attwood, 2004a). Assessment of B's ability to work with a CBT approach was made and a formulation was proposed on the basis of information from B, his mother and school staff.

Mechanism (M5): B's ability to engage with and participate in therapy.

Evidence (M5): IQ PROFILE

B's IQ scores and profile, as measured on the WISC-IV (UK), was compared to, and found to be similar to, the profile for a sample of AS adolescents reported by Wechsler (2003). Therefore account could be taken of B's individual cognitive profile.

- *Strengths = comprehension, picture concepts and symbol search – session materials were designed to have a high visual and conceptual format supported by repetition and verbal exposition being secondary to visual materials.*
- *(relative) weaknesses = vocabulary, matrix reasoning and digit span – session discourse kept to a minimum necessary and care was taken not only with emotional vocabulary but vocabulary in general.*

Evidence (M5): PUPIL COMMENTS (rated on a scale from 0-10 (10 being very improved))

Diagrams and materials helpful (8).

"I liked..."

- *Puzzles,*

- *Diagrams,*
- *Social maps for the experiments.*

Outcome (O5): Pupil acts on session information and change is observed in salient behaviours and cognition.

Evidence (O1): PRE-POST MEASURES

Changes in sociality as recorded on Resiliency Scale as pre and post measures.

Changes in Trust, Support, Comfort and Tolerance in the pre and post test measures of the Resiliency Scales.

Changes in cognition during therapy as measured by pre and post measure changes in Personal Constructs (Butler, 1994).

Observed changes in behaviour at school and at home reported by school staff and parent in pre and post CBT intervention rating of behaviour.

CMO configuration 6

Context (C6): The CBT programme is developed out of a formulation-based approach to CBT in which the programme is written for B based on his needs in school, not based on a manual for AS pupils.

An assessment and formulation of B's needs was made with reference to initial concerns from school regarding his behaviour. A formulation was constructed in terms of thoughts feelings and behaviour. The focus was on the 'here and now' lived challenges for B and those working with him in school. The AS diagnosis was given due regard in the planning and preparation of the CBT materials and session design (Attwood, 2004a).

Mechanism (M6): Adaptions to CBT facilitate engagement with therapy sessions.

Evidence (M6): SCHOOL ASSESSMENTS

The school keep good records on the pupil's progress, assessments in context and arrange appropriate interventions for B, in line with the CoP (DES, 2001).

Evidence (M6i): CBT PROGRAMME

Programme is written to meet the specific needs of B in the school context, based on triangulated assessment between views of school staff and parents to build a systemic formulation of difficulties in school (Dummett, 2006).

Materials are adapted for the needs of a pupils with AS (Attwood, 2003; Sze and Wood, 2007; Anderson and Morris, 2006).

Sessions were designed to be more didactic in their delivery than traditional CBT sessions (Attwood, 2004a). Arrangements were made in advance with the school for the same room to be made available at the same time each week.

Evidence (M6ii): CBT PROGRAMME CONTENTS

- *Visual rating scales based on assessment of ability to recognise thoughts, feelings and behaviour,*
- *The use of visual materials (cartoon characters) (Grieg and MacKay, 2005),*
- *A didactic approach to sessions,*
- *Session length, structure and venue were all well structured and routinised,*
- *Consideration given to vocabulary and language use in relation to emotional states,*
- *A flexible approach to the design of the programme to account for B's needs on an ongoing basis.*

Outcome (06): Pupil engages in therapeutic sessions and participates in activities.

Evidence (O6): SESSION ATTENDANCE RATE

100%

Evidence (O6i): COMPLETION RATE FOR BEHAVIOUR 'EXPERIMENTS' (ACTIVITIES BETWEEN SESSIONS)

86%

Evidence (O6ii): PUPIL COMMENTS (rated on a scale from 0-10 (10 being very improved)

Diagrams and materials helpful (8).

I tried the experiments between sessions (10).

"I liked..."

- *Puzzles,*
- *Diagrams,*
- *'Social maps' for the experiments.*

(see appendix P)

Evidence (O6iii): ASD PROFILE GRAPHS

A high degree of concordance between parent and school tutor rating of positive changes in B's behaviour on the ASD profile. (See figure 11 Chapter 7, p.129).

Evidence (O6iv): RESILIENCY GRAPH

*Resiliency measures:
Suggested that social aspects of school were most difficult.*

(see figure 8 Chapter 7, page 122)

Evidence (O6v): BECK INVENTORY

The Beck administration showed no indication of difficulties with anxiety and or depression and therefore no post measures were taken (see appendix L)

Evidence (O6vi): PARENTAL COMMENTS (rated on a scale from 0-10 (10 being very improved)

Improved social use of language (7).

Progress on controlling behaviour (6).

(see appendix O)

Evidence (O6vii): PUPIL COMMENTS (rated on a scale from 0-10 (10 being very improved)

My social skills have improved (7).

(see appendix P)

Evidence (O6viii): PUPIL COMMENTS (rated on a scale from 0-10 (10 being very improved)

Psychologist explained sessions (8).

Psychologist listened to what I had to say (9).

(see appendix P)

Evidence (O6ix): SESSION ATTENDANCE RATE

100%

Evidence (O6x): COMPLETION RATE FOR BEHAVIOUR EXPERIMENTS (ACTIVITIES BETWEEN SESSIONS)

86%

CMO configuration 7

Context (M7): Locating CBT in school focuses on solutions to problems in the situations in which they occur, in the setting in which they are reported to have difficulty.

The difficulties faced by B in school are addressed by the CBT programme being delivered in school in addition to the inclusive context of the educational settings. In delivering CBT in school it is anticipated that it may facilitate links between learning and specific school situation and positive outcomes. Thus the challenging behaviours are addressed in situ with guidance and support.

Mechanism (M7): A reduced 'distance' between the learning of a skill and the application of it in a context may reduce the difficulties of generalisation of learning.

Evidence (M7): TEACHER COMMENTS

"I think doing therapy in school is a good idea, it would cut down on the DNAs (did not attend) but it would be an opportunity for the learning to be linked with real life situations. School is an important setting for children and they are used to learning and the adults at school are they may be more likely to apply any learning." (CT2 Appendix H.

"I define inclusion widely and see it as anything that helps pupils develops social skills that are accepted in school and classroom and means that they feel better at school and learn, and for me that is inclusion." (CT2, Appendix H).

Evidence (C): ENGAGEMENT

Parent attends an initial psycho-education programme.

School staff keen to engage with programme.

School staff makes themselves available when possible for assessment and for questionnaires.

Mechanism (M7i): A CBT intervention in school has the potential to change the attitudes and behaviour of the school staff as they work with the pupil on between session tasks

Evidence (M7ia): PARENT COMMENTS

B was prompted and supported at home with practice on the behaviour experiments by his mother as part of the behaviour experiments.

Information about B and his difficulties in school increased teaching/school staff confidence at managing B in school.

Evidence (M7ib): TEACHER COMMENTS

"Conducting the experiments with B meant that I further developed my relationship with B and got to know more about his difficulties" (CT3, Appendix I).

"Working this way stops it being an 'outside issue' and means school has to take some ownership of the process and commitment to it working" (CT1, Appendix G) Teachers help and participate in the intervention even when they have no formal role to do so.

Evidence (M7ic): TEACHER COMMENTS

"Collaboration with the EP is needed – the resources in school are limited in school and there is also the issue of lots of different groups in school such as pragmatics groups, self esteem groups. The issue in school can be that things get watered down and eventually become less effective, we saw this with precision teaching, and therefore the key issue is the skills of the EP. We are still inclusive if we use the EP to deliver the therapy but we are helping the child too." (CT2 Appendix H).

"I would have no objection to being a co-therapist as long as I had some training or support; so that I was confident that I was doing it right." (CT3, Appendix H).

Outcome (O7): Increased opportunities to apply information learned in sessions; observed changes in behaviour at school

Evidence (O7i) OUTCOMES OF CBT AS DIFFERENCES BETWEEN PRE AND POST MEASURES

Results reported in above in subsections 7.2.1 – 7.2.3.

Evidence (O7ii): PARENTAL COMMENTS

B's mother reported that B had found the sessions very helpful.

No firm view expressed about whether CBT should be delivered in school or a clinic setting.

B's mother also reported that she would have no objection to professionals other than psychologists delivering therapy in school as long as they were trained and supervised

7.4.3 Emerging themes in the RE analysis

Table 11: Mechanisms triggered in school by the CBT intervention that either facilitated or limited the observed outcomes of therapy.

Facilitative Mechanisms	Limiting Mechanisms
School staff report changing their view of B as a result of the CBT intervention, and changing their behaviour toward him as they learned more about him and his difficulties in school.	School staff report being unaware of the intervention, and reported that if they had been allocated a formal role they could have provided more formal and focused support for the intervention.
The school staff report that having an existing positive relationship with the EP was essential for them in having the confidence that the success of the intervention.	There was difficulty securing a room and resources in school. It proved challenging to negotiate a time for the CBT intervention in school consistent with need for the same room at the same time each week. The educational psychologist's time allocation to the school also increased difficulties in arranging frequent therapy sessions.
No evidence was seen that school staff adopt a 'medical model' approach, but report that they wanted to be involved and believed that they could facilitate changes for B to support him at school.	Poor communication in school between the SEN department and the teaching staff limited the degree of support and the pro-active role staff could have played in the intervention.
CBT session resources and session design (based on existing literature on adapting CBT for use with AS adolescents) facilitated a high participation rate by B.	There was a discrepancy between the school's stated policies on inclusion in school and the school's understanding and confidence in enacting them.
School staff reported being supportive of therapy being delivered in school by the EP to support an AS pupil in school.	
A formulation approach to CBT allowed for a degree of flexibility to meet B's individual	

needs rather than focusing on the AS label.	
B's parent supports with behaviour experiments at home.	

The RE enabled an analysis of the current study in terms of tracing the observed outcomes back with regard to the context(s) and mechanisms(s) proposed by existing literature and theory. The findings suggest a complex and dynamic interaction between the pupil's individual needs in school, the school as an inclusive setting, and the nature and course of the CBT intervention. It is significant that teachers reported changes in their own understanding and subsequent behaviour toward B during the CBT intervention phase. It could be argued that the cognitive and behavioural changes in those school staff are at least as significant as the CBT programme and changes in B's behaviour. It is not uncommon to find that teachers in mainstream schools feel that they do not have the correct skills to manage ASD pupils in their classes (Robertson et al., 2003; Humphrey and Lewis, 2008). The CMO configurations highlight a dissonance between the stated inclusion policy and the confidence of teaching staff in managing pupils, particularly those with ASD, in class. There was evidence of poor communication, and feedback between the school's SEN policy and departmental action. Resources had been unanimously suggested, by school staff, as a potential difficulty in school and this was evident. It was also evident that the SENCO's confidence in the EP and their work in school and existing relationship was a key factor for the school staff in allowing the therapy to commence and be supported during the sessions. However there were difficulties both in terms of the time allocation of the psychologist to the school and the availability of B in the school day for therapy.

In terms of the CBT sessions, designing and preparation of therapeutic materials followed existing advice on adapting CBT for AS pupils (Attwood, 2004a and b; Sze and Wood 2008).

It was also shown that a formulation-based approach to CBT, focused on the pupil's ability to access the therapy and their unique cognitive profile, enabled the materials and their presentation to be finely tailored to B's needs. Thus the context of a formulation-based approach to CBT, which responds to the individual needs and not the characteristics of the medical label 'Asperger syndrome' were important mechanisms and contexts that supported positive therapeutic outcomes.

7.5 Concluding summary

The results presented above show that the CBT intervention delivered in school to support a pupil with AS could be usefully explored using a realistic evaluation methodology to provide analysis of the observed outcomes of the CBT.. It was also found that there were changes in B's cognition between pre and post intervention measures. The RE analysis was an effective way to highlight how observed changes in pre and post CBT measures were supported in the school context. With the school context it has been shown by retroductive analysis that a number of mechanisms were triggered in school that support the positive outcomes. Thus the results lend support to the emerging literature on using CBT with AS pupils in school, can be an effective intervention approach but the present study suggests that the impact of the educational setting triggers mechanisms that support the positive outcomes. The next chapter considers these results and findings in terms of the literature review and in terms of a wider discussion and implication of the findings.

CHAPTER 8

DISCUSSION AND REFLECTION

8.1 Introduction and context

This chapter will undertake a critique of the methodology employed in the present study along with a reflection on the research tools used to collect the data analysed and presented in Chapter 7. A central element of the research that will be explored and reflected on is the employment of Realistic Evaluation as a framework for the analysis of the outcomes of the present study. In addition to this the findings reported in Chapter 7 will be considered in terms of the existing literature on using CBT to support pupils with AS, and to develop implications of the present study for future practice. Questions raised by the findings and conclusion of the present study will be discussed in terms of potential questions for future research.

