

**PERSONALITY IN BOYS WITH
ATTENTION-DEFICIT HYPERACTIVITY DISORDER:
RORSCHACH PERSPECTIVES**

Daniel Davis

B.A. (Soc. Sc.), Grad. Dip. Hlth Psych.

Thesis submitted to Victoria University in partial fulfilment of the degree of

Doctor of Psychology (Clinical Psychology)

School of Social Sciences and Psychology

December 2009

ABSTRACT

Despite the voluminous body of published research on childhood Attention-Deficit Hyperactivity Disorder (ADHD), very little research has specifically investigated personality functioning in these children. This anomaly is curious given the evidence from prospective studies of significant disturbance of personality functioning in children, adolescents, and adults diagnosed with ADHD. Rorschach Inkblot Method studies of children with ADHD, along with psychoanalytic studies and theorising, has been one of the few streams that have investigated the personality functioning of these children, recognising the destabilising influence of neuropsychological dysfunction on personality development and functioning. The present study represented an attempt to replicate and build upon aspects of the findings of the five published Rorschach studies of children with ADHD, framing the research within a psychoanalytic conceptualisation concerning Pine's (1990) core domains of personality, namely ego functioning, object relations, and sense of self. Further, given the known negative influence of co-morbid Oppositional Defiant Disorder (ODD), the study sought to clarify its influence on specific aspects of personality functioning in ADHD boys with and without ODD. The study design was cross-sectional and entailed two types of comparisons of constituent aspects of personality functioning, assessed by select variables from the Comprehensive System for the Rorschach, of the three core domains of personality. The first consisted of comparison of Rorschach findings of the present ADHD sample with those found by previously published Rorschach studies on children with ADHD, and one study on children with Conduct Disorder (CD). The second consisted of comparison of Rorschach findings of the present ADHD sample, divided into sub-groups of boys diagnosed with and without co-morbid ODD. Participants were 17 boys diagnosed with ADHD, 9 of who had a co-morbid diagnosis of ODD. Rorschach and Mutuality of Autonomy Scale data were analysed parametrically and non-parametrically. Regarding the first type of comparison, the present sample of ADHD boys was found to resemble ADHD samples of children from published studies in terms of the presence of coping and social difficulties (CDI), poor reality-testing (X-%), and depressive features (DEPI). Additionally, the ADHD sample was found to resemble a published sample of children with CD in terms of frequency of severely maladaptive representations of object relations (MOA Scale score of 6 and 7) in Rorschach responses. With respect

to the second type of comparison, a sub-group of ADHD boys with ODD, compared to those without ODD, were found to have significantly more boys evidencing disturbed thinking (WSum6) and lack of empathy (M-). On the basis of these and published Rorschach findings, an emerging profile of the personality functioning of children with ADHD was proposed. The latter was discussed with respect to its implications for future theory, practice, and research. Study limitations and strengths were also discussed.

STUDENT DECLARATION

I, Daniel John Davis, declare that the thesis entitled “Personality in boys with Attention-Deficit Hyperactivity Disorder: Rorschach perspectives” is no more than 40,000 words in length, exclusive of tables, figures, appendices and references. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my sole work.

Signed:

**Daniel John Davis, Candidate,
December 2009**

ACKNOWLEDGEMENTS

First and foremost, I want to express my deep gratitude to all of the parents and children who participated in this research study. Without their generosity, this study would simply not have been possible.

I also wish to sincerely thank both of my supervisors, Associate Professor Suzanne Dean and Dr Alan Tucker, for their support, encouragement, and constructive feedback over the course of this study. It would be an understatement to suggest that they have been patient with my juggling of competing commitments, which slowed completion of this thesis.

Even though he can never know the depth of my appreciation, my reliable companion, Harold, has been good-natured throughout this journey.

Finally, the unwavering support from my partner, Edwina, has sustained my commitment to this undertaking, from beginning to end.

TABLE OF CONTENTS

DECLARATION	iv
ACKNOWLEDGEMENTS	v
LIST OF APPENDICES	xiv
LIST OF TABLES	xviii

CHAPTER ONE

ATTENTION-DEFICIT HYPERACTIVITY DISORDER AND PERSONALITY FUNCTIONING

1.1 Psychological difficulties experienced by children with ADHD.....	2
1.2 Adolescent and adult personality outcomes of children with ADHD.....	3
1.3 Shape of the present thesis.....	6

CHAPTER TWO

CONCEPTUALISATIONS OF ATTENTION DEFICIT HYPERACTIVITY DISORDER

2.1 The diagnosis of Attention-Deficit Hyperactivity Disorder.....	8
2.1.1 Prevalence rates of ADHD diagnosis and prescription of psycho-stimulant medication.....	10
2.1.2 Aetiological risk factors relating to ADHD.....	11
2.1.3 ADHD and co-morbid mental health disorders.....	14
2.1.3.1 ADHD and co-morbid ODD/CD.....	16

2.2	Controversial diagnostic issues.....	17
2.2.1	Absence of universal biological diagnostic indicators of ADHD.....	18
2.2.2	Limitations of the DSM categorical-behavioural approach to the diagnosis of ADHD.....	19
2.2.3	The lack of a specific psychometric test enabling accurate diagnosis of ADHD.....	21
2.3	Psychoanalytic perspectives.....	22
2.3.1	Influence of neuropsychological dysfunction on child personality development and functioning.....	23
2.3.1.1	Potential effects of neuropsychological dysfunction on ego functioning in children with ADHD.....	24
2.3.2	Disruption of the integrative, organisational, and synthetic functions of the ego in children with ADHD.....	27
2.3.3	Impairment of mentalization in children with ADHD.....	28
2.3.3.1	Narcissistic vulnerability in children with severe behaviour problem.....	29
2.4	Barkley's neuropsychological conceptual model of ADHD.....	31
2.5	A developmental and idiographic approach to assessment and understanding children with ADHD.....	32

CHAPTER THREE

STUDY OF PERSONALITY FUNCTIONING IN CHILDREN WITH ADHD AND RELATED DISORDERS

3.1	General research on personality variables in children with ADHD.....	35
3.1.1	Study of overall personality.....	36
3.1.2	Study of specific socio-emotional processes.....	36
3.1.2.1	Studies relating to ego functioning.....	37
3.1.2.2	Studies relating to object relations.....	38
3.1.2.3	Studies relating to sense of self.....	39
3.2	Rorschach Inkblot Method studies of children with ADHD.....	40
3.2.1	Limitations of the studies.....	43
3.3	Rorschach Inkblot Method and Mutuality of Autonomy Scale studies of children from other clinical populations.....	45
3.3.1	Relevance to personality functioning in children with ADHD.....	48
3.4	The emerging Rorschach Inkblot Method profile of the personality functioning of children with ADHD.....	50
3.4.1	Ego functioning of children with ADHD.....	51
3.4.2	Object relations of children with ADHD.....	53
3.4.3	Sense of self of children with ADHD.....	54
3.5	Towards further investigation.....	55

CHAPTER FOUR

CONCEPTUALISATION OF THE PRESENT STUDY

4.1	Need for research concerning personality functioning of children with ADHD.....	56
4.2	Employment of the Rorschach Inkblot Method.....	60
4.3	Aims of the present study.....	63
4.4	Theoretical framework of personality employed.....	64
4.5	Overall design.....	65
4.6	Overview of hypotheses of the present study.....	67
4.6.1	Hypotheses involving comparisons between the entire ADHD sample and samples of past studies.....	68
4.6.1.1	The ego functioning variable and hypotheses.....	68
4.6.1.2	The object relations variables and hypothesis.....	70
4.6.1.3	The sense of self variable and hypothesis.....	72
4.6.2	Hypotheses involving comparisons between ADHD children with and without ODD.....	73
4.6.2.1	The ego functioning variables.....	73
4.6.2.2	The object relations variables.....	75
4.7	Summary.....	76

CHAPTER FIVE

METHOD

5.1	Participants recruited.....	77
5.2	Psychological assessment instruments.....	78

5.2.1	Independent variables: Determination of diagnostic status.....	79
5.2.1.1	ADHD Rating Scale-IV: Home Version.....	79
5.2.1.2	Behaviour Assessment System for Children – Parent Rating Scale for children Aged 6-11.....	81
5.2.1.3	Semi-structured interview.....	84
5.2.1.4	Wechsler Intelligence Scale for Children – Third Edition.....	85
5.2.2	Dependent variables: Assessing constituent aspects of core domains of personality functioning.....	85
5.2.2.1	The Comprehensive System for the Rorschach Inkblot Method.....	86
5.2.2.1.1	Coping Deficit Index.....	89
5.2.2.1.2	Distorted Form Quality.....	91
5.2.2.1.3	Depression Index.....	93
5.2.2.1.4	Weighted Sum of six Special Scores.....	94
5.2.2.1.5	Distorted Form Human Movement Response.....	96
5.2.2.2	The Mutuality of Autonomy Scale.....	98
5.3	Planned procedures of the study.....	101
5.3.1	Recruitment of participants.....	102
5.3.2	Procedures relating to data collection.....	103
5.3.2.1	Determination of diagnostic status.....	104

5.4	Summary of the Comprehensive System Rorschach Inkblot Method and Mutuality of Autonomy Scale variables to be employed.....	105
5.5	Operational hypotheses.....	107
5.5.1	Hypotheses involving comparisons between the entire ADHD sample and samples of past studies.....	108
5.5.1.1	The ego functioning variable.....	108
5.5.1.2	The object relations variable.....	109
5.5.1.3	The sense of self variables.....	109
5.5.2	Hypotheses involving comparisons between ADHD children with and without Oppositional Defiant Disorder.....	109
5.5.2.1	The ego functioning variables.....	109
5.5.2.2	The object relations variables.....	110
5.6	Planned data analysis procedures.....	110
5.6.1	Reliability and screening of data.....	110
5.6.2	Principal analyses.....	111
5.6.3	Controlling for Type I and II errors.....	112

CHAPTER SIX

RESULTS

6.1	Characteristics of the sample.....	115
6.1.1	Age of participants.....	116
6.1.2	Responsiveness of participants to assessment.....	116
6.1.3	Diagnostic, behavioural, and socio-emotional features of participants.....	116

6.1.4	Intellectual functioning and schooling	
	difficulties of participants.....	121
6.1.5	Developmental factors.....	123
6.1.6	Family background factors.....	125
6.2	Reliability and screening of data.....	126
6.2.1	Reliability of Rorschach Inkblot Method data.....	127
6.3	Testing of hypotheses.....	128
6.3.1	Findings of hypotheses involving comparisons	
	between the entire ADHD sample and samples	
	of past studies.....	128
6.3.1.1	The ego functioning variable.....	128
6.3.1.2	The object relations variable.....	133
6.3.1.3	The sense of self variable.....	138
6.3.2	Findings of hypotheses involving comparisons	
	between ADHD children with and without	
	Oppositional Defiant Disorder.....	140
6.3.2.1	The ego functioning variables.....	140
6.3.2.2	The object relations variables.....	143
6.4	Frequency data for important Comprehensive System	
	RIM variables of boys with ADHD.....	144

CHAPTER SEVEN

DISCUSSION

7.1	Summary of findings.....	147
7.2	Limitations and strengths of the study.....	147

7.3	Interpretation of findings concerning comparisons between the entire sample and samples of past studies.....	150
7.3.1	The ego functioning variable.....	151
7.3.1.1	Hypothesis One: Concerning coping and social competence.....	151
7.3.1.2	Hypothesis Two: Concerning reality testing.....	153
7.3.2	The object relations variable.....	155
7.3.2.1	Hypothesis Three: Concerning representations of object relations.....	155
7.3.3	The sense of self variable.....	158
7.3.3.1	Hypothesis Four: Concerning depressive features.....	158
7.4	Interpretation of findings concerning comparisons between ADHD boys diagnosed with and without ODD.....	159
7.4.1	The ego functioning and object relations variables.....	159
7.4.1.1	Hypothesis Five: Concerning quality of thinking.....	159
7.4.1.2	Hypothesis Six: Concerning capacity for empathy.....	163
7.5	Consideration of an updated emerging Rorschach Inkblot Method personality profile of boys with ADHD.....	166
7.5.1	Emerging personality profile concerning all children with ADHD.....	167

7.5.1.1	Ego functioning domain.....	167
7.5.1.2	Object relations domain.....	169
7.5.1.3	Sense of self domain.....	171
7.5.2	Emerging personality profile concerning ADHD children with ODD: Ego functioning and object relations domains.....	172
7.6	Implications of this research.....	174
7.6.1	Implications for future theorising.....	174
7.6.2	Implications for clinical practice.....	176
7.6.3	Implications for future research.....	178
7.7	Conclusions.....	179
REFERENCES.....		182

APPENDICES

Appendix I	Descriptions of Published Rorschach Inkblot Method Studies of Children with ADHD.....	205
1.	Study by Gordon and Oshman (1981).....	205
2.	Study by Bartell and Solanto (1995).....	207
3.	Study by Cotugno (1995).....	210
4.	Study by Jain, Singh, Moharty, and Kumar (2005).....	214
5.	Study by Meehan, Ueng-McHale, Reynoso, Harris, Wolfson, Gomes, and Tuber (2008).....	215

Appendix II	Descriptions of Published Rorschach Inkblot Method and Mutuality of Autonomy Scale Studies of Children From Related Clinical Populations.....219
	1. Study of children with Conduct Disorder.....219
	a. Mutuality of Autonomy Scale assessment of object relations in children with Conduct Disorder.....221
	2. Comparison study of children with Post-Traumatic Stress Disorder and Oppositional Defiant Disorder.....223
	3. Studies of children with Learning Disorder.....224
	4. Additional relevant studies exploring quality of thinking and representations of object relations in children.....225
	a. Study of thought disorder in inpatient children.....225
	b. Study of adaptive fantasy, adaptive representations of object relations, and resilience in children living under stressful conditions.....227
Appendix III	Protocol of Semi-Structured Interview.....229
Appendix IV	Invitation to Participate in a Research Study Form.....241

Appendix V	Participant Research Study Consent Form.....	243
Appendix VI	Participant Release of Information Form.....	244
Appendix VII	Frequency Data for Important Comprehensive System Rorschach Inkblot Method Variables of Boys with ADHD.....	245
	1. Frequency data concerning ego functioning variables.....	245
	a. Frequencies concerning coping styles.....	245
	b. Frequencies concerning stress tolerance.....	247
	c. Frequencies concerning information processing.....	248
	d. Frequencies concerning reality testing.....	248
	e. Frequencies concerning perception and thinking.....	250
	f. Frequencies concerning emotional regulation.....	251
	g. Frequencies concerning global social and coping deficits.....	252
	2. Frequency data concerning object relations variables.....	252
	a. Frequencies concerning attachment Difficulties.....	253

b.	Frequencies concerning anticipation of rewarding interactions.....	254
c.	Frequencies concerning anticipation of aggressive interactions.....	254
d.	Frequencies concerning interpersonal adeptness.....	255
3.	Frequency data concerning sense of self Variables.....	255
a.	Frequencies concerning quality of identifications.....	255
b.	Frequencies concerning self-esteem.....	256
c.	Frequencies concerning dysphoric affect.....	257
d.	Frequencies concerning self-critical ideation.....	257
e.	Frequencies concerning depressive features.....	257
f.	Frequencies concerning miscellaneous variables.....	258
Appendix VIII	Summary of Findings.....	259

LIST OF TABLES

Table 1	Summary of Findings of Published Rorschach and RIM Studies of Personality Functioning of Children with ADHD.....	41
Table 2	Summary of Findings of Published Rorschach Inkblot Method and Mutuality of Autonomy Scale Studies of Personality Functioning of Children From Related Clinical Populations.....	46
Table 3	Summary of Dependent Variables and Rorschach Inkblot Method and Mutuality of Autonomy Scale Measures Represented in Hypotheses One to Four Concerning the Entire ADHD Sample.....	106
Table 4	Summary of Dependent Variables and Rorschach Inkblot Method and Mutuality of Autonomy Scale Measures Represented in Hypotheses Five and Six Concerning Comparisons of ADHD Boys With and Without ODD.....	107
Table 5	Means and Standard Deviations for Boys with Combined and Inattentive Types of ADHD on the ADHD Rating Scale-IV and Behaviour Assessment System for Children.....	117
Table 6	Mean T-Scores for ADHD Boys With and Without ODD on the Aggression and Conduct Problems Clinical Subscales of the Behaviour Assessment System for Children.....	119

Table 7	Percentage and Frequency (in brackets) of ADHD Boys With and Without ODD with Problematic Levels of Socio-Emotional Symptoms Measured by the Mental Status Examination and Behaviour Assessment System for Children.....	120
Table 8	Percentage of Sample with Kindergarten and Primary School Difficulties.....	122
Table 9	Percentage of Sample with Developmental Difficulties in Infancy and Childhood.....	124
Table 10	One-Sample T-Test for Mean Difference Between Boys with ADHD and Test Value (Derived From Past Research) on RIM Measure of Coping Difficulties and Social Incompetence (CDI) (N=17).....	129
Table 11	Frequencies of Clinically Significant Coping Deficit Index (CDI) Scores in Boys with ADHD.....	130
Table 12	One-Sample T-Test for Mean Difference Between Sample of ADHD Boys and Test Value (Derived From Past Research) on RIM Measure of Inaccurate Perception (X-%) (N=17).....	131
Table 13	Frequencies of Clinically Significant Distorted Form Quality (X-%) Scores in Boys with ADHD.....	132

Table 14	Frequency Data for MOA Scale Scores of 6 or 7, Signalling Severely Maladaptive Representations of Object Relations, and Statistical Significance of Differences Between the Sample of ADHD Boys and Test Proportion (Derived From Previous Research) (N=17).....	134
Table 15	Proportion of Frequencies of RIM Responses Assigned Mutuality of Autonomy Scale Scores: Comparison of Findings of the Present, Gacono and Meloy (1994), and Tuber (1989) Studies.....	135
Table 16	Examples of RIM Responses Assigned MOA Scale Scores of 6 or 7 Produced by Boys with ADHD.....	137
Table 17	One-Sample T-Test for Mean Difference Between Boys with ADHD and Test Value (Derived From Past Research) on RIM Measure of Depressive Features (N=17).....	138
Table 18	Frequencies of Clinically Significant Depression Index (DEPI) Scores in Boys with ADHD.....	139
Table 19	Frequency Data for Clinically Significant Weighted Sum of six Critical Special Scores and Statistical Significance of Difference Between ADHD Boys With and Without ODD (N=9,8).....	141
Table 20	Examples of RIM Responses Assigned Critical Special Scores Produced by ADHD Boys With ODD.....	142

Table 21	Frequency Data for Clinically Significant Distorted Form Human Movement Responses and Statistical Significance of Difference Between the ADHD Boys With and Without ODD (N=9,8).....	143
Table 22	Summary of an Updated Emerging Personality Profile of Children with ADHD Concerning the Domain of Ego Functioning.....	168
Table 23	Summary of an Updated Emerging Personality Profile of Children with ADHD Concerning the Domain of Object Relations.....	170
Table 24	Summary of an Updated Emerging Personality Profile of Children with ADHD Concerning the Domain of Sense of Self.....	172
Table 25	Summary of an Updated Emerging Personality Profile of ADHD Children with ODD Concerning the Domain of Ego Functioning and Object Relations.....	173
Table A	(APPENDIX VII) Frequency Data for Important Comprehensive System Rorschach Inkblot Method Variables Comparing the Ego Functioning of ADHD and CS Non-Patient Children.....	246
Table B	(APPENDIX VII) Frequency Data for Important Comprehensive System Rorschach Inkblot Method Variables Comparing the Object Relations of ADHD and CS Non-Patient Children.....	253

Table C	(APPENDIX VII) Frequency Data for Important Comprehensive System Rorschach Inkblot Method Variables Comparing the Sense of Self of ADHD and CS Non-Patient Children.....	256
Table D	(APPENDIX VII) Summary of Findings of Hypotheses Involving Comparisons Between the Entire ADHD Sample and Samples of Past Studies.....	260
Table E	(APPENDIX VIII) Summary of Findings of Hypotheses Involving Comparisons Between ADHD Boys With and Without ODD.....	261

CHAPTER ONE
ATTENTION-DEFICIT HYPERACTIVITY DISORDER
AND PERSONALITY FUNCTIONING

A voluminous body of published psychological research on the topic of Attention-Deficit Hyperactivity Disorder (ADHD) in children mostly reports investigation of neuropsychological and behavioural dysfunctions associated with this disorder. Where the socio-emotional functioning of these children has been explored, it has generally occurred within a narrow frame of reference, without regard to overall personality functioning. Very little research reports interest in the personality functioning of these children. So far, neither structure of personality, in terms of traits and states, nor dynamics of personality, involving “underlying needs, attitudes, conflicts, and concerns” influencing thinking, feeling and behaviour (Weiner, 1998, p.18), have been studied in any depth. A comprehensive, integrated understanding of the intrapsychic life and personality functioning of children with ADHD has yet to be developed.

The influence of neuropsychological dysfunction on the shaping of personality development and functioning in these children is another area that has not been extensively reported to date. Nevertheless, during the past decade the neuropsychological dysfunction inherent to children with ADHD, and its potential compromising of interpersonal relationships, has come to be seen by some as pivotal in shaping personality structure and dynamics (Gilmore, 2000, 2002; Rothstein, 1998, 2002; Rothstein & Glenn, 1999; Schmidt Neven, Anderson & Godber, 2002).

Despite this recent trend, acknowledgement of the relationship between neuropsychological dysfunction and personality development has not yet reached the mainstream literature on childhood ADHD. This is curious, given considerable indirect evidence of significant disturbance of personality functioning in children, adolescents, and adults with ADHD. Many prospective studies, for instance, have found that the pervasive psychological disturbance associated with childhood ADHD often persists into adolescence and adulthood, frequently co-existing with a range of other psychological disorders (Barkley, 2006). The longevity of such psychological disturbance itself suggests that the personality functioning of this clinical population is complex and problematic.

The present thesis represents an effort to pursue an understanding of personality functioning in children with ADHD, and this first chapter reviews the indirect evidence available of disturbed personality functioning in this group.

1.1 Psychological difficulties experienced by children with ADHD

Barkley (2006), in his extensive review of the literature concerning the impaired psychological functioning of children with ADHD, suggested that impairment was experienced by these children in the areas of: cognitive functioning (i.e. IQ deficits, deficient academic achievement, learning disabilities, impaired nonverbal and working memory, impaired planning); language; adaptive functioning; motor development; emotional functioning (poor self-regulation, low frustration tolerance, underreactive arousal system); school performance; task performance; and medical or health status. In addition, Barkley reported that these children have a very high

probability of being diagnosed with a co-morbid psychiatric disorder, stating that at least half of all children with ADHD also present a co-morbid Disruptive Behaviour Disorder, while at least a quarter present an internalising form of co-morbid psychopathology, such as Anxiety or Mood Disorder.

The breadth of the psychological impairment experienced by children with ADHD described by Barkley (2006) highlights the need for a deeper and richer conceptualisation of this impairment, particularly its links with personality functioning and development. Exploration of these links is still preliminary, as indicated below, and further detailed in Chapter Three.

1.2 Adolescent and adult personality outcomes of children with ADHD

Evidence of the persistence of ADHD and associated psychological difficulties in children with the diagnosis of ADHD, and thus its relevance to personality functioning, comes from prospective studies. According to Barkley (2006), follow-up studies published during the past two decades have shown that between 30 and 80 percent of children with ADHD continued to suffer symptoms, meeting diagnostic criteria for ADHD in adolescence. One of the most methodologically rigorous of these studies, conducted by Barkley, Fischer, Edelbrock, and Smallish (1990), which compared ADHD children with a non-clinical sample, found that 71.5 percent of the ADHD children met the DSM-III-R criteria for ADHD in adolescence. Furthermore, 59 percent of the ADHD sample had a co-morbid diagnosis of Oppositional Defiant Disorder (ODD), compared to 11 percent of the non-clinical sample, and 43 percent of the ADHD sample had a co-morbid diagnosis of Conduct Disorder (CD), compared

to 1.6 percent of the non-clinical sample. Additionally, Barkley et al. found that adolescents diagnosed with ADHD predominantly Combined Type and co-morbid CD demonstrated two to five times the rate of substance use (e.g., cigarettes, alcohol, or marijuana) than did those without co-morbid diagnoses, and than did non-clinical adolescents.

It was telling that Barkley et al. (1990), and later a rigorous prospective study by Weiss and Hechtman (1993), found that ADHD symptomatology was not the major concern of parents of adolescents with ADHD. Rather, parents were most concerned about the young person's "poor school-work, social difficulties with peers, problems related to authority, especially at school, and low self-esteem" (Barkley, 1998, p. 199). Alternatively interpreted, the problems most worrying to these parents were those relating to adjustment and personality functioning, possibly developed in association with neuropsychological dysfunction accompanying ADHD.

With respect to adult outcome studies of children with ADHD, the most methodologically rigorous known as the Milwaukee study conducted by Barkley, Fischer, Smallish, and Fletcher (2002), not only indirectly illuminated the extent of problematic personality functioning in this clinical population, but also the relevance of personality functioning to the conceptualisation of their difficulties and to their treatment.

The Milwaukee study followed children diagnosed with ADHD into young adulthood, and revealed:

- persistence of the ADHD diagnosis, made according to DSM-III-R criteria, in 42 percent of the young adults;
- co-morbid diagnosis¹ of Major Depressive Disorder (MDD) in 26 percent;
- co-morbid diagnosis of Passive-Aggressive Personality Disorder in 18 percent;
- co-morbid diagnosis of Borderline Personality Disorder in 14 percent;
- co-morbid diagnosis of Histrionic Personality Disorder in 12 percent;
- co-morbid diagnosis of Antisocial Personality Disorder (APD) in 21 percent; and
- significantly higher frequency of antisocial and minor criminal offences among the ADHD adults than among a community control sample.

A similar rate of diagnosis of co-morbid APD was discovered in adults with ADHD (e.g. 23 percent vs. 2.4 percent of controls), followed from childhood, by Weiss and Hechtman (1993). Other notable but less rigorous prospective studies have obtained similar prevalence rates for APD (e.g., Mannuzza, Gittleman-Klein, Bessler, Malloy, & LaPadula, 1993; Rasmussen & Gillberg, 2001). Further, Weiss and Hechtman found that adult ADHD subjects, compared to controls, had committed significantly more minor criminal offences (i.e., 18 percent vs. 5 percent for controls), and had perpetrated physical aggression towards others (i.e., 20 percent vs. 5 percent for controls).

¹ Prevalence rates for the listed co-morbid mental health diagnoses in young adults with ADHD were significantly higher than rates for these co-morbidities found in the community control sample.

Additionally, in Weiss and Hechtman's (1993) adult follow-up of ADHD subjects from childhood, 75 percent experienced interpersonal problems compared to 51 percent of control subjects. Ten percent had attempted suicide in the past three years and 5 percent had died from suicide or accidental injury, while none of the controls had attempted suicide, or died intentionally or accidentally.

In summary, the research reviewed above has suggested important disturbances in the personality functioning of children with ADHD. Not only has it been observed to be common for children with ADHD to experience significant impairment in most domains, including cognitive, academic, and psychosocial aspects, but this impairment has been also noted to frequently persist into adolescence and adulthood, particularly where the child has displayed antisocial behaviour. By adulthood, according to the follow-up studies reviewed, subjects with ADHD were not uncommonly burdened with MDD and a range of severe personality disorders, especially APD. Given this evidence alone, it would seem that concerted investigation of the personality functioning of children and adolescents with ADHD is warranted.