8.2 Findings of the present study and existing literature on applying CBT for AS

The results and findings of the present study show that CBT, adapted for use with an adolescent diagnosed with AS and delivered in school by an educational psychologist, is effective. It was shown that CBT was effective in reducing B's inappropriate behaviour in class, changing his cognitions and increasing social interaction and communication. The Realistic Evaluation research methodology employed proved to be highly effective for exploring the outcomes of CBT as being contingent on triggered mechanisms in the school context. The results lend further support to the emerging literature that CBT is an efficacious support for use with AS adolescents in school. Significantly, the present study has shown

that the setting and context in which the CBT is delivered is an active ingredient in sustaining the observed outcomes.

The results of the present study show that CBT was effective in reducing difficulties of behaviour in class and in reducing difficulties with social interaction at school. A significant finding is that there is a high concordance rate between school staff's and parent's ratings of B's behaviour. It was also demonstrated that changes in social skills (social interaction and social communication) were observed, despite research that suggests these skills are resistant to social skills training programmes (Greenwood, 2000; Marriage et al., 1995). The present study also demonstrated the efficacy of Realistic Evaluation (RE) as a research methodology to explore a single participant case study intervention. The RE approach enabled an analysis not only of the post intervention outcomes of the CBT but also of the complex social context of the school and its impact on the reported outcomes.

The literature review presented in Chapter 4 demonstrated that there is an emerging research interest in the area of adapting and applying CBT with adolescents diagnosed with AS, and reports that it is an efficacious intervention to support such pupils with a range of needs: anxiety (Sofronoff et al., 2005; Reaven and Hepburn, 2003), depression (Grieg and MacKay, 2005) and social skills (Bauminger, 2002, 2006a, 2006b). There is also an interest in applying CBT approaches for AS adolescents in school contexts (Bauminger, 2002; Fitzpatrick, 2004; Grieg and MacKay, 2005). The methodological designs of existing studies have tended to focus on demonstrating the efficacy of CBT through experimental and quasi-experimental research designs. It was argued earlier in Chapters 4 and 5 that such research designs have the advantage of being 'scientific' and able to make causal claims for the efficacy of CBT. However such experimental approaches tend to control for, or manipulate, the context in which CBT is delivered in order to strengthen causal claims, the reasoning

being that if the setting is controlled for, any observed outcomes must logically be due to the CBT intervention. If a number of similar observations show a similar pattern of outcomes then CBT is considered efficacious and can therefore be generalised to other settings, such as schools. However, such inductive reasoning, in which we move from a number of empirical observations to the formulation of a generalisation, is not as sound as it appears (Warburton, 1996). There always remains the possibility that researcher-practitioner may extrapolate too far beyond the given range of the empirical and observable information.

The control for the environment, in experimental studies, also means that the context or setting of the school is overlooked as a potential influence on the outcomes of the CBT intervention. This is particularly important when we consider that school is often the context in which AS pupils receive intervention and support (Lord et al., 2005). Viewed as organisational communities, schools can vary considerably and this is reflected in the ethos and culture of any individual school (Frederickson and Cline, 2003).

To argue that the challenges for an AS pupil in school arise from their difficulties adapting to the school is to accept a 'medical model' or 'within child' approach to the difficulties they experience. Rather it is more likely that difficulties for a pupil in school arise from how that individual is supported and responded to in a given context (Elliman, 2011). Therefore it was suggested that future research on intervention in school should consider the setting of the school as a context that may impact on the delivery of that support for a pupil, and could impact on the outcomes.

The employment of Realistic Evaluation in the present study represents a novel application of RE for an evaluation of a CBT intervention in school. RE acknowledges the context of a

school as implicated in outcomes and strengthens the validity of a single participant design. Significantly the present study has shown that the setting of a secondary school as a context triggers mechanisms that both support and hinder the progress of the CBT intervention and the observed outcomes.

8.3 The CBT programme delivered in school

The CBT materials employed in the current study were adapted for use with an adolescent (Stallard, 2005) diagnosed with Asperger syndrome (Attwood, 1994b; Anderson and Morris, 2006; Sze and Wood, 2008). Previous research has employed a 'manual' based approach to CBT in which set materials and sessions have been followed according to a script. It has been argued as part of the present research that this is an artefact of experimental research designs which stresses a need for the setting and delivery of the CBT to be standardised for all participants in the research. The present study has employed a 'formulation-based' approach to CBT, which can be adapted to meet the needs of an individual as the process of CBT unfolds.

To consider the effectiveness of an intervention it is necessary to employ measures that can record accurately any changes reported to have been caused by that intervention. The reliability and validity of the methodological tools employed in the present study were documented above in Chapter 6. It is acknowledged in the present study that CBT interventions are designed to be shorter in duration than other psychotherapeutic interventions (Curwen, 2000). However, there must also be a limit to how brief and adapted a CBT programme can be and still be considered to be CBT; both the duration of the sessions and the length of the intervention programme were limited in the present study by the time available for the psychologist to be in school and by the pupil's availability during

school time. This is significant because in considering CBT for use with pupils diagnosed AS it has been suggested that the length of the treatment and the period of administration are both implicated in observed outcomes (Whyte, 2009). There is evidence in the present study that the observed improvements in B's social and communication difficulties were in part a result of the mechanisms triggered such that adults in the setting changed their perception of B and started to interact with him differently. However a significant weakness in the present study is the lack of a follow up measure of B to assess how sustained the reported changes were for B, at home and at school. Although some evidence in the form of a letter from B's paediatrician (Appendix T, page 238) that the positive effects were maintained.

Another factor to be considered in a future study would be to incorporate follow up measures to explore any delay between learning strategies and applying them in everyday school behaviour. The use of between-session activities or 'homework' (reframed as 'behaviour experiments') is common in CBT programmes and implies enquiry based learning. Enquiry based learning refers to knowledge that is built up in small steps through practising or doing something and interacting with others in a group context (Banchi and Bell, 2008). In a future study the CMO configurations could reflect not only the CBT programme and the person delivering the intervention, but also the types of learning implied by the delivery of CBT and the difficulties these may pose for an AS individual. The CBT programme in the present study was designed to reflect the needs of an Asperger pupil, but also to have flexibility to meet any on-going or emerging needs during the intervention. The outcomes of CBT in the present study were reported as differences in pre and post intervention, as is common in CBT interventions (Kirk, 1989), but with the addition of a Realistic Evaluation of the outcomes, which are considered below.

8.3.1 Pre and post CBT intervention measures

In a pre and post test research design some measures are taken of the participants prior to an intervention and again following the CBT, so that differences in pre and post measures can be compared. Such designs are referred to as 'pre experimental' (Robson, 2003, p. 137) and have similar threats to their validity to experimental designs. These include the possibility that events or factors other than the planned intervention have caused the change, or differences between pre and post measures, or that there have been developments in the participant between the measures that affect the post intervention measure but would have occurred regardless of the intervention.

8.3.1.1 Post intervention changes in behaviour

One of the significant outcomes of the present study was the reduction in the difficulties reported for B with social interaction and social communication. Although a reduction in difficulty was observed it is acknowledged that social communication and social interaction are difficult behaviours to measure.

To date we do not have a standardised test of social interaction and social reasoning for typical children that can be used to produce a 'social quotient' for a child with Asperger syndrome. The interpretation of aspects of social skills and social understanding such as reciprocity and peer relationships is currently a subjective clinical judgement.

(Attwood, 2007, p. 57)

In the present study, given the caveats noted above, a measure of 'social relatedness' was employed from the Resiliency Scales for Adolescents (Price-Embury, 2007) which is a self-report scale and was employed because it acknowledges the importance of the child's environment as a key factor in the development of resilient social behaviours. This scale also

emphasises that what we bring as individuals to our environment also plays a role in the development of resilience. The scale provides data that can be compared to a standardised population by age and gender. However in the present study these comparisons were not made, as the test has not been standardised with a population of adolescents diagnosed with Asperger syndrome.

A potential difficulty with using the relatedness measure as a research tool is that it is an 'indirect' measure of social interaction via a person's reporting of their perception rather than what is actually happening *in situ*. Another threat to validity in the present study is that the scales require the responder to have developed a level of self-awareness and emotional states, both of which are known to be difficult to varying degrees of difficulty for children on the autism spectrum (Howlin, 2003a; Jordan and Powell, 1995). It is also more likely that children and young people on the autism spectrum will experience difficulties relating to Theory of Mind (Cumine et al., 1989). Experiencing ToM difficulties can influence an individual's development of the self and self-consciousness (Frith and Happé, 1999). This is not to imply that someone diagnosed with AS does not have self-awareness but that they may experience it differently (Jordan and Powell, 1995). Indeed, some people with AS may have comparatively well-developed ToM skills but take significantly longer to process such information (Kaland, et al., 2002). Given that the development of ToM skills may at best be delayed in AS adolescents and that the very concept of ToM itself is a contested one (Nadesan, 2003), professional judgement was used that B would have some capacity to complete the scales on the resiliency test and that he would not be disadvantaged by the 'ToM nature' of the task.

In the present study, if time had permitted, it may have been helpful to provide a measure of B's actual development of ToM skills rather than relying on clinical or professional judgement alone, as it may have been implicated in the validity of the results of the subscales. To counter this threat to validity, in addition to the participant's own reporting of their behaviour, ratings were also taken from both B's school tutor and from the participant's parent of B's behaviour in the post CBT intervention phase, which could be triangulated with his accounts.

Parental and school tutor ratings were made on an ASD behaviour profile that presented behaviour statements that could be ranked by adults observing the child's behaviour in a given context. In the present study the ratings of B's behaviour were made by a school tutor and his mother, their ratings were made independently, and analysis showed a high degree of concordance. It is significant that behaviour ratings for statements relating to sensory challenges, such as toleration of noise level, demonstrated a high degree of concordance for 'no changes'; this result could be predicted since these statements concerned difficulties likely to be underpinned by physiological mechanisms, and it suggests a degree of reliability and validity for the research tool.

The establishment of reliability and validity for this research tool could have been improved by establishing a level of agreement between those giving ratings, as an 'inter-observer agreement' score or value (Bakeman and Gottman, 1997). However an index was not employed in the present study as there were only two raters; it would have been desirable to have had a larger number of observers, particularly from different curriculum areas and from non-teaching staff. In addition to the reports of adults in the present study it would have

been useful to have involved more of the participant's peers in the rating of social interaction and social communication.

8.3.1.2 Post intervention changes in cognition

Another key finding reported in Chapter 7 with regard to pre and post measures was that changes in B's cognition were observed in terms of the changes, pre and post CBT, reported in B's personal constructs. Children develop their personal constructs as they mature and they gradually become more complex as they encounter more experiences in the world, elaborating their set of constructs which become hierarchical over time (Kelly, 1955; Dalton and Fransella, 2000; Butler and Green, 2007; Procter, 2001). In children on the autism spectrum this elaboration of constructs will be influenced by their acknowledged difficulties with interpersonal relationships, potentially resulting in a hierarchical deficit (Motttrone et al., 1999) or challenges of integrating information into a meaningful whole (Frith, 1989; Happé, 1998). The result can be a fragmented world view in which the bigger picture is not perceived, in addition to difficulties with Theory of Mind (Baron-Cohen, 1997) or subsuming another's way of construing, as Kelly would refer to it (Kelly, 1955). Thus difficulties with 'sociality' personal constructs can lead to disrupted social interaction and the further building of a shared set of constructs with others. There has been increasing interest in applying personal construct psychology to model autistic behaviour (Procter, 2001) and to seek the views of pupils (Williams and Hanke, 2007).

It is acknowledged that the concept of personal constructs as applied in the present study has been presented as indicative of cognitions and explicitly as a measure of cognitive change. However, the theoretical conceptualisation of personal constructs represent more than 'just' cognitions and was originally conceived of as a comprehensive cognitive theory of

personality (Kelly, 1952). In this formulation people are actively involved in interpreting the events in their lives; these then make up our personal constructs, which form the basis of our predictions about the world around us (Kelly, 1952). Indeed Fransella (2005) has argued that representing constructs as mere cognitions misses the point that constructs are a complex integration of many aspects of human behaviour and emotion.

It should also be noted that in the present study the personal constructs assessed were not elicited directly from B but were instead 'donated' by the researcher to B, based on those developed by Butler and Green (2003). It can be argued that such a donated approach represents a threat to validity in that the constructs employed were not B's own. However this course of action was guided by Bannister and Fransella's (1986) view that, when working with personal construct psychology, '... seeking validity measures seems largely superfluous ...'(p. 82) and that it is more useful to think in terms of 'usefulness' and 'understanding' rather than validity.

8.4 A reflection on the Realistic Evaluation methodology

Being reflexive about the choice and implementation of research paradigm and methodology in research is important because methodological choices reflect the embedded philosophical underpinnings which impact on the interpretation of the results of a study (Bettis and Gregson, 2001). The use of a single participant case study design within a realistic framework was considered an appropriate design in the present study as a way to explore the depth about the context of school and any mechanisms triggered that may have supported the observed outcomes. Thus the methodological choices made in the present study reflect the values of the researcher as a 'scientist-practitioner' seeking causal insights in an applied context (Mathews, 2003; Moore, 2005).

8.4.1 A single participant case study design

In selecting a single participant case study it is acknowledged that it is exploratory and as such has known limitations, such as lacking a control and not having a wide enough sample from which to generalise the findings. Case study designs, in general, are criticised as a research approach for lacking objectivity (Yin, 2003). However the single participant case design employed in the present study represents a real life example of the case work of the researcher. Single participant case studies are powerful methods for practitioners seeking to understand the process of an intervention and to understand what characterises the social situation. It can lead to an exploration of what is not always present in the public or empirical observation, what Goffman (1963) called the 'backstage' of social phenomena. In addition, not being representative does not preclude the possibility that we can learn from individual cases and apply their findings in a similar situation. Practicing educational psychologists furnished with enough detail about the context of a case study school and an awareness of a proposed new school context could see outcomes as transferable rather generalizable (Lincoln and Guba, 2000). Transferability implies that some information or knowledge about the setting in which the case study results will next be employed are already known and have been considered, which is consistent with EP practice.

An exploratory approach was considered an appropriate design (Yin, 2003) to investigate the research questions arising from the literature review i.e. to explore the setting of CBT. However the use of an AB approach, in which 'A' represents an initial measure and 'B' a post intervention measure, has limitations, the most significant being that any difference between the pre measures (A) and post measure (B) could have been due to factors other than that of the planned intervention. An improvement would have been to employ a reverse design

(ABA) in which a measure is taken some time after the withdrawal of the intervention to see if any gains attributed to the CBT have been maintained. Although a follow up was not conducted by the researcher a letter from B's paediatrician suggest that the gains made during the case work were sustained. The introduction of an RE analysis adds to the case study by exploring the causal links between A and B and so strengthens the rigour of the research.

8.4.2 Applying Realistic Evaluation in the context of a CBT case study

Locating interventions in schools means conducting research in a highly complex social setting in which it can be difficult to tease out the factors that are influencing the observed outcomes (Timmins and Miller, 2007). Realistic Evaluation was employed in the current study specifically to explore and consider the impact of mechanisms triggered in the educational setting that support or limit the observed outcomes. A rationale underpinning an RE approach is that the people in an organisation are a critical factor in the success (or otherwise) of an intervention, not just the intervention itself (Pawson and Tilley, 1997). The RE analysis of the outcomes enabled a far broader perspective of the findings to be considered than simply those of the pre and post measures. There has been an emerging interest in applying RE in educational settings (Thistleton, 2008; Timmins and Miller, 2007) and in educational psychology work in schools (Matthews, 2003, 2010; Woliter, 2004).

However, this approach has not to date been applied directly in educational psychology case work, or to a CBT intervention for pupils diagnosed with Asperger syndrome. Thus the present study was planned as a pre and post measures design, as is traditionally the case in CBT interventions (Hawton et al., 1989). However traditional research questions are often

framed as 'did it work?' or in a commissioning culture context, was it 'value for money'? However it is also acknowledged that there is a lack of process research or investigating the mechanisms of CBT and not just focusing on the outcomes in the literature (Kazdin, 2003). RE in the present study is employed specifically to address this by considering the context and mechanisms generated in the setting, giving an account of outcomes of the CBT programme in terms of the social setting of the school.

The first stage in the process of RE in the present study was to express the hypothesis of the research in terms of CMO (Contexts, Mechanisms and Outcomes) configurations. This apparently clear and straightforward task proved far more difficult to operationalize in practise. A particular challenge when formulating the CMO configurations was to be clear about operationalising the concepts of a 'context' and that of a 'mechanism'. From the review of the literature they appeared to be ambiguous and to overlap, on occasions to a substantial degree. However the process of thinking about and planning a CBT programme as a set of CMO configurations, in which outcomes are a product of a dynamic interaction between contextual and triggered mechanisms, focused thinking on how the intervention might work, not limiting it to the possibility of improvements for the pupil. As Pawson and Tilley have asserted:

The reality that we seek to understand is stratified ...

(Pawson and Tilley, 1997, xiii)

A fundamental premise of realist research is that reality is stratified and that there are embedded levels of reality in social processes which can have generative mechanisms that support observed regularities.

8.4.2.1 Exploring contexts

In accepting this stratification the question then becomes: what are the proper levels of reality to consider in order to better understand how and why an observed outcome is supported? A way to do this is to present clear outlines of the contexts and mechanisms to be explored. Thus we need to be able to account for the type of context in which the research study is conducted; Pawson and Tilley argue that this is a significant aspect of classification of context types. However they give no logic or methodology for enacting this classificatory process (Pawson and Tilley, 1997). Therefore it is also the case that in research from a realist paradigm the concept of a 'context' is an under researched one (Dahler-Larsen, 2001).

In the present study context was operationally defined to account for the broad context of the school. Context is defined as a set of prior values, norms, or pattern of relationships, which may limit (or facilitate) the proposed intervention, when interacting with a mechanism. To explore these contextual aspects of school in the present study a research tool, the ASD audit, was employed to capture aspects of the cultural context of the school setting. The audit tool consists of a rating scale on which school respondents can indicate relative strengths and weaknesses in areas of practice and policy in relation to ASD pupils attending school. However it is acknowledged that capturing such aspects of school life as 'inclusion' may be difficult to measure empirically, as they rely in part on subjective views such as, 'attitudes', 'school ethos' and the 'feeling of being included' that play a critical role in the experiences an Asperger syndrome pupil at school (Pratt, 2004).

In the present study it is acknowledged, with hindsight, those accommodations made for AS pupils in school as a reflection of the school's sensitivity to the issues of AS may have been a

rather narrow conception of a school context. This extends to the ASD audit tool employed as a means of establishing the context for the CBT programme in school in the critical realist conception of a context. A significant threat to validity was that the audit tool was designed for and only administered with a senior member of school staff and therefore only reflects the views of inclusion from a strategic level and not that of actual classroom practice. Although non senior staff were interviewed for the realist interview and this may have given an insight into the CBT work in school from their perspective a critical questions remains as to what is to count as a context? In a future investigation it may be advisable to refine the concept of the context, in realist terms, so that it focuses more closely on collecting data from the actual behaviour of staff and the experiences of being a year 8 pupil experiencing challenges in this context. This could have been improved by recruiting observers who could have made structured observation of B's actual behaviour both in lessons and at break times in school. The observations could have included both adults and B's peers in school and concordance statistics could have been applied to provide a degree of reliability and validity of the observers. Thus triangulated observation data could form a baseline form which post CBT observations could be compared and comments made about the actual pattern of B's behaviour in school. Such analysis might have indicated the effectiveness or otherwise of the CBT sessions or evidence of specific strategies or techniques being applied, and suggested further mechanisms that may have been operating in school that facilitated or limited the observed outcomes. It may be useful in future research to represent the contextual features of school as being nested and embedded at different levels of the school's interaction with the child, i.e. the classroom ecology and the approach of individual teachers, as well as the wider issues of specific organisational accommodations for autistic pupils.

8.4.2.2 Mechanisms

Operationalizing mechanisms also proved challenging, given that in their account Pawson and Tilley (1997) fall short of providing a definition of a mechanism. They instead talk of capturing the essential characteristics of mechanisms. For the purposes of the present study a mechanism was defined as a 'resource' that, when triggered in a given context, gives an observed outcome. The specific mechanisms proposed to support the outcomes in the present study were derived from what the research literature suggests should underpin outcomes. In addition to the research literature the views of those working in the school where the CBT was delivered were also sought using a realistic interview (Pawson and Tilley, 1997). The aim of the realistic interview is not to record and describe the respondent's views and opinions as such, but to draw out from the interviewee's nuanced knowledge the workings of the organisation in which the CBT was conducted. The realistic interview approach represents an improvement on more traditional interviews which can be seen as 'data driven' (Pawson and Tilley, 1997, p. 155) that is, asking questions to seek responses. A realistic interview is, by contrast, what Pawson and Tilley (1997) call 'theory driven'; an explanation (or theory) is given of the researcher's theory of how the intervention works. The respondent's views about the researcher's proposed intervention in their workplace are likely to reveal underlying mechanisms that may be triggered during the intervention. These mechanisms are captured in the participant's responses to their understanding of the researcher's theory, capturing the often unaddressed feelings participants may have, such as 'oh but if you tried that in our school ...'.

In the present study it was planned to conduct the realistic interview with a sample group of school staff representing different role functions and expertise. However for practical reasons this was not possible, thus data on staff views was collected, but the opportunity was missed

to collect responses as part of a group dynamic in which consensus and challenges may have represented key potential mechanisms. However one advantage of the individual approach to interviews was that it may have avoided any conflicts of status that may have led to a consensus or disagreement in the group, based on the power relations between the participants rather than their actual opinions. Thus individual interviews may have served to increase the sense of confidentiality about expressing participants' true opinions about the planned intervention, unhampered by the scrutiny of their colleagues.

8.4.2.3 Outcomes

Outcomes in realist research are seen as contingent on both the context and mechanisms acting together to produce an observed outcome. In the present study outcomes were considered in two ways, firstly in terms of the observed differences between pre and post measures and secondly, in terms of CMO configurations. Thus there were multiple outcomes that were used to confirm the interaction of specified mechanisms and the school context, which moved the present study beyond 'did CBT work' to provide a deeper analysis of how it worked.

The present research, therefore, looks beyond the empirical observed outcomes to the real underlying mechanisms triggered in the context that support the empirical observations. However it was not possible to explore every conceivable CMO configuration and this raises the possibility that there may have been 'causal powers' that existed in the present study that were not revealed. Thus in future RE research of this type consideration should be given to research tools that are sensitive enough to capture the traces and shadows of the mechanisms that support observed outcomes in the setting. In addition to this Pawson and

Tilley (1997) recommend repeating and refining these CMOs in successive repetitions of the experiment or study.

8.4.3 Causation: Applying retroduction

Since the causal logic of existing CBT studies to support AS pupils is based on deductive reasoning, the patterns of observed regularities or outcomes can be generalised to future situations as they are indicative of underlying cause. Retroduction by contrast is a mode of inference in which observed events are explained by postulating and identifying the mechanisms which are capable of sustaining the observed outcomes (Sayer, 2000; Lawson, 1997 Pawson and Tilley, 1997).

There is no specific guidance on how to perform retroductive analysis in Pawson and Tilley's (1997) work; indeed they do not use the term 'retroduction'. The aim of the present study, though, was to show that there was a linking thread in the triangulated data between the contexts, mechanisms and outcomes observed. However because variables were not controlled for, one can never be certain that it was the mechanisms proposed or some other unstated mechanism(s) supporting the outcome. The results were collected and presented in a way that CMOs could be considered with the supporting evidence listed beneath them (see Chapter 7). This triangulation of data is an acknowledged way of realising the process of retroduction in a realist study (McEvoy and Richards, 2006).

8.4.4 Some challenges of applying RE to a CBT case study in school

The motivation of the researcher to employ RE was a scientific approach that enabled some discussion of the underpinning mechanisms or causes of any observed outcomes of the CBT to support an AS pupil. RE enabled a broader view of the school as a context for intervention delivery to be considered, and allowed the study to look beyond the empirical results to the real mechanisms underpinning the observed outcomes. It was considered by the researcher not to be sufficient just to know that the intervention had worked, but to explore how it may have worked in the given context. It was anticipated that the RE methodology would cast light on some of the mechanisms that supported a successful CBT intervention in school for pupil diagnosed with AS. It was also anticipated that the research might demonstrate a method for use in educational psychology case work in school. RE was particularly helpful in the present study in:

- Encouraging the researcher to think at the start of the research what the outcomes might be and to systematically propose mechanisms that might account for this outcome. Thus the approach to the design and delivery of the CBT was developed in a different way.
- The approach also highlighted the need for a consideration of the social context of the setting into which a planned intervention is to be delivered, so that the educational setting could be considered to have a potential impact on the outcomes of the intervention. This is a significant gap in the existing literature on applying CBT in schools.
- Coming to see the outcomes of the CBT intervention in broader terms as being part of a multiple and dynamic interaction between triggered mechanisms and the specific context and these acting together to produce outcomes.
- The realistic analysis of the outcomes through triangulation and 'retroduction' enabled a causal consideration of the outcome of the single case design extending the scope and utility of a single participant design.

However applying RE was not without its challenges; particularly difficult was moving from the initial theoretical formulation of CMOs to testing them *in situ*. Another significant

challenge was the difficulty in demonstrating the evidential links between individual CMO configurations. This in part stemmed from a difficulty in the degree to which contexts and mechanisms seem to overlap, despite operationalized definitions. This presented a particular difficulty when triangulating the data and being able to discriminate between the relative effects of contexts and mechanisms. However this could be an artefact of the operational definitions used in that contexts and mechanisms were perceived as distinct entities, when in fact they actually represent a dynamic interaction. This was a challenge in the current study because there is a paucity of research on how autistic characteristics of children are influenced by educational settings (Pellicano, 2007).

The findings in the present study are provisional; the intervention has not been repeated so that the programme specification can be further refined, but a strength is that the researcher has been able to consider some of the mechanisms in a 'one off' piece of school case work. That the CBT was efficacious and that the educational setting influenced the outcome of the therapy is a significant and novel finding because how the different elements of a therapeutic intervention interact and combine to produce outcomes is currently poorly understood in CBT work in general (Kendall and Choudhury, 2003). The underlying mechanisms that support a successful CBT intervention are often not explored in the existing research literature (Rait et al., 2010). Thus the present study makes a small, modest inroad into highlighting how the process and contextual setting of a school for a CBT intervention might be considered alongside the observed outcome measures.