Shape of the present thesis

The aim of the present study was to build upon steps towards a comprehensive understanding of children with ADHD that takes into account the association of underlying neuropsychological dysfunction with personality development and functioning, both its structure and dynamics. The study employed a reliable and valid

psychometric instrument, namely the Rorschach Inkblot Method (RIM)², administered, coded and scored in accordance with the Comprehensive System (CS) (Exner, 1991, 1993, 2003; Exner & Weiner, 1995), to investigate the personality functioning of boys diagnosed with ADHD, and attempted to ascertain the differences in personality functioning between those with and without co-morbid ODD.

Setting the scene for the study conducted, Chapter Two reviews literature pertaining to conceptualisations of ADHD, followed by Chapter Three, an analysis of the reported studies of personality functioning in children with ADHD and related disorders. Chapter Four presents an overview of the conceptualisation of the present study, outlining its aims, theoretical framework, design, and hypotheses. The methodology adopted is described in Chapter Five, followed by presentation of the results in Chapter Six. Finally, an interpretation of the findings occurs in Chapter Seven, concluding with discussion of the implications of the findings, in view of the study's strengths and limitations.

² Where the Rorschach has been employed using the Comprehensive System, it will hereafter be referred to as the RIM or CS. For all other systems of administration, coding, and interpretation, it will be referred to as the Rorschach.

CHAPTER TWO

CONCEPTUALISATIONS OF ATTENTION-DEFICIT HYPERACTIVITY DISORDER

This chapter summarises conceptualisations of ADHD from three different perspectives, namely the descriptive-diagnostic, psychoanalytic and neuropsychological.

It begins with a description of the features of Attention-Deficit Hyperactivity Disorder, as documented in the test-revised fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, American Psychiatric Association [APA], 2000). Discussion of the prevalence rates of ADHD diagnosis and of prescription of psycho-stimulant medication follows. Next presented is a review of identified aetiological risk factors of ADHD, and of the high prevalence rate of co-morbid mental health disorders in children and adolescents diagnosed with ADHD. Diagnostic issues complicating the definition, measurement, and assessment of ADHD in children are then explored, followed by an overview of psychoanalytic perspectives of ADHD. The chapter finishes with a summary of a widely accepted neuropsychological model of ADHD, which complements psychoanalytic and developmental conceptualisations of the disorder.

2.1 The diagnosis of Attention-Deficit Hyperactivity Disorder

According to the DSM-IV-TR (APA, 2000), the core features of ADHD, a mental health disorder usually first diagnosed in childhood, are developmentally

inappropriate levels of inattention, impulsivity, and hyperactivity, displayed by a child in at least two contexts, such as home or school, that cause clinically significant impairment to their social, academic, or occupational functioning. Inattention has been defined as comprising difficulties in directing, dividing, and sustaining attention (Cepeda, Cepeda, & Kramer, 2000; Seidel & Joschko, 1990), impulsivity by difficulties inhibiting (premature) behavioural responses to stimuli (Barkley, 1997; Nigg, 2001), and hyperactivity by excessive motor activity (Barkley & Cunningham, 1979; Porrino, Rapoport, Behar, Sceery, Ismond, & Bunney, 1983; Teicher, Ito, Glod, & Barber, 1996).

Factor analytic studies of parent and teacher ADHD symptom ratings (e.g. Bauermister, Alegria, Bird, Rubio-Stipec, & Canino, 1992; Healy et al., 1993) identified “two broad distinguishable behavioural dimensions of ADHD” in children (Stefanatos & Baron, 2007, p.7). This contributed to a decision by the committee for the DSM-IV (APA, 1994) to divide its ADHD behavioural diagnostic criteria into two symptom clusters, namely inattention and hyperactivity-impulsivity.

For the diagnosis of ADHD to be made, according to DSM-IV-TR criteria (APA, 2000), at least six symptoms must be observed in one or both symptom clusters. Accordingly, a child may be diagnosed with one of three subtypes of types of ADHD, namely 1) ADHD predominantly Inattentive Type, 2) ADHD predominantly Hyperactive-Impulsive Type, or 3) ADHD Combined Type, involving both inattentive and hyperactive-impulsive symptoms (APA, 2000). Later factor analytic studies supported this approach (DuPaul, Power, Anastopoulos, Reid, McGoey, & Ikeda, 1997; Burns, Boe, Walsh, Sommers-Flanagan, & Teergarden, 2001).

Finally, the diagnosis of ADHD should only be made where inattentive or hyperactive-impulsive symptoms were present before a child's seventh birthday

2.1.1 Prevalence rates of ADHD diagnosis and prescription of psycho-stimulant medication

Variability in reported prevalence rates of childhood ADHD in the epidemiological literature has been attributed to the differing methodological rigour and diagnostic criteria employed by the relevant studies (Barkley, 2006). Epidemiological research using diagnostic criteria of ADHD from earlier versions of the DSM has found the disorder to be prevalent in approximately 3.8 percent of the child population in the United States (US) (Barkley, 2006; Breton, Bergeron, Valla, Berthiame, Gaudet, & Lambert, 1999). According to Froehlich, Lanphear, Epstein, Barbaresi, Katusic, and Kahn (2007), the prevalence of ADHD in children, using DSM-IV diagnostic criteria, was found to be 8.7 percent for the period of 2001 to 2004, derived from the US National Health and Nutrition Survey. Barkley speculated that this rise in prevalence rates might be due to the inclusion of additional subtypes in the DSM-IV diagnostic criteria.

Consistent with the reported prevalence rates, the US Centre for Disease Control (CDC) in 2003 found that ADHD was diagnosed in approximately 4.4 million children, between the ages of 4 and 17, in psychiatric clinics throughout the US. ADHD was the most commonly diagnosed psychiatric disorder in that year (CDC, cited by Stefanatos & Baron, 2007).

Barkley (2006) reported a prevalence rate of 3 to 5 percent for the prescription of psycho-stimulant medication to the population of school-aged children in the US.

In Australia, a national survey of the mental health of 4509 young people, between the ages of 4 and 17, was conducted in 2000. Using DSM-IV diagnostic criteria, this survey found a one-year prevalence rate for ADHD of 11 percent (Birleson, Sawyer, & Storm, 2000; Sawyer et al., 2001). On this basis, 355,600 young people were estimated to have a diagnosis of ADHD, 250,000 being male and 105,000 females. Fifteen percent of males, compared to 7 percent of females, fulfilled the DSM-IV diagnostic criteria of ADHD (Birleson et al.; Sawyer et al.).

Since 1990 there has been a twentyfold increase in the prescription rates of psycho-stimulants in Australia, which have been estimated to total more than 300,000 prescriptions annually (Mackey & Kopras, 2001). The elevated rates of prescription of stimulant medication have provoked much controversy in Australia, leading to government inquiries in some states (Halasz, 2002, 2004; Halasz & Vance, 2002; Schmidt Neven et al., 2002).

2.1.2 Aetiological risk factors relating to ADHD

Since its identification as a clinical syndrome, initially referred to as Attention Deficit-Disorder (ADD) between 1980 and 1986, biological mechanisms have been regarded as the principal cause of ADHD (American Academy of Child and Adolescent Psychiatry, 2007; Barkley, 1997, 1998, 2006; Douglas, 1983; Laufer, Denhoff, & Solomons, 1957, cited in Barkley, 2006; Still, 1902, cited in Barkley,

2006; Swanson, McBurnett, Chrisitan, & Wigal, 1995; Wender, 1971). However, only in the past decade has research by a range of disciplines been able to demonstrate causal links between biological factors and the manifestation of ADHD (Barkley, 2006; Pliszka, 2009).

Previously, alternative aetiological theories were proposed, suggesting causation by psychosocial and environmental factors, such as family and social adversity, particularly problematic child-mother relationships (Barkley et al., 1990; Bettelheim, 1973, cited in Barkley, 2006; Campbell, 1987; Jacobvitz & Sroufe, 1987; Willis & Lovas, 1977, cited in Barkley, 2006). Although research has clearly shown that these psychosocial and environmental variables are associated with ADHD (Angold, Costello, & Erkanli, 1999; Johnstone & Mash, 2001), it has become increasingly accepted, according to Barkley (2006), that they are unlikely to play a causal role. The strongest correlations between environmental and psychosocial variables and ADHD have been found to occur in large-scale prospective studies investigating ADHD children with co-morbid externalising disorders, such as ODD, CD, or both ODD and CD (Pliska, 2009), discussed further in Section 2.1.3 below.

As the aetiological literature on ADHD is a distinct and vast branch of scientific knowledge, an extensive summary of this field is beyond the scope of the present thesis. The reader is instead referred to excellent summaries of the current aetiological research findings by Barkley (2006) and Swanson et al. (2007). Barkley, on the basis of his exhaustive review of research findings, concluded: “neurological and genetic factors make a substantial contribution both to symptoms of ADHD and the occurrence of the disorder per se” (p. 236).

Numerous types of investigation have unearthed the developmental neurological and genetic factors now considered to play causal roles in the occurrence of ADHD. Those providing key findings, representing “converging lines of evidence”, according to Barkley (2006, p. 219), include:

- *cerebral blood flow studies* (e.g. decreased cerebral blood flow to the frontal lobes);
 - *brain activity studies* (e.g. decreased and inconsistent brain activity in insular and hippocampal regions and increased activity in the right anterior cingulate during decision-making);
 - *neuropsychological studies* (e.g. deficits in behavioural inhibition and executive functioning, considered to be mediated by the frontal lobes, basal ganglia, and cerebellum);
 - *neuro-imaging studies* (e.g. reduced brain size and volume of anterior frontal lobes and unusual brain activity in the frontal lobes);
 - *neurochemical studies* (e.g. evidence of problematic spread of neurotransmitters, dopamine and norepinephrine, in brain areas relevant to ADHD);
 - *molecular genetic studies* (e.g. identification of a gene, one that is possibly linked to dopamine distribution, which influences the occurrence of ADHD);
- and
- *family, adoption, and twin studies* (e.g. high family concordance of ADHD).

Swanson et al. (2007) provided further evidence from *pregnancy and birth complication studies* (e.g. identification of environmental risk factors, such as maternal smoking and alcohol consumption, premature birth, low birth weight,

exposure to toxins, which include “other possible factors that alter foetal development with lasting or permanent effects on attention and behaviour” (p. 51).

According to Barkley (2006), the above cited risk factors combine to contribute causally to the disorder, probably “through some disturbance in the final common pathway in the nervous system”, namely the “prefrontal-striatal-cerebellar network” (p. 236). Neuropsychological research has found that deficits in the capacity for effective behavioural inhibition and executive functioning are endemic to children diagnosed with ADHD, and are associated with disturbances in the aforementioned brain regions (Stefanatos & Baron, 2007). These findings have informed Barkley’s conceptual model of ADHD, which is presented in Section 2.4 below, along with its compatibility with psychoanalytic theorising regarding the consequences of cognitive deficits and neuropsychological dysfunction for child personality development.

2.1.3 ADHD and co-morbid mental health disorders

Children with ADHD have extremely high prevalence rates of co-morbid mental health disorders, especially Disruptive Behaviour, Anxiety, and Mood Disorders. With respect to co-morbid ODD/CD³ in children with ADHD, studies over the past two decades, according to Barkley (2006), have reported prevalence rates ranging between 45 and 84 percent, averaging 55 percent. In fact, ODD/CD is the most commonly diagnosed co-morbid mental disorder in children with ADHD (Angold et al., 1999). When ODD and CD are regarded as separate disorders, and where the diagnosis of CD takes precedence over an existing diagnosis of ODD, differing rates

³ This refers to ADHD children initially diagnosed with co-morbid ODD who were later diagnosed with CD instead.

of prevalence have been reported. The Multimodal Treatment of ADHD study, for instance, found that ODD and CD were diagnosed in 40 and 14 percent of children with ADHD, respectively (MTA Cooperative Group, 1999a, 1999b). Pfiffner et al. (1999) reported similarly differing rates for ODD and CD co-morbidity in ADHD children, namely 46 and 1 percent respectively. Thus, “whereas ODD may occur by itself in the absence of CD, CD rarely occurs alone in children with ADHD” (Barkley, p. 190).

In terms of co-morbid Anxiety Disorders in children with ADHD, prevalence rates range from 25 to 50 percent, averaging 25 to 35 percent, in contrast to that of 6 to 20 percent for normal paediatric populations (Barkley, 2006; Costello, Egger, & Angold, 2005). Similar prevalence rates have been found across studies for co-morbid MDD in children with ADHD, namely 25 to 30 percent (Barkley). The highest levels of depression, however, are found amongst ADHD children and adolescents with a co-morbid diagnosis of ODD/CD (Jensen, Burke, Garfinkel, 1988; Treuting & Hinshaw, 2001).

A large-scale study of co-morbidity in children with ADHD carried out by the Health Sciences Unit at the University of Texas, San Antonio, gathered data from 1035 children over 15 years, and underscored the pervasiveness and the associated clinical complexity of co-morbidity within this clinical group (Pilszka, 2009). Of the 1035 ADHD subjects, 327 children (32 percent) met the criteria for co-morbid ODD/CD. However, within this group, 160 (49 percent) had triple or quadruple co-morbid diagnoses (e.g. ADHD-ODD/CD-Depression, ADHD-ODD/CD-Anxiety-Depression, ADHD-ODD/CD-Bipolar Disorder-Intermittent Explosive Disorder). On this basis,

Pliszka concluded that: “argumentative, negativistic, and aggressive behaviour in children with ADHD are frequently (but not always) fuelled by other co-morbidities” (p. 10).

2.1.3.1 ADHD and co-morbid ODD/CD

In DSM-IV-TR (APA, 2000), ODD is regarded as typically emerging in childhood, characterised by persistent aggressive, disobedient, and challenging behaviour. Its other marked feature is the frequent, and at times intense, expression of negative affect, particularly anger (Pliszka, 2009). While children and adolescents with CD tend to share these characteristics, although negative affectivity is not always a feature, their behavioural symptoms tend to be more pervasive and severe (Pliszka).

As noted above, children with ADHD have high prevalence rates of co-morbid ODD/CD, but CD rarely occurs on its own (Barkley, 2006; Pliszka, 2009). It is not surprising, therefore, that ODD has been found, through prospective studies, to predispose children with ADHD to the later development of CD and internalising disorders, such as Anxiety and Mood Disorders (Burke, Loeber, Lahey, and Rathouz, 2005; Maughan, Rowe, Messer, Goodman, & Meltzer, 2004; Newcorn & Halperin, 2000; Newcorne et al., 2001). These studies have also found that co-morbid ODD/CD in children with ADHD greatly contributes to the longevity of these disorders, and to severity of ADHD symptomatology. Psychosocial risk factors, namely social adversity, family psychiatric problems and family conflict, have been found to be strongly associated with the occurrence and development of these co-morbid disorders children with ADHD.

It is well established that ADHD children with co-morbid ODD/CD experience more severe psychological difficulties than those without. For instance, the former exhibit greater levels of aggressive and anti-social behaviour (Harada, Yamazaki, & Saitoh, 2002; Satterfield, Faller, Crinella, Schell, Swanson, & Homer, 2007; Walker, Lahey, Hynd, & Frame, 1987). They also experience more conflict with and rejection from their peers (Harada et al.; Johnston & Mash, 2001), and more frequently attribute hostile intentions to others (Dodge, 2006; Milich & Dodge, 1984).

2.2 Controversial diagnostic issues

Since its identification as a clinical syndrome, a number of practical issues have persistently challenged the reliability and validity of the diagnosis of ADHD. These issues have been summarised by Barkley (2006), Halasz (2004), Halasz and Vance (2002), Schmidt Neven et al. (2002), and Stefanatos & Baron (2007), and are relevant to any study of children diagnosed with ADHD. Most prominent among the concerns identified in these summarises, are the 1) absence of universal biological indicators of ADHD, 2) limitations of the DSM categorical-behavioural approach to the diagnosis of ADHD, and 3) lack of a single psychometric test enabling accurate diagnosis of ADHD.

Discussion now follows of how these issues have complicated the definition, measurement, and assessment of ADHD.

2.2.1 Absence of universal biological diagnostic indicators of ADHD

Despite the great convergence of findings pointing to the significant aetiological contribution of genetic, neurological, and specific environmental risk factors in ADHD (Barkley, 2006), no universal biological diagnostic indicator of ADHD has yet been isolated (Schmidt Neven et al., 2002; Stefanatos & Baron, 2007). This is epitomised by findings of neuro-imaging studies on children with ADHD. Several such studies found evidence of structural and functional abnormalities in the cerebral cortex of children with ADHD, but this has not been universal, as some children without ADHD have displayed similar abnormalities (Castellanos, 1996; Castellanos et al., 1994, cited by Schmidt Neven et al.; Klorman, 1991, cited by Schmidt Neven et al.; Lahat, Avital, Barr, Berkovitch, Arlazoroff, & Aladjem, 1995, cited by Schmidt Neven et al.).

Neither the absence of a universal biological diagnostic indicator of ADHD, nor the accumulated evidence that ADHD arises from multiple aetiological risk factors, has apparently altered the theory of many practitioners that ADHD is a clear-cut endogenous, biological disorder (Dyer, Kiernan, & Tyson, 2006). Such uncritical conceptualisation of ADHD has been influenced, according to Green, Wong, and Atkins (1999, cited by Schmidt Neven et al., 2002), by the clinical observation that at least 75 percent of children diagnosed with ADHD make behavioural improvements within weeks of taking psycho-stimulant medication. Halasz and Vance (2002) and Schmidt Neven et al. (2002) expressed concerns that this occurrence has been taken by numerous practitioners as proof not only of an accurate diagnosis, but also of unequivocal evidence of the biological aetiology of ADHD. Such reasoning, where

the treatment becomes the method of diagnosis, has limited the consideration by practitioners of the multiple aetiological risk factors of ADHD, including developmental and psychosocial factors, especially where co-morbid mental health problems occur.

Not only does this mean that the complex causality of ADHD remains an issue to be resolved, but Halasz (2004), Halasz and Vance (2002), and Baron (2007) have argued that the reluctance of researchers and practitioners to grapple with the complex aetiological research on ADHD has contributed to misdiagnosis, as well as single factor treatment, of children presenting with ADHD symptoms.

2.2.2 Limitations of the DSM categorical-behavioural approach to the diagnosis of ADHD

Since the 1960s, swayed by the rise of behavioural positivism, as well as the absence of biological indicators of ADHD, ADHD has been conceptualised as a discrete disorder manifesting specific behavioural features. This approach is epitomised by the DSM-IV-TR descriptive criteria for the diagnosis of ADHD. According to Barkley (2006), these “are some of the most rigorous and most empirically derived criteria ever available in the history of ADHD” (p. 84).

Some researchers have challenged the categorical diagnostic approach of the DSM-IV-TR (Farone, 2005; Schmidt Neven et al., 2002; Stefanatos & Baron, 2007). Stefanatos and Baron have pointed to the DSM-IV-TR “limitations in symptom specification, insufficient consideration of developmental course, age, gender, and

maturational stage, heterogeneity of subtypes, unspecified influence regarding non-empirically based age demarcation for both diagnosis and duration, and indifference to environmental and contextual considerations” (p. 16).

Further, some have argued that due to the heterogeneous nature of ADHD, it cannot be validly defined as a categorical disorder (Halasz, 2004; Halasz and Vance, 2002; Schmidt Neven et al., 2002; Rutter, 1982, 1983, 1989; Stefanatos & Baron, 2007). The DSM-IV-TR diagnostic criteria of ADHD, which encompass three ADHD subtypes, may actually represent an over-simplification of the array of symptoms exhibited by these children, limiting its usefulness as a discrete categorical disorder. For example, according to Barkley (2006), studies of children diagnosed with the predominantly Hyperactive-Impulsive subtype of ADHD (ADHD-PHI), in accordance with DSM-IV-TR criteria, have revealed the presence of three further distinct clinical groups within this subtype, each involving unique symptoms and impairment.

Consideration of the high prevalence of co-morbid mental health problems in ADHD children (especially Learning, Disruptive Behavioural, Mood and Anxiety Disorders), along with the complications associated with the heterogeneity of symptoms recognised in these children, also challenges the validity of ADHD as a discrete or unitary disorder (Barkley, 1998; Halasz & Vance, 2002; Jensen, 2000; Schmidt Neven et al., 2002; Weinberg & Brumback, 1992). Rutter (1982, 1983, 1989) was an early critic for these reasons.

2.2.3 The lack of a specific psychometric test enabling accurate diagnosis of ADHD

The third set of issues complicating the diagnosis of ADHD has entailed psychometric assessment. Variable expression within and across environments, as well as the heterogeneous nature of ADHD symptoms, has greatly challenged the precise measurement of the behavioural and neuropsychological features of ADHD (Barkley, 2006). It has not been possible for psychology, psychiatry, or paediatrics to devise a straightforward diagnostic psychometric test to distinguish normal variations in hyperactivity, impulsivity, and inattention, from abnormal levels of such behaviour that call for a diagnosis of ADHD (Barkley, 1998; Baron, 2007; Halasz & Vance, 2000; Schmidt Neven et al., 2002). Instead, workers have been required, for the sake of best practice, to conduct thorough assessments using multiple sources (i.e. children, parents, teachers), and using multiple methods (i.e. clinical interview, child observation, behaviour rating scales, cognitive assessment instruments, neuropsychological tests, personality tests) (Barkley, 2006; Reddy & Thomas, 2007).

Thorough psychological assessment of children with ADHD involves the collection of in-depth information concerning psychological functioning across family, school, and wider social contexts, and consideration of the “full range of factors or conditions that may be primarily responsible for attentional variability and hyperactivity/impulsivity but that may not lead to a formal ADHD diagnosis” (Stefanatos & Baron, 2007, p. 6). However, the reliability of the diagnostic process is limited because the battery of techniques used by medical and mental health practitioners, particularly psychologists, to assess ADHD, varies greatly. Different

batteries measure different aspects of ADHD, and with varying levels of validity and reliability (Schmidt Neven et al., 2002). Further, the practice of assessing ADHD using multiple sources and methods has not been consistently adopted across disciplines. The medical profession, in particular, has tended to diagnose ADHD simplistically, often leading to misdiagnosis and inadequate treatment (Barkley, 2006; Halasz, 2002, 2004; Halasz & Vance, 2002; Schmidt Neven et al.).

Together with the absence of a universal biological indicator of ADHD, and the problematic categorical-behavioural approach to the definition of ADHD, the lack of a single definitive psychometric test of ADHD underlines the importance of the need for sophisticated and sensitive, rather than simplistic and rigid, conceptualisation and assessment of ADHD in children. Responses to this need have come from Barkley (1997a, 1997b, 1998) and by Halasz and Vance (2002) and Reddy and De Thomas (2007), as outlined in Sections 2.3 through 2.5 below.

2.3 Psychoanalytic perspectives

One field generating a response to the need for greater complexity in understanding ADHD has been that of psychoanalytic theory. A traditional criticism of psychoanalytic theory has been its tendency to conceptualise all psychological difficulties, even the neuropsychological, as the product of psychic conflict (Rothstein & Glenn, 1999). However, contemporary psychoanalytic theory, based upon case study evidence and developmental research, has demonstrated adept consideration of the interplay between neuropsychological dysfunction and psychological conflict, and the role of this interplay in the shaping of personality and psychodynamics in the

developing child (Fonagy, Gergely, Jurist, & Target, 2002; Gilmore, 2000, 2002; Rothstein, 1998; Rothstein, Benjamin, Crosby, & Eckstein, 1988; Rothstein & Glenn, 1999). The perspectives of contemporary psychoanalysts here are indebted to Hartmann's (1958, 1964) work on the functions of the conflict-free sphere of the ego, and particularly to his proposition that deficits in the ego-apparatus influence intrapsychic life, ego development, and in turn, adaptation to the external world. Bowlby's (1958, 1969, 1973, 1980) views on the importance of secure infant and child attachment for optimal personality development have also been seminal to contemporary psychoanalytic approaches to children with ADHD, particularly the approach of Fonagy et al.

Some of this psychoanalytic literature has not been specific to children with ADHD. However, its discussion of the influence of neuropsychological dysfunction variables on childhood personality development and functioning renders it extremely relevant to the present investigation of personality functioning in children with ADHD.

2.3.1 Influence of neuropsychological dysfunction on child personality development and functioning

Rothstein (1998, 2002), Rothstein et al. (1988), and Rothstein and Glenn (1999) have significantly contributed to the modern psychoanalytic conceptualisation of children with neuropsychological dysfunction, including children with ADHD. Their approach is steeped in Freud's (1926/1978) writings on the compromise formation of psychic symptoms and Hartmann's (1958, 1964) theory of ego development. Rothstein (1998) argued that neuropsychological dysfunction, such as that inherent to

ADHD (Barkley, 2006), shapes “psychic structure, psychodynamic conflicts, and the compromise formations which result” (p. 220). Further, Rothstein (2002) asserted that the experience of living with the core symptoms of ADHD, namely inattention, hyperactivity, and impulsivity, become incorporated in the unconscious fantasies and compromise formations of these children.

2.3.1.1 Potential effects of neuropsychological dysfunction on ego functioning in children with ADHD

Rothstein et al. (1988) and Rothstein and Glenn (1998) also documented the likely impairment to personality development arising from the influence of neuropsychological dysfunction, and its associated consequences on the child’s interaction with the social world. These associated effects can be general or else specifically related to the type of neuropsychological dysfunction experienced by children with ADHD. While Rothstein et al. and Rothstein and Glenn did not write specifically about children with ADHD, they did discuss the types of nonspecific and specific developmental effects associated with the neuropsychological difficulties inherent to ADHD.

A common nonspecific intrapsychic effect of the neuropsychological dysfunction experienced by children with ADHD, according to Rothstein et al. (1988) and Rothstein and Glenn (1998), is a pervasive sense of defectiveness and incompetence (Lacan, 1949/2002), with associated difficulties regulating self-esteem (Kohut, 1971, 1977).

Regarding the intrapsychic effect of specific aspects of neuropsychological dysfunction experienced by these children, impulsivity and hyperactivity are understood to be likely sources of disruption to the development of motor mastery, perceptual registration, and reality testing in children with ADHD (Fries, 1944, cited by Rothstein et al.). Further, the inattention experienced by these children has been considered likely to not only undermine the retention of information, but also to foster the reliance upon maladaptive defence mechanisms of denial and avoidance. In other words, the unfocussed retention of information may be used for defensive purposes, such as denial or avoiding confrontation with unwanted mental states or events (Rothstein et al.).

The increased propensity for sensory overload, and its associated cognitive and behavioural disorganisation, has been considered by Rothstein et al. (1988) to be associated with the over-reactivity to stimuli and self-regulation difficulties of children with ADHD. Rothstein et al. also commented that sensory overload tends to be accompanied by a subjective sense of being flooded, a conceptualisation akin to Freud's (1895/1978, 1926/1978) concept of anxiety breaching the so-called stimulus barrier. Due to the frequency of these mental states in children with ADHD children, and their difficulties mentally representing affective states, they may be prone to developing and relying on maladaptive ways of dealing with such unpleasure and disorganisation (Rothstein et al.). One commonly employed defence by these children is the discharging of anxiety or affective tension through motor activity (Weil, 1971, cited by Rothstein et al.).

Consistent with the views of Rothstein et al. (1988) regarding the self-regulation difficulties of children with ADHD, Harris, Reynoso, Meehan, Ueng-McHale, and Tuber (2006), in a Rorschach and psychoanalytic psychotherapy case study, described how a child with ADHD employed a bi-modal approach to the handling of affective arousal. This bi-modality was characterised, on the one hand, by the attempt to constrict affective experience, and, on the other, by trying to acknowledge feelings, but tending to become overwhelmed by them.