The central research question of the present study were to consider the efficacy of CBT to support a pupil diagnosed with AS in school and to explore RE as a methodological approach

to investigate CBT. The present study has demonstrated the efficacy of CBT but also reported a number of identified mechanisms:

- adaption to CBT programme and delivery,
- school policy that recognises challenges faced by AS pupils,
- school has a good relationship with the educational psychologist,
- perception that use of CBT is a good intervention,
- individuals in school work to support and facilitate CBT for the pupil,
- child's abilities and skills to engage with CBT programme,
- changes to school staff's perception of B and subsequent behaviour changes.

These have supported the observed empirical outcome at the real level, however what is not clear from the outcomes of the RE analysis is the relative importance or impact of any individual mechanism(s). The mechanisms reported in the present study appear to have equal value and so their relative importance in supporting the outcomes cannot be determined. Yet this is a critical aspect of planning and delivering future interventions that are more likely to have positive outcomes for pupils in school.

Exploratory case studies are not uncommon in the area of AS research and this can be a difficulty when trying to establish a general base on which to build further research (Attwood, 1989, Ali and Frederickson, 2007). However in the present study there is considered to be a 'depth-breadth' payoff in that considering one case, or having a lack of breadth, is made up for by providing a detailed and robust analysis of the single case outcomes, a depth of analysis. This depth of analysis was further systematised by the use of RE analysis to further deepen the analysis of the case study, but also to highlight causal mechanisms in the intervention. This methodological process further supports the view that

contextual and social factors are critical when planning interventions for autistic children (Nadesen, 2003; Pellicano, 2007).

8.5 Summary and implications

One limitation in the present study was that the concept of a context was operationalized to reflect the culture of the school in relation to accommodations made to include pupils with ASDs, and in so doing missed other potential mechanisms. For example, the therapy sessions could be seen to be a micro context nested within the wider school culture, and as such reflects another ontological layer of 'the real' in the present study. In addition to this, more could have done to include the views of the participant's peers to triangulate with outcomes reported by adults in the school setting (Bauminger, 2006). However the present study does lend further support to the emerging literature on the efficacy of using CBT to support adolescents diagnosed with Asperger syndrome. A key finding that changes were observed in the thinking and behaviour of school staff toward B, that contributed to changes in B's thinking and behaviour, are consistent with results reported by Barrett (2006). Therefore there is a clear implication that future studies should consider the role of significant adults (and peers) in school in terms of the degree to which the intervention alters their relations with the participant and so facilitates the aims of the CBT.

A central importance for EPs as researcher-practitioners is the need to consider the evidence base for the interventions that they recommend and apply in school (Ali and Frederickson, 2007). The present study is a small scale exploratory study, but is consistent with existing research evidence in school settings that emphasise the value of a Realist Evaluation approach (Woliter, 2004; Timmins and Miller, 2007 Thistleton, 2005, 2008, 2009; Matthews, 2003, 2010) for maintaining the scientific rigour of research in complex social settings. Thus

the use of RE is consistent with the role of the EP as a 'scientific practitioner' as outlined in the 2004 *Children Act* which suggests that psychologists should be responsible for highlighting the impact of their interventions in school settings. In the present study the EP was shown to add value to the delivery of CBT for AS pupils as a highly skilled practitioner who had a good knowledge of the school systems and the challenges of AS pupils at school.

There is little evidence in the existing literature about the nature and type of CBT that would benefit children with specific learning needs (DoH, 2004); the present study suggests that a formulation based approach to CBT is important. There is no panacea intervention for children on the autism spectrum (Jordan et al., 1998) and this may well include attempts to structure the environment favourably as an inclusive strategy (Elliman, 2011). Thus it is likely to be those interventions that have been individualised for a particular child on the autism spectrum that are likely to have positive impacts (Jones and Jordan, 2008; Humphrey and Parkinson, 2006). Educational psychologists are well placed to design and deliver these interventions with both their knowledge of school systems and the the challenges of AS in school and knowledge of evaluating the impacts of interventions in complex social settings (Farrel et al., 2006).

8.6 Questions for further research

The findings of the present study suggest a number of questions for further research, particularly increasing the data set beyond a single case study. The present study suggests that the methodological approach of RE is a practical approach to considering the underpinning mechanisms that support observed outcomes of CBT case work in school. However further research needs to consider a wider sample of individuals (or a group) to

establish whether there are any commonalities or a core set of mechanisms across different pupils and contexts that support CBT outcomes for AS adolescents.

In a future study the researcher could also be separate from the delivery of the CBT, so that mechanisms relating to the dynamics of the delivery of CBT itself could be explored as this could be implicated in outcomes (Rait et al., 2010).

Future research should also take account of the communication modes that AS pupils themselves are considered to favour. Reports suggest the evolution of a distinct voice or narrative of those with AS, which has developed on social networking and blogging sites (Nadesan, 2003). Indeed Bagatell (2010) has likened the computer, as a communication device for AS individuals, as having the equivalent value to sign language for the deaf. Therefore future research should explore the way that computers could be used to provide a means of social communication for this group (Elliman, 2011) and to be a mode of CBT delivery in school. The National Institute for Clinical Excellence (NICE) has published results on the efficacy of Computerised-CBT (C-CBT) in primary care trusts, suggesting it is an effective approach (Proudfoot et al., 2004). CBT software could be written with adaptations for AS pupils, reflect the school in which they are experiencing difficulties and be accessed through the school network; this raises the question of what mechanisms might operate to facilitate positive outcomes for an AS pupil using a computerised CBT approach in school?

It was also demonstrated in the present study that the use of PCP (Personal Construct Psychology) was useful in determining changes in the pupil's personal constructs. There is emerging interest in PCP and autism, both to explain autism and as a method for eliciting autistic pupil's views (Procter, 2001; Moran, 2006; Williams and Hanke, 2007). A useful

question might be to ask what efficacy there is for using PCP as a 'therapeutic' intervention to support AS adolescents, as an alternative to CBT?

Realistic Evaluation has been shown in the present study to be a fit for purpose methodology for investigating CBT interventions located in a mainstream school setting. In future a meta-analytic survey of existing research on employing CBT with AS pupils could be reconsidered, retrospectively, from a realist perspective (Timmins and Miller, 2007). This would enable an exploration of any patterns in the existing data that suggest what mechanism(s) are operating in different research studies.

8.6 Final word

The findings of the present study, although small in scale, extend the existing literature on the use of CBT to support pupils with AS, demonstrating that the educational setting is important in triggering mechanisms that support outcomes of CBT intervention. The application of a Realistic Evaluation research design has been shown to be an effective methodology to provide an evidence base for the delivery of CBT, designed for the needs of an AS pupil, delivered in school by an EP. RE has been shown to be effective for analysis of a case study that is both scientific in orientation and gives due regard to the contextual setting which offers a way in which EPs can demonstrate the effectiveness of their work.

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APPENDIX A

Programme details

Consistent format for delivery; every session to follow the same format, at the same time, in the same place – emphasis on high structured and predictable sessions.

Content planned to be matched to needs of AS pupils:

- Concrete language
- Visual presentation of materials
- Didactic approach
- Sessions started with recap (if not first session) and home work 'or behaviour Experiment'
- Core content delivered working together or child focused on task
- Organised around visual aids
- Key points pre-prepared
- Formulation shared visually 'mini-formulation' link between thoughts, feelings, and behaviour
- Handouts to visually reinforce core teaching points
- 'Behaviour experiment' homework set.

Seven sessions (40 minutes each).

1. Affective Education: Introduce on emotions/thinking and behaviour – focus on positive emotions

Rapport building, welcome, information swap (getting to know each other) good news item. Some baseline measures taken.

Introduce mini formulation using visual cue cards to represent thoughts feelings and behaviour.

Separating situations, emotions and thoughts quiz.

What is CBT? How will it help? What happens?

Cartoon character introduced (in different scenarios) client to complete thought bubbles. Focus on positive behaviours and feelings and how to recognise them in our own bodies (counting heart rate etc...).

Conclude session with recap of thoughts feelings and behaviour.

Homework (between session task) set to collect pictures from magazine and label the emotions they are expressing.

2. Affective education: focus on current challenges/share formulation

Focus on identifying different emotions and feelings from behaviour cues and facial expression. The 'thoughts feelings and behaviour triangle' employed again. The homework task was employed to link with previous session.

Scenarios (about school) presented and client reports how they feel and rate their feelings (introduction of a 10 point rating scale). When do I feel like that?

Introduce the Padesky 5 aspects model for considering the thoughts, feelings and behaviour in school.

Between session tasks to think about a situation(s) in school that cause concern and to write them up as thoughts feelings and behaviour chart.

3. Effective Coping skills: focus on existing personal strategies

This session introduces the notion of social difficulties; these are explored with the therapist using normalisation statements "lots of people struggle with ...", "I know some people worry about", "I hear that..."

To explore assumptions and predictions. This is discussed in terms of future/now discriminations. Formulation shared with client.

- Social skills
- What words mean
- Behaviour in class.

Examples of how what we say and do may change others. Brief discussion of idioms.

Social difficulties through *Mr Bean* YouTube clips. Why is it funny? How does he behave? Who might he feel? How do others interact with him?

Between session task: watch a TV soap opera (or other TV programme) which characters do you approve / disapprove of? What do you notice about their behaviour? How do others responds to them?

What would you say on a telephone message to a friend?

4. Cognitive and or behavioural restructuring: explain sequences of behaviour change

Apply thoughts and feelings learned to date linked with donated social scenarios in school. Therapist starts to teach strategies for managing situations in school and introduces the notion of a 'behaviour experiment', having a theory about how to manage and how to collect data on that theory.

To plan an experiment a behaviour map was used (think about situation and what we want to happen and map our behaviour on to it):

- Expected behaviour –what you think others expect
- How this behaviour make you feel/others feel
- The consequences you expect I that situation
- How other may feel when you do expected behaviour
- How you feel.

A school lesson was then selected to conduct the experiment following the plan (the above bullets can be written as a structured numerical/linear table).

5. Effective coping skills: problem solving strategy

Recap of 'homework' and explore the planning for the behaviour experiment. Client encouraged to develop (or use) monitoring charts and rating scales. Notion of a responsibility pie introduce for analysing situations and solving problems.

Example of difficult scenario and how we identify problem and plan a map to solve it.

Highly structured plan developed and set structure to help sequence predictable steps to solution

Map agreed with therapist and time set school diary used to prompt. Score sheet issued for teacher in whose class the map would be employed.

Homework task: to read through and employ plan in a stated lesson during the week.

6. Effective coping skills: consolidation forward planning

A review of the behaviour experiment from the client's view and from those of the teacher in the class.

Consolidation of skills explores in behaviour experiment, generic plan presented for use in future.

Rating scales revisited and discussed in terms of the context of the behaviour experiment. Using data to prove our experiment.

Homework task: prepare a new behaviour experiment.

7. Overview of sessions 1-6: analysis, application, identifying future help.

The session reviewed the behaviour experiments and ratings, celebrating success. Baseline measures re-administered.

Set of small steps identified to start next step of behaviour experiment and to employ problem-solving framework.

Further help and support discussed and a plan and set of acting agreed.

Problem solving

- ❖ Recognising what a problem is
- ❖ Restating the difficulty as a challenge – with a solution focus
 - Identify who can help in reaching a solution
 - Introduce the homunculus
 - Brain storming – visual representation
 - Use of logic (evaluate evidence/Socratic questioning)
 - Antidote to poisonous thoughts
 - Social stories/ scripting
- ❖ Consider solutions and consequences – choose most appropriate
- ❖ Develop step by step action plan
- ❖ Take action
- ❖ Evaluate and adjust as necessary.