The disrupted internalisation of speech and language, a common difficulty stemming from impaired executive functioning, has also been thought to have specific detrimental effects on the developing ego structures in children with ADHD. Such disruption can significantly undermine the developmental process of mental representation and symbolisation (Rothstein, 1998, 2000; Rothstein et al., 1988; Rothstein & Glenn, 1999), contributing to difficulties in reflecting upon and verbalising thoughts and feelings (Verhaeghe, 2004). An associated consequence of these difficulties, according to Katan (1961) and Weil (1971, cited by Rothstein et al.) may be the increased propensity to the enactment or discharge of affects and psychic tension. Additionally, Rothstein et al. argued that language problems generally undermine the capacity for secondary processing in these children, that is, the ability for logical thinking without interference from affects and fantasy, including the understanding of “time sequences, spatial relationships, and causal relationships” (p. 21).

2.3.2 Disruption of the integrative, organisational, and synthetic functions of the ego in children with ADHD

Gilmore (2000, 2002), influenced by the ideas of Rothstein (1998, 2002), Rothstein et al. (1988), and Rothstein and Glenn (1999) concerning the incorporation of neuropsychological dysfunction into unconscious fantasy and its impact on personality development, primarily conceptualised the personality functioning of children with ADHD from an ego psychology perspective. Accordingly, Gilmore (2002) described ADHD, and its underlying neuropsychological complications, as a disorder that gives rise to “inconsistency and variability [to the] integrative, organisational, and synthetic functions of the ego” (p. 1288). These fundamental ego functions are “responsible for regulation, modulation, and balancing of internal and external stimuli (including drive derivatives and affects); for the internalisation of object relations and its consequent facilitation of structure building and superego development; and for the organisation of different components of the ego to create a sense of continuity and facilitate the capacity for self-observation and self-reflection” (Gilmore, 2002, p. 1266). Thus, disturbance in the integrative functions of the ego in these children is likely to disturb their overall personality and functioning, along with their capacity for adaptation.

On these grounds, Gilmore (2000, 2002) regarded Barkley’s (1997, 1997a, 1998) conceptualisation of ADHD, concerning the derailment of executive functioning as a consequence of impulsivity and excessive motor activity, as consistent and somewhat interchangeable with her theorising on the disturbance of ego functioning in children with ADHD.

2.3.3 Impairment of mentalization in children with ADHD

The compromised personality development and functioning of children with ADHD, particularly their difficulties with affect regulation and mentalization, has more recently been conceptualised from an attachment theory perspective (Fonagy et al., 2002; Schmidt Neven, 2002). Fonagy et al. argued that the disruption to normal personality development in these children occurs due to their neurobiological vulnerability, the latter's impact on family and social interactions, and the increased likelihood, where co-morbid ODD or CD exists, of familial adversity. In particular, these multiple risk factors have been found to undermine a critical attachment process, namely "the social biofeedback of parental affective mirroring" (Fonagy et al., p. 201). The latter has been identified as critical to the development of reflective functioning and mentalization, both of which are, in turn, integral to the acquisition of affect regulation (Gergely & Watson, 1996, 1999; Stern, 1985). Fonagy et al.'s concept of mentalization comprises a self-directed psychological process enabling reflection on one's own and others' affective states and interpersonal behaviour, necessary to the planning of appropriate interpersonal interactions.

Fonagy et al. (2002) have proposed that such undermining of the capacity for mentalization in ADHD children tends to have three broad consequences for their personality functioning. Firstly, these children tend to struggle to signify or mentally represent, using language, their intrapsychic processes and interpersonal experiences. Secondly, their sense of identity tends to be impoverished, as they lack reflective skills to enhance and integrate their self-awareness. Thirdly, their interpersonal relationships tend to be problematic, compounded by an inadequate capacity to

resolve interpersonal conflict (Twemelow, Fonagy, & Sacco, 2005a, 2005b). Fonagy et al. asserted that children with ADHD lack a “mentalized reflective model of conflictual interpersonal situations”, rendering them prone to provoking situations of conflict, with an inability to flexibly resolve such conflict (p. 63).

2.3.3.1 Narcissistic vulnerability in children with severe behaviour problems

The adverse family circumstances typically experienced by children who develop Disruptive Behaviour Disorders, according to Fonagy et al. (2002), tend to have significant implications for child personality development and functioning. As already mentioned, one consequence identified is the development of “nonreflective internal working models” for the handling of interpersonal conflict, so that the child is likely to handle conflict with aggression rather than negotiation (Fonagy et al., p. 62). A further psychic consequence, related to inadequate affirmation of the “intentional stance” of these children, is their propensity for failure to “acquire the sense of ownership” of their actions, “essential for a sense of self-agency” (p.63). Fonagy, Moran, and Target (1993), in an earlier study, proposed that the aggression of these children often played a “defensive role in the protection of self-representation and identity”. Consistent with this thesis, Fonagy et al. (2002) argued that the core behavioural features of children with ODD could be conceptualised as efforts at “reasserting self-agency” (p. 63).

Willock (1986, 1987), similarly to Fonagy et al. (1993, 2002), has extensively discussed the narcissistic vulnerability of children with severe behaviour problems (Winnicott, 1967/1971), including those typically diagnosed with ADHD, ODD, CD

or a combination of these disorders. He suggested that such narcissistic vulnerability involves both a “disregarded self”, reflecting “the feeling that no one really cares about [them]”, and a “devalued self”, reflecting “an abysmally negative self-image, this feeling that there is something about them which makes people turn away” (1987, p. 220). Due to narcissistic vulnerability, according to Willock (1987), these children are “hypersensitive” and “constantly on the lookout for hints of not caring” from significant others, and are especially prone to misinterpret ambiguity as signs of “total noncaring” and, consequently, to react with “instant alarm and aggression” (p. 220). The antisocial behaviour of these children can be interpreted as “an attempt to ward off awareness of feelings of being unloved and unlovable (disregarded and devalued)” (p. 222).

Theoretically, Willcock (1986, 1987) conceptualised the narcissistic vulnerability of this group from a “primitive, internalized object relational paradigm – a grossly debased image of self in relation to a nonsupportive, unloving, and devaluing object”. Accordingly, the psychic and interpersonal world of these children tends to be governed by pre-oedipal or “paranoid-schizoid” mental states (Klein, 1930, 1946/1986). Ogden (1989) discussed in much detail the deleterious influence of paranoid-schizoid mental states on thinking, reality-testing and interpersonal interaction. The capacity for symbolic thinking reduces and symbolic equation tends to govern thinking (Segal, 1957), which significantly hinders reflection and perspective-taking. Schizoid defences, splitting and projective identification, also undermine thinking, as thought processes become dichotomous, internal and external reality become confused, and the disavowal and projection of affective states and the misinterpretation of the intentions of others are commonplace. Given that children

with severe behaviour problems may not yet have reached the stage of formal operations in thinking (Piaget, 1936/1952), paranoid-schizoid mental states have the capacity to cause enormous disruption to their developing perceptual-cognitive processes.

2.4 Barkley's neuropsychological conceptual model of ADHD

Barkley's (1997, 1997a, 1998) conceptual model of ADHD, grounded in developmental psychology and neuropsychology research, stands in contrast to the simplistic conceptualisation of ADHD evidenced in the DSM-IV-TR (APA, 2000). It is in essence a theory of self-regulation, the latter being derived from effective behavioural inhibition and executive functioning. Barkley divided the umbrella category of executive functioning into four interrelated neuropsychological skills, namely non-verbal working memory, internalisation of speech, self-regulation of affect-motivation-arousal, and flexible problem solving. Thus, he viewed ADHD as a disturbance of self-regulation emanating from a child's deficient capacity for behavioural inhibition, which in turn disrupts the capacity for effective executive functioning. Furthermore, the persistence of a child's deficient capacity for inhibition derails the development of the (four) neuropsychological skills that constitute executive functioning.

It is noteworthy that Barkley's conceptual model of ADHD dovetails with psychoanalytic theories concerning impaired ego-functioning and its consequent disruption to the process of symbolisation (Freud, 1900/1978, 1911/1978; Hartmann, 1958, 1964; Klein, 1930; Pine, 1990), or what is now referred to as mentalization

(Fonagy et al., 2002). Disturbance of the capacity for symbolisation tends to significantly undermine the capacity of a child for impulse control, delaying of gratification, and logical reasoning. Barkley's emphasis on the importance of language, and the internalisation of speech for the development of delay and containment of affect and actions, was derived from the pioneering work of Bronowski (1977), Luria (1961), and Vygotsky (1966).

2.5 A developmental and idiographic approach to assessment and understanding of children with ADHD

Halasz and Vance (2002), in their recognition of ADHD as a neuro-developmental disorder, encouraged "an integrated biopsychosocial approach" to the assessment of children with ADHD, to sufficiently "account for the heterogeneity of the condition's onset, clinical course, and outcome" (p.556). A central feature of this approach, according to Halasz and Vance, is the developmentally informed psychiatric assessment. The latter requires consideration and clinical investigation of recognised developmental influences on the presentation of children with ADHD, such as "parenting style, qualities of early attachment, presence of parental and sibling physical or mental illness, and social and cultural influences (including academic and peer-group influences)" (Halasz & Vance, p.555). Rutter's view of development as "the crucial link between genetic determinants and environmental variables, between sociology and individual psychology, and between physiogenic and psychogenic causes" (Rutter, 1980, cited by Halasz and Vance, p.554) underpins this approach.

Notwithstanding the merits of such an approach, additional developmentally oriented perspectives are necessary for the inner world of these children to be comprehensively understood. These perspectives include familiarity with psychoanalytic theory of personality development, and with the employment of an idiographic approach to the assessment of children with ADHD.

Firstly, a psychoanalytic understanding of child and personality development is crucial for attention to, and assessment of, key developmental cognitive-social-emotional processes in children, particularly children with ADHD possessing multifaceted difficulties and impairment. In latency-aged children, for example, these processes include, “the development of a sense of self, the ability to tolerate affect and manage internal urges, and the refinement of an internal, affective locus of control” (Smith & Handler, 2007, p.8). Contemporary psychoanalytic conceptualisations have highlighted the interruption to these normal developmental-psychological processes by biological, neurological, and neuropsychological vulnerabilities, and their associated impact on relationships with parents and the broader social world (Gilmore, 2000, 2002; Hurry, 1998; Rothstein & Glenn, 1999; Rothstein 1998, 2002; Schmidt Neven et al., 2002). Rothstein (2002), for instance, contended “ADHD exerts an inevitable shaping influence on the patient’s perceptions, self-experience, and psychodynamic constellation, including central unconscious fantasies” (p. 393).

Secondly, an idiographic rather than formulaic approach to psychological assessment of children with ADHD, as recommended by Reddy and De Thomas (2007), facilitates access to in-depth and unique information regarding psychological

functioning. An idiographic approach would necessarily include “multiple methods, informants, and contexts to assess a child’s unique learning, social/emotional, cultural/linguistic, and adaptive/maladaptive functioning” (p.370).

Central to thorough idiographic assessment of these children is thorough assessment of social-emotional functioning. The RIM is one assessment technique that has been well established in clinical practice and research with children (Exner & Weiner, 1995), including children diagnosed with ADHD (Bartell & Solanto, 1995; Cotugno, 1995; Gordon & Oshman, 1981; Jain, Singh, Moharty, & Kumar, 2005; Meehan et al., 2008). Erdberg (2007) referred to the CS for the RIM (Exner, 1991, 1993, 2003; Exner & Weiner, 1995) as an “omnibus measure”, in that it “provides information about coping style, affect, interpersonal function, self-concept, and information processing”, which can be compared with “developmental and normative data” for further elucidation. Accordingly, it has been well recognised that idiographic information pertaining to personality structure and functioning of children with ADHD can be comprehensively gathered using the RIM, and interpreted using a psychoanalytically informed developmental-biopsychosocial framework (Smith & Handler, 2007).

A small body of researchers have recognised the potential usefulness of the RIM in the understanding of children diagnosed with ADHD. The next chapter reviews the research published in this area so far.

CHAPTER THREE
STUDY OF PERSONALITY FUNCTIONING IN CHILDREN
WITH ADHD AND RELATED DISORDERS

This chapter begins with a summary of reported non-projective research studies of personality variables in children with ADHD, followed by a review of the findings of RIM studies of personality functioning in these children. Due to the high prevalence of co-morbid mental health problems in children with ADHD, such as CD, ODD, and Learning Disorder (LD), the findings of RIM and Mutuality of Autonomy (MOA) Scale studies of personality functioning in these clinical samples are then presented. The chapter concludes with a presentation of a profile of the personality functioning of children with ADHD that has been discerned in the present research as emerging from studies so far.

3.1 General research on personality variables in children with ADHD

To date, few studies have specifically set out to investigate the overall personality functioning of children with ADHD using non-projective personality instruments. In fact, a literature search revealed reports of only three published studies, one of which examined personality in adults with ADHD. In contrast, many published studies have explored particular aspects of socio-emotional functioning of these children by non-projective means. General personality assessment studies are now discussed, followed by those pertaining to specific socio-emotional variables considered central to core domains of children's personality functioning.

3.1.1 Study of overall personality

Using self-report personality instruments, Lufi and Parish-Plass (1995) found that children with ADHD evidenced significantly higher external locus of control, lower levels of persistence, and elevated levels of anxiety related to concentration and social difficulties, than children in a control group.

Cukrowics, Taylor, Schatschneider, and Iacono (2006), in a large scale study, investigated whether personality patterns, assessed by self-report personality instruments, differed between non-clinical children and adolescents and those diagnosed with “singular or combined presentations of ADHD and CD”, and whether this pattern was similar in childhood, adolescence, and across gender (p. 152). The personality variables of negative emotionality (i.e. labile affectivity and reactivity to stress) and low constraint (i.e. irresponsibility and impaired moral reasoning) were found to be associated with each clinical group. Further, the subgroup of ADHD children diagnosed with co-morbid CD manifested the strongest association between these personality variables. This association existed in both children and adolescents, irrespective of gender.

3.1.2 Study of specific socio-emotional processes

The number of published studies on specific social-emotional difficulties of children with ADHD is vast. A brief overview of these, mainly derived from Barkley's (2006) exhaustive review is offered below. Studies are discussed in terms of their centrality to three core domains of personality functioning, conceptualised in accordance with

Pine's⁴ (1990) psychoanalytic framework of personality, which encompasses ego functioning, object relations, and sense of self.

3.1.2.1 Studies relating to ego functioning

In this domain, research studies have mainly focussed upon cognition and information processing, and affect regulation. Concerning the former, a large body of research has found significant language impairment in children with ADHD. In particular, according to Barkley (2006), these studies have evidenced impairments in verbal fluency, organisation and expression of ideas, verbal problem solving, rule-governed behaviour, listening comprehension, and moral reasoning. Marked delay in the internalisation of speech has also been found. Collectively, such deficits may undermine the capacity of children with ADHD to mentally represent thoughts, and to use private or internalized speech for impulse control, logical reasoning and problem solving, just as predicted by theories discussed in Chapter Two.

A study by Caplan, Guthrie, Tang, Neuchterlein, and Asarnow (2001), which investigated the clarity of thinking in children with ADHD, also revealed impairment in ego functioning. Samples of speech were compared between three groups of children, namely those without a diagnosis, those diagnosed with ADHD, and those diagnosed with Schizophrenia. The latter two groups displayed thought disorder, less severe in children with ADHD than in children with Schizophrenia. Nevertheless,

⁴ Pine (1990) actually referred to four domains of personality functioning within the field of psychoanalysis, namely drives, ego functioning, object relations, and sense of self. Given the accepted understanding within psychoanalysis that the ego is responsible for managing both internal (drives) and external demands in an effort to maintain psychic equilibrium and to adapt to reality, for organisational ease only the domains of ego functioning, object relations, and sense of self are hitherto referred to when employing Pine's conceptualisation in this thesis.

children with ADHD were more prone to illogical thinking and using fewer conjunctions than children in the control sample. The study also revealed that the thinking problems of children with ADHD, in contrast to those with Schizophrenia, were associated with impaired executive functioning.

Further evidence of mild thought disorder in children with ADHD came from a study by van der Gaag, Caplan, Engeland, Loman, and Buitelaar (2005), which compared thought disorder rating scale findings of five samples, namely children diagnosed with Pervasive Developmental Disorder (PDD), Autistic Disorder (AD), ADHD, Anxiety Disorder, and non-patient children. Higher ratings of formal thought disorder were found in children with PDD and AD, low rates in children with ADHD, and no thought disorder was found in the non-patient and Anxiety Disorder samples.

Concerning affect regulation, studies have found that children with ADHD struggle to regulate the expression of affect, especially anger and frustration (Cole, Zahn-Waxler, & Smith, 1994; Douglas & Parry, 1994; Shea & Fisher, 1996). These children have also been found to exhibit higher levels of sadness, anger, and guilt than a non-clinical group (Braaten & Rosen, 2000).

3.1.2.2 Studies relating to object relations

Research studies that have examined aspects of object relations, namely quality of interpersonal interaction, capacity for empathy, and social cognition, have emerged. Studies of interpersonal functioning have found that children with ADHD tend to relate and communicate in negative and emotional ways, display more aggressive

facial expressions, and demonstrate lower levels of empathy than children in non-clinical samples (Braaten & Rosen, 2000; Hinsham & Melnick, 1995; Keltner, Moffitt, & Stouthamer-Loeber, 1995).

Studies of social cognition in children with aggression problems, such as those diagnosed with a Disruptive Behaviour Disorder, have found that, compared to non-aggressive children, they perceived fewer relevant social cues, failed to seek additional information, and attributed hostile intent, when discussing their understanding of a videotape depicting an ambiguous social scenario involving three children playing in a sandpit⁵. Further, they were limited in generating interpersonal solutions for this social scenario, and believed that aggression would lead to a desirable social outcome (Dodge, 2006; Dodge & Schwartz, 1997).

3.1.2.3 Studies relating to sense of self

In this field, research has focussed upon the sense of self in terms of regulation of self-esteem. Such regulation, often featuring biased self-appraisal or cognitive distortion, has actually been studied extensively in children with ADHD (Hoza et al., 2004; Hoza, Pelham, Dobbs, Owens, & Pillow, 2002; Hoza, Waschbusch, Pelham, Molina, & Milich, 2000). It has emerged that these children tend to rely on a positive illusory bias, over-estimating their abilities and under-estimating their difficulties, to cope with impairments in scholastic, social, and behavioural areas (Hoza et al., 2000; Hoza et al., 2002). Studies have shown that where impairment is pronounced in a

⁵ The videotaped ambiguous social scenario depicted two children playing contently together with a toy in a sandpit. After a few minutes another boy enters the sandpit and joins in the play, but then grabs the toy and runs away.

particular area, children with ADHD tend to employ more extreme illusory biases in assessing their own level of competence (Hoza et al., 2004). These children have been found to be more prone than non-clinical samples to rely on cognitive distortions as a means of regulating self-esteem and preserving a favourable self-concept (Diener & Milich, 1997). Such findings accord with the psychoanalytic view that these children with Disruptive Behaviour Disorders are narcissistically vulnerable (Fonagy et al., 2002; Rothstein, 1998, 2002; Willock, 1986, 1987).

3.2 Rorschach studies of children with ADHD

To date, only five Rorschach studies of personality functioning of children with ADHD have been published, namely those by Gordon and Oshman (1981), Bartell and Solanto (1995), Cotugno (1995), Jain et al. (2005), and Meehan et al. (2008). Table 1 on page 41 presents significant and clinically meaningful findings from these studies, along with authorship and date of publication, child samples studied, Rorschach variables investigated. A more detailed analysis of the five published Rorschach studies can be found in Appendix I.

It is evident from Table 1 that each published study assessed how the personality functioning of children with ADHD differed from non-specific clinical samples or control samples in an attempt to elucidate aspects of personality functioning unique to children diagnosed with ADHD. Two studies employed non-specific clinical samples, one study employed both a non-specific clinical group and a control sample,

Table 1

Summary of Findings of Published Rorschach and RIM Studies of Personality Functioning of Children with ADHD

Author & Year of Publication	Clinical and Contrast Samples	Rorschach System Employed & Variables Studied	Findings
Gordon & Oshman (1981)	Hyperactive (n=20) vs Non-Hyperactive (20) Gender: Boys (mean age: 9 years)	Klopfer et al. (1954) Variables: R, Reaction Time, M, FM C, CF, FC, Sum C, Sum Sh, A%, H%, P, F+%	<u>ADHD significant findings (as hypothesised):</u> <i>Lower than contrast sample:</i> M, A%, H% <u>Important Non-Significant:</u> C, CF, FC, Sum C
Bartell & Solanto (1995)	a) ADHD (n=24) vs Exner CS child norms b) ADHD-Only (n=12) vs ADHD/ODD (12) vs Exner CS child norms Gender: 22 Boys & 2 girls (mean age: 8 years)	Exner CS (1986) Variables: a) R, CF, FC, FC:CF+C, M, SumM:WSumC, EA, X% D b) H, AG	a) <u>ADHD significant findings (as hypothesised):</u> <i>Lower than CS child norms:</i> M, X-% <u>ADHD significant findings (not as hypothesised):</u> <i>Lower than CS child norms:</i> FC, CF b) <u>ADHD/ODD significant findings (as hypothesised):</u> <i>Lower than ADHD-Only & CS child norms:</i> H
Cotugno (1995)	ADHD (n=40) vs Non-Specific Clinical (40) vs Control (40) Gender: 99 boys & 21 girls (mean age: 5 years 9 months)	Exner CS (1993) Variables: R, Lambda, D, Adj D, SumC Sum Sh, Afr, Blends, 3r+(2)/R, MOR, COP, Pure H, AG, Zf, Zd, P, X+%, X-%, Xu%, Sum6, WSum6, SCZI, DEPI, CDI	<u>ADHD significant findings (exploratory hypotheses):</u> <i>Higher than control sample:</i> CDI, Lambda, Sum Sh, DEPI, X-%, Xu%, SCZI, <i>Lower than control sample:</i> SumC, Afr, 3r+(2)/R, Pure H, P, X+%, <i>Lower than contrast & control samples:</i> Blends, COP, AG, Sum6, WSum6
Jain et al. (2005)	ADHD (n=111) vs Controls (113) Gender: 181 boys & 36 girls (age range: 6 – 11)	Beck (1961; Beck & Molish, 1967) Variables: R, Reaction Time, W, D, Dd, F+%, M, C, CF, FC, V, Y, T, Afr, H, Hd, An, P, S%, Lambda	<u>ADHD significant findings (exploratory hypotheses):</u> <i>Lower than control sample:</i> M, A, D, F+%, P <i>Higher than control sample:</i> Sum C
Meehan et al. (2008)	ADHD (n=28) vs Non-Specific Clinical Group (14) Gender: 27 boys & 15 girls (mean age: 8 years)	Exner CS (1993) Variables: R, M, Sum H, X+%, Lambda, EA, D	<u>ADHD significant findings (as hypothesised):</u> <i>Lower than contrast sample:</i> EA, M <u>Important Non-Significant:</u> Lambda

and two studies utilised the Comprehensive System child normative data as a comparison group. Evaluation of the appropriateness of these comparison samples is presented below in Section 3.2.1.

Perusal of Table 1 above also demonstrates that these studies employed three separate Rorschach systems for administration, scoring, and interpretation. Gordon and Oshman (1981) utilised the Klopfer, Ainsworth, Klopfer, and Holt (1954) system, Jain et al. (2005) adopted the Beck (1961; Beck & Molish, 1967) system, and the remaining three studies (i.e. Bartell & Solanto, 1995; Cotugno, 1995; Meehan et al., 2008) employed the Exner (1986, 1993, 2003) Comprehensive System.

A partial consequence of the employment of three separate Rorschach systems has been the wide array of Rorschach variables investigated in studies of children with ADHD thus far, as is explicit in Table 1. This has also partly stemmed from the exploratory nature of some of these studies, and the absence, except in the Meehan et al. (2008) study, of grounding of research hypotheses in Rorschach and psychoanalytic theory of personality development and functioning. This and other limitations are discussed next in Section 3.2.1. Nevertheless, particular trends have emerged in the findings across these studies, which are presented in Section 3.4 below as an emerging RIM profile of personality functioning of children with ADHD.

3.2.1 Limitations of the studies

The findings of the studies reviewed above are not easily integrated due to the employment of the three separate systems for administering the Rorschach Inkblot Test and for scoring and interpreting its data. Use of the Comprehensive System (Exner, 1986, 1993, 2003), which incorporates earlier methods of administering and scoring Rorschach, only partially overcomes this limitation.

Integration of the findings has also been thwarted by the focus on different sets of Rorschach Inkblot Test variables as dependent variables. Not one Rorschach variable has been investigated by all five studies, three Rorschach variables (e.g. X+%, M, Sum C) have been investigated by four studies, three Rorschach variables (e.g. R, Sum H, P) have been investigated by three studies, and nine Rorschach variables (Lambda, EA, D, FC, CF, FC:CF+C, Sum Sh, AG, X-%) have been investigated by two studies. The remaining 19 variables that have been investigated occurred within single studies. Hence, further research is needed to build upon the current body of literature, so that existing findings about the personality functioning of these children gain greater reliability and external validity.

Another limitation of the published studies has been the sole reliance on parametric statistical methods, when non-parametric or categorical analysis may have been more clinically meaningful and in line with the lack of normal distribution of numerous CS Rorschach variables. Categorical analysis, for example, would have enabled the studies reviewed to compare the distribution of scores between the ADHD and

comparison samples, according to whether or not they fulfilled commonly employed clinical cut-off points.

A further limitation of the studies has been the employment of inadequate (Bartell & Solanto, 1995), and poorly defined (Gordon & Oshman, 1981; Cotugno, 1995; Meehan et al., 2008) comparison samples. Bartell and Solanto (1995), for instance, used the CS (Exner, 1993) child normative data as their comparison sample. Exner, Kinder, and Curtiss (1995) expressed major reservations about this practice, especially where normative data are compared with those of a homogenous sample. This was because the CS normative data (Exner, 1991, 1993; Exner and Weiner, 1995; Exner, 2003) were drawn from a large heterogenous sample, and demonstrated considerable sample variance. Thus, significant differences found between the Bartell and Solanto ADHD sample and the CS normative sample may have been due to the considerable sample variance of the latter, rather than to any clinically meaningful variables. Bartell and Solanto compromised the reliability and external validity of their findings with an inappropriate comparison group.

Gordon and Oshman (1981), Cotugno (1995), and Meehan et al. (2008) used non-specific clinical comparison groups, but did not describe these definitely, apart from stating that they were comprised of children with behavioural, emotional, and learning difficulties, which did not fulfil diagnostic criteria for ADHD. Given that ADHD is a type of Disruptive Behaviour Disorder, frequently co-morbid with other externalising and internalising disorders, an ADHD sample may share many similar patterns of personality functioning with a non-specific clinical comparison sample. Indeed,

Meehan et al. regarded the latter issue as a variable that potentially contributed to numerous of their non-significant findings.

Finally, although it was the most methodologically rigorous of the five relevant studies, that of Cotugno (1995) failed to control for the possibility of inflated Type I error. This study conducted at least 25 statistical comparisons of variables nominated a priori, with further analyses conducted post-hoc. As 9 of the 19 statistically significant findings were achieved with an alpha level of .05, some of these findings are likely to have been a function of Type I statistical error. This possibility was not, however, acknowledged by the author. With the exception of Jain et al. (2005), the other studies did confine their investigation to a fewer number of dependent variables.