APPENDIX B

ASD Behaviour Rating Profile Form

Behaviour	0	1	2
<p> follows verbal instructions in 1:1 follows verbal instructions I a group recognises and responds to non-verbal cues understands abstract concepts understands ambiguous language understands implied meaning follows the language of the lesson without difficulty joins conversations appropriately gives answers in an appropriate manner uses appropriate language and behaviour accepts another person's point of view shares toys/equipment turn takes and follows rules of game works with an adult accepts help from all adults works with peers </p> <p> follows peers' lead chooses to engage with peers has a friendship group shares interests with others engages with appropriate interaction with peers accesses an activity during unstructured times chooses to engage with peers rather than adults understands the differing status of adults uses appropriate behaviour during social interactions engages in a group activity/classroom setting engages in a group rather than solitary activity engages in appropriate social interaction with peers </p> <p> sits still during individual or group setting accepts boundaries for special interest changes behaviour according to the situation accepts changes in rules, routines and procedures is able to engage following a distraction accepts and follows rules and routines understands consequences of own behaviour easily calmed and redirected </p>	<p>g a social</p> <p>work</p>		

Behaviour	0	1	2
<p>organises equipment for lessons organises equipment needed for the day organises self at home time gets changed independently for PE completes homework and hands it in finds a way around the school generalises learnt skills into other areas connects previous learning to new learning</p> <p>tolerates a rise in noise level copes with crowded places tolerates others touching self or possessions writes legibly tolerates any textures eats most food works comfortably in any areas sits without squirming stays where asked without appropriate running</p>			

APPENDIX C

ASD Audit Document for School

C: Is there a system for the early identification and assessment of children with ASDs?	No Evidence	Some Evidence	Well on the Way	Achieved
<p> Ci. There are clear referral pathways once difficulties are suspected. </p>				
<p> Cii. All teachers are aware of their duties under the SEN Code of Practise in Identifying Children's Needs, including those whose difficulties fall within the triad of impairments. </p>				
<p> Ciii. There is good regular communication between special educational needs co-ordinators (SENCOs) and the teaching staff. </p>				

G: Whole school approaches to inclusion

G1: does the school's SEN policies promote inclusion and cover children with an ASD?	No Evidence	Some Evidence	Well on the Way	Achieved
G1i. ASDs and their impact for the children and school are recognised in the schools policies and development plans, which reflect duties under the Disability Discrimination Act and the inclusion framework.				
G2: Does the school have whole-school awareness training in ASDs so that staff understand the implications of the triad of impairments for learning and behaviour as well as any other associated difficulties such as sleep disturbance, motor and perceptual difficulties or dietary needs?				
G2i. At least one member of staff, possibly the SENCO, with the support of the head teacher, has received specific additional training in ASDs.				
G2ii. School covers ASDs during in service training programme and staff know for example how and how not to meet, greet and redirect children with ASDs.				
G2iii. Staff can plan and implement responses to behavioural problems as they arise.				
G3: Are all staff who teach a child with an ASD aware of their individual needs?				
G3i. All the staff have been given relevant information about the individual child with an ASD and their particular needs within the triad of impairments.				
G3ii. Information is shared regularly with all staff teaching the children concerned.				
G3iii. Staff have copies of the children's IEPs.				

G4: Are there clear internal mechanisms to provide advice to staff on ASDs and for staff to provide feedback to the SENCO or named person for ASD support?	No Evidence	Some Evidence	Well on the Way	Achieved
G4i. Non-teaching time is allocated.				
G4ii. Courses on ASDs are funded.				
G4iii. There is a clear policy on behaviour management and ASDs.				
G5: Depending on the age and the wishes of the child and their parents, do other children and parents know about the implications of having an ASD and how best to help the child?				
G5i. Peers within the school and their parents have attended an ASD awareness raising session.				
G5ii. Strategies such a circle of friends or buddy systems are in place.				
G6: Does the school have a named person to co-ordinate information about the children with an ASD?				
G6i. Pre-entry information, planning and co-ordinating interventions, monitoring progress is co-ordinated by a named individual. The person may be the SENCO or a key professional within the school with ASD expertise/knowledge who meets the Teacher Training Agency's Specialist Standards.				
G6ii. In secondary school there is a system that enables a representative from each subject department to: <ul style="list-style-type: none"> ➤ Know about the child's needs ➤ Work with the named co-ordinator to address them. 				

G7: Are both formal and informal opportunities made for parents/professionals and school to exchange and upon information on ASDs?	No Evidence	Some Evidence	Well on the Way	Achieved
G7i. School staff and parents are part of an Autism interest group which may include staff from other schools.				
G7ii. The School has good information for their own staff and parents and outside professionals about how they have worked to meet needs.				
G8: Particularly for compulsory school age children, does the school environment help to meet the child's learning and social needs?				
G8i. Account has been taken of the need to create a low distraction work place with in the classroom setting (for example, the creation of a work station area) and a clearly defined space for personal equipment and belongings.				
G8ii. The school makes a quiet room available at any time in the school day and appropriate break time activities are offered and taught.				
G8iii. The school has undertaken a risk assessment which takes account of the lack of awareness of hazards of some children with ASD.				
G8iv. Clear signs/symbols/photographs are in evidence in school communal areas and subject bases.				
G8v. The school has taken account of the vulnerability of some children with ASD to environmental distraction in terms of acoustics, smells and lighting (for example the use of daylight tubes in classrooms).				

G9: Is there a flexible but systematic approach to develop the necessary skills for children with ASDs to join in whole school experiences?	No Evidence	Some Evidence	Well on the Way	Achieved
G9i. Well understood routines and rules of conduct, clear verbal instructions and visual signs are used to allow inclusion in whole school experiences such as assemblies, sports day, and school council and community involvement.				
G10: Is there flexibility in the arrangements around class attendance?				
G10i. School staff recognise that moving between classes can be very difficult for some children with ADS.				
G10ii. This is reflected in the timetables (for example they may move slightly earlier or later than their classmates to avoid difficulties in the corridor which may be confusing or distressing).				
G11: Do teachers adopt ASD-friendly communication strategies?				
G11i. Teachers provide visual clues for the child in the form of timetables, key subject words and language.				
G11ii. Lesson plans are written in such a way that a child can check where they are up to.				
G11ii. Care is taken in the use of language in trying to avoid metaphor and overly long explanations.				
G11iii. Teachers promote ASD children's personal and social development (pastoral support).				

H1: Is there a named member of staff to identify any areas of difficulty a child with an ASD might encounter?	No Evidence	Some Evidence	Well on the Way	Achieved
H1i. There is a named person who knows about ASDs within the school who is available to discuss any concerns the child may have.				
H1ii. A named member of staff has a responsibility for ensuring the child knows when and where they have to be and what equipment they need to have with them in the course of the day.				
H2: Within the school's general anti-bullying policy staff are aware of the vulnerability of children with an ASD to bullying?				
H2i. The school recognises and understands that some children with an ASD are vulnerable to bullying, and has a support and monitoring in place.				
H2ii. For example, the child has a mentor/key person to discuss areas of personal concern.				
H3: Is there support in mainstream schools for children who are at risk of disengaging from learning because their ASDs alienate them from the learning process?				
H3i. Connexions and /or the school pastoral support systems provide guidance informed by an understanding of ASDs.				
H3ii. Support is available from the locally based NHS Child and Adolescent Mental Health Service working in partnership with community nurses and speech and language therapists.				
H4: Does the school foster positive relationships between the child and their peers?				
H4i. Examples are evident of buddy or mentoring schemes, 'circle of friends' or peer tutoring, lunchtime clubs and group support systems both in classroom settings and at break and lunch times.				

The role of the SENCO	No Evidence	Some Evidence	Well on the Way	Achieved
K1: Is the SENCO aware of all the children in the school who have an identified ASD?				
K1i. Information on ASD diagnosis is noted on the SENCO's records.				
K2: Does the SENCO regularly meet the parents to discuss the child's learning needs and progress and is there frequent communication with parents about children's experiences at school and at home?				
K2i. Parents are given the opportunity to meet the SENCO and the class teacher on a regular basis.				
K2ii. There is a home-school diary or alternatively there is use of video diaries or one way screens or photographs.				
K3: Are there mechanisms in place to make sure SENCO is aware of all appropriate support agencies and have links been made?				
K3i. The SENCO is aware of the support available from support services, health and social services and voluntary agencies.				
K3ii. Other agencies are aware of all the children with ASDs in the school and give support when necessary.				
K4: Are there checks in place to ensure the child is learning?				
K4i. The SENCO or named staff member has responsibility to check whether the child is experiencing difficulties, in either curriculum access or understanding rules and social expectations of school.				

L: The school curriculum	No Evidence	Some Evidence	Well on the Way	Achieved
L1. Does the school offer, in consultation with the child, parents and professionals, a curriculum adapted to the child's needs and is this reflected in the child's statement, where applicable?				
L1i. The school offers a focused personal and social curriculum which addresses the triad of impairments.				
L2: Are clear links made visually and/or verbally by the teacher between the subject matter of the lesson or activity and a) previous lessons/activities, b) the purpose of the present lesson/activity, c) expected outcomes from the child?				
L2i. There are visual cues as to the plan, content and aims of the lesson activity, for example written cues or symbol instruction, colour coding or highlighting key aspects with a highlighter pen.				
L2ii. Concepts are reinforced by using language appropriate to the comprehension level of the child.				
L2iii. Staff ensure the child's attention before addressing them and key words are used as symbols.				
L2iii. Records/evidence from previous work is available to the child and key points/photos are highlighted depending on what is appropriate for them.				
L2iv. Lessons/activities follow a predictable pattern, or where there is no predictable pattern clear visual and or verbal markers are laid down which highlight the structure of the lesson or activity, regular routines are used.				

L3: Is homework clarified for the pupil with an ASD according the child's skill level and, where appropriate, is this explained to parents or care staff?	No Evidence	Some Evidence	Well on the Way	Achieved
L3i. The child has a named person who checks that homework tasks have been understood and recorded as necessary.				
L4. Are there opportunities to ensure that skills taught in one part of the day are generalised and transferred into other situations and settings?				
L4i. There are scheduled opportunities for all who work with the child, their parents and carers to meet regularly, and to spend time with the child in different settings.				
L5: Are arrangements, which take account of the needs of children with ASDs, made for national curriculum tests and public examinations?				
L5i. The school prepares the children in good time for the test/assessment situation that they will encounter using the rehearsal and explanation.				
L5ii. The school is familiar with special educational needs assessment and reporting arrangements for the current year and informs relevant bodies in good time.				

L6: Are support systems in place to ensure the child's educational, social and life skill needs are recognised and responded too?	No Evidence	Some Evidence	Well on the Way	Achieved
L6i. There is an ongoing monitoring of children's access to the curriculum, and social activities, involving the child's mentor where they have one.				
L6ii. IEPs contain targets for acquiring life and self care skills.				
L6iii. Arrangements are in place to ensure that all who come into contact with the child are able to address their life skill needs in a consistent fashion.				
L6iii. Teachers and parents have jointly planned strategies for addressing learning needs in and out of formal educational setting.				
L7: Is account taken of individual children interests?				
L7i. Where appropriate the child's special interest is incorporated into general class and subject specific work as a mentor.				

APPENDIX E

Parental Consent Form

Consent for An Educational Psychologists involvement

As part of my Doctoral research at The University of Birmingham I am carrying out individual case studies with pupils in school. The aim of the research is to deliver CBT (Cognitive Behaviour Therapy) to pupils diagnosed with Asperger Syndrome and to evaluate how effective this is in a school context, as opposed to a clinic setting. This work will usually involve:

- An observation of the pupils in class
- An assessment of the pupil
- Discussion with the pupils about their current circumstances
- Discussion with staff in school about the pupils circumstances
- A set number of therapy sessions with pre CBT and post CBT measures
- Follow up meeting with school staff parents and pupil

I will work individually with the pupils in school, following their consent to do so, I will also liaise with parents regularly or as needed, in addition to questioning and working with school staff.

Participants in the case study have the right to withdraw from the intervention at any point in the process. The confidentiality of the intervention the pupils and the school will be maintained.

The reasons for the case study and my rights to confidentiality and right to withdrawal have been fully explained to me and I am in agreement with the involvement of the educational psychologist.

I am the parent/legal guardian of B. [REDACTED] (Name)

Signed [Signature] Date 26.10.09

Print full name [REDACTED]

Contact details [REDACTED]

If you require any further information about the intervention I can be contacted at the Jennie Lee Centre Wednesfield Wolverhampton on [REDACTED]

Thank You

Dean Woliter CPsychol
Educational Psychologist – Senior Practitioner
(Post Graduate Researcher - The University of Birmingham)

APPENDIX F

Realist Interview Script for use with school staff member 1

Script

I would like to find out more about what you think about certain aspects of the CBT intervention we have been running school. I am using an approach called a realistic interview in which I will share my views with you and ask you what you feel about these. To aid my memory and to be as accurate as possible I am going to tape the interview. I will use the information to summarise the main points and make these notes available to you so that you can check that they are a fair representation of our discussion. After I have used the recording I will destroy it, and should you wish at any time to leave the study I will destroy all records of our communications. Your confidentiality will be maintained throughout the study. I will not use your name or identify you in any other way in the research unless you give me written instructions that I can do so. I will not use the name of the school in the research, unless I have been informed in writing by the head teacher that the school would like to be named.

Are there any questions before we start the tape and the interview?

Explanation

The purpose of the interview is to find out what you think about the idea of using CBT in school with child who have been diagnosed with AS. I will share some of my plans and thoughts with you and ask for your comments.

1. How confident do you feel differentiating lessons for children diagnosed with AS?

0-10

Why that score?

Where do you think you might be after being involved in this CBT intervention?

What would help to increase your confidence?

2. We decided to use CBT in school because it has traditionally been carried out in a clinical setting away from where the children experience difficulties. It was thought that conducting CBT in school with some consultation with school staff may play a part in helping the child to generalise some of the strategies in school with school staff support.

What do you think about this?

Why is this the case?

- 3. We feel that the use of CBT in a community setting like a school will be more effective than having the same therapy in a clinic.**

What do you think of this as an idea?

Do you feel that your role would be important in effective the outcomes for the child?

- 4. We thought that involving parents in the intervention too would help.**

What do you think of this?

Why?

- 5. We thought that working collaboratively the EP, directly with the child and school staff knowing what things the child was working on in therapy would help the child to reach their outcomes?**

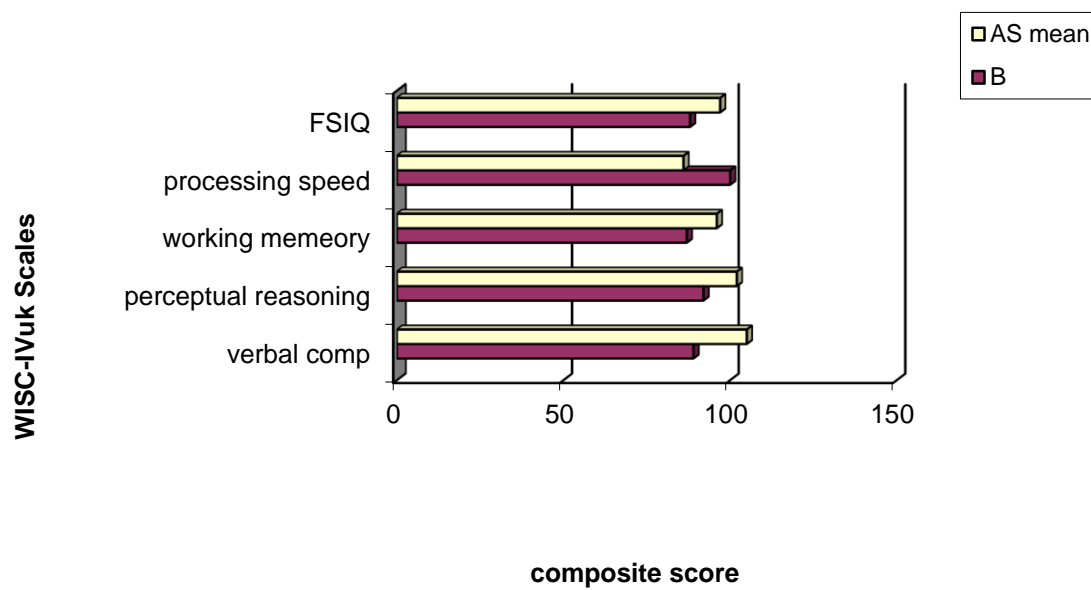
What do you think of this?

What do you think will change in your practice?

APPENDIX K

WISC-IV UK Results for B

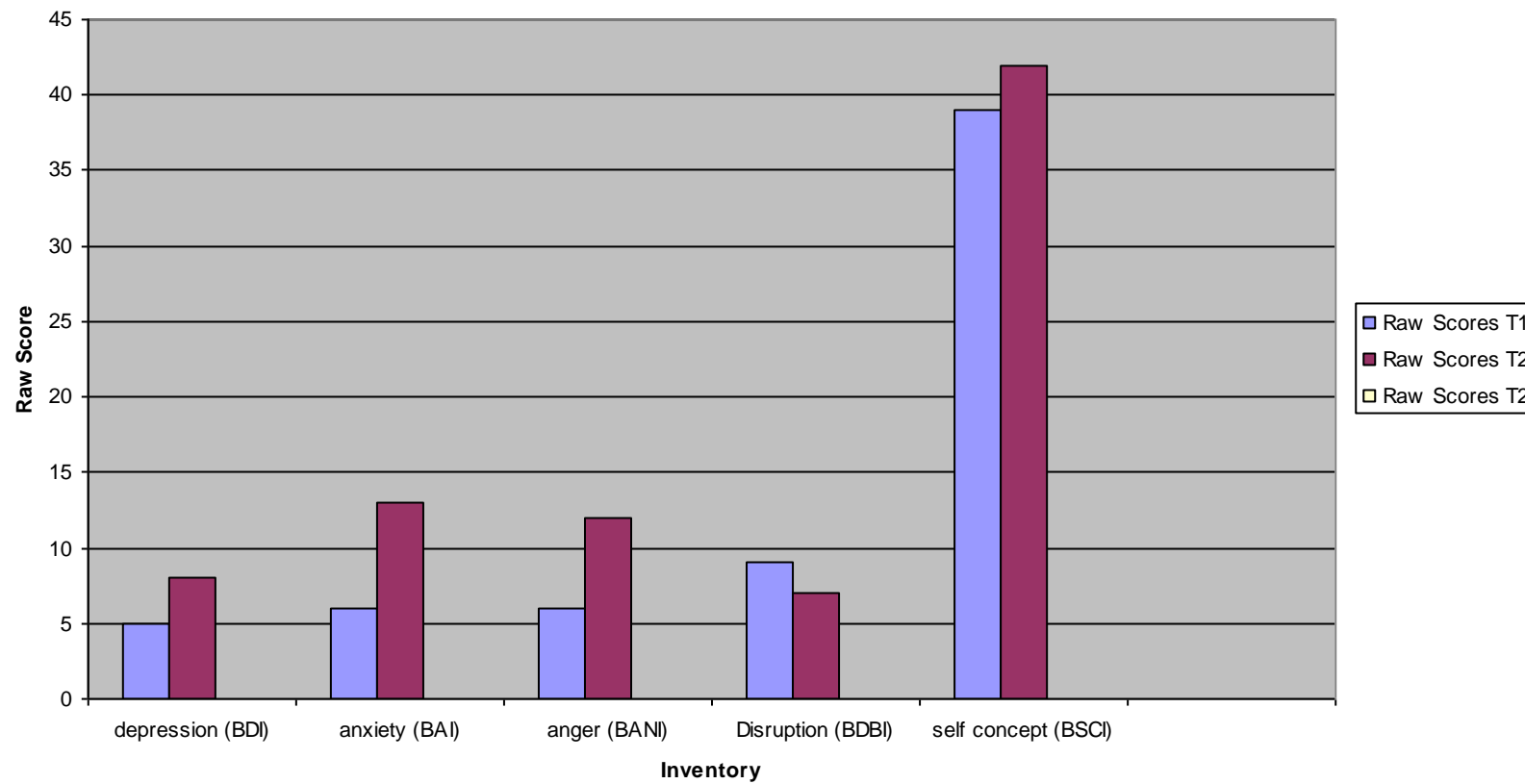
A comparison of the subscale scores for the WISC-IVuk for B and the average scores for the AS sample on this test



APPENDIX L

Beck Youth Inventory Scores for B

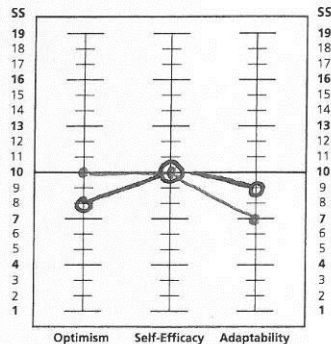
Before and after Raw Scores on the Beck Youth Inventory



APPENDIX M

Resiliency Scores for B Pre and Post the CBT Intervention

MAS Subscale Profile

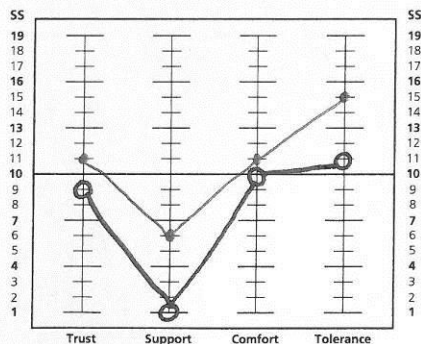


Sense of Mastery Subscale Scoring

Optimism		Self-Efficacy		Adaptability	
1	3	5	3	15	3
2	3	6	3	16	2
3	3	7	3	17	2
4	3	8	3		
18	3	9	2		
19	2	10	1		
20	2	11	3		
		12	2		
		13	4		
		14	4		
Total 19		Total 28		Total 7	
SS 10		SS 10		SS 7	

For scaled scores, see Table A.2.

REL Subscale Profile

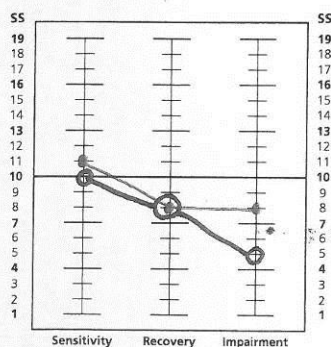


Sense of Relatedness Subscale Scoring

Trust		Support		Comfort		Tolerance	
6	3	5	4	1	3	11	4
7	3	18	2	2	4	12	4
8	3	19	2	3	3	13	4
9	3	20	2	4	3	14	4
10	2	21	2			15	4
23	4	22	3			16	4
24	4					17	3
Total 22		Total 15		Total 13		Total 27	
SS 11		SS 6		SS 11		SS 15	

For scaled scores, see Table A.3.

REA Subscale Profile



Emotional Reactivity Subscale Scoring

Sensitivity		Recovery		Impairment	
1	3	10	1	7	1
2	2	11	0	8	1
3	3	12	0	9	1
4	2	13	0	14	0
5	1			15	1
6	0			16	3
				17	2
				18	0
				19	0
				20	0
Total 11		Total 1		Total 9	
SS 11		SS 8		SS 8	

For scaled scores, see Table A.4.

APPENDIX N

CBT Session Notes Recorded by the Researcher

5 6 10 TUESDAY / WED / THUR.

Social Behavior Map Template 1:
Behaviors that are EXPECTED

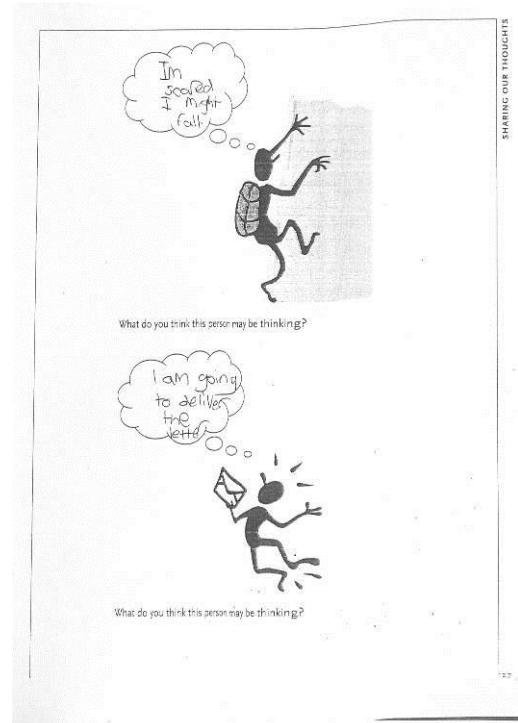
Context: Science Lesson.

Behaviors, feelings, and consequences are listed in categories in arbitrary order. There is not a one-to-one correlation between the information listed in each column. For example, whatever behavior is listed first does not have to match to the first emotional reaction or the first consequence, and so on.

Expected Behaviors You Produce	How They Make Others Feel	Consequences You Experience	How You Feel About Yourself
• He's late to teacher	• Dh. may worry.	• "Learn more" test with your better skills to join	• not feel so sad but long to happen
• Repeat from table while she is	• better lesson	• good to you you can find	• his good with it which
• need flower & be organized	• good. it's your chance.	• reward for his organized	• good. we are happy and to work.
		• last it might in front	• happy and easy to read.

→

2



CBT Session Notes

Client's Name: B. Hospital Number: DoB: Session 4 Date/Time 8:30 4-12-09

Agree Agenda
discuss school new of behavior in school
look for ways to meet this problem (Mehmet)

Review Week
Some easy and some complex, but I am intent to understand.

Feedback from last session
Saying's hard. saying's not easy.

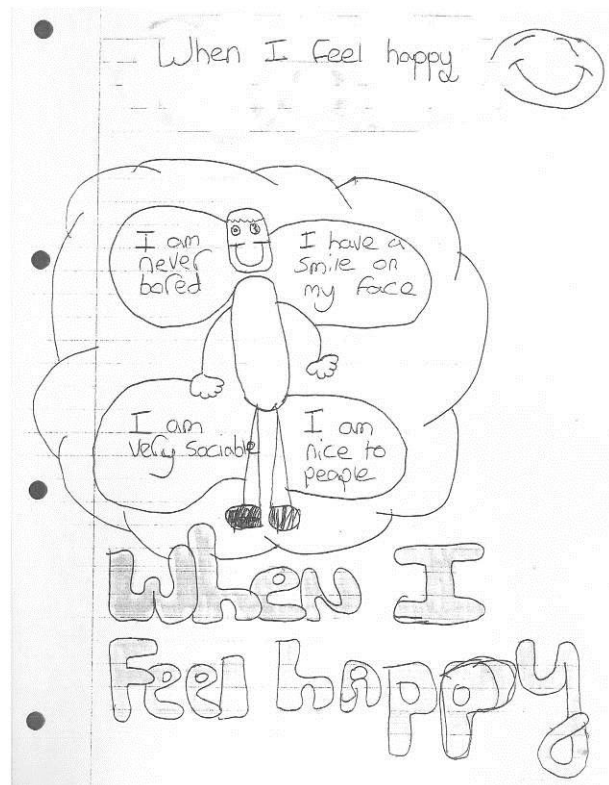
Review Homework
Home work not completed - couldn't get an adult to help with this and find some of them difficult -> start with with only some hard!