3.3 Rorschach Inkblot Method and Mutuality of Autonomy Scale studies of children from other clinical populations

Due to the scarcity of RIM research on children with ADHD, combined with their high rates of psychiatric co-morbidity, a review of the published RIM and MOA Scale (Urist, 1977) research on children from other, related clinical populations was conducted. Encompassed were studies on the personality functioning of children with ODD, CD, Post-Traumatic Stress Disorder (PTSD), and LD. Significant and clinically meaningful findings from the five discovered studies, along with authorship and date of publication, child samples studied, RIM variables investigated, are summarised in Table 2 on page 46 below.

Table 2

Summary of Findings of Published Rorschach Inkblot Method and Mutuality of Autonomy Scale Studies of Personality Functioning of Children From Related Clinical Populations

Author & Year of Publication	Clinical & Contrast Samples	RIM & MOA Scale Variables Studied	Findings
Gacono & Meloy (1994)	<p>a) CD (n=60) vs CS child norms</p> <p>b) CD (n=60) vs Tuber (1989) non-patients (statistical comparisons)</p> <p>Gender: 52 boys & 8 girls (mean age: 9.75 years)</p>	<p>a) RIM variables: All CS structural summary variables and indices.</p> <p>b) Rorschach responses assigned MOA Scale scores of 1 through 7</p>	<p>a) CD significant qualitative findings: <i>Lower than CS child norms:</i> X+%, Afr, 3r+(2)/R, H:(H)+Hd+(Hd), AG, COP</p> <p><i>Higher than CS child norms:</i> SCZI, M-, Lvl2 Spec Sc, Mp>Ma, Xu%, X-%, C, T, AgCont, AgPast, AgPot</p> <p>b) CD significant quantitative findings: <i>i) More CD subjects produced responses depicting:</i> narcissistic (MOA score of 4) and malevolent (MOA scores of 5-7) and severely malevolent (MOA Score of 7) representations of object relations.</p> <p><i>ii) CD subjects produced more responses depicting:</i> malevolent (MOA scores of 5-7) and severely malevolent (MOA Score of 6 or 7) representations of object relations.</p> <p><i>iii) CD subjects produced less responses depicting:</i> adaptive object relations (MOA Scores of 1-2)</p>
Holaday (2000)	<p>a) PTSD (n=35) & ODD (n=35) vs CS child norms</p> <p>b) PTSD vs ODD</p> <p>Gender: 47 boys & 23 girls (mean age: 10.91, PTSD & 11.02, ODD)</p>	<p>a) SCZI, DEPI, CDI, X+%, 3r(2)/R, Afr, T, EA, P, WSumC, Sum6, WSum6</p>	<p>a) PTSD & ODD Significant findings: <i>Lower than CS child norms:</i> X+%, 3r(2)/R, Afr, EA, P, WSumC</p> <p><i>Higher than CS child norms:</i> SCZI, DEPI, CDI, WSum6, Sum6</p> <p>b) PTSD significant findings: <i>Higher than ODD:</i> SCZI, X+%, Sum6, WSum6</p>
Champion et al. (1984)	<p>LD (n=20, 8.4 yrs; & n=20, 11.4yrs) vs CS child norms</p> <p>Gender: 30 boys & 10 girls</p>	<p>R, Lambda, X+%, F+%, Afr, 3r(2)/R</p>	<p>LD (8 year & 11 year old samples) significant findings (as hypothesised): <i>Lower than CS child norms:</i> X+%, F+%, Afr, 3r(2)/R</p> <p><i>Higher than CS child norms:</i> Lambda</p>
Acklin (1990)	<p>LD vs CS norms</p>	<p>Replication of Champion et al.</p>	<p>LD significant findings (predicted): X+%, F+%, Afr, 3r(2)/R</p>
Harper & Scott (1990)	<p>LD (n=12) vs Controls (n=13)</p> <p>Gender: 21 boys & 4 girls (mean age: 12.7 years)</p>	<p>R, Lambda, FQ+, FQo, FQu, FQ-, X-%, Afr, 3r(2)/R</p>	<p>LD significant findings (as predicted): <i>Higher than Controls:</i> FQ-, Lambda</p> <p><i>Lower than Controls:</i> FQo</p>

Detailed analysis of these studies, as well as those exploring the quality of thinking and representations of object relations of inpatient children and adolescents and children living under conditions of extreme environmental stress, can be found in Appendix II.

Inspection of Table 2 above reveals that, in these RIM and MOA Scale studies, specific clinical samples and either the CS child normative data or actual non-patient samples were compared with samples of children with CD, PTSD, ODD, and LD. Gacono and Meloy (1994), for example, contrasted the RIM profiles of children with CD with the CS child normative data. They also used the Tuber (1989) non-patient MOA Scale data, concerning representations of object relations, for comparison with the findings of children with CD on this scale. Holaday (2000) used both a sample of children diagnosed with ODD and the CS child normative data as comparison groups in her study of personality functioning in children with PTSD. Champion et al. (1984) and Acklin (1990) both contrasted the RIM findings of children with LD with the CS child normative data, while Harper and Scott (1990) used an actual control sample in her study of children with LD.

The exploratory nature of the Gacono and Meloy (1994) and Holaday (2000) studies is indicated in Table 2 above by the array of RIM variables they respectively employed to investigate the personality functioning of children with CD, as well as children with PTSD and ODD. Additionally, using the MOA Scale, Gacono and Meloy specifically investigated the internal object relations of children with CD. In contrast, the studies of children with LD, two of which were replication studies, were

more focussed and investigated similar RIM variables, namely those concerning openness to experience, accuracy of perception, handling of affect, and self-esteem.

3.3.1 Relevance to personality functioning in children with ADHD

The RIM and MOA Scale summarised in Table 2 are relevant to the present research in two main ways. Firstly, ODD, CD, and LD are common co-morbidities in children with ADHD, with prevalence rates of up to 84 percent for ODD/CD and up to 39 percent for LD (Barkley, 2006). Further, prospective studies have shown that ADHD children with co-morbid ODD/CD experience a severely troubled developmental trajectory, characterised by significant maladjustment throughout childhood and adolescence and into adulthood (Barkley et al., 1990; Burke et al., 2005; Maughan et al., 2004; Newcorn & Halperin, 2000; Newcorne et al., 2001; Weiss & Hechtman, 1993). Secondly, findings from these studies are comparable with the RIM findings of children with ADHD, reported in Table 1 on page 41, as they point to similar disturbances in personality functioning.

Regarding the domain of ego functioning, inadequate internal resources, measured by the CDI and EA variables, have been found in the ODD (Holaday, 2000) and CD (Gacono & Meloy, 1994) child samples. Thinking problems, measured by the SCZI, Lvl2 Spec Sc, and M-, have been found in children with CD, and in children with ODD, measured by the SCZI. Poor reality testing, as measured by the X-% variable, has been found in CD and LD (Acklin, 1990; Champion et al., 1984; Harper & Scott, 1990) child samples. Difficulties perceiving conventional reality, as measured by the X+% variable, have been found in CD and ODD child samples. Finally, avoidance

and constriction of affect, as measured by the Afr and Lambda variables, has been found in the ODD, CD, and LD samples of children. Comparable impaired ego functioning has been documented in the Rorschach studies of children with ADHD, using a combination of the aforementioned Rorschach variables (Gordon & Oshman, 1981; Bartell & Solanto, 1995; Cotugno, 1995; Jain et al., 2005; Meehan et al., 2008).

In the domain of object relations, severely maladaptive representations of object relations, as measured by the MOA Scale, have been found in a CD child sample (Gacono & Meloy, 1994). While no Rorschach studies have yet used the MOA Scale to assess the object relations of children with ADHD, evidence of impoverished capacity for representations of object relations has been found (Bartell & Solanto, 1995; Meehan et al., 2008). Similarly, studies have found reduced capacity to produce M responses on the Rorschach (Gordon & Oshman, 1981; Bartell & Solanto; Jain et al., 2005; Meehan et al.). Donahue and Tuber (1993), in a study of children living under stressful conditions, highlighted the psychological significance of the capacity to depict adaptive representations of object relations (MOA Scale Scores of 1 – 3) and to provide Elaborate Form Human Movement Responses (M+) on the RIM. They found that MOA Scale scores of 1 to 3 (depicting adaptive representations of object relations) were highly correlated with M+ scores on the RIM, and reflective of resilient psychological functioning in these children

With respect to the domain of sense of self, depressive features, as measured by the DEPI, have been reported in the CD (Gacono & Meloy, 1994) and ODD (Holaday, 2000) child samples. Lowered self-esteem, as measured by the Egocentricity Index, has also been found in the ODD, CD, and LD (Acklin, 1990; Champion et al., 1984;

Harper & Scott, 1990) samples of children. Comparable difficulties in the domain of sense of self, indicated by these same Rorschach variables, have been reported in the RIM studies of children with ADHD (Gordon & Oshman, 1981; Bartell & Solanto, 1995; Cotugno, 1995).

Taken together, these findings contribute to understanding the personality functioning, structure and psychodynamics, of ADHD children, particularly those with co-morbid mental health problems. They are clearly relevant to planning further research in this field.

3.4 The emerging Rorschach Inkblot Method profile of the personality functioning of children with ADHD

Despite the limited number of Rorschach studies on children with ADHD, and the inconsistent use of Rorschach variables across these studies, the present researcher has discerned an emerging profile of the personality functioning of ADHD children. Adopting the psychoanalytic framework of personality proposed by Pine (1990) described in Section 3.1.2 above, this inchoate profile can be articulated in terms of three core domains of psychic functioning, namely ego functioning, object relations, and sense of self. These domains can in turn be divided into constituent aspects of personality functioning, assessable by variables contained within the CS for the RIM.

Thus, ego functioning, as measured by the CS (Exner, 1991, 1993, 2003; Exner & Weiner, 1995) for the RIM, refers to the effectiveness of internal adaptive resources (ideational and expressive), the capacity for stress tolerance, the ability to tolerate and

modulate emotion, the capacity to attend to experience, and ability to perceive reality accurately. Object relations, as identified by the CS, refers to interpersonal perception and behaviour, namely, the capacity for social engagement, interaction and empathy, and the ability to identify with and internalise whole, real relationships with people. sense of self, assessed by the CS, refers to self-concept, its quality and nature, and the level of self-esteem (Weiner, 1998).

3.4.1 Ego functioning of children with ADHD

In terms of the ego functioning of children with ADHD, they have been found to lack adequate internal coping resources, which render them vulnerable to emotional overload, behavioural disorganisation, and interpersonal problems (Bartell & Solanto, 1995; Meehan et al., 2008). More specifically, these children have been found lacking in their capacity to delay the enactment of their impulses and to mentally represent and reflect on their thoughts and ideas (Bartell & Solanto; Gordon & Oshman, 1981; Jain et al., 2005; Meehan et al.). This ego deficit has been considered to be associated with compromised executive functioning arising from a core feature of ADHD, namely disinhibition or impulsivity (Fonagy et al., 2002; Gilmore, 2000, 2002; Rothstein, 1998, 2002; Rothstein & Glenn, 1999; Schmidt Neven et al., 2002).

Regarding the capacity of children with ADHD to tolerate and regulate affects, it has emerged that these children have difficulties mentally representing their affects in thoughts and language (Bartell & Solanto, 1995; Cotugno, 1995), a precondition for the development of affective and behavioural control (Barkley, 2006; Fonagy et al.,

2002; Gilmore, 2000, 2002; Rothstein, 1998, 2002; Rothstein & Glenn, 1999; Schmidt Neven et al., 2002). There has also been evidence of these children avoiding affective stimuli and narrowing their attention in an attempt to gain control over their affects (Cotugno, 1995). Meehan et al. did not confirm this latter finding, and proffered as an explanation that these children might have a “bi-modal” relationship with affect, whereby they fluctuate between the strategies of avoidance and constriction, and attempts at representation, with the latter making them vulnerable to affective over-arousal.

In contrast, however, Jain et al. (2005) found that children with ADHD were more comfortable processing affect, and were more able to mentally represent and regulate affect, than children in the control group. Clearly, these findings ran counter to the body of evidence gathered by others. The authors were not concerned to interpret these findings in terms of personality functioning, and did not attempt to explain why their findings differed from those of previous studies. A possible explanation may be in the fact of Jain et al.’s sample being culturally different (Indian) from that of the other studies, or in the use of the Beck (1961; Beck & Molish, 1967) coding system.

Thus, while there was not direct evidence of excessive emotionality in children with ADHD, the aforementioned deficits in their ego functioning indicated that they were vulnerable to an exacerbation of unregulated behaviour when their limited internal resources become taxed by strong affects.

The reality testing of children with ADHD, a key aspect of ego functioning, has been found to be impaired (Bartell & Solanto, 1995; Cotugno, 1995). It has also appeared

likely that these children are less prone to highlight less conventional aspects of reality (Cotugno; Jani et al., 2005). Such impairments of ego functions are consistent with the adjustment difficulties of these children, as inaccurate perception and disregard for conventional aspects of social reality contribute to faulty reasoning and decision-making, and in turn inappropriate social behaviour (Weiner, 1998).

3.4.2 Object relations of children with ADHD

In terms of the object relations of children with ADHD, they have been found to demonstrate a generally impoverished capacity for adaptive representations of object relations (Meehan et al., 2008; Gordon & Oshman, 1981; Bartell & Solanto, 1995; Cotugno, 1995). These studies demonstrated that children with ADHD have difficulties understanding and feeling empathy for people, as well as engaging in age-appropriate social interaction and relationships. Where these children had a co-morbid diagnosis of ODD, there was evidence of lessened capacity for empathy compared to those children without ODD (Bartell & Solanto). Using the terminology of Fonagy et al. (2002), children with ADHD appear to be inadequately developed in their capacity for mentalization, the ability to reflect on affective states and the interpersonal behaviour of other people, as well as oneself.

Of further interest in the domain of object relations was the finding that children with ADHD do not anticipate their social interactions to be rewarding and reciprocal (Cotugno, 1995). However, contrary to prediction, these children were not found to be more prone to representing object relations in hostile or aggressive interactions than normal or other clinical subjects (as measured by the frequency and comparison

of Rorschach responses depicting aggressive interactions or themes). Similarly, ADHD children with co-morbid ODD were no more prone to Aggressive Movement (AG) responses in their protocols than non-ODD ADHD subjects. These counter-intuitive findings highlighted the possibility of a compromised ability in children diagnosed with ADHD to mentally represent interpersonal aggression. This is not surprising, given their tendency to discharge rather than represent, contain and internally process affect generally.

3.4.3 Sense of self of children with ADHD

Difficulties in personality functioning concerning the domain sense of self have been identified in children with ADHD. Regarding their subjective experience, they have been found to have poor self-esteem, and appear prone to depressive symptoms (Cotugno, 1995). The latter may tend to strain their limited internal resources, including their capacity to tolerate stress and to regulate affects, making behavioural control even harder. Barkley's (2006) review of the literature on co-morbid depression in children with ADHD was entirely consistent with this apparent trend. Furthermore, these children have evidenced impaired capacity for identification with people as whole objects (Gordon and Oshman, 1981; Bartell & Solanto, 1995; Cotugno, 1995), a process undermining adequate identity formation.

3.5 Towards further investigation

The conclusions of the published research on the personality functioning of children diagnosed with ADHD are crystallised in a brief summary in the next chapter, comprising the rationale for conceptualisation of the present study.

CHAPTER FOUR

CONCEPTUALISATION OF THE PRESENT STUDY

The overview of the literature presented in Chapters One to Three highlights the need for research concerning the personality functioning of children with ADHD. The present chapter begins with a discussion of this need, followed by a description of the rationale for employing the CS (Exner, 2003) for the RIM. Next, the aims, theoretical framework and design of the present study are outlined, leading on to a presentation of the research hypotheses, accompanied by reference to their theoretical and research underpinnings.

4.1 Need for research concerning personality functioning of children with ADHD

As documented above, within the vast literature on the heterogeneous group of children diagnosed with ADHD, attention to their personality development and functioning has been limited. This is curious, given the frequently reported findings suggesting significant disturbance of personality functioning. These children have been found to be burdened by an array of associated psychological problems (cognitive, behavioural, emotional, social, academic and familial) and co-morbid mental health problems (e.g. ODD, CD, MDD, LD, etc.), and have been deemed to have poor long-term prognoses, especially in cases of co-morbid diagnosis of ODD/CD (Barkley, 2006; Harada, Yamazaki, & Saitoh, 2002). Regarding the latter, many children not only retain the diagnosis of ADHD in adolescence and adulthood, but have also been found to experience serious on-going psychological problems,

particularly Personality Disorder (Barkley et al., 1990; Burke et al., 2005; Maughan et al., 2004; Weiss & Hechtman, 1993).

While the field as a whole has tended to emphasise the behavioural or neuropsychological correlates of ADHD in children, a small body of published literature has been produced that stresses the importance of conceptualising the psychological functioning of these children from an in-depth biopsychosocial and developmental perspective. The latter includes consideration of variables, such as biological vulnerability, neuropsychological functioning, and psychosocial variables, such as attachment history, intrapsychic and personality functioning, and their interaction in determining symptom presentation, psychological development, and adaptive functioning (Gilmore, 2000, 2002; Halasz, 2002, 2004; Halasz & Vance, 2002; Reddy & De Thomas, 2007; Rothstein, 2002; Rutter, 1982; Schmidt Neven et al., 2002).

This small collection of studies, outlined in Sections 2.3 and Chapter Three above, concerning the problematic personality development and functioning of children with ADHD, has emerged from separate but related sources. Non-projective methods of assessing personality and socio-emotional variables have been emphasised, as have clinical psychoanalysis, and personality assessment studies utilising the RIM.

With respect to the studies employing non-projective methods of assessing personality, the personality traits of negative emotionality, low constraint (Cukrowicz et al., 2006), external locus of control, low persistence, and anxiety related to attention and social problems (Lufi & Parish-Plass, 1995) have been found to be

associated with ADHD in children. Similarly, studies of specific socio-emotional variables have found that children with ADHD exhibit language and thinking problems (Barkley, 2006; Caplan et al., 2001, van der Gaag et al., 2005), poor regulation and expression of affect (Douglas, 1983; Douglas & Parry, 1994; Cole et al., 1994; Shea & Fisher, 1996), negative and emotional interpersonal behaviour (Hinshaw & Melnick, 1995; Keltner et al., 1995), limited empathy (Braaten & Rosen, 2000), and reliance on cognitive distortion to regulate self-esteem levels (Hoza et al., 2004; Hoza et al., 2002; Hoza, et al., 2000; Diener & Milich, 1997).

Regarding the studies in the field of clinical psychoanalysis, a series of theoretical papers and case studies have emphasised the significant, destabilising influence of underlying neuropsychological dysfunction on the personality development and functioning of children diagnosed with ADHD (Fonagy et al., 2002; Gilmore, 2000, 2002; Rothstein, 1998, 2002; Rothstein et al., 1988; Rothstein & Glenn, 1999; Schmidt Neven et al., 2002). The compromised personality functioning of these children, according to these authors, is characterised by (a) disturbed ego functioning (e.g. difficulties thinking clearly; mentally representing thoughts and affects or mentalization; containing affects; defending against psychic conflicts and anxiety; and reality-testing), (b) impaired object relations (e.g. the internalisation and reliance upon part and fantasised representations of people, which undermine their mental life and interpersonal relationships; deficient capacity for interpersonal understanding and problem solving), and (c) a brittle sense of self (e.g. the predominance of negative self-constructs, namely a sense of defect, and fluctuating levels of self-esteem). Additionally, psychoanalytic studies (Fonagy et al., 1993, 2002; Willock, 1986, 1987) have described the narcissistic vulnerability of children with Disruptive Behaviour

Disorders, which renders likely to feel unloved, and being on the lookout for, and frequently misinterpreting, signs of rejection by significant others.

RIM studies of children with ADHD, which are extensively reviewed in Appendix I, have also highlighted significant disturbance in personality functioning (Gordon & Oshman, 1981; Bartell & Solanto, 1995; Cotugno, 1995; Jain et al., 2005; Meehan et al., 2008), presented in Section 3.4 above as an emerging Rorschach profile of the personality functioning. This profile is conceptualised psychoanalytically in terms of the three core domains of personality functioning identified by Pine (1990), namely ego functioning, object relations, and sense of self. Additionally, the findings from Rorschach studies on children diagnosed with CD (Gacono & Meloy, 1994), PTSD and ODD (Holiday, 2000), and LD (Acklin, 1990; Champion et al., 1984; Harper & Scott, 1990), which are summarised in Section 3.3 above and in Appendix II, their relevance stemming from the high prevalence rates of these co-morbid disorders in children with ADHD, demonstrated comparable disturbance in the personality functioning of these related clinical populations. Due to the limited number of these published studies, however, their influence has not extended to the mainstream of clinical research and practice regarding the conceptualisation, assessment, and treatment of this heterogeneous child clinical population.

Against this background, the present study was planned to further investigate key aspects of the emergent RIM profile of children diagnosed with ADHD.

4.2 Employment of the Rorschach Inkblot Method

An unintended consequence of much of the published research on children with ADHD, which has typically examined either the behavioural or neuropsychological problems associated with the disorder, has been a minimal or simplistic understanding of the intrapsychic life of these children. On the other hand, the employment of the RIM by some studies has afforded an opportunity to comprehensively assess the personality functioning, structure and psychodynamics involved.

The use of the CS (Exner, 1986, 1993, 2003; Exner & Weiner, 1995) for the RIM has been demonstrated to yield reliable and valid idiographic and nomothetic information concerning the behavioural, emotional, social, and cognitive aspects of personality functioning in child as well as adult populations, both normal and clinical (Weiner, 2003). Nevertheless, there has been energetic debate within the literature concerning the psychometric properties of the CS (Exner, 2003). Some have even vociferated for a moratorium to be placed on the employment of the RIM in clinical practice and research, as they believe the CS possesses significant psychometric weaknesses (Garb, 1999; Wood & Lilienfeld, 1999; Wood, Lilienfeld, Nezworski, & Garb, 2001; Wood, Nezworski, Lilienfeld, & Garb, 2003). These authors have proposed various shortcomings in the CS, including reliance upon flawed and aged normative data, inadequate levels of inter-scoring of CS variables, questionable validity of some variables in measuring what they purport to measure, and unreliability of the CS in psychiatric diagnosis.

Against these arguments, a number of workers have systematically outlined the psychometric strengths of the CS (Exner, 2003) for the RIM, and have advocated for its continued usage in clinical practice and research (Exner, 2003; Ganellen, 2001; Hiller, Rosenthal, Bornstein, Berry and Brunnel-Neuleib, 1999; Parker, Hanson, & Hunsley, 1988; Weiner, 1996, 2000, 2003). On the basis of a thorough review of the research on its psychometric status, Weiner (2003) has advocated the use of the CS in assessing the personality functioning of both children and adults. He concluded that it satisfies each of the four criteria necessary for classification of psychometric soundness, namely: “(a) trained examiners can reach reasonable agreement concerning their scores of its variables; (b) estimates of its reliability indicate that it provides reasonably accurate information, that is, scores obtained from it have minimal error variance and closely approximate actual or true scores; (c) its demonstrated corollaries identify purposes for which it is reasonably valid; and (d) there are adequate normative data concerning its descriptive statistics among various populations” (p. 25).

More specifically, Weiner (2003) supported his conclusions by summarising the findings of the extensive Hiller et al. (1999) meta-analytic study that “analysed a random sample of RIM and Minnesota Multiphasic Personality Inventory (MMPI) research studies published from 1977 to 1997 and including 2,276 Rorschach protocols and 5,007 MMPI protocols” (p.27). The unweighted mean validity coefficients of the two tests were found to have been nearly identical, .29 for the Rorschach Inkblot Test and .30 for the MMPI. The researchers, quoted by Weiner (2003, p.27), found that: “these effect sizes (a) demonstrate equivalent general validity for the [Rorschach] and the MMPI, (b) warrant confidence in using both

instruments for their intended purposes, and c) are about as large as can be expected for personality tests (Hiller et al., 1999, p. 291)”.

Earlier, also on the basis of substantial research on the psychometric properties of the RIM in assessing personality functioning in clinical populations, Weiner (1997, cited by Weiner, 2003) argued that the RIM could reliably and validly achieve four essential aims of personality assessment: “1) to yield a well validated description of personality, 2) to aid in the differential diagnosis of various psychological disorders in so far as personality functioning is an important component of the classifiable disorder, 3) to make well validated plans for and assessment of treatment, and 4) to make cautious personality trait based estimates of behaviour and future predictions of personality style” (p.29).

It was considered in the present research, that the psychometric soundness of the CS (Exner, 2003) for the RIM, and its employment in previous studies assessing the personality functioning of children, including the five studies which assessed the personality functioning of children with ADHD summarised in Chapter 3 and Appendix I, provide sufficient justification for its use in the study of personality functioning in children (Weiner, 2003). Indeed, the employment of the RIM in the present investigation of personality functioning in children diagnosed with ADHD had several methodological advantages.

Firstly, the RIM provided a valid and reliable means for assessing the personality functioning of children considered to be limited in their capacity to describe their internal worlds. Secondly, it enabled assessment not only of conscious or overt

aspects of child personality functioning, but also of unconscious or covert aspects, including unconscious cognition, affect, and perceptual biases (Exner, 2003; Weiner, 2003). Thirdly, the personality functioning of children with ADHD could be studied with reference to the CS child normative data, derived from 1,390 subjects between the ages of 5 and 16. Finally, the use of this system permitted conceptualisation of the present study in terms of findings from past RIM studies on children with ADHD.

4.3 Aims of the present study

In aiming to investigate the personality functioning of children with ADHD, the present study was limited to a study of boys. This was because boys have been found to have a far higher rate of ADHD diagnosis than girls (Barkley, 2006). In addition, by recruiting only boys, the homogeneity of a small sample and the validity of any conclusions drawn could be enhanced.

Accordingly, the present study aimed to investigate the personality structure and functioning of boys diagnosed with ADHD in order to extend the findings of past Rorschach research, framing the research within a psychoanalytic conceptualisation of personality, as considered most appropriate to RIM methodology.

Further, given the known destabilising influence of co-morbid ODD (Barkley, 2006), the study sought to clarify its influence on personality through comparison of specific aspects of personality functioning in ADHD boys with and without co-morbid ODD.

The present study also aimed to overcome some of the core methodological limitations of previous Rorschach studies on children with ADHD, which are discussed above in Section 3.2.1 of Chapter Three. Firstly, rather than run the risk of using an inappropriate or ill-defined comparison group, it attempted to replicate findings from previous Rorschach studies on relevant child clinical populations. Secondly, unlike some previous studies, all hypotheses were grounded in both past RIM research and in psychoanalytic theory regarding personality development, structure, and functioning. Thirdly, efforts were made to control for Type I and II statistical errors, as described in Chapter Five. Finally, the study would provide a full summary of frequency data concerning children with ADHD pertaining to key variables derived from the CS (Exner, 2003), absent in publications of previous studies. Such frequency data have the potential to inform future research questions about the problematic personality functioning of children with ADHD.

The present study also represented an attempt to promote the conceptualisation of ADHD in children, in clinical practice and research, from a broad biopsychosocial and developmental perspective, acknowledging the place of neuropsychological processes.

4.4 Theoretical framework of personality employed

As already suggested, Pine's (1990) psychoanalytic framework concerning core domains of personality functioning was held to be a useful structure within which to conceptualise the present research.

Thus, firstly, with respect to ego functioning, the present study would examine the potential presence of (a) inadequate ego strength or inadequate level of internal coping resources, both of an ideational and expressive kind (Bartell & Solanto, 1995; Gordon & Oshman, 1981; Meehan et al., 2008); (b) poor reality testing (Bartell & Solanto; Cotugno, 1995); and (c) confused and illogical thinking in those children with a co-morbid diagnosis of ODD (Gacono & Meloy, 1994; Holaday, 2000).