Session Issue / Treatment
Review TFB and discussion of situation when difficulty occur.
> sometimes questioning of what may be difficulty.
> discussed specific situation with TFB.
talked about notion of social mapping - visualization + role play.
> planned individualization experiment to be formulated answers for this new

Set homework
think about how to improve in science -> list expected behavior for class

Session feedback
expected some but time but need to get adult to help with language science

Signature: Designation: School Psychologist.
Print name: DEMAN KALINER C. Psychol.



APPENDIX O

Parental Responses to Post CBT Questionnaire

If further sessions were offered would you like your child to attend?

☒ YES ☐ NO

If yes would your preference be for CBT delivered in school or at the psychologist's office? *by other than Psych. Therapist then ok.*

Psychologist office

In School

either.

nonverbal strong emotion built up - debilitated. to what begin to

Are there any things left out of the sessions that you would like covered in the future? YES ☐ NO ☐

If yes please comment in the box

- *working with other pupils and with adults*
- *following rules - why have way.*

Any further comments, suggestions please enter them below

no.

Thank you for taking the time to complete this form.

5. Is there anything in particular you liked about meeting the Educational Psychologist?

- > *puzzles.*
- > *chess game unique*
- > *some interesting.*

1. Was there anything in particular the Educational Psychologist could have done better or differently?

→ *no.*

→

THANK YOU!!!

APPENDIX P

B's Responses to Post CBT Questionnaire

CBT DELIVERED IN SCHOOL

How did it go?

Please help me to see how our (CBT) meetings are working out for you by answering the questions on this sheet as honestly as you can. The answers must be just your own but you can get a teacher to help you to answer if you like.

Are you a boy or a girl? *boy*

How old are you? *12*

Which school do you go to? *[REDACTED]*

Put a cross on each line to show us what you think:

There are no right or wrong answers.

1. Did the Educational Psychologist explain why you were meeting them?

☺.....*X*.....☹

Yes very well *8*

Not at all

2. Did the Educational Psychologist listen to what you had to say?

☺.....*X*.....☹

Yes very well *9*

Not at all

3. Did you try some of the session activities between our meetings?

☺.....*X*.....☹

Yes very much *10*

Not at all

4. I found the diagrams and pictures used in the sessions useful?

☺.....*X*.....☹

Yes very *8*

Not at all

5. Do you think you would prefer to have CBT at school or at say the psychologist's office?

☺.....*X School*.....☹

Yes very *9*

Not at all

6. I feel that my social skills and organisational skills have improved?

☺.....*X*.....☹

Yes very *7*

Not at all

APPENDIX Qi

Analysis of the ASD Audit Responses from School in relation to the school's perceived competence in relation to assessing and early identification of ASD in school.

KEY:

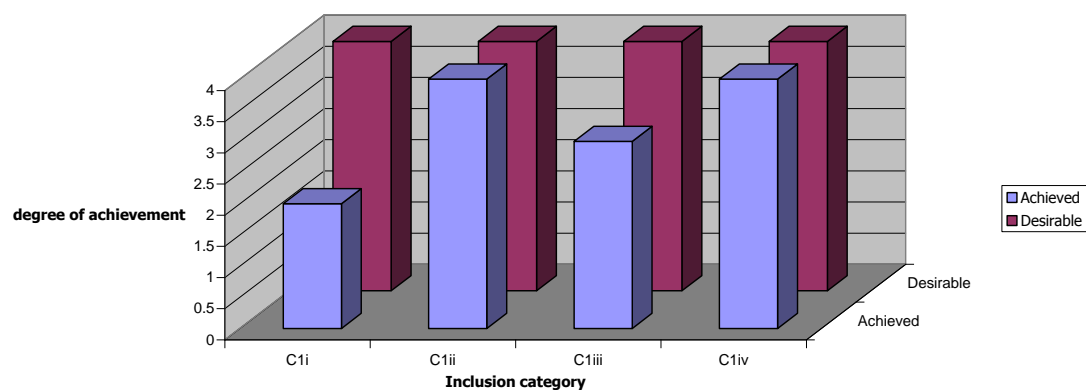
C: Is there a system for the early identification and assessment of children with ASDs?

Ci There are clear referral pathways once difficulties are suspected

Cii All teachers are aware of their duties under the SEN Code of Practice in Identifying Children's Needs, including those whose difficulties fall within the triad of impairments.

Ciii There is good regular communication between special educational needs co-ordinators (SENCOs) and the teaching staff

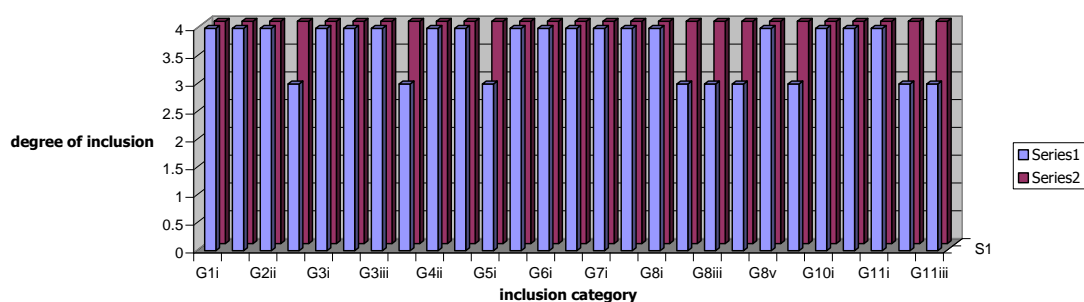
**A graph to show the SENCOs rating of the degree of inclusion in relation to early identification
and assessment of children with ASD/AS in school**



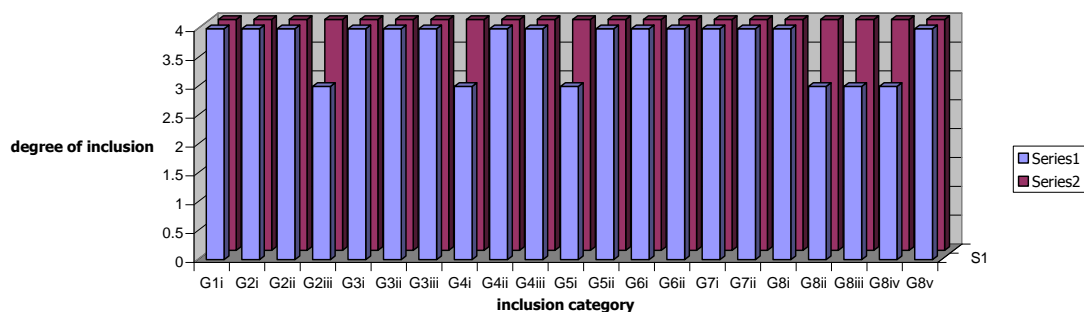
APPENDIX Qii

Analysis of the ASD Audit Responses from School in relation to the school's perceived competence in relation to whole school approaches to supporting ASD pupils in school.

A graph to show the degree of inclusion reported by the SENCO that is reflected in whole school approaches and inclusion



A graph to show the degree of inclusion on whole school policies and inclusion



KEY:

G: Whole school approaches to inclusion

G1 Does the school's SEN policies promote inclusion and cover children with an ASD?

G1i ASDs and their impact for the children and school are recognised in the school's policies and development plans, which reflect duties under the Disability Discrimination Act and the inclusion framework

G2 Does the school have whole-school awareness training in ASDs so that staff understand the implications of the triad of impairments for learning and behaviour as well as any other associated difficulties such as sleep disturbance, motor and perceptual difficulties or dietary needs?

G2i At least one member of staff, possibly the SENCO, with the support of the head teacher has received specific additional training in ASDs

G2ii School covers ASDs during in service training programme and staff know for example how and how not to meet greet and redirect children with ASDs

G2iii Staff can plan and implement responses to behavioural problems as they arise.

G3 Are all staff who teach a child with an ASD aware of their individual needs?

G3i All the staff have been given relevant information about the individual child with an ASD and their particular needs within the triad of impairments

G3ii Information is shared regularly with all staff teaching the children concerned

G3iii Staff have copies of the children's IEPs

G4 Are there clear internal mechanisms to provide advice to staff on ASDs and for staff to provide feedback to the SENCO or named person for ASD support?

G4i Non-teaching time is allocated

G4ii Courses on ASDs are funded

G4iii There is a clear policy on behaviour management and ASDs

G5 Depending on the age and the wishes of the child and their parents, do other children and parents know about the implications of having an ASD and how best to help the child?

G5i Peers within the school and their parents have attended an ASD awareness raising session

G5ii Strategies such a circle of fiends or buddy systems are in place.

G6 Does the school have a named person to co-ordinate information about the children with an ASD?

G6i Pre-entry information, planning and co-ordinating interventions, monitoring progress is co-ordinated by a named individual. The person may be the SENCO or a key professional within the school with ASD expertise/knowledge who meets the Teacher Training Agency's Specialist Standards.

G6ii In secondary school there is a system that enables a representative from each subject department to:

➤ Know about the child's needs

➤ Work with the named co-ordinator to address them

G7 Are both formal and informal opportunities made for parents/professionals and school to exchange and upon information on ASDs?

G7i schoolstaff and parents are part of an Autism interest group which may include staff from other schools

G7ii The school has good information for their own staff and parents and outside professionals about how they have worked to meet needs.

G8 Particularly for compulsory school age children, does the school environment help to meet the child's learning and social needs?

- G8i Account has been taken of the need to create a low distraction work place with in the classroom setting (for example, the creation of a work station area) and a clearly defined space for personal equipment and belongings
- G8ii The school makes a quite room available at any time in the school day and appropriate break time activities are offered and taught
- G8iii The School has undertaken a risk assessment which takes account of the lack of awareness of hazards of some children with ADS
- G8iv clear signs/symbols/photographs are in evidence in school communal areas and subject bases
- G8v The school has taken account of the vulnerability of some children with ASD to environmental distraction in terms of acoustics, smells and lighting (for example the use of daylight tubes in classrooms).

G9 Is there a flexible but systematic approach to develop the necessary skills for children with ASDs to join in whole school experiences?

- G9i well understood routines and rules of conduct, clear verbal instructions and visual signs are used to allow inclusion in whose school experiences such an assemblies, sports day, and school council and community involvement.

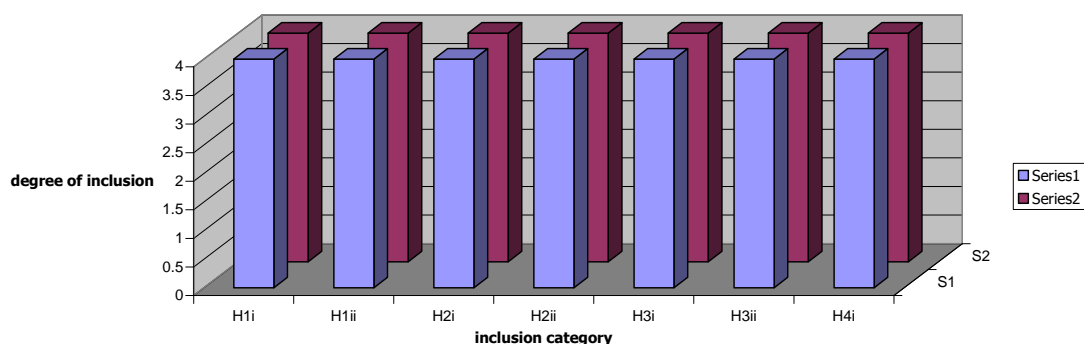
G10 Is there flexibility in the arrangements around class attendance?

- G10i school staff recognise that moving between classes can be very difficult foe some children with ADS
- G10ii there is reflected in the timetables (for example they may have slightly earlier or later than their classmates to avoid difficulties in the corridor which may be confusing or distressing)

G11 Do teachers adopt ASD-friendly communication strategies?

- G11i Teachers provide visual clues for the child in the form of timetables, key subject words and language
 - G11ii lesson plans are written in such a away that a child can check where they are up to
 - G11ii Care is taken in the use of language in trying to avoid metaphor and overly long explanations
- Children's personal and social development (pastoral support)

A graph to show the SENCOs report of the focus on pastoral support provided for ASD pupils in school



H1 Is there a named member of staff to identify any areas of difficulty a child with an ASD might encounter?

H1i There is a named person who knows about ASDs within the school who is available to discuss any concerns the child may have

H1ii a named member of staff has a responsibility for ensuring the child knows when and where they have to be and what equipment they need to have with them in the course of the day.

H2 within the school's general antibullying policy are staff aware of the vulnerability of children with an ASD to bullying?

H2i The school recognises and understands that some children with an ASD are vulnerable to bullying, and has a support and monitoring in place.

H2ii for example the child has a mentor/key person to discuss areas of personal concern.

H3 is there support in mainstreams schools for children who are at risk of disengaging from learning because their ASDs alienate them from the learning process?