Secondly, in terms of internal object relations, the present study would investigate the potential presence of (a) maladaptive representations of object relations; b) impaired empathy in those children with a co-morbid diagnosis of ODD (Bartell & Solanto; Gacono & Meloy, 1994; Holaday, 2000); and c) profound social inadequacy (Cotugno, 1995).

Thirdly, regarding the sense of self of these children, the present study would examine the potential presence of negative self-concepts and low self-esteem, in terms of evidence of depressive symptoms (Cotugno, 1995).

4.5 Overall design

To fulfil the principal aim of the study, to elucidate the personality functioning of boys diagnosed with ADHD, RIM data were gathered from a sample of boys diagnosed with ADHD and compared with published RIM studies of these children, as well as those concerning related clinical populations. The rationale for this is outlined in Section 4.3 above. Two types of comparisons were chosen as the most effective means of fulfilling this aim.

The first type involved comparing the personality functioning, measured by specific variables from the CS (Exner, 2003) for the RIM, relating to the present sample of boys with ADHD with those found by previously published Rorschach studies on children with ADHD, and one study on children with CD. The latter study was included in one of the comparisons because it was the only study previously published that used the MOA Scale to comprehensively assess patterns of object relations in children with a Disruptive Behaviour Disorder. Given the evidence that children with ADHD have problematic patterns of object relations, comparable to those found in children with CD, as well as high prevalence rates of co-morbid ODD/CD, the said RIM and MOA Scale study of personality in children with CD was deemed suitable for inclusion in the proposed comparisons.

The second type of comparison entailed comparing the personality functioning, measured by specific variables from the CS (Exner, 2003) for the RIM, of two sub-groups of ADHD boys, namely those with and without a co-morbid diagnosis of ODD. These sub-groups were chosen because a co-morbid diagnosis of ODD has been found to be a pathway diagnosis with a serious deleterious impact on the psychological development and personality functioning of children with ADHD, and on their long-term prognosis (Barkley, 2006; Pliszka, 2009).

In the context of this design, the hypotheses of the present study were formulated.

4.6 Overview of hypotheses of the present study

The existing body of findings from the range of non-projective, psychoanalytic, and RIM studies on the personality functioning of children with ADHD, as summarised in Section 2.3 of Chapter Two and in Chapter Three, pointed to the likely presence of disturbance in three core domains of personality functioning as outlined by Pine (1990), namely ego functioning, object relations, and sense of self. On the basis of the RIM studies of children with ADHD, and related clinical populations, it had been possible to discern an emergent profile of personality functioning in this clinical population, as outlined in Section 3.4 of Chapter Three.

In an attempt to corroborate and build upon this emergent profile of personality functioning, as well as explore the contribution of a co-morbid diagnosis of ODD to personality functioning in a sub-group of boys with ADHD, a RIM study replicating aspects of previous research was planned. A series of six hypotheses was proposed.

The hypotheses were articulated in terms of Pine's (1990) core domains of personality and their constituent aspects of personality functioning. RIM variables were selected to assess these constituents, on the basis of three interrelated criteria, namely (a) their emergence in previous research as probably critical to children with ADHD, (b) the rationale underlying their employment within the Exner (2003) CS, and (c) their compatibility with the psychoanalytic conceptualisation of the core domains of personality.

Four hypotheses pertained to the ADHD sample as a whole, comparing selected present RIM scores with findings from previous studies. The dependent variables were represented by the following RIM variables: Coping Deficit Index (CDI), Distorted Form (X-%), maladaptive representations of object relations (i.e. scores of 6 and 7) on the Mutuality of Autonomy (MOA) Scale, and the Depression Index (DEPI).

Following this, two hypotheses were devised to compare RIM findings of ADHD boys with and without a co-morbid diagnosis of ODD. The RIM variables selected here were Weighted Sum of six Critical Special Scores (WSum6) and Human Movement (M).

4.6.1 Hypotheses involving comparisons between the entire ADHD sample and samples of past studies

4.6.1.1 The ego functioning variable and hypotheses

Hypothesis One: Concerning coping and social competence

Within the psychoanalytic literature reviewed in Section 2.3 above, children with ADHD have been conceptualised as manifesting significant ego impairment, particularly with respect to the integrative, organisational and synthetic functions of the ego (Gilmore, 2000, 2002; Rothstein, 1998, 2002; Rothstein et al., 1988; Rothstein & Glenn, 1999). This has been considered to involve impaired coping capacity, namely stress tolerance, affect representation and containment, thinking and

judgement, motor inhibition, reality testing, and, as a consequence, interpersonal relationships. Social incompetence has been well documented in children with ADHD, as highlighted by Barkley (2006).

Consistent with these findings, pervasive coping difficulties and social incompetence were found in the RIM studies on children with ADHD, evidenced by numerous CS (Exner, 2003) variables, summarised in Section 3.3 above (e.g. Bartell & Solanto, 1995; Cotugno, 1995; Gordon & Oshman, 1981; Meehan et al., 2008). For the purpose of the present hypothesis, the findings from the Cotugno study, using the mean score of children with ADHD on the Coping Deficit Index, a global measure of coping difficulties and social incompetence, was to be used for comparison with the present ADHD sample.

The following hypothesis was therefore framed:

Hypothesis 1: The present sample of boys diagnosed with ADHD does not differ from the Cotugno (1995) sample of children with ADHD in terms of coping deficiency and social incompetence.

Hypothesis Two: Concerning reality testing

Reality testing refers to an individual's capacity to discriminate reality from fantasy (or internal from external reality) and to perceive the world accurately (Exner, 2003). According to the reviewed psychoanalytic literature on children with ADHD, this is another aspect of ego functioning that tends to be compromised (Fries, 1944;

Rothstein et al., 1988; Gilmore, 2002). Consistent with this, two reviewed RIM studies on these children (e.g. Bartell and Solanato, 1995; Cotugno, 1995) reported marked inaccurate perception of reality or poor reality testing. This was indicated by mean scores on the Distorted Form Quality (X-%) variable in the ADHD samples of both of these studies.

These considerations led to the following hypothesis:

Hypothesis 2: The present sample of boys diagnosed with ADHD does not differ from the Bartell and Solanto (1995) and Cotugno (1995) samples of children with ADHD in terms of inaccuracy of perception.

4.6.1.2 The object relations variable and hypothesis

Hypothesis Three: Concerning representations of object relations

According to the psychoanalytic literature, consisting of developmental research and theory derived from case study evidence, reviewed in Section 2.3 above, the processes of identification, internalisation, and mental representation of object relations are problematic in children with ADHD (Fonagy et al., 2002; Gilmore, 2000, 2002; Rothstein, 2002; Rothstein et al., 1988; Rothstein & Glenn, 1998). This has been partly attributed to the impaired ego structures of these children, and also to the internalisation of strained and conflicted relationships with parents, teachers, and peers. Findings from RIM studies on children with ADHD have also pointed to their limited capacity to represent object relations in a realistic and whole, rather than

fantasised and part, manner (Bartell & Solanto, 1995; Cotugno, 1995; Gordon & Oshman, 1981; Meehan et al., 2008).

None of these RIM studies of children with ADHD utilised the MOA Scale (Urist, 1977), which was conceptualised using object relations theory, and was designed to specifically assess the quality of object representations portrayed in movement responses to the inkblots. Gacono and Meloy (1994), however, employed the MOA Scale in their RIM study of children with CD. Due to the high rate of co-morbid ODD/CD in children with ADHD (Barkley, 2006), and the comparable problematic personality functioning of children with Disruptive Behaviour Disorders, the Gacono and Meloy study was deemed suitable for comparison with the present sample of boys with ADHD.

Gacono and Meloy (1994) found that children with CD produced a significantly greater proportion of severely maladaptive representations of object relations (designated by MOA Scale scores of 6 and 7) in their Rorschach responses than Urist's (1977) sample of normal children.

On the basis of these findings, the following hypothesis was formulated:

Hypothesis 3: The proportion of severely maladaptive representations of object relations on the RIM produced by the present sample of boys diagnosed with ADHD does not differ from that produced by the Gacono and Meloy (1994) sample of children with CD.

4.6.1.3 The sense of self variable and hypothesis

Hypothesis Four: Concerning depressive features

As discussed in Chapters Two and Three, approximately 30 percent of children with ADHD have been found to suffer from a form of Mood Disorder (Barkley, 2006). It has been found, too, that these children utilise cognitive distortions (i.e. unrealistic and inflated assessment of ability) to their self-esteem, especially regarding those domains of functioning where they are deficient (Diener & Milich, 1997; Hoza et al., 2004; Hoza et al., 2002; Hoza et al., 2000). Consistent with these findings, the reviewed psychoanalytic literature described a profound sense of defect experienced, but not always consciously, by children with ADHD (Rothstein et al., 1988; Rothstein & Glenn, 1998; Rothstein, 2002;). Cotugno (1995), in the only RIM study to specifically assess the quality of self-esteem and the degree of depressive symptoms, found that not only was the self-esteem low in children with ADHD, but they demonstrated a clinically significant level of depressive features. The latter indicated by the mean score of children with ADHD on the Depression Index, a global measure of depressive features.

Therefore, the following hypothesis was proposed:

Hypothesis 4: The present sample of boys diagnosed with ADHD does not differ to the Cotugno (1995) sample of children with ADHD in terms of depressive features.

4.6.2 Hypotheses involving comparisons between ADHD children with and without ODD

4.6.2.1 The ego functioning variable and hypothesis

Hypothesis Five: Concerning quality of thinking

No RIM studies of children with ADHD have specifically investigated thinking problems in ADHD children with a co-morbid diagnosis of ODD or CD. Nevertheless, the RIM literature reviewed in Section 3.3 indicated that children with Disruptive Behaviour Disorders, such as CD and ODD, were prone to thinking difficulties, often manifested in Rorschach responses as instances of cognitive slippage, arbitrary reasoning, or illogical thinking (Gacono & Meloy, 1994; Holaday, 2000). Further, significant proportions of children in these samples (i.e. 33 percent of the CD sample and 13 percent of the ODD sample) had clinically significant elevations on the Schizophrenia Index (SCZI), relating to illogical thinking and poor reality testing.

More specifically, Gacono and Meloy (1994) found that the cognitive processes of children with CD were remarkable for the presence of malevolent object representations (signalled by MOA Scale scores of 6 and 7), absence of empathic thinking (signalled by M- responses), tendency to abuse fantasy (signalled by greater proportion of Mp than Ma responses), and the intermittent presence of “severe perceptual distortions and cognitive derailments” (signalled by SCZI, Level 2 Special Scores, M-). These cognitive patterns suggest that children with CD have difficulties

with balanced and reasoned thinking, and suffer from inadequate capacity for mentalization (Fonagy et al., 2002).

Similar themes have been identified by psychoanalytic developmental research and theory derived from case study evidence of children with Disruptive Behaviour Disorders (Fonagy et al., 1993, 2002; Willock, 1986,1987). These studies identified narcissistic vulnerability in such children, and an associated limited capacity for mentalization, as well as distortion of perceptual-cognitive processes by primitive internalised object relations or paranoid-schizoid mental states (Klein, 1946/1986; Ogden, 1989). Consistent with these findings, research studies of social cognition has found evidence of distorted thinking in these children, characterised by a tendency to attribute hostile intentions to others when social cues were ambiguous (Dodge, 2006; Dodge and Schwartz 1997).

While there has been very little investigation of quality of thinking of children with ADHD in published RIM studies, as noted in Section 3.2 of Chapter Three, some important psychoanalytic literature has suggested that thinking problems in these children tend to be associated with the intrusion of primary processes (i.e. primitive and unmediated affect and fantasy) into secondary process thinking (Katan, 1961; Rothstein et al., 1988; Rothstein & Glenn, 1998; Weil, 1971), as documented in Section 2.3 of Chapter Two. Other psychoanalytic writers noted impaired capacity for mental representation of psychological processes, or mentalization, in these children (Fonagy et al., 2002; Gilmore, 2000, 2002; Rothstein, 2002). Further, two empirical studies using non-projective methods of assessing thought disorder in

children with ADHD found evidence of mild thought disorder, characterised by illogical thinking (Caplan et al., 2001; van der Gaag, 2005).

It was expected that thought disorder would be more severe in children with ADHD who had also been given a co-morbid diagnosis of ODD, due to their greater narcissistic vulnerability and a propensity to experience paranoid-schizoid mental states, as discussed above.

Accordingly, it was hypothesised as follows:

Hypothesis 5: A sub-group of ADHD boys diagnosed with co-morbid ODD includes more boys evidencing disturbed thinking than the sub-group without ODD.

4.6.2.2 The object relations variable and hypothesis

Hypothesis Six: Concerning capacity for empathy

Given the often troubled relationship history of ADHD children with a co-morbid diagnosis of ODD/CD, it is not surprising that research studies on these children have found a lack of age appropriate capacity for empathy (Barkley, 2006; Braaten & Rosen, 2000). In line with this, Fonagy et al. (2002) suggested that the typically adverse family circumstances of children with Disruptive Behaviour Disorders compromise their development of capacity for mentalization and affect regulation. These children have been observed as likely to have difficulties reflecting upon their

own mental states and intentions, and those of others, which limits the capacity for empathy. Findings from the RIM studies have also confirmed this.

Bartell and Solanto (1995), the only published researchers to compare ADHD children with and without ODD, found that those with a co-morbid diagnosis of ODD displayed a lessened capacity for empathy (indicated by fewer H responses). Studies on related child clinical populations generated similar findings. Holaday (2000) found that ODD children displayed limited empathy compared to a sample of children with PTSD, while Gacono and Meloy (1994) found that their sample of CD children displayed a limited capacity to relate to others as whole, and that they were also chronically detached.

On this basis, the following hypothesis was formulated:

Hypothesis 6: A sub-group of ADHD boys diagnosed with co-morbid ODD includes more boys evidencing a lack of empathy than the sub-group without ODD.

4.7 Summary

The first four hypotheses thus involved replication of previous research work, which was considered appropriate at the current stage of research, when so little has been reported. The two final hypotheses relating to the ODD subgroup involved comparisons made within the data collected by the present study.

CHAPTER FIVE

METHOD

Chapter Five begins with a description of the children to be recruited for the present study. The data collection instruments employed is presented next, together with the scoring of dependent variables relating to assessment of personality structure and functioning. This is followed by an outline of the procedures used for participant recruitment, data collection, and determination of diagnostic status. The CS (Exner, 2003; Exner & Weiner, 1995) for the RIM and MOA Scale (Urist, 1977) variables, incorporated in the hypotheses of the present study, are then summarised in preparation for presentation of a complete listing of the operational hypotheses. An outline of the planned data analysis procedures to test these hypotheses concludes the chapter.

5.1 Participants recruited

The present study attempted to recruit 20 boys diagnosed with ADHD, between the ages of 7 and 13, from private paediatric and child psychiatric or psychology clinics in the South Eastern metropolitan suburbs of Melbourne, Australia, for the purpose of investigating their personality functioning using the RIM (Exner, 2003; Exner & Weiner, 1995). Participating clinics were assigned uniform referral criteria, namely boys diagnosed with ADHD, aged between 7 and 13, and without intellectual disability or autism.

Consistent with the reported high prevalence rates of co-morbid ODD in children with ADHD (Barkley, 2006; Pliszka, 2009), it was anticipated that approximately half of the recruited sample would have, or demonstrate symptoms consistent with, such a co-morbid diagnosis.

5.2 Psychological assessment instruments

In order to test the hypotheses outlined in Section 4.6 of Chapter Four, several measures were used to collect data pertaining to the independent and dependent variables specified.

The accuracy of ADHD diagnosis, the presence of co-morbid ODD, and absence of intellectual disability, all independent variables, were determined through employment of: a) the ADHD Rating Scale IV, Home Version (DuPaul, Power, Anastopoulos, & Reid, 1998), b) the Behaviour Assessment System for Children, Parent Rating Scale (BASC-PRS, Reynolds & Kamphaus, 1998), c) a short-form version of the Wechsler Intelligence Scale for Children, Third Edition (WISC-III, Wechsler, 1991), and d) a Semi-Structured Interview, designed specifically for this study.

Assessment of the dependent variables, namely the constituent aspects of the core domains of personality functioning, was achieved using the CS (Exner, 2003; Exner & Weiner, 1995) for the RIM, and the MOA Scale (Urist, 1977).

Each of these measures is now described below.

5.2.1 Independent variables: Determination of diagnostic status

The diagnostic status of boys referred to the study was determined using data obtained from four sources, namely, a diagnosis of ADHD made by a paediatrician, child psychiatrist or psychologist, findings from two behaviour rating scales (i.e. the ADHD Rating Scale IV and the Behaviour Assessment System for Children) completed by parents, and information gathered from both child and parent at the clinical interview. For a boy's data to be included, the diagnosis of ADHD had to be corroborated by these methods of data collection, which are respectively described below. In addition the WISC-III was used to exclude severe cognitive dysfunction.

5.2.1.1 ADHD Rating Scale-IV: Home Version

All participants were diagnosed with ADHD by a referring paediatrician, child psychiatrist or psychologist, and the ADHD Rating Scale-IV, Home Version, was used to screen out those with potentially inaccurate ADHD diagnoses (see Section 5.3.2.1 below for this procedure). The designers of the scale referred to it as “a method to obtain parent and teacher ratings regarding the frequency of each of the symptoms of ADHD based on DSM-IV criteria” (DuPaul et al., 1998, p. 2).

Only the Home Version of the ADHD Rating Scale-IV (DuPaul et al., 1998) was selected for use in the present study. Usually, both the home and school versions are employed when a child is referred to a mental health clinician for assessment of ADHD. Because this rating scale was to be employed only for the purpose of diagnostic screening, the Home Version was deemed as sufficient and expedient.

The ADHD Rating Scale-IV, Home Version, requests parents to rate, via a four-point Likert scale from “never or rarely (score of 0)” through to “very often (score of 4)”, the frequency of their child’s ADHD behaviour (in accordance with the DSM-IV diagnostic criterion) displayed at home over the previous six months. In total, the scale consists of 18 symptom specific questions. One half pertains to symptoms of Inattention and the other to symptoms of Hyperactivity-Impulsivity. Three raw score totals, which are then converted to percentiles based on the child’s age for interpretation, are derived from the Home Version of the scale: 1) Total Scale, 2) Inattention Subscale and 3) Hyperactivity-Impulsivity Subscale.

In terms of reliability and validity, the ADHD Rating Scale-IV has been found to have “adequate psychometric properties for use as screening, diagnostic, and treatment outcome measures” (DuPaul, Power, Anastopoulos, & Reid, 1998, p.41). Specifically, it has a reported internal consistency of 0.88 to 0.96, and test-retest reliability, concerning parent ratings four weeks apart, of 0.78 to 0.86, for the Total Score, and Inattention and Hyperactivity-Impulsivity subscales (DuPaul, Power, McGoey, Ikeda, & Anastopoulos, 1998). Sound convergent validity has been reported between the Hyperactivity-Impulsivity subscale of the ADHD Rating Scale-IV and the Hyperactivity Index ($r = 0.81$) and Impulsivity-Hyperactivity Index ($r = 0.78$) of the Conners Parent Rating Scale (DuPaul, Power, McGoey, Ikeda, & Anastopoulos, 1998).

The ADHD Rating Scale-IV has been shown to discriminate between the subtypes of childhood ADHD (i.e. Inattentive and Combined types), as well as between children with and without ADHD ((DuPaul, Power, Anastopoulos, & Reid, 1998)

5.2.1.2 Behaviour Assessment System for Children - Parent Rating Scale for children aged 6 – 11⁶

For the purpose of the present study, the Behaviour Assessment Scale for Children – Parent Rating Scale (BASC-PRS) (Reynolds & Kamphaus, 1998) was used as a parental self-report method of globally assessing the observable behavioural and emotional problems displayed by children with ADHD. It was also used to screen out potentially inaccurate ADHD diagnoses made by referring private paediatricians and child psychiatrists or psychologists. Further, it could be used to identify those ADHD children fulfilling the diagnostic criteria for a co-morbid diagnosis of ODD. The procedure for determination of accurate diagnostic status of subjects is described in Section 5.3.2.1 below.

The BASC-PRS is a behaviour rating scale, completed by parents, together or separately, in the form of 126 questions regarding “objectively observable behaviour” (Reynolds & Kamphaus, 1998 p.5) displayed by the child over the previous six months. Behaviours are rated using a four-point Likert scale from “Never (score of 1)” through to “Almost Always (score of 4)”.

Three domains of child behaviour are assessed by the BASC-PRS, namely a) Externalising Problems, b) Internalising Problems, and c) Adaptive Skills. Each of these behavioural domains is comprised of subscales that measure specific clinical problems. The Externalising Problems domain, for example, is comprised of the Hyperactivity, Aggression, and Conduct Problems clinical subscales; the Internalising

⁶ The BASC-PRS adolescent form, which has identical items and system of scoring and interpretation, but uses an age appropriate set of norms, was used for participants aged 12 and 13.

Problems domain is comprised of the Anxiety, Depression, and Somatization clinical subscales; and the Adaptive Skills domain is comprised of the Social Skills, Leadership, and Adaptability subscales.

Behavioural raw scores, which are later transformed to T-scores and percentiles for the purpose of interpretation, are generated for each of the nine clinical subscales, for the three behavioural domains, and for the Behavioural Symptom Index (BSI), an overall estimate of the severity of observable child psychopathology. This transformation is achieved by referring to the BASC 'Norms Tables' for either general or clinical populations. The 'Norm Tables' for clinical groups was used in the present study to transform the BASC raw scores of children with ADHD.

On all clinical subscales within the Externalising and Internalising domains and the BSI, T-scores between 60 and 70 are classified, in accordance with the BASC interpretive guidelines, as falling in the "at risk" range of child psychopathology. In other words, a problem may be clinically significant but not necessarily severe enough to warrant a formal diagnosis. Similar interpretations are formed when T-scores on the subscales within the Adaptive Skills domain fall between 31 and 40. When a T-score is 70 and above on the clinical subscales within the Externalising and Internalising domains and the BSI, it is considered to be clinically significant, representative of a "high level of maladaptive behaviour" (Reynolds & Kamphaus, 1998, p.12) and probably warranting a formal diagnosis. Similar conclusions can be drawn when the T-score is 30 or below on subscales within the Adaptive Skills domain.

The BASC-PRS, child and adolescent forms, clinical domains or composite scores have been reported to have internal consistency reliabilities (i.e. coefficient alpha values) of .86 to .93, test-retest reliabilities of 0.89 to 0.94, and interrater reliabilities (i.e. consistency of child ratings by both parents) of 0.46 to 0.67 (Reynolds & Kamphaus, 1998). In addition, the BASC-PRS has been found to have sound convergent validity with the Child Behaviour Checklist (Achenbach, 1991, cited by Reynolds & Kamphaus) where scales have similar content. For example, correlations of 0.71 to .84 were reported for the Externalising domain, and of 0.65 to 0.74 for the Internalising domains (Reynolds & Kamphaus). It also has a proven capacity to distinguish clinical from normal children and to differentiate between child diagnostic categories (Reynolds & Kamphaus).

On this basis, the BASC-PRS was used to determine the presence or absence of a co-morbid diagnosis of ODD in each participant, the second independent variable of the present study. Confirmation of this was achieved through the scale's capacity to assess the clinical significance of each participant's behaviour suggestive of ODD. Further, this scale was to be used to provide additional support for the accuracy of each participant's ADHD diagnosis. This was achieved through the scale's capacity to assess whether a participant's ADHD symptoms were clinically significant. Finally, this scale was also used to assess the level of depressive and anxiety symptoms in the sample.

5.2.1.3 Semi-Structured Interview

A semi-structured interview, designed for the present study, was conducted with each child and his parents referred to the present study to ascertain background information, namely a) Developmental History, b) Demographic Information and Family History, and c) Mental Status Examination and ADHD History. This information was regarded as critical to a comprehensive understanding of the overall psychological development and functioning of these children. It was also used to gather evidence to assist in the determination of the presence or absence of ODD in boys with ADHD referred to the study.

A protocol of this semi-structured interview can be found in Appendix III.

The Developmental History section contained questions about subjects' infant and early childhood physical, motor, and cognitive development. It also included questions about subjects' emotional and social development in early and later childhood. Kindergarten and primary school functioning was also explored in this section. The Demographic Information and Family History section consisted of demographic questions, as well as those pertaining to family structure, quality of relationships, and history of mental health and trauma. The final section, Mental Status Examination and ADHD History, involved questions concerning child mental status, as well as inquiries about the onset and course of childhood ADHD.

5.2.1.4 Wechsler Intelligence Scale for Children – Third Edition

A short-form version of the Wechsler Intelligence Scale for Children - Third Edition (WISC-III, Wechsler, 1991) involving the administration of the Vocabulary and Block Design subtests, as recommended by Groth-Marnat (1997), Kaufman (1994), and Kaufman, Kaufman, Balgopal, and McLean (1996), was used to exclude from the study children evidencing intellectual disability or severe cognitive dysfunction. This abbreviated assessment of intellectual functioning involves both a verbal and non-verbal subtest, the subject's Full Scale IQ being derived by pro-rating these subtest results (Groth-Marnat).

While this short-form version of the WISC-III does not assess intelligence with the same reliability as the administration of the full test, it is commonly used for screening purposes (Kaufman, 1990; Kaufman et al., 1996; Sattler, 1992) as its correlation with Full Scale IQs derived from the full test generally fall in the .90 range (Brooker & Cyr, 1986, cited by Groth-Marnat, 1997; Hoffman & Nelson, 1988, cited by Groth-Marnat; Silverstein, 1982, 1990, cited by Groth-Marnat). The advantage of this version, especially when assessing children with ADHD, is that it usually takes no more than 20 minutes to administer.

5.2.2 Dependent variables: Assessing constituent aspects of core domains of personality functioning

Dependent variables representing constituent aspects of the three core domains of personality functioning, namely ego functioning, object relations, and sense of self, as

conceptualised by Pine (1990), were assessed in the present study using select variables from the CS (Exner, 2003; Exner & Weiner, 1995) for the RIM and MOA Scale (Urist, 1977). Both of these instruments are described below, along with the RIM and MOA Scale variables relevant to each of the hypotheses in the present study.

5.2.2.1 The Comprehensive System for the Rorschach Inkblot Method

The CS (Exner, 2003; Exner & Weiner, 1995) for the Rorschach Inkblot Test (Rorschach, 1921), termed the Rorschach Inkblot Method (RIM) by Weiner (1998), is a projective personality evaluation instrument that assesses both personality structure (i.e. states and traits) and dynamics (i.e. latent conflicts, beliefs, and needs). Integral to the methodology of the RIM is the assumption that people are prone to attribute internal characteristics to ambiguous (external) stimuli. The current consensus appears to be that the process of attributing meaning to the ten ambiguous Rorschach Inkblots is both a perceptual-cognitive and associational problem-solving task (Weiner, 2003).

Testing involves ten bilaterally symmetrical inkblots being presented, one at a time, to a subject, who is then asked what might this be. The subject's responses are recorded verbatim. After the Response phase has been completed, the test enters the Inquiry phase, comprising an exploration of each response, including identification of the features of the inkblot that contributed to what was seen by the subject. Information necessary for the coding of each response is generated during the Inquiry phase, which is also recorded verbatim.