H3i Connexions and /or the school pastoral support systems provide guidance informed by an understanding of ASDs

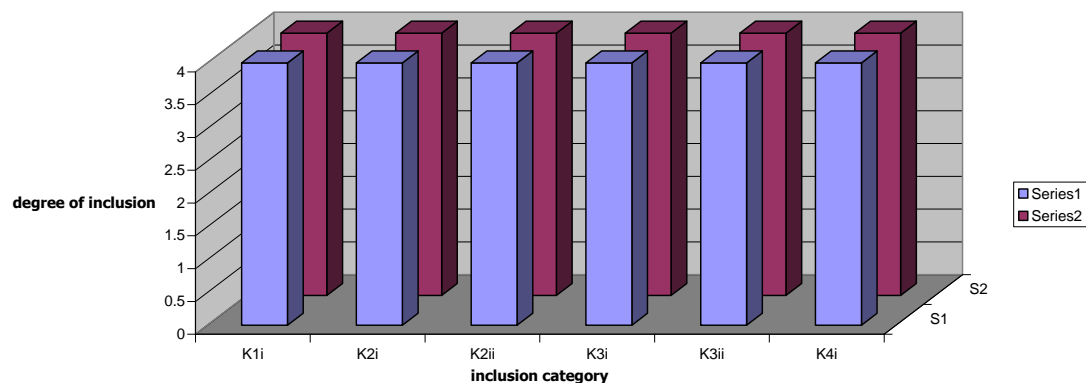
H3ii Support is available from the locally based NHS Child and Adolescent Mental Health Service working in partnership with community nurses and speech and language therapists

H4 does the school foster positive relationships between the child and their peers?

H4i Examples are evident of buddy or mentoring schemes, 'circle of friends' or peer tutoring lunchtimes clubs and group support systems both in classroom settings and at break and lunch times.

SENCOs

A graph to show the SENCOs perception of the SENCOs role in relation to strategic support for ASD pupils in school



K1 Is the SENCO aware of all the children in the school who have an identified ASD?

K1i Information on ASD diagnosis is noted on the SENCOs records

K2 Does the SENCO regularly meet the parents to discuss the child's learning needs and progress and is there frequent communication with parents about children's experiences at school and at home?

K2i Parents are given the opportunity to meet the SENCO and the class teacher on a regular basis

K2ii There is a home-school diary or alternatively there is use of video diaries or one way screens or photographs

K3 Are there mechanisms in place to make sure SENCO is aware of all appropriate support agencies and have links been made?

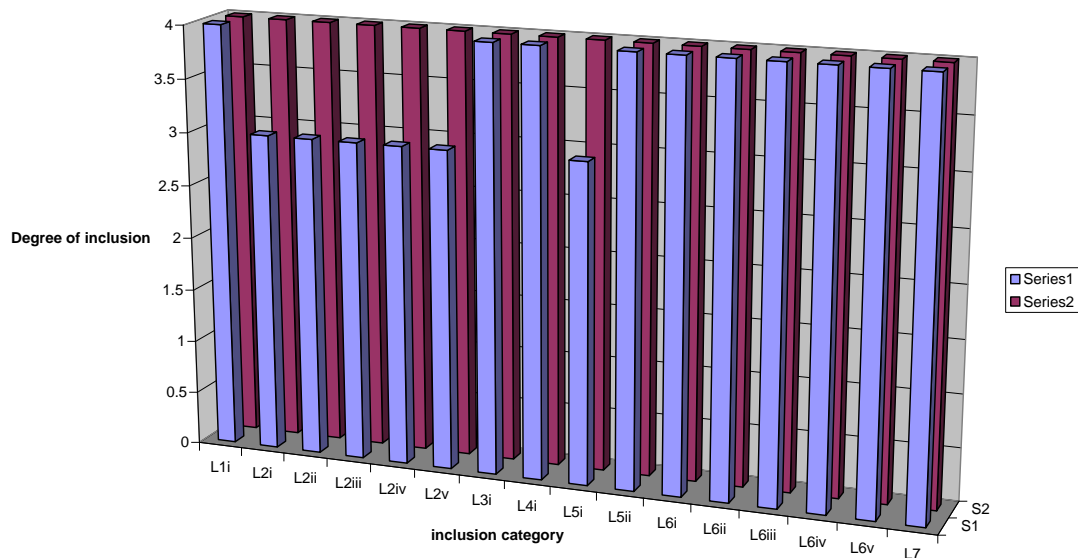
K3i The SENCO is aware of the support available from support services, health and social services and voluntary agencies.

K3ii Other agencies are aware of all the children with ASDs in the school and give support when necessary

K4 Are there checks in place to ensure the child is learning?

K4i The SENCO or named staff member has responsibility to check whether the child is experiencing difficulties, in either curriculum access or understanding rules and social expectations of school.

A graph to show how the SENCOs view of the degree to which the school curriculum takes account of pupils with ASD in school



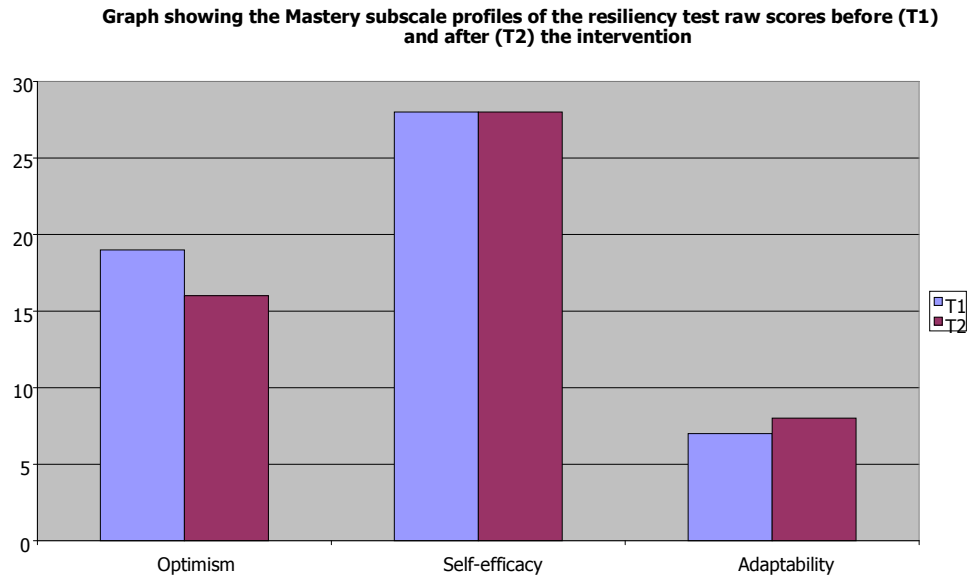
L The school curriculum

- L1 Does the school offer, in consultation with the child, parents and professionals a curriculum adapted to the child's needs and is this reflected in the child's statement, where applicable?
- L1i The School offers a focused personal and social curriculum which addresses the triad of impairments
- L2 Are clear links made visually and/or verbally by the teacher between the subject matter of the lesson or activity and a) previous lessons/activities b) the purpose of the present lesson/activity c) expected outcomes from the child?**
- L2i There are visual cues as to the plan, content and aims of the lesson activity for example written cues or symbol instruction, colour coding or highlighting key aspects with a high lighter pen
- L2ii Concepts are reinforced by using language appropriate to the comprehension level of the child
- L2iii Staff ensure the child's attention before addressing them and key words are used as symbols
- L2iii Records/evidence from previous work is available to the child and key points/photos are highlighted depending on what is appropriate for them
- L2iv Lessons/activities follow a predictable pattern or where there is no predictable pattern clear visual and or verbal markers are laid down which highlight the structure of the lesson of activity. Regular routines are used.
- L3 Is homework clarified for the pupil with an ASD according the child skill level and, where appropriate, is this explained to parents or care staff?**
- L3i The child has a named person who checks that homework tasks have been understood and recorded as necessary
- L4 Are there opportunities to ensure that skills taught in one part of the day are generalised and transferred into other situations and settings?

- L4i These are scheduled opportunities for all who work with the child, their parents and carers to meet regularly, and to spend time with the child in different settings.
- L5 Are arrangements, which take account of the needs of children with ASDs, made for national curriculum tests and public examinations?**
- L5i The school prepares the children in good time for the test/assessment situation that they will encounter using the rehearsal and explanation
- L5ii The School is familiar with special educational needs assessment and reporting arrangements for the current year and informs relevant bodies in good time.
- L6 Are support systems in place to ensure the child's educational, social and life skill needs are recognised and responded too?**
- L6i There is an ongoing monitoring of children's access to the curriculum, and social activities, involving the child's mentor where they have one
- L6ii IEPs contain targets for acquiring life and self care skills
- L6iii Arrangements are in place to ensure that all who come into contact with the child are able to address their life skill needs in a consistent fashion.
- L6iii Teachers and parents have jointly planned strategies for addressing learning needs in and out of formal educational setting
- L7 Is account taken of individual children interests?**
- L7i Where appropriate the child's special interest is incorporated into general class and subject specific work as a mentor.

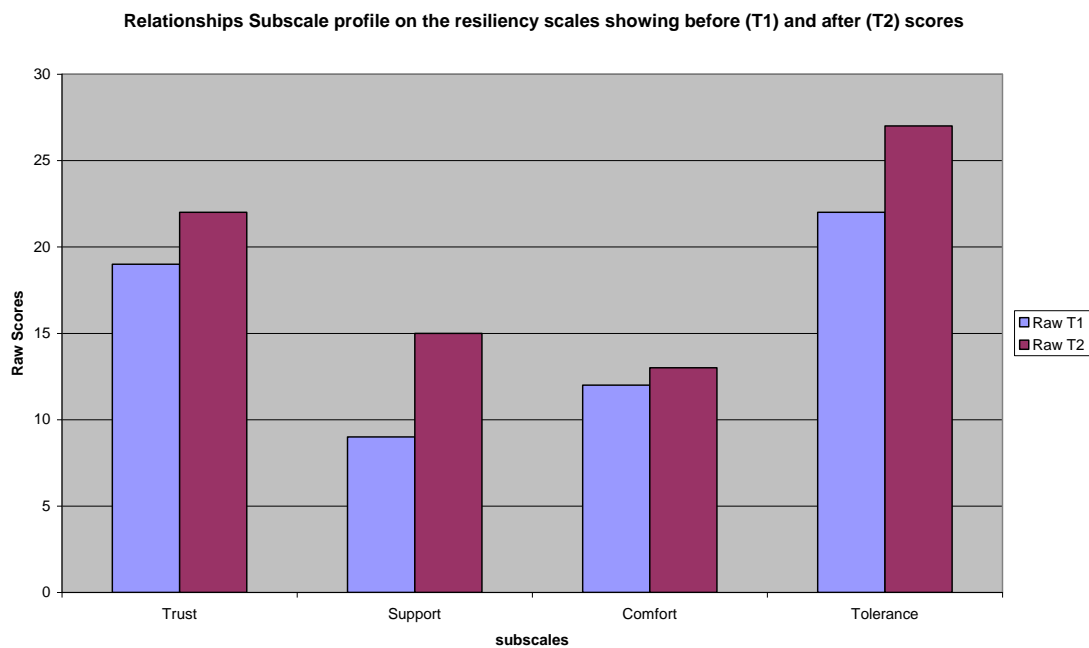
APPENDIX R

B's Resiliency Results by Subtest for Pre and Post CBT Intervention




APPENDIX S

B's Relatedness Scores Pre and Post CBT Intervention.




APPENDIX T

Follow up letter from B's paediatrician






RECEIVED
18 JAN 2010



NHS Walsall
Department of Community Child Health
Sycamore House
111 Birmingham Road
Walsall
WS1 2NL





Dear Dr Wariyar,



RE:  DOB: 

SCHOOL : 

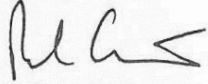
I reviewed  with his mother at my  Clinic on the 13th November.

**AUTISM SPECTRUM DISORDER
LEARNING DIFFICULTIES**




Many things seem to be going in the right direction. Mom was very pleased that B  was the subject of some research by Dean Woliter, Educational Psychologist and B  seemed to be benefiting from this extra and intensive input. I understand that Dean had requested that some specific pragmatics help in school be deferred until he had completed his programme.

Other services seem to be in place and I agreed with mother that I would ask Dr Anand the school doctor to review B  in school in the next one to two years as requested. In the meantime if issues were to occur I would be happy to be contacted earlier myself but otherwise I have not arranged a further appointment for B  to see me in my clinic.

Yours sincerely,



DR. P. F. B. CARTER
CONSULTANT PAEDIATRICIAN

Cc: ✓ Dean Woliter, EP, Jennie Lee Centre, Lichfield Rd, Wednesfield, Wolverhampton. WV11 3HT ✓
Dr. I. Anand, Associate Specialist, Sycamore House - I would be grateful if you could review B  in school within the next one to two years?
Pete Bull, Services for children with a disability, EDC
Ms , Mom
Mr Wright, SENCO, 
Dr. T. Madurai, Child Clinical Psychologist, Greybury House
Sumaya Rassool, Speech and Language Therapist, Ablewell House