As already delineated in Section 4.2 of the previous chapter, the RIM (Exner, 2003; Exner & Weiner, 1995) has been found to be a reliable and valid method of assessing personality processes (i.e. structure and dynamics) when it is used for the purposes for which it was designed (Exner; Ganellen, 2001; Hiller et al., 1999; Parker et al., 1988; Weiner, 1996, 2000, 2003). Specifically, and concerning reliability, a meta-analytic study by Parker (1983) reported reliabilities in the 0.80s for the RIM. When developing the CS, Exner (1974, 1986, 1993) only included scoring categories that obtained inter-scorer reliabilities of at least 0.85. Correlations of 0.26 to 0.91 were obtained from the testing and retesting of 25 CS variables, where 20 variables had correlations above 0.72, over a one-year period for adult non-patients. Obviously, test-retest reliabilities for children have not been found to be as stable as they are for adults (Exner & Weiner, 1995). Nonetheless, short-term retesting over 7 days for 8 year olds and 3 weeks for 9 year olds revealed acceptable reliabilities: 23 of the 25 CS variables tested obtained correlations above 0.70 (Exner, 1986).

Regarding the validity of the RIM, an extensive meta-analytic study by Hiller et al. (1999) found that the RIM and the MMPI had unweighted mean validity coefficients of 0.29 and 0.30, respectively. In addition, the structural scores or variables of the CS have been extensively standardised on various client populations, including children, and are interpreted with reference to a large child non-patient sample (Exner, 2003).

The CS for the RIM and MOA Scale variables used to assess dependent variables represented in the six research hypotheses, whose selection has been justified in Section 4.6 of the previous chapter, were grouped in terms of the core domains of

personality functioning that these variables measured, namely ego functioning, object relations, and sense of self, as conceptualised by Pine (1990).

For hypotheses involving comparisons between findings from the present and published studies of children with ADHD, the following RIM and MOA Scale variables were chosen to assess constituent aspects of the three core domains of personality functioning.

The domain of ego functioning included the CS variable:

- Coping Deficit Index (CDI), a measure of coping and social competence; and
- Distorted Form Quality (X-%), a measure of inaccurate perception or poor reality testing.

The domain of object relations included the MOA Scale variables:

- MOA Scale scores of 6 or 7, indicative of severely maladaptive representations of object relations in RIM responses.

The domain of sense of self included the CS variable:

- Depression Index (DEPI), a measure of depressive features.

For hypotheses involving comparisons between the present ADHD boys with and without co-morbid ODD, the following RIM variables were chosen to assess constituent aspects of two core domains of personality functioning.

The domain of ego functioning included the CS variable:

- Weighted Sum of six Critical Special Scores (WSum6), a measure of quality of thinking.

The domain of object relations included the CS variable:

- Distorted Form Human Movement (M-) responses, a measure of capacity for empathy.

These CS for the RIM (Exner, 2003) and MOA Scale (Urist, 1977) variables, including scoring procedures, are outlined respectively in Sections 5.2.2.1.1 to 5.2.2.1.5, and in Section 5.2.2.2, below.

5.2.2.1.1 The Coping Deficit Index

The dependent variable, coping and social competence, a constituent of the domain of ego functioning, was assessed in the present study using the CS variable, Coping Deficit Index (CDI).

The CDI incorporates 11 distinct CS variables forming the five diagnostic criteria of the overall index (Exner, 2003). Scores on the CDI range between 0 and 5, and only scores above 3 are considered clinically meaningful. Clinical elevations on the CDI point to the presence of adjustment difficulties, which, according to Weiner (1998), tend to be born out of “inept and ineffective ways of attempting to cope with ordinary experiences of daily living” (p.141). Clinically significant elevations on the CDI in

the CS normative data (Exner) are relatively infrequent in children aged 7 to 11 (i.e. 6 - 15%), but are more frequent in 12 and 13 year olds (i.e. 24% and 20%, respectively).

The CDI, according to Weiner (2003), measures two different types of subjects with adjustment and coping difficulties. One type has a history of chronic coping problems and limited achievement, typically highlighted on the RIM in terms of clinically significant CDI and EA (i.e. Experience Actual, a measure of the availability of adequate internal coping resources) scores. The other type has an adequate level of internal coping resources, as well as a history of relative educational and vocational success, but has significant and on-going problems in their interpersonal relationships. Given that approximately 30 percent of children diagnosed with ADHD have a co-morbid MDD (Barkley, 2006), it is of clinical relevance to the present study that elevations on the CDI have been found to be common amongst clinical populations with mood disorders, particularly those struggling with pervasive helplessness (Exner, 2003; Weiner).

Although few in number, the only two published studies on the CDI and children diagnosed with Disruptive Behaviour Disorders have reported a high percentage of children with clinically significant elevations on this index (Gacono & Meloy, 1994; Holaday, 2000). The following percentages for clinical elevations on the CDI were reported in these studies: 27 percent of children with CD (Gacono & Meloy), and 31 percent of children with PTSD, compared with 34 percent of children with ODD (Holaday). While none of the published RIM studies on children with ADHD included frequency data on the percentage of ADHD children with a clinically elevated CDI, Cotugno (1995) used the CDI in his investigation of personality and

found that 40 children with ADHD had a mean CDI of 3.78. The latter was significantly higher than that of the normal sample, and was interpreted as being indicative of pervasive coping difficulties amongst the ADHD sample.

On this basis, the CDI was used to assess coping deficits and social incompetence in boys with ADHD. The criterion of CDI scores greater than 3, as defined by the CS (Exner, 2003), was used as the marker of clinical significance.

5.2.2.1.2 Distorted Form Quality

The dependent variable, accuracy of perception or reality testing, a constituent of the domain of ego functioning, was assessed in the present study using the CS variable, Distorted Form Quality (X-%).

The Distorted Form Quality (X-%) variable measures the proportion of RIM responses evidencing distorted form (Exner, 2003). A response is considered to manifest distorted form when it violates the physical contours of the inkblot, that is, a mismatch exists between the response and the shape of the blot. Adjudication of whether a response has distorted form is guided by use of the CS System Form Quality Working Tables (Exner, 2004, pp. 103 – 170), originally developed by reviewing a sample of 9,500 protocols and 205,701 responses, which lists 5,018 responses and their respective form classification of ordinary (o), unusual (u), or minus (-). Because only a small proportion of potential distorted form responses are listed in the said tables, the examiner is required to adjudicate using the aforementioned definition in many instances.

While distorted form responses are not uncommon, the proportion of such responses in the CS normative data for children has been found to be low. For example, the mean X-% for non-patient children aged from 7 to 13 ranged from 0.07 to 0.10, and only 3 to 13 percent of these children gave a clinically significant proportion of distorted form responses, namely 20 percent of their total responses (Exner, 2003, 2004). In contrast, clinically significant X-% sample means have been reported in two studies of children with ADHD, namely 0.39 by Bartell and Solanto (1995) and 0.31 by Cotugno (1995). Furthermore, studies on children with mental disorders commonly co-morbidly diagnosed in children with ADHD have reported the following X-% sample means: children with CD, 0.41 (Gacono & Meloy, 1994); children with LD, 0.26 (Harper & Scott, 1990); children with Asperger's Disorder, 0.33 (Holaday, Moak, Shipley, 2001); and Inpatient children and adolescents of mixed psychiatric diagnoses, mainly MDD and ADHD, 0.29 (Smith, Baity, Knowles, & Hilsenroth, 2001). In other words, perceptual inaccuracy or impaired reality testing has emerged as a significant problem in children with ADHD, as well as children from related clinical populations.

With respect to the personality processes that contribute to distorted form responses, Exner (2003) argued they occur due to “mediational negligence, but most seem to be products of preoccupations, affective interference, or more diffuse cognitive impairments (p. 389)”, and involve “disregard for, or distortion of, reality” (p. 372). Accordingly, the higher the frequency of distorted form responses, the greater the likelihood of disturbed reality testing. The inability of children to accurately perceive their social world significantly and concomitantly impairs decision-making, interpersonal behaviour and degree of adjustment (Exner, 1993, 2003; Weiner, 2003).

On this basis, the X-% variable was used to assess inaccuracy of perception or impaired reality testing in boys with ADHD. The criterion of X-% scores greater than .19, as defined by the CS (Exner, 2003), was used as the marker of clinical significance.

5.2.2.1.3 The Depression Index

The dependent variable, depressive features, a constituent of the domain of sense of self, was assessed in the present study using the CS variable, Depression Index (DEPI).

The DEPI incorporates 15 distinct CS (Exner, 2003) variables forming the seven diagnostic criteria of the overall index. While DEPI scores range from 0 to 7, only scores above 4 are considered clinically meaningful. Subjects whose DEPI scores are clinically elevated are regarded as sharing many of the cognitive and affective processes common to people diagnosed with Depression or other Mood Disorders (Exner, 2003; Weiner, 1998, 2005). When DEPI scores reach 6 and 7, according to Exner (1993, 2003), it is highly likely that the subject has a diagnosable Mood Disorder.

In terms of the frequency of clinically significant elevations on DEPI in the CS (Exner, 2003) child normative data, there were no elevations on DEPI in children between the ages of 7 and 11, and 1 percent of 12 and 13 year olds yielded clinically significant DEPI elevations (Exner 2003). However, the three published RIM studies of children with Disruptive Behaviour Disorders all reported the presence of

depressive features using the DEPI. Cotugno's (1995) sample of 40 children with ADHD had a clinically elevated DEPI mean score of 4.81. Gacono and Meloy (1994) found that 15 percent of their sample of 60 children with CD had clinically elevated DEPI scores. Finally, in a comparison between 35 children with PTSD and ODD, Holaday (2000) found that 34 and 14 percent of these samples respectively had clinically elevated DEPI scores.

On this basis, the DEPI was used to assess depressive features in boys with ADHD. The criterion of DEPI scores greater than 4, as defined by the CS (Exner, 2003), was used as the marker of clinical significance.

5.2.2.1.4 The Weighted Sum of six Special Scores

The dependent variable, quality of thinking, a constituent of the domain of ego functioning, was assessed in the present study using the CS variable, Weighted Sum of six Special Scores (WSum6).

The capacity of a subject to think logically and coherently is manifested in two ways in RIM responses. Firstly, it is manifested in Human Movement (M) responses, because conceptualisation is required in the attribution of movement to an otherwise vague and inanimate object (Exner, 2003; Weiner, 2003). Such responses are discussed in Section 5.2.2.1.5 next in terms of their relevance to interpersonal functioning. Secondly, the wordage used in RIM responses is indicative of underlying conceptual processes, both their nature and clarity or lack thereof (Exner; Weiner).

Illogical and incoherent thinking, as manifested in the verbiage of RIM responses, is assessed by the Weighted Sum of six Critical Special Scores (WSum6) variable. The Special Scores are codes, weighted by severity of dysfunction, assigned to responses manifesting instances of arbitrary, dissociated, or fantastic thinking (Weiner, 2003). The WSum6 variable has clinical cut-off points for various age groups, as well as for low or high numbers of the total number of RIM responses. The higher a subject is above their respective clinical cut-off point, the greater the illogicality and incoherence of their thinking.

The ramifications of a clinically elevated WSum6 variable for personality functioning has been summarised by Weiner (1998): “When people lose the capacity to think logically, whether momentarily or for some extended period of time, they tend to reason in an arbitrary fashion, derive unwarranted conclusions from limited or circumstantial evidence, and fail to distinguish between conclusions that are relatively reasonable, or at least plausible, and conclusions that are at most tentative, if not improbable or impossible” (p.118).

CS normative data show that WSum6 mean scores are relatively low in childhood, and decrease with age (Exner, 2004, pp. 189 - 215). The mean WSum6 scores, for example, decrease from 11.08 at age five to 6.86 at age twelve, and reach an average of 4.48 by adulthood.

In contrast, a study of inpatient, suicidal adolescents reported a high proportion of clinically significant elevations on the WSum6 variable (Silberg & Armstrong, 1992, cited by Exner, 2003), and juvenile delinquent adolescents, as contrasted with non-

patients, have demonstrated significantly higher WSum6 scores (van-Patten, cited by Exner). Finally, a sample of 200 adults diagnosed with Schizophrenia, and assessed using the RIM during their first hospital admission, achieved an average WSum6 score of 52.31 (Exner).

On this basis, the WSum6 variable was used to assess the prevalence of disturbed thinking in a subgroup of ADHD boys with co-morbid ODD, compared to a subgroup without ODD. Two sets of criteria, as defined by the CS (Exner, 2003), were used to determine the clinical significance of Wsum6 scores. For boys that produced more than 17 RIM responses, the following markers of clinical significance were employed: a) WSum6 scores of greater than 20 for boys aged 5 to 7, b) WSum6 scores of greater than 19 for boys aged 8 to 10, and c) WSum6 scores of greater than 18 for boys aged 11 to 13. For boys that produced less than 17 RIM responses, the following markers of clinical significance were employed: a) WSum6 scores of greater than 16 for boys aged 5 to 7, b) WSum6 scores of greater than 15 for boys aged 8 to 10, and c) WSum6 scores of greater than 14 for boys aged 11 to 13.

5.2.2.1.5 Distorted Form Human Movement Response

The dependent variable, capacity for empathy, a constituent of the domain of object relations, was assessed in the present study using the CS variable, Distorted Form Human Movement Response (M-).

Not only has the M response been found to be an indicator of clarity of thinking, it has also been shown to have a strong relationship with interpersonal functioning

(Exner, 2003; Weiner, 2003). In order to explain the latter relationship further, the coding criteria for M responses are first clarified.

Exner (2003) defined M as the code used for all responses that contain human or human-like behaviour, both active (e.g. running, jumping, talking, singing) and passive (e.g. sitting, sleeping, praying, and emotional experiences). Form quality of M responses is assessed on the basis of the “goodness of fit” between the response and physical contours of the inkblot. The category of Distorted Form (-) is assigned to M responses that violate reality by failing to conform to the contours of the inkblot.

Research studies have shown that in addition to the numerous psychological operations that give rise to M responses (e.g. complex and deliberately directed conscious thought and imagination, as well as the delaying of spontaneous and loosely conceived thought in reaction to stimuli), the form quality of M responses correlate with the capacity of children and adults for empathy (Exner, 2003; Weiner, 1998, 2003). According to Weiner (1998): “Accurately seen M responses (M+, Mo, and Mu) identify empathic capacity, whereas perceptually distorted M responses (M-) indicate deficient empathy” (p. 172). The correspondence between the interpersonal implications of the M response and the concept of mentalization (Fonagy et al., 2002; Fonagy & Target, 1998) is thus apparent.

In accordance with CS (Exner, 2003) interpretive guidelines, the production of at least one M- response (i.e. $M^- > 0$) in an RIM protocol is reflective of deficient interpersonal empathy. Children or adults fulfilling this criterion “are prone to misjudge the attitudes and intentions of others and to forming inaccurate impressions

of situations in which they are involved” (Weiner, 1998, p.172). Consequently, they tend to behave in socially inappropriate ways and experience less rewarding relationships.

On this basis, the M- variable was used to assess the prevalence of lack of empathy in a subgroup of ADHD boys with co-morbid ODD, compared to a subgroup without ODD. The criterion of M- responses greater than 0, as defined by the CS (Exner, 2003), was used as the marker of clinical significance.

5.2.2.2 The Mutuality of Autonomy Scale

The dependent variable, representations of object relations, a constituent variable of the domain of object relations, was assessed in the present study using the MOA Scale (Urist, 1977).

Urist (1977) designed the MOA Scale to measure enduring or structural patterns of self-other object relationships signified in Human (M), Animal (FM) and Inanimate Object (m) movement responses on the RIM. Tuber (1992) defined the MOA as “an ordinal scale depicting differing modes of object experience of varying severity” (p.189) that exist along a seven-point continuum, ranging from adaptive (mutually autonomous activity, score of “1”) to maladaptive (overpowering envelopment and incorporation, score of “7”) modes of object relating.

Recent confusion regarding the construct validity of the MOA Scale has been clarified by Bombel, Mihura, and Meyer (2009), who found that it is a scale that

validly measures both quality of object relations and severity of psychopathology. It has also been found to have adequate inter-rater reliability ratings, which Holaday and Sparks (2001) rated to be an 80 percent exact agreement rate.

The MOA Scale has been validated through research on a diverse range of clinical populations, namely children suffering from Separation Anxiety Disorder (Goddard & Tuber, 1989), Major Depression (Goldberg, 1989), gender identity confusion (Coates & Tuber, 1987; Tuber & Coates, 1989), children with imaginary friends (Meyer & Tuber, 1989), and children anticipating surgery (Tuber, Frank & Santostefanu, 1989). It has also been used with non-clinical samples (Santostefano, Rieder & Berk, 1984; Ryan, Avery & Grolnick, 1985; Tuber, 1989), generating a small but useful body of normative data (Tuber).

The MOA Scale has been found to reliably distinguish between clinical and non-clinical child populations, and it has been found to be a reliable measure of the severity of child psychopathology (Blatt, Tuber, & Auerbach, 1990; Coates & Tuber, 1987; Goddard & Tuber, 1989; Tuber & Coates, 1989). It has also been used to predict the future adjustment of a child psychiatric sample (Tuber, 1983). Adaptive scores on the MOA Scale (i.e. scores of 1-3) have also been found to positively correlate with the production of adaptive fantasy in children under severe environmental stress (Donahue & Tuber, 1993).

Notwithstanding the aforementioned strengths of the MOA Scale, Dies (1995) has identified some drawbacks, namely that (1) differentiation between clinical and non-clinical populations using MOA Scale scores does not necessarily mean that the

primary feature of a target sample has been identified, (2) such MOA Scale findings have often not been replicated, and 3) the MOA Scale draws its data from a small, rather than large, pool of Rorschach variables, which are used to make broad generalisations concerning personality.

The MOA Scale has often been used to generate a sample 'Mean MOA Score', and the mean 'Highest Object Relation Score' (HORS), referring to most adaptive representations of object relations, and the mean 'Lowest Object Relation Score' (LORS), referring to most maladaptive representations of object relations. However, other ways of organising and analysing MOA Scale data have been effectively utilised (Tuber, 1989; Gacono & Meloy, 1994). Gacono and Meloy, for instance, in studying the personality functioning of children with CD, analysed the HORS and LORS data categorically, in terms of the proportion of subjects that gave scores in the upper, lower and mid ranges on the MOA Scale. In addition, they analysed the proportion of frequency of responses assigned scores in the upper, lower and mid ranges on the MOA Scale.

Gacono and Meloy (1994) used the said proportional-categorical method of organising and analysing MOA Scale data, as this was more effective than mean scores in delineating differences between their CD sample and that of Tuber's (1989) non-patient sample. They found that children with CD significantly differed from non-patients in terms of their greater frequency of producing severely maladaptive representation of object relationships (as signalled by MOA scores of 6 or 7) in their RIM protocols. In other words, these children were more prone than non-patients to depict maladaptive representations of object relations.

For the present study, only the severely maladaptive depictions of object relations signalled by MOA Scale scores of 6 and 7 were investigated. According to Goddard and Tuber (1989, p. 245), an MOA Scale score of 6 “depicts the relationship between figures as imbalanced wherein one figure is decidedly destructive, or seriously attacking of another’s autonomy (e.g., torture, strangulation, and wounding)”, while a score of 7 “depicts interaction characterised by an overpowering, enveloping force destructively compromising another’s existence or integrity”.

On this basis, the MOA Scale was used to identify the frequency of severely maladaptive representations of object relations depicted in Movement responses produced by boys with ADHD on the RIM. The criterion of MOA Scale scores of 6 or 7, as defined by Urist (1977) and Tuber (1992), was used to identify such depictions of object relations.

5.3 Planned procedures of the study

Procedures planned for the recruitment of participants, determination of ADHD and ODD diagnostic status, data collection, and scoring of RIM and MOA Scale variables are outlined below.

The research reported in this thesis was conducted in accordance with principles of ethical treatment of human participants as set out in the National Health and Medical Research Committee. Permission for this study was obtained from the Victoria University Human Research Ethics Committee.

5.3.1 Recruitment of participants

Potential participants were to be recruited by privately practising paediatricians, child and adolescent psychiatrists, and clinical psychologists in the south-eastern suburbs of Melbourne, Victoria. Boys were eligible for referral to the study if they were between 7 and 13 years of age with a diagnosis of ADHD made in accordance with the DSM-IV (APA, 2000) diagnostic criteria, by their paediatrician, psychiatrist, or psychologist, and were without intellectual disability. Inclusion into the sub-group of boys diagnosed with ADHD and co-morbid ODD would be decided on the basis of an existing ODD diagnosis, or data gathered at assessment, via clinical interviews and behaviour rating scale employed (i.e. BASC-PRS), indicative of ODD.

Recruitment of participating clinicians was to occur from a network of privately practising paediatricians, child and adolescent psychiatrists, and clinical psychologists specialising in working with children with ADHD and other Disruptive Behaviour Disorders.

Potential subjects were to be recruited via a written invitation given to the parent by the treating clinician, which included an outline of the nature and aims of the study (see Appendix IV for this document). The clinician was expected to discuss, using a prepared set of guidelines, the study with the boys as well as with the parents. Interested parents were encouraged to contact the researcher by telephone, so that questions about the study could be answered and an initial interview arranged.

5.3.2 Procedures relating to data collection

Data collection involved four procedural stages.

In stage one, when parents of boys with ADHD contacted the researcher by telephone, their questions about the study would be answered, and they would be invited to participate. Parents would be informed that data collection was to take between three and four hours, which could be conducted over one or two sessions, and a first session was scheduled if the parent was still agreeable.

In stage two, informed consent was to be sought from the parent of the ADHD child at the outset of the initial clinical interview. The semi-structured interview was then to be conducted with the parent and child jointly, asking questions about the demographic, developmental, familial, mental status and mental health history of the child. This was to be followed by the administration of the short-form version of the WISC-III with the child, while the parent completed the behaviour-rating scales, the ADHD Rating Scale-IV and BASC, in the waiting room.

In stage three, the child participant was to be involved in a second session on his own. Time was to be spent first between the interviewer and child engaging in play, such as a card game or drawings, in order to strengthen rapport and prepare the child for administration of the RIM. Once the boy was comfortable, the RIM was to be administered in accordance with the procedures outlined in the CS (Exner, 2003).

In stage four, upon the completion of the assessment all data collected from psychological testing and behaviour rating scales was to be scored. A brief psychological report summarising the findings of the assessment was then to be prepared by the researcher and sent to the parent and treating practitioner of the boy with ADHD. All parents were to be offered the invitation to discuss the assessment report with the researcher, via telephone or in person.

5.3.2.1 Determination of diagnostic status

Given that boys were referred to the present study only if their paediatrician or psychologist had assigned them an ADHD diagnosis using the DSM-IV (APA, 1998) or DSM-IV-TR (APA, 2000) criteria, it was judged that unnecessary stress would be created for the boys and their parents if their diagnoses were questioned at the completion of stage one of the assessment process (after scoring the relevant behaviour rating scales). Therefore full data would be collected from all boys referred to the study, and each would receive a full assessment.

The accuracy of their diagnosis would be determined at the completion of the assessment using the method outlined below.

Data from numerous sources, namely that gathered by the clinical interview, the ADHD Rating Scale-IV, and the BASC Hyperactivity and Inattention clinical subscales, completed by parents regarding their child's behaviour, would be used to exclude from the study the data pertaining to children for whom the ADHD diagnosis appeared potentially inaccurate. A child's ADHD Inattentive Type diagnosis would

be deemed inaccurate when his Inattention percentile score on the ADHD Rating Scale-IV was less than 85, and his Inattention T-score on the BASC was less than 60, the clinical cut-off points on both scales, and such findings were consistent with data derived at clinical interview. Similarly, a child's ADHD Combined Type diagnosis would be deemed inaccurate when his Inattention percentile score on the ADHD Rating Scale-IV was less than 85 and both of his Hyperactivity and Inattention T-scores fell below 60 on the BASC, and such findings were consistent with data derived at clinical interview.

The data of boys with ADHD with co-morbid ODD were, of course, to be accepted into the study, with the exception of children with co-morbid diagnoses of autism or intellectual disability. With respect to the assignment of ADHD boys into the ODD subgroup, this was to be determined by 1) a pre-existing ODD diagnosis made by the referring clinician, 2) Aggression or Conduct Problems T-scores on the BASC of at least 60, or 3) a history, reported at interview by the parent of an ADHD child, evidencing clinically significant oppositional and defiant behaviour or conduct disturbance.

5.4 Summary of the Comprehensive System Rorschach Inkblot Method and Mutuality of Autonomy Scale variables to be employed

The dependent variables under investigation, including their measurement and criterion for clinical significance, are listed in Tables 3 and 4. Table 3 on page 106 below pertains to the variables contained in Hypotheses 1 to 4 concerning the entire sample of ADHD subjects. Table 4 on page 107 below pertains to the variables

contained in Hypotheses 5 and 6 concerning comparison of the two subgroups of ADHD boys with and without a co-morbid diagnosis of ODD.

Table 3

Summary of Dependent Variables and Rorschach Inkblot Method and Mutuality of Autonomy Scale Measures Represented in Hypotheses One to Four Concerning the Entire ADHD Sample

Dependent Variables	Measurement: MOA Scale and CS RIM Variables	Criteria for Clinical Significance
Ego Functioning		
Coping & Social Competence	Coping Deficit Index (CDI)	CDI > 3
Reality Testing	Distorted Form Quality (X-%)	X-% > .20
Object Relations		
Representations of Object Relations	MOA Scale: Severely Maladaptive Representations of Object Relations	MOA Scores > 5
Sense Of Self		
Depressive Features	Depression Index (DEPI)	DEPI > 4

Table 4

Summary of Dependent Variables and Rorschach Inkblot Method Measures Represented in Hypotheses Five and Six Concerning Comparison of ADHD Boys With and Without ODD

Dependent Variables	Measurement: RIM Variables	Criteria for Clinical Significance
Ego Functioning		
Quality of Thinking	Weighted Sum of six Critical Special Scores (WSum6)	WSum6 > age appropriate clinical cut-off point: <u>Age 7</u> , WSum6 > 16 <u>Age 8 - 10</u> , WSum6 > 15 <u>Age 11 - 13</u> , WSum6 > 13
Object Relations		
Capacity for Empathy	Distorted Form Human Movement Responses (M-)	M- > 0

5.5 Operational hypotheses

The research hypotheses of the present study were operationalised in terms of the CS (Exner, 2003) RIM and MOA Scale variables targeted. Hypotheses One to Four involving comparisons between scores of the entire ADHD sample and those found in past studies are set out in Section 5.5.1 below. Hypotheses Five and Six involving comparisons between ADHD children with and without ODD are set out in Section 5.5.2 below.

Hypotheses in Section 5.5.1 and 5.5.2 are listed under the domain of personality structure and functioning to which they are relevant, namely Ego Functioning, Object Relations, and Sense of Self, according to the organisational framework borrowed from Pine (1990), as discussed in Section 3.3.7 of Chapter 3.

5.5.1 Hypotheses involving comparisons between the entire ADHD sample and samples of past studies

5.5.1.1 The ego functioning variable

Hypothesis One: Concerning coping and social competence

The present sample of boys diagnosed with ADHD does not differ from the Cotugno (1995) sample of children in terms of mean Coping Deficit Index (CDI) scores.

Hypothesis Two: Concerning reality testing

The present sample of boys diagnosed with ADHD does not differ from the Bartell and Solanto (1995) and Cotugno (1995) samples of children with ADHD in terms of mean Distorted Form Quality (X-%) scores.

5.5.1.2 The object relations variable

Hypothesis Three: Concerning representations of object relations

The proportion of RIM responses assigned MOA Scale scores of 6 or 7 produced by the present sample of boys diagnosed with ADHD does not differ from that produced by the Gacono and Meloy (1994) sample of children with CD.

5.5.1.3 The sense of self variable

Hypothesis Four: Concerning depressive features

The present sample of boys diagnosed with ADHD does not differ from the Cotugno (1995) sample of children in terms of mean Depression Index (DEPI) scores.

5.5.2 Hypotheses involving comparisons between ADHD boys with and without ODD

5.5.2.1 Ego Functioning variable

Hypothesis Five: Concerning quality of thinking

A sub-group of ADHD boys diagnosed with co-morbid ODD includes more boys evidencing disturbed thinking, signalled by Weighted Sum of six Critical Special

Scores (WSum6) falling beyond age determined clinical cut-off points, than the sub-group without ODD.

5.5.2.2 The object relations variable

Hypothesis Six: Concerning capacity for empathy

A sub-group of ADHD boys diagnosed with co-morbid ODD includes more boys evidencing lack of empathy, signalled by the production of at least one Distorted Form Human Movement Response (M-), than the sub-group without ODD.

5.6 Planned data analysis procedures

5.6.1 Reliability and screening of data

As a means of safeguarding against CS (Exner, 2003) scoring errors in the RIM protocols of the present sample, approximately half of the protocols would be randomly selected and re-scored by a second clinical psychologist, well experienced both in projective personality assessment and in the use of the CS.

It was also planned that relevant data would be entered into a data file in the Statistical Package for Social Sciences (SPSS: Graduate Pack 13.0 for Mac OS X) in preparation for data analysis. In preparation for proposed parametric statistical analysis, preliminary data checks would be performed using the SPSS function, *Frequencies and Descriptives*. Variables would be examined for accuracy of data

input, missing values, outliers, and normality of distribution. This would involve the data associated with the three hypotheses to be tested via parametric techniques, namely Hypotheses One, Two, and Four.

Assessment of the normality of distribution of CS RIM variable scores pertinent to Hypotheses One, Two, and Four, namely CDI, X-%, and DEPI, would be achieved using the Kolmogorov-Smirnoff (K-S) Test in SPSS. This method tests the assumption of normality through comparison of the “centiles of the observed distribution of the data with the corresponding centiles of the normal distribution” (p. 137, Gray & Kinnear, 1998). The nearer these centile scores are to each other, the more probable the normality of distribution of the given data set (Albright, Winston & Zappe, 2004). Thus, normality of distribution of a given data set is indicated when the K-S Test Statistic upholds the null hypothesis.

5.6.2 Principal analyses

One sample t-tests would be employed for Hypotheses One, Two, and Four to assess the equivalence of RIM mean scores on CDI, X-%, and DEPI for the present, Bartell and Solanto (1995), and Cotugno (1995) child clinical samples. As these Rorschach variables would produce interval data, they were deemed suitable for parametric analysis.

A binomial test would be employed for Hypothesis Three to calculate the (statistical) equivalence of frequency of severely maladaptive representations of object relations in the RIM responses provided by the present and Gacono and Meloy (1994) clinical

samples. For this test, RIM responses would be scored according to whether or not they fulfilled Urist's (1977) criteria for severely maladaptive representations of object relations (i.e. MOA Scale scores > 5). Because the data would be both dichotomous (i.e. MOA Scale scores > 5 , yes or no) and categorical (i.e. subjects in either the present or Gacono & Meloy study) it was deemed appropriate for nonparametric statistical analysis.

Finally, chi-square tests for independence would be employed for Hypotheses Five and Six to calculate the statistical difference between ADHD boys with and without a co-morbid diagnosis of ODD in terms of disturbed thinking and lack of empathy. For these tests, RIM scores would be coded categorically, that is, whether or not they fulfilled the CS (Exner, 2003) criteria for clinical significance. Disturbed thinking would be signalled by the Weighted Sum of six Critical Special Scores (WSum6) above age determined clinical cut-off points; lack of empathy would be indicated by the presence of Distorted Form Human Movement Responses ($M- > 0$).

Frequency data (i.e., proportion of subjects fulfilling commonly employed clinical cut-off points) concerning important CS Rorschach Inkblot Test variables would also be tabulated.

5.6.3 Controlling for Type I and Type II errors

Due to the inherent statistical dilemmas of a study with a small sample size, namely the problem of detecting clinically meaningful findings with limited statistical power, steps would be taken to control for the potential impact of Type I and II errors.

In order to avoid an unacceptable risk of committing Type II errors (i.e. failing to reject the null hypothesis when it was false), whilst also attempting to control for Type I errors (i.e. rejecting the null hypothesis when it was actually true), a less conservative form⁷ of the Bonferroni correction method was selected for use. This method of correction entailed the nomination a priori of a figure for the experimentwise error rate, the probability of committing one or more Type I errors, which was then divided by the number of planned comparisons to obtain the adjusted per comparison alpha level. For the present study, by adopting the conservative experimentwise error rate of .20, a figure commonly recommended by reviewers of research (Viglione, 1995), per comparison alpha levels were reduced to .033 (i.e. experimentwise error rate of .20 divided by 6 planned comparisons).

This method of controlling for Type I and II errors was deemed suitable since two of the six research hypotheses predicted that differences would be found in personality functioning between ADHD boys with ODD, as compared to those without this comorbidity. Because these hypotheses were predicting trends not previously investigated in published studies, it was important that the present study, with its limited statistical power, would have some potential to detect differences, which subsequent research might then clarify. Furthermore, because statistically significant findings are often harder to obtain with smaller sample sizes, especially where some effort has been made to control for Type I error, it is arguable that such findings warrant future investigation because of an increased likelihood that they have been derived from real or clinically meaningful differences (McGuire & Exner, 1995).

⁷ If a conservative form of Bonferroni correction, as discussed by Keppel (1982), were applied to the present study (i.e. selecting an alpha of .05 and dividing it by the six planned comparisons), per comparison alpha levels would have been reduced to the extremely conservative value of .008.

An additional reason for choosing the aforementioned method of control of Type I and II errors was that four of the six research hypotheses predicted that no differences would be found in the personality functioning of the present sample of ADHD boys when contrasted with the findings from past research on the same or similar child clinical populations. In other words, these hypotheses predicted that the null hypothesis was true. The selection of a very conservative alpha level to control for Type I error would actually make it more difficult to detect whether the alternative hypothesis was in fact true. Hence, some control over Type II error was highly desirable in order to have assurance that the present clinical group, albeit small, resembled ADHD or similar child clinical populations in the published research.

Finally, the comparison of the personality functioning of the present sample of ADHD boys with the findings of past RIM research on the same or similar clinical populations was a further attempt to address the limitation of reduced statistical power. It is not as statistically demanding to argue for equivalence rather than difference between groups. Moreover, being able to argue that a small sample resembles other published studies on the same or similar clinical populations potentially increases the validity of the findings. Therefore, the fulfilment of the latter has the potential to enhance the foundations upon which future research might proceed.

CHAPTER SIX

RESULTS

Chapter Six begins with a thorough description of participant characteristics, followed by summary of findings from data screening and testing for normality of distribution in select data sets. The presentation of findings pertaining to each of the tested hypotheses comes next. Finally, frequencies of important CS variables pertaining to the core domains of personality functioning, namely ego functioning, object relations, and sense of self, are summarised and interpreted.

6.1 Characteristics of the sample

Although 20 ADHD subjects were aimed for, data were collected for a total of 17 boys.

Due to practical constraints, the exact number of participants informed of the study by treating practitioners was not recorded. Nonetheless, feedback received from the referring practitioners indicated that of the potential subjects informed of the study, greater numbers elected not to participate in the study.

Sections 6.1.1 to 6.1.6 below outline participant characteristics in terms of age, responsiveness to assessment, diagnostic and behavioural features, intellectual functioning, and family background factors.

6.1.1 Age of participants

The average age of boys in the sample at the time of recruitment was 10 years and 5 months, ranging from 7 years to 13 years and 1 month.

6.1.2 Responsiveness of participants to assessment

All boys cooperated fully and responded with interest to psychological assessment instruments used at assessment, namely the Semi-Structured Interview, WISC-III, and the RIM. This was remarkable given the presenting problems of these boys and demonstrated that the efforts to establish rapport using drawing and play were effective.

The excellent responsiveness of participants obviously enhanced the reliability and validity of the study. In particular, each boy produced a valid RIM protocol by giving at least 14 responses.

6.1.3 Diagnostic, behavioural, and socio-emotional features of participants

The clinical sample comprised 17 subjects⁸, of which 14 had been diagnosed with ADHD-Combined-Type (i.e. Hyperactive-Inattentive) and 3 with ADHD-Inattentive-Type. On average, these boys were aged 7 years and 5 months when diagnosed with ADHD.

⁸ Five out of 17 parents whose ADHD child participated in the study elected to discuss the report with the researcher; all five requested face-to-face appointments.

Using data collected from child behaviour ratings scales completed by parents, as well as that gathered at clinical interview, all of the ADHD diagnoses of the 17 participants were found to be accurate. Were subjects found to possess clinically insignificant findings of ADHD symptoms on the behaviour rating scales, which accorded with clinical interview data, they would have been excluded from the study. No subjects, however, were excluded on this basis. Mean scores obtained by boys diagnosed with Combined and Inattentive types of ADHD on the ADHD Rating Scale-IV and Behaviour Assessment System for Children (BASC) are listed in Table 5 below.

Table 5

Means and Standard Deviations for Boys with Combined and Inattentive Types of ADHD on the ADHD Rating Scale-IV and Behaviour Assessment System for Children

Measure	ADHD boys			
	Combined type (n=14)		Inattentive type (n=3)	
ADHD Rating Scale-IV				
Inattention	92 ^a	(13)	87	(2)
Hyperactivity- Impulsivity	94	(6)	75	(22)
BASC				
Hyperactivity	73 ^b	(8)	45	(13)
Inattention	70	(12)	66	(6)

Note. Percentile scores on the ADHD Rating Scale-IV are clinically significant above 84 and range from 0-100. T-scores on the BASC are categorised as 'at risk' between 60 and 69 and as 'clinically significant' above 69, ranging from 20-120.

^a 13 out of 14 parents of boys with ADHD Combined Type completed this rating scale. ^b 12 out of 14 parents of boys with ADHD Combined Type completed this rating scale.

Inspection of Table 5 above shows that boys diagnosed with ADHD-Combined-Type obtained clinically significant scores on the Inattention and Hyperactivity subscales of the ADHD Rating Scale-IV, and on the Attention Problem and Hyperactivity subscales of the BASC. Thus, confirming the accuracy of their ADHD diagnoses. The boys diagnosed with ADHD-Inattentive-Type obtained a clinically significant score on the Inattention subscale of the ADHD Rating Scale, and their score on the Attention Problem subscale of the BASC fell within the 'at risk' range. The accuracy of ADHD-Inattentive-Type diagnoses was also supported by the lack of clinically significant scores on the behaviour rating scales measuring hyperactivity.

Nine ADHD boys were confirmed as having a co-morbid diagnosis of ODD. Of these 9 boys with ODD, 7 diagnoses were made using with data gathered from both the BASC and semi-structured interview, and 2 diagnoses were made using the interview data alone. The procedures for determination of the presence of co-morbid ODD were outlined earlier in Section 5.3.2.1 of Chapter 5. The mean scores on the Aggression and Conduct Problems subscales of the BASC, concerning sub-groups of ADHD boys with and without ODD, are summarised in Table 6 on page 119.

It is evident from Table 6 below that ADHD boys with ODD, compared to those without this co-morbidity, obtained clinically significant scores on the Aggression and Conduct Problem clinical subscales of the BASC. These findings, along with those obtained at clinical interview, pointed to the presence of an array of problematic behaviour consistent with the diagnosis of ODD.

Table 6

Mean T-Scores for ADHD Boys With and Without ODD on the Aggression and Conduct Problems Clinical Subscales of the Behaviour Assessment System for Children

BASC Clinical Subscales	ADHD Boys with ODD (n=9)	ADHD Boys without ODD (n=8)
Aggression	78 ^a (13)	51 (14)
Conduct Problem	84 (14)	58 (13)

Note. T-scores on the BASC are categorised as ‘at risk’ between 60 and 69 and as ‘clinically significant’ above 69, ranging from 20 - 120.

^a7 out of 9 parents of ADHD boys with ODD completed this behaviour rating scale.

A discrepancy existed in the age of ADHD boys diagnosed with co-morbid ODD, compared to those boys without this co-morbidity. The average age of ADHD boys with ODD was 9 years and 7 months, and for boys without ODD it was 11 years and 2 months. This discrepancy was not found to be statistically significant, which ruled it out as a potentially confounding variable of the present study.

Mental status examination and behaviour rating scale data (i.e. Behaviour and Assessment System for Children, BASC) concerning problematic levels of symptoms of depression and anxiety, as well as quality of peer relationships, in ADHD boys with and without ODD are described in Table 7 below on page 120.

Table 7

Percentage and Frequency (in brackets) of ADHD Boys With and Without ODD with Problematic Levels of Socio-Emotional Symptoms Measured by the Mental Status Examination and Behaviour Assessment System for Children

Measure	ADHD Boys			
	With ODD		Without ODD	
Mental Status Examination^a				
Depression symptoms	89%	(8)	14%	(1)
Anxiety symptoms	44%	(4)	57%	(4)
Unstable and or dissatisfying peer relationships	100%	(9)	29%	(2)
Behaviour Assessment System for Children (BASC)^b				
Depression symptom	71%	(5)	13%	(1)
Anxiety symptom	14%	(1)	25%	(2)

Note. T-scores on the BASC are categorised as 'at risk' between 60 and 69 and as 'clinically significant' above 69, ranging from 20 - 120.

^a Mental status data was collected for 7 of 8 boys in the ADHD sample without ODD.

^b BASC data was collected for 7 of 9 boys in the ADHD sample with ODD.

According to Table 7, the mental status examination revealed problematic levels of depression in most ADHD boys with ODD, and in a few boys without this co-morbidity. Problematic levels of anxiety symptoms were identified in a little over half of ADHD boys without ODD, and in a little under half of boys with ODD. All 9 ADHD boys with ODD were identified as having unstable and dissatisfying peer relationships, whereas this was identified in approximately a third of boys without this co-morbidity.

It was also evident from Table 7 above that problematic levels of depression were identified by the BASC in approximately three quarters of ADHD boys with ODD, and in only one boy without this co-morbidity. Regarding problematic levels of anxiety symptoms, according to BASC findings, this was relatively infrequent in both ADHD sub-groups.

6.1.4 Intellectual functioning and schooling difficulties of participants

Only ADHD boys without intellectual disability or severe cognitive dysfunction were included in the sample. Using a two-subtest short form version of the WISC-III, as described in Section 5.2.1.4 of the previous chapter, all of the recruited boys were found to be without intellectual disability or severe cognitive dysfunction. A mean pro-rated Full Scale IQ of 109, with scores ranging from 77 to 124, was found for the entire sample. It is noteworthy that one boy was estimated to be functioning in the borderline range of intelligence. This boy had had viral meningitis in infancy, which compromised his overall development. Nevertheless he attended a mainstream primary school, and was therefore deemed suitable for inclusion in the study.

A statistically significant difference ($t [15] = -2.893, p = .011$) was found between the sub-groups of ADHD boys with and without ODD in terms of mean pro-rated Full Scale IQ scores. ADHD boys with ODD obtained a mean pro-rated Full Scale IQ score of 102, whereas boys without this co-morbidity obtained a mean score of 117. The relevance of this finding, as a potentially confounding variable, is discussed in Section 7.2 of Chapter Seven. Barkley (2006) has argued that such discrepancies in intellectual functioning might arise due to disturbance of language and academic

functioning associated with the severe behavioural and neuropsychological symptoms of ADHD boys with ODD.

The percentage of boys that experienced difficulties in the social, behaviour, and learning domains at kindergarten and school, derived from the Semi-Structured Interview data, are summarised in Table 8 below.

Table 8

Percentage of Sample with Kindergarten and Primary School Difficulties

Schooling Level & Domains of Difficulty	Percentage With Difficulties^a
Kindergarten	
Behavioural problems	63
Social problems	50
Learning problems	31
Primary School	
Behavioural problems	65
Social Problems	62
Learning problems	31

Note. ^aThese data were gathered from all parents of child participants during the Semi-Structured Interview.

Inspection of Table 8 shows that over half of the sample experienced behavioural problems at both kindergarten and primary school. At least half of the sample experienced social problems at both kindergarten and primary school. Further, approximately a third of the sample experienced learning difficulties at both kindergarten and primary school. These findings are consistent with those from

prospective studies highlighting the pervasive adjustment difficulties of these children (Barkley, 2006).

6.1.5 Developmental factors

The nature of, and percentage of the sample that experienced, developmental difficulties during infancy and childhood, which has been derived from the Semi-Structured Interview data, are summarised in Table 9 below on page 124.

Inspection of Table 9 indicates that speech and language delays were the most commonly experienced forms of developmental difficulty during infancy and childhood of the present sample. Approximately 40 percent of boys with ADHD were reported to have such developmental difficulties by their parents. During the period from birth to 10 months of age, the most common form of socio-emotional difficulty displayed by the present sample was an inconsistent ability to be relaxed and settled. Approximately 40 percent of boys with ADHD were reported to have such socio-emotional difficulties by their parents. Regarding socio-emotional difficulties at 26 to 30 months of age, 80 percent of the sample were reported to have had self-control problems, 53 percent were reported to have had difficulties distinguishing of reality from fantasy, and 43 percent were reported to have struggled with symbolic play. Further, approximately two thirds of the sample had a family history of ADHD, and half of them had experienced trauma in infancy and/or childhood.

Table 9

Percentage of Sample with Developmental Difficulties in Infancy and Childhood

Nature of Developmental Difficulties	Percentage With Difficulties ^a
Infant Development	
In utero complications	25
Feeding problems	13
Speech/Language delays	38
Motor delays	19
Toilet training problems	25
Infant-Child Socio-Emotional Development^b	
(0 – 10 months of age)	
Inconsistently able to be relaxed and comforted	38
Inconsistently responsive to communications from parents	7
Inconsistently interactive with parents and expressive of emotions	7
(10 – 17 months of age)	
Inconsistently expressive of social feelings in interactions	21
Inconsistently able to separate from parents for exploration	13
(17 – 30 months of age)	
Inconsistently communicative of social intentions and wishes	21
(26 – 30 months of age)	
Poor capability for symbolic play	43
Poor capability for distinguishing reality from fantasy	53
Poor for capability for self-limiting behaviour	80
Other	
Infant & child medical problems	35
Infant & child traumatic experiences	53
Family history of ADHD	69

Note. ^aWith the exception of the section, Infant-Child Socio-Emotional Development, the stated developmental data was gathered from all parents of ADHD boys (i.e. n=17). Infant-Child Socio-Emotional Development data was collected from the parents of 15 ADHD boys. ^bThe listed emotional-social developmental criteria were adapted from Greenspan (1992).

6.1.6 Family background factors

In terms of the family composition of the sample, 47 percent resided in nuclear families, 23 percent in blended families, 18 percent in single mother families (without contact with biological father), and 12 percent in single mother families (with contact with biological father). Regarding the occupational status of parents in these families, 46 percent were employed in professional occupations, 23 percent in skilled occupations, 24 percent in unskilled occupations, and 6 percent in unpaid employment, including full-time parenting.

The quality of relationships between boys with ADHD and their family members varied, as assessed during the Semi-Structured Interview and subsequently categorised by the researcher as either close, conflicted-ambivalent, or distant. Seventy-one percent of these boys were rated as having a 'close' relationship with their mother, and 29 percent were rated as having a 'conflicted-ambivalent' relationship. These findings changed greatly when analysed in terms of the presence or absence of a co-morbid diagnosis of ODD: 56 percent of ADHD boys with ODD were rated as having a 'conflicted-ambivalent' relationship with their mother, whereas all boys without this co-morbidity were rated as having a 'close' relationship.

The relationship between boys with ADHD and their fathers was found to be more problematic than with their mothers. Forty-seven percent were rated as having a 'distant' relationship, 41 percent were rated as having a 'close' relationship, and 12 percent were rated as having a 'conflicted-ambivalent' relationship with their father. When these data were analysed according to those ADHD boys with and without

ODD: 56 percent of boys with ODD, compared to 38 percent of boys without this comorbidity, were rated as having a 'distant' relationship with their father. In contrast, 50 percent of boys without ODD, compared to 33 percent boys with ODD, were rated as having a 'close' relationship with their father. Regarding the relationships between these boys and their siblings, 71 percent were rated as 'conflicted-ambivalent' and 29 percent were rated as 'close'.

6.2 Reliability and screening of data

As detailed in Section 5.6.1, preliminary data checks of input, missing values, outliers, and normality of distribution were performed prior to conducting the principal statistical analyses.

Checks revealed that data were entered with a high level of accuracy.

A small number of missing variables were identified in the data gathered from psychological assessment instruments, primarily used for determination of the independent variables, for 4 out of 17 boys. This consisted of a) 3 boys lacking BASC (a general behaviour rating scale) data, b) 1 boy lacking ADHD Rating Scale-IV data, and c) 2 boys lacking Emotional-Social Developmental History data, a component of the Semi-Structured Interview. These missing variables were, however, irrelevant to the principal dependent variable measure, namely the RIM.

All of missing variables occurred as a result of unforeseen circumstances limiting the amount of time that some participating families could devote to the lengthy

assessment process. Subsequent attempts (e.g. telephone calls or mailed questionnaires) were made to collect the missing data, but these efforts were often unsuccessful. The missing BASC and ADHD Rating Scale-IV information used to confirm the accuracy of ADHD diagnoses and the co-morbid presence of ODD, were compensated for by other clinical data gathered during the Semi-Structured Interview, sufficiently enabling the principal researcher to confirm or disconfirm the diagnoses of interest.

The distribution of data for RIM variables relevant to Hypotheses One, Two, and Four (i.e. CDI, X-%, and DEPI) were assessed regarding the assumption of univariate normality using the Kolmogorov-Smirnoff (K-S) Test found in SPSS. All three K-S Tests on the data sets for these RIM variables upheld the null hypotheses. Thus, the data sets for these variables were deemed normally distributed and amenable to analysis using parametric statistical analysis.

6.2.1 Reliability of Rorschach Inkblot Method data

All RIM protocols were scored in accordance with the CS (Exner, 2003) by the principal researcher. A random selection of 8 protocols were re-scored by a second clinical psychologist, well versed both in projective personality assessment and the CS, in an effort to enhance the reliability of the RIM data through minimising scoring errors. Comparison of the two sets of scores for the 8 RIM protocols revealed a small number of coding discrepancies. After reaching agreement regarding the correct coding, achieved through discussion between the principal researcher and second psychologist, the variable in question was re-coded correctly.

While considerable time and effort went into this method of crosschecking and correcting scoring discrepancies, systematic recording of scoring errors was not conducted. Nonetheless, it is estimated that at least 80 percent of all variables were scored accurately.

6.3 Testing of hypotheses

Findings from the six hypotheses investigated are organised into two sections. The first section presents the findings of hypotheses involving comparisons between the entire ADHD sample and past studies. The second section presents findings of hypotheses involving comparisons between ADHD children with and without ODD. Within each section the hypotheses are listed under headings specifying the domain and constituent aspect of personality functioning under investigation. The findings of each hypothesis are in turn described, including reporting of statistical significance and descriptive and frequency data.

6.3.1 Findings of hypotheses involving comparisons between the entire ADHD sample and samples of past studies

6.3.1.1 The ego functioning variables

Hypothesis One: Concerning coping and social competence

Consistent with the previous finding of coping and social difficulties in children with ADHD (Cotugno, 1995), the first hypothesis predicted that the present ADHD sample

of boys would not differ from the Cotugno sample in terms of their mean Coping Deficit Index (CDI) score on the RIM. The ADHD sample in the Cotugno study obtained a mean CDI score of 3.78. The statistical equivalence of the mean CDI scores of ADHD children in both studies was tested via a one-sample t-test, as described in Section 5.6.2 of Chapter Five. The results of this comparison are displayed in Table 10 below.

Table 10

One-Sample T-Test for Mean Difference Between Boys with ADHD and Test Value (Derived from Past Research) on RIM Measure of Coping Difficulties and Social Incompetence (CDI) (N=17)

Variable	Mean	SD	Test Value ^a	t
Coping Deficit Index (CDI)	3.47		3.78	-1.04

^aThe test value of 3.78, which was contrasted with the observed mean CDI score, was derived from the Cotugno (1995) Rorschach Inkblot Test study of ADHD children.

As summarised in Table 10, the results of the t-test ($t [16] = -1.037, p = .315$) indicated a lack of statistical difference between the mean CDI scores of both ADHD samples. Alternatively stated, the present ADHD sample of boys resembled the Cotugno (1995) ADHD sample of children in terms of coping difficulties and social incompetence. Accordingly, Hypothesis One was supported.

The mean CDI score of the present ADHD sample, as evident in Table 8 above, fell slightly below the commonly used individual cut-off point for clinical significance,

namely 4 or greater. However, the closeness to the point of clinical significance, as well as the proportion of ADHD children with clinically significant CDI scores, described in the Table 11 below, suggest that coping difficulties and social incompetence are widespread within the present sample.

Table 11

Frequencies of Clinically Significant Coping Deficit Index Scores in Boys with ADHD

Coping Deficit Index Scores	Frequency	%
CDI > 3	10	59
CDI > 4	3	18

Note. CDI scores ranged between 1 and 5.

It is also meaningful that the mean CDI scores of ADHD boys with and without ODD, namely 3.00 and 4.00 respectively, were found, via an independent t-test, to not statistically differ ($t [15] = 1.782, p = .095$). Similarly, 5 out of 9 (56 percent) ADHD boys with ODD, as compared to 6 out of 8 (75 percent) ADHD boys without ODD, had clinically significant CDI scores. Arguably, coping difficulties and social incompetence is relatively common in children with ADHD, irrespective of the comorbid influence of ODD.

Hypothesis Two: Concerning reality testing

The second hypothesis proposed that the present ADHD sample of boys would not differ from the Bartell and Solanto (1995) and Cotugno (1995) ADHD samples of children in terms of inaccuracy of perception, measured by the percentage of

Distorted Form Quality (X-%) responses on the RIM. The statistical equivalence of mean X-% scores of the present and published Rorschach studies of children with ADHD, the latter of which had an average sample mean X-% score of 0.35, was tested via a one sample t-test. The results are presented in Table 12 below.

Table 12

One-Sample T-Test for Mean Difference Between Sample of ADHD Boys and Test Value (Derived From Past Research) on RIM Measure of Inaccurate Perception (X-%) (N=17)

Variable	Mean	SD	Test Value ^a	t
Distorted Form X-%	.40	.13	.35	1.749

^aThe test value of .35, which was compared with the observed X-% mean in the t-test, is an average of the X-% scores from the Bartell and Solanto (1995) and Cotugno (1995) RIM studies of children with ADHD.

Results of the t-test ($t [16] = 1.75, p = .099$), reported in Table 12, indicated that there was no statistically significant difference between the X-% mean scores of the present and published ADHD samples. In other words, the present ADHD sample of boys resembled the Bartell and Solanto (1995) and Cotugno (1995) samples of children in terms of inaccuracy of perception or disturbed reality testing. Thus, Hypothesis Two was supported.

The proportion of ADHD boys with X-% scores above 0.20, the clinical cut-off point for the detection of pervasive inaccurate perception of reality, was extremely high.

Table 13 below describes the overall frequencies of clinically significant X-% scores of boys with ADHD.

Table 13

Frequencies of Clinically Significant Distorted Form Quality (X-%) Scores in Boys with ADHD

Clinically Significant Distorted Form Scores	Frequency	%
X-% >.15	17	100
X-%>.20	16	94
X-%>.25	14	82
X-%>.30	14	82

Note. X-% scores ranged between .17 and .64.

Inspection of Table 13 demonstrates that the entire ADHD sample of boys displayed clinically significant problems with reality testing or inaccuracy of perception, evidenced by Distorted Form (X-%) scores above 0.15. Moreover, 82 percent of these boys displayed severe problems with reality testing, evidenced by X-% scores above 0.30. Consistent with these findings, the mean X-% scores of ADHD boys with and without ODD, namely 0.44 and 0.36 respectively, were found, via an independent t-test, to not statistically differ ($t [15] = -1.386, p = .186$). In other words, pervasive inaccuracy of perception appears widespread in these children, irrespective of a co-morbid ODD diagnosis

Distorted Form scores at these levels of clinical significance, according to the CS (Exner, 2003) child normative data, are very rare. They do not occur in non-patient

children between the ages of 7 and 11, and occur in 2 percent of such children aged 12 and 13. Collectively, these findings point to significant disturbance of reality testing, a cornerstone of effective ego functioning, in the present sample of boys with ADHD.

6.3.1.2 The object relations variable

Hypothesis Three: Concerning representations of object relations

The third hypothesis proposed that the proportion of severely maladaptive representations of object relations, signalled by responses assigned MOA Scale scores of 6 or 7, produced on the RIM by the present ADHD sample of boys would not differ from that produced by the Gacono and Meloy (1994) sample of children with Conduct Disorder (CD). A binomial test was used to determine whether the observed proportion of MOA Scale Scores of 6 and 7 produced by the present ADHD sample was equivalent to the proportion produced by the CD sample in the Gacono and Meloy study. Since 24 percent of the MOA Scale responses of the CD sample were scored as 6 or 7, the null hypothesis predicted that the present ADHD sample would produce a similar proportion of MOA Scale responses scored as 6 or 7.

Findings of the binomial test (1, $N = 17$, $p = .388$), reported in Table 14 on page 134 below, indicated that there was no statistically significant difference between the proportion of MOA Scale responses scored 6 or 7 produced by the present ADHD sample and that produced by the Gacono and Meloy CD sample. In other words, the present ADHD sample of boys was found to resemble the CD sample of children in

Table 14

Frequency Data for MOA Scale Scores of 6 or 7, Signalling Severely Maladaptive Representations of Object Relations, and Statistical Significance of Differences Between the Sample of ADHD Boys and Test Proportion (Derived From Previous Research) (N=17)

Variable	Frequency	%	Test Proportion	p
MOA Scale Responses Scored 6 or 7	18 ^a	22	.24 ^b	.388

^a A total of 82 RIM responses assigned MOA Scale scores were produced by the entire ADHD sample.

^b The test proportion of .24 was derived from the Gacono and Meloy (1995) RIM study of children with CD. It indicates that 24 percent of all MOA Scale responses of the CD sample were assigned scores of 6 or 7. The latter scores signal severely maladaptive representations of object relations in RIM responses.

terms of frequency of production of RIM responses depicting severely maladaptive representations of object relations. Hypothesis Three of the study was therefore supported.

A comparison of frequency data for the MOA Scale scores obtained by the present sample of boys with ADHD, the Gacono and Meloy (1994) sample of children with CD, and the Tuber (1989) sample of non-patient children is presented in Table 15 on page 135 below.

Table 15 reveals that the present ADHD sample of boys and the Gacono and Meloy (1994) CD sample of children produced greater proportions of MOA Scale responses scored 6 or 7, signalling severely maladaptive representations of object relations, in their RIM protocols than non-patient children from the Tuber (1989) study. Despite this trend, the present ADHD sample produced a lower proportion of MOA Scale

responses scored 1 or 2, signalling adaptive representations of object relations, than both the CD (Gacono & Meloy) and non-patient (Tuber) samples.

Table 15

Proportion of Frequencies for RIM Responses Assigned Mutuality of Autonomy Scale Scores: Comparison of Findings of the Present, Gacono & Meloy (1994), and Tuber (1989) Studies

MOA Scale Score	Proportion of Frequencies		
	Studies		
	<u>Present</u> (ADHD, n=17)	<u>Gacono & Meloy</u> (CD, n=60)	<u>Tuber</u> (Non-Patient, n=40)
Responses 1 & 2	.27 ^a	.40	.50
Response 3	.32	.14	.16
Response 4	.05	.05	.02
Response 5	.13	.17	.25
Response 6	.15	.21	.07
Response 7	.07	.03	.00
Responses > 4	.35	.41	.33
Responses > 5	.22 ^b	.24	.07

Note. MOA Scale scores refer to the quality of representation of object relations in RIM responses. The most adaptive depictions of object relations, reflecting mutual and autonomous interactions, are scored either 1 or 2, whereas the most maladaptive depictions of object relations, reflecting dominating, destructive, and enveloping interactions, are scored 6 and 7. The scores of 3 to 5 reflect an increasing loss of mutuality and autonomy depicted in representations of object relations. ^aThis figure, when analysed by ADHD sub-group, indicates that 15 percent of the total number of RIM responses, which were assigned MOA Scale scores of 1 or 2, were produced by the ADHD sub-group without ODD. The ADHD sub-group with co-morbid ODD produced such responses at a similar frequency, namely 12 percent. ^bThis figure, when analysed by ADHD sub-group, indicates that 16 percent of the total number of RIM responses, which were assigned MOA Scale scores of 6 or 7, were produced by the ADHD sub-group with co-morbid ODD. The ADHD sub-group without ODD produced such responses at much lower frequency, namely 6 percent.

It should be acknowledged, however, that the sub-groups of ADHD boys with and without ODD produced RIM responses assigned MOA Scale scores of 6 or 7 with differing frequency. The ODD subgroup produced 13 (16 percent) of these responses, whereas the non-ODD sub-group only produced 5 (6 percent) responses. A post-hoc binomial test (1, $N = 18$, $p.000$) revealed that these frequencies were statistically significantly different.

In contrast to this finding, the sub-groups of ADHD boys with and without ODD produced similar frequency of RIM responses assigned MOA Scale scores of 1 and 2, reflecting the representation of adaptive (or mutual and autonomous) object relations. The ODD sub-group produced 12 of these responses, and the non-ODD sub-group produced 10.

Thus, while severely maladaptive representations of object relations are depicted more frequently in the RIM responses of ADHD boys with ODD, both ADHD sub-groups produce a similar frequency of responses depicting very adaptive representations of object relations. The implications of these findings are discussed next in Chapter Seven.

Illustrative examples of the RIM responses produced by the present ADHD sample that were assigned MOA Scale scores of 6 and 7, depicting severely maladaptive object relations, are found in Table 16 on page 137 below.

Table 16

Examples of RIM Responses Assigned MOA Scale Scores of 6 or 7 Produced by Boys with ADHD

<p>MOA Scale Scores of 6</p>
<ul style="list-style-type: none"> • “A crystal surrounded by two evil fire-birds ... a man is shooting fire at the birds and is ready to attack them.” • “Two bulls scratching the face out of a monster, and they cut the monster’s feet off.” • “A fish-man running around bleeding and screaming.” • “Two fleas fighting over a stick, trying to take it from one another.”
<p>MOA Scale Score of 7</p>
<ul style="list-style-type: none"> • “A flying ship and its tearing parts off this other ship ... and there are yellow goats in the air, and someone is driving them ... and the green ship is going to stab the purple thing. They park the ship here [pointing], and these [gates] open and close, these arms open [pointing] and they can go through it.” • “A shark with a dead seal in its mouth with blood pouring out of the shark’s mouth.” • “A bug crawling through blackness ... a fog that swept over it and went everywhere.”

6.3.1.3 The sense of self variable

Hypothesis Four: Concerning depressive features

The fourth hypothesis predicted, consistent with the previous finding of depressive features in children with ADHD (Cotugno, 1995), that the present sample of boys with ADHD would not differ from the Cotugno ADHD sample in terms of their mean Depression Index (DEPI) score on the RIM. The Cotugno ADHD sample obtained a mean DEPI score of 4.81. The statistical equivalence of mean DEPI scores of ADHD samples in both studies was tested using a one sample t-test. Results are displayed in Table 17 below.

Table 17

One-Sample T-Test for Mean Difference Between Boys with ADHD and Test Value (Derived From Past Research) on RIM Measure of Depressive Features (N=17)

Variable	Mean	SD	Test Value ^a	t
Depression Index (DEPI)	4.65	1.37	4.81	-.492

^aThe test value of 4.81, which was contrasted with the observed mean DEPI score, was derived from the Cotugno (1995) RIM study of ADHD children.

As shown in Table 17 above, $t(16) = -.492$, $p = .630$, demonstrated a lack of statistically significant difference between the mean DEPI scores of the present and Cotugno (1995) ADHD samples. In other words, the present sample of ADHD boys resembled the Cotugno ADHD sample of children in terms of depressive symptoms measured by the DEPI. As such, Hypothesis Four was supported.

The DEPI score of the present ADHD sample, as evident in Table 17 above, is just below the commonly used individual cut-off point for clinical significance (i.e. DEPI > 4). Further evidence of the extent of depressive features in the present sample of boys with ADHD is suggested by the high proportion of boys with clinically significant DEPI scores. The exact proportion of these boys with clinically significant DEPI scores are presented in Table 18 below.

Table 18

Frequency of Clinically Significant Depression Index Scores in Boys with ADHD

Depression Index Scores	Frequency	%
DEPI > 4	8	47
DEPI > 5	3	18
DEPI > 6	2	12

Note. DEPI scores ranged between and 3 and 7

It is also meaningful that the mean DEPI scores of ADHD boys with and without ODD, namely 4.67 and 4.63 respectively, were found, via an independent t-test, to not statistically differ ($t [15] = -0.61, p = .952$). In a similar vein, 5 out of 9 ADHD boys with ODD, as compared to 3 out of 8 ADHD boys without ODD, had clinically significant DEPI scores.

The nature of the depressive features experienced by these boys are indicated by the frequency data regarding some of the variables that constitute the DEPI:

- 94 percent of boys evidenced self-esteem difficulties (i.e. $3r+2[2]/R < \text{age appropriate score}$),

- 47 percent of boys evidenced clinically significant levels of internalised dysphoric affect (i.e. [FM+m] < Sum Shading),
- 41 percent of boys demonstrated self-critical ideation and damaged self-representations (i.e. MOR > 2),
- 71 percent of boys evidenced discomfort with, and difficulties mentally representing, affective experiences (i.e. Afr < age appropriate score), and
- 41 percent demonstrated that they did not anticipate their interactions with others to be rewarding and reciprocal (COP < 2).

6.3.2 Findings of hypotheses involving comparisons between ADHD children with and without ODD

6.3.2.1 The ego functioning variable

Hypothesis Five: Concerning quality of thinking

The fifth hypothesis proposed that a subgroup of ADHD boys diagnosed with co-morbid ODD would include more boys evidencing disturbed thinking, signalled by (age determined) clinically significant scores on the Weighted Sum of six Critical Special Scores (WSum6) variable, than the subgroup without ODD. This predicted difference in the frequency of clinically significant WSum6 scores between the ADHD subgroups was tested via a chi-square test for independence. Table 19, on page 141 below, presents the findings.

Table 19

Frequency Data for Clinically Significant Weighted Sum of six Critical Special Scores and Statistical Significance of Difference Between ADHD Boys With and Without ODD (N=9,8)

Variable	ADHD Boys With ODD (n=9)		ADHD Boys Without ODD (n=8)		Chi
	Frequency	%	Frequency	%	
WSum6>Age Clinical Cut-off Score	7	78	1	12	7.244*

Note. Clinical cut-off scores for WSum6 by age: Age 7, WSum6>16; Age 8 – 10, WSum6>15; Age 11-13, WSum6>13. * $p < .033$ ($p < .05$ with Bonferroni correction)

Given that the analysis revealed 2 cells with expected counts of less than 5, an exact significance test (i.e. Fisher's Exact Test) was employed for Pearson's chi-square. As evident above, the chi square statistic, 7.244, 1, $N = 9,8$, exact $p = .012$, demonstrated that the subgroup of ADHD boys with ODD, as compared to the subgroup without this co-morbidity, included a statistically significant greater proportion of participants with clinically elevated Wsum6 scores signalling disturbed thinking. This difference was in the predicted direction with 78 percent of ADHD boys with ODD, compared to 12 percent of ADHD boys without ODD, exhibiting signs of serious thinking problems. The fifth hypothesis was thus supported.

Descriptive data for the aforementioned subgroups of boys with ADHD was also supportive of differences in their tendency to think illogically and incoherently. For example, the mean WSum6 score for ADHD boys with and without ODD was 18.22

and 9.60, respectively, with scores ranging from 0.00 to 40.00. Nevertheless, it is worth noting that an ADHD boy without ODD obtained a WSum6 score of 40.00.

Illustrative examples of RIM responses produced by boys with ADHD evidencing instances of arbitrary, illogical and fantastic thinking, which were assigned one of the six Special Scores that when weighted contribute to the Wsum6 score, are listed in Table 20 below.

Table 20

Examples of RIM Responses Assigned Critical Special Scores Produced by ADHD Boys With ODD

RIM Responses Assigned the Incongruous Combinations (INCOM) Special Score
<ul style="list-style-type: none"> • “This one looks weird. It’s got two eyelashes, four feet, and two arms. It looks like its got black fire coming out of its ears ... it doesn’t have any ears, nose, or mouth, but it has ears because of the fire coming out. Looks like it has some wings” (Level 2 - Card VI). • “Weird bug with a bowtie” (Level 1 - Card III).
RIM Responses assigned the Fabulized Combination (FABCOM) Special Score
<ul style="list-style-type: none"> • “A flying ship and its tearing parts off this other ship ... and there are yellow goats in the air, and someone is driving them ... and the green ship is going to stab the purple thing. They park the ship here [pointing], and these [gates] open and close, these arms open [pointing] and they can go through it” (Level 2 - Card X). • “Someone wearing a yabbie⁹ on top of their head” (Level 1 - Card X). • “A lantern and a butterfly [holding] the lantern in its hands” (Level 1 - Card VIII).

⁹ A yabbie is an Australian variety of fresh water crayfish, usually found in dams.

6.3.2.2 The object relations variable

Hypothesis Six: Concerning capacity for empathy

Hypothesis Six predicted that a subgroup of ADHD boys diagnosed with co-morbid ODD would include more boys evidencing a lack of empathy, signalled by the production of at least one Distorted Form Human Movement response (i.e. $M > 0$), than the subgroup without ODD. This predicted difference in the frequency of clinically significant M- scores between the ADHD subgroups was tested via a chi-square test for independence. Table 21, below, presents the findings.

Table 21

Frequency Data for Clinically Significant Distorted Form Human Movement Scores and Statistical Significance of Difference Between ADHD Boys With and Without ODD (N=9,8)

Variable	ADHD Boys with ODD (n=9)		ADHD Boys without ODD (n=8)		Chi
	Frequency	%	Frequency	%	
M->0	7	78	1	12	7.244*

Notes. Clinically significant M- scores ranged between 1 and 4. * $p < .033$ ($p .05$ with Bonferroni correction).

The Fisher's Exact Test was selected for Pearson's chi-square, as the analysis revealed that 2 cells had expected counts of less than 5. As shown above, the chi square statistic, 7.244, 1, $N = 9,8$, exact $p = .012$, revealed that the subgroup of

ADHD boys with ODD, as compared to the subgroup without this co-morbidity, included a statistically significant greater proportion of participants with clinically significant M- scores, reflecting a lack of empathy, in their RIM protocols. In fact, 78 percent of ADHD boys with ODD, compared to 12 percent of ADHD boys without ODD, produced at least one M- response. The sixth hypothesis was thus supported.

These findings were also supported by the discrepancy in mean M- scores between the ADHD boys with and without ODD, the subgroups obtained mean M- scores of 1.56 and .37, respectively.

6.4 Frequency data for important Comprehensive System RIM variables of boys with ADHD

As a way of enhancing the understanding of the overall personality functioning of boys with ADHD, frequency data for the present sample concerning their results on important CS RIM variables are presented in Tables A, B, and C in Appendix VII. Each table refers to frequency data for CS variables pertaining to one of the three domains of personality functioning as conceptualised by Pine (1994), namely ego functioning, sense of self, and object relations. In each of these tables, the frequency data for boys with ADHD, who had an average of 10 years, is contrasted with frequency data for 10 years olds contained in the Comprehensive System's table of child non-patient data, derived from 1390 subjects (Exner, 2004). Even though it is inappropriate to make statistical comparisons between a study and normative reference data, inspection of similarities and differences between them can sometimes be of interest.

Inspection of the frequency data tables in Appendix VII reveals that the present sample of ADHD boys, compared to children in the CS non-patient sample, consistent with the findings from the hypothesis testing, experience significant dysfunction across the three core domains of personality functioning.

Firstly, regarding the domain of ego functioning, it was concluded that boys with ADHD tend to:

- (a) Experience situational (i.e. $D < 0$) and chronic (i.e. $\text{Adj } D < 0$) stress overload, arising due internal and external pressures that are in excess of available internal coping resources,
- (b) Process information haphazardly without attention to detail (i.e. $Z_d < -3$),
- (c) Possess reduced accuracy of perception (i.e. $X_A\% < .70$), even when attending to more obvious aspects of reality (i.e. $WDA\% < .75$), as well as idiosyncratic (i.e. $X_u\% > .20$) and pervasively distorted perception (i.e. $X_{-}\% > .30$),
- (d) Experience perceptual and thinking problems (i.e. $PTI \ \& \ SCZI > 4$), without underlying psychotic features (i.e. Level 2 Spec. Sc.),
- (e) Avoid, and experience difficulties mentally representing, affective experiences (i.e. $A_{fr} < \text{age determined cut-off point}$), notwithstanding evidence suggesting adequate capacity for affective control (i.e. $FC > [CF + C] + 1$), and
- (f) Experience global coping and social difficulties (i.e. $CDI > 4$).

Secondly, regarding the domain of object relations, it was concluded that boys with ADHD are prone to:

- (a) Experience difficulties forming close attachments to people (i.e. $T = 0$) and to not anticipate reciprocal and rewarding interactions with others (i.e. $COP = 0$),

- (b) Not mentally represent hostile or aggression feelings or intentions concerning interpersonal relationships (i.e. $AG = 0$), possibly as a result of the mental processes of dissociation and splitting, and
- (c) Inappropriate and problematic social interactions and interpersonal relationships (i.e. $GHR < PHR$).

Finally, regarding the domain of sense of self, it was concluded that boys with ADHD are inclined to:

- (a) Form identifications based on part-object and fantasised representations of people (i.e. $Pure H < 2$),
- (b) Experience self-esteem difficulties (i.e. $3r + [2]/R < \text{age determined cut-off point}$),
- (c) Engage in self-critical ideation (i.e. $MOR > 2$), and
- (d) Develop depressive symptoms (i.e. $DEPI > 4$).

CHAPTER SEVEN

DISCUSSION

Chapter Seven opens with a brief summary of the findings, followed by discussion of the present study's strengths and limitations. The findings of each hypothesis are then interpreted, leading on to consideration of an updated emerging RIM profile of the personality functioning of children with ADHD. Concluding the chapter is discussion of research, theoretical, and clinical implications of the findings of this research.

7.1 Summary of findings

The four hypotheses involving comparisons between the entire ADHD sample and samples of past studies were supported. Similarly, the two hypotheses concerning comparisons between ADHD boys with and without ODD were supported. A more detailed summary of these findings can be found in Appendix IX.

7.2 Limitations and strengths of the study

As stated in Chapter Four, an attempt was made to minimise the limitations of the previous Rorschach studies (Section 3.2.1 of Chapter Three). This attempt was partially successful.

While there are indeed limitations associated with a small empirical study of this kind, it nevertheless possesses some strengths. Firstly, all participants were responsive to the RIM and provided valid protocols, thus enhancing the reliability and

the validity of the findings. This responsiveness was achieved through the building of good rapport prior to the administration of the RIM. The initial interview, followed by cognitive testing, enabled rapport to be established, which was then consolidated through a drawing exercise.

A second strength of the study was its control of Type I and II errors, a statistical necessity given the small sample. Type I error was contained by keeping the number of statistical comparisons to a minimum and through employment of Bonferroni correction. In turn, Type II error was minimised through employment of a less conservative method of Bonferroni correction. This particularly benefitted the two exploratory hypotheses, as it minimised the obscuring of potentially meaningful differences in the comparison of personality functioning of ADHD children with and without ODD.

Another strength of the study was the incorporation of both parametric and non-parametric statistical methods to analyse Rorschach findings of the present and past studies. This meant that it was possible to analyse both descriptive and frequency data concerning Comprehensive System (Exner, 2003) RIM variables. An advantage of non-parametric analysis is that it enables comparison between samples in terms of the frequency of participants satisfying clinical cut-off points on CS variables, which enhances the clinical applicability of findings.

Compilation and tabulation of frequency data for key CS variables concerning the three domains of personality functioning, namely ego functioning, object relations, and sense of self, was another strength of the present study. The resulting in-depth

information concerning numerous constituent variables within each of the core domains of personality functioning addressed clarifies and enriches the findings from the hypothesis testing. Further, such information can be used by future researchers to formulate potential research hypotheses, particularly if they wish to use non-parametric methods to assess whether their sample of ADHD children resemble the present sample on particular variables or aspects of personality.

A further strength underlying the study was the fact that in the testing of the hypotheses, the comparisons with past findings were all able to be based on Exner's (2003) CS. This avoided the problem of interpreting past research associated with the use of different coding schemes, mentioned in Section 3.2.1.

The strengths of the study, however, did not overcome limitations inherent to the smallness of the present sample and its non-random derivation. The sample gathered might not necessarily be representative of boys with ADHD, with or without ODD. A likely instance of such non-randomness was the low participation rate of families invited by practitioners to take part. More than half of those approached declined to participate. This could suggest that families with an ADHD boy experiencing significant adjustment difficulties were more likely to participate in the study, as they presented themselves as desperate for additional support. The high levels of school learning, behavioural, and social problems, and considerable symptoms of distress experienced by the present ADHD sample, go some way towards supporting this speculation. Conversely, it might have been the case that families of very troubled boys with ADHD, which tend to be dysfunctional, were the least likely to participate,

as they had other more pressing priorities. In these circumstances, generalisation from the sample in any way must be most cautious.

It should also be acknowledged that the size of the present sample also limited the scope of the investigation, particularly the ability to analyse the effects of interactions between variables, because it simply lacked the necessary statistical power for these to be performed validly.

Obviously, the employment of a non-clinical control group would have greatly strengthened the study.

A further factor warrants consideration. The statistically significantly lower intellectual functioning of ADHD boys with ODD (Mean FSIQ = 102), compared to those without ODD (Mean FSIQ = 117), may be a potentially confounding variable. Barkley (2006) argued that this difference, also observed in previous studies, possibly arises from the compromised schooling experiences of ADHD boys with ODD. The latter, in turn, probably relates to the significant personality difficulties of children with ODD. The effect of this difference in intellectual functioning remains unclear, however.

7.3 Interpretation of findings involving comparisons between the entire sample and samples of past studies

For ease of reading, the findings relating to each hypothesis is briefly restated, set in the context of past research and theory, and commented upon as appropriate.

7.3.1 The ego functioning variable

7.3.1.1 Hypothesis One: Concerning coping and social competence

As predicted, the present ADHD sample resembled the Cotugno (1995) ADHD sample in terms of coping difficulties and social incompetence, as indicated by the absence of statistical difference between the samples on mean Coping Deficit Index (CDI) scores.

Given that the mean CDI score for the present sample was 3.47, fractionally below the CS (Exner, 2003) individual clinical cut-off point for clinical significance, it was interpreted as sufficient evidence of generalised coping and social difficulties within the present sample of boys diagnosed with ADHD. This was supported by the high percentage of boys, namely 59 percent, actually fulfilling the criterion of clinical significance on the CDI (i.e. $CDI > 3$).

This finding was consistent with past RIM studies on children with ADHD that investigated the availability of internal coping resources, ideational and expressive. Bartell and Solanto (1995) and Meehan et al. (2008) both found that ADHD children possessed inadequate internal resources, as indicated by the Experience Actual (EA) variable. Numerous Rorschach studies have also found that these children struggle to represent mental and affective states and to engage in reflection (Bartell & Solanto, 1995; Gordon & Oshman, 1981; Jain et al., 2005; Meehan et al., 2008), as indicated

by the Human Movement (M) variable. These findings would seem to have been confirmed by the supporting of Hypothesis One.

Psychoanalytic literature, consisting of developmental research and case study evidence, as reviewed in Section 2.3 of Chapter Two, has argued that the ego functioning of children with ADHD, particularly the integrative and synthetic functions of the ego, tends to be very compromised. As a consequence, these children often have strained interactions with significant others, leading to the internalisation of problematic patterns of object relations (Gilmore, 2000, 2002; Rothstein 1998, 2002; Rothstein et al., 1988; Rothstein & Glenn, 1999). Thus, the support for Hypothesis One fits with these psychoanalytic conceptualisations.

Further, the work of Fonagy et al. (2002) concerning the impaired capacity for mentalization in children with ADHD, arising from their neurological and psychosocial vulnerabilities, rendering them prone to interpersonal conflict and the inability to resolve such situations, also appears consistent with the above finding.

Given that the support for Hypothesis One suggests that these ADHD samples were deficient in their level of ideational and expressive coping resources, as well as social understanding and adeptness, it is entirely consistent with the findings from prospective studies, reviewed by Barkley (2006), demonstrating chronic social problems in these children, along with their susceptibility to the development of anxiety and mood disorders.

7.3.1.2 Hypothesis Two: Concerning reality testing

As predicted, the present sample resembled the Cotugno (1995) and Bartell and Solanto (1995) ADHD samples in terms of degree of inaccurate perception of reality, indicated by the statistical equivalence of the Distorted Form Quality (X-%) mean scores between the samples. Hypothesis Two predicting no differences was supported.

The present sample obtained a mean X-% score of .40, significantly above the selected individual marker for clinical significance (i.e. X-% > .20). In terms of frequency data concerning the respective markers of clinical significance on the X-% variable, 100 percent of the present ADHD sample had a X-% score greater than .15, 94 percent had a X-% score greater than .20, and 82 percent had a X-% score greater than .30. Thus, inaccurate perception or poor reality testing in these boys was not only pervasive, but it was marked in its severity.

A more complete understanding of the mediational capacity of the present sample is achieved by considering the above findings together with frequency data concerning the WDA% variable, listed in Table A located in Appendix VIII, which indicates perceptual accuracy in responses using commonly identified areas of the inkblots. Regarding the latter variable, 76 percent of boys with ADHD satisfied the criterion for clinical significance (i.e. WDA% < .75). In practice, this meant that 76 percent of these boys, even when attending to more obvious aspects of reality, were only capable of accurate perception in less than 75 percent of their RIM responses. Thus, not only were boys in the present ADHD sample prone to perceptual distortion, but they also

struggled to consistently and accurately perceive more obvious aspects of consensual reality.

In contrast to this interpretation, Bartell and Solanto (1995) interpreted the clinically significant mean X-% score obtained by their ADHD sample as the result of impulsivity rather than poor reality testing. This is an inadequate explanation as perceptual distortion results not simply from impulsivity and associated inattention to detail, but also from, as explained by Exner (2003), ideational preoccupations and interference from affects. In other words, impaired reality testing or perceptual inaccuracy in children with ADHD may arise due to the interaction of cognitive impairments with other intrapsychic processes, such as preoccupying thoughts and the intrusion of affects.

The psychoanalytic literature reviewed in Section 2.3 of Chapter Two posited a similar argument concerning the origins of impaired perceptual registration and reality testing in these children, considering it to be an inevitable result of the impact of neuropsychological dysfunction, specifically deficits in executive functioning, on the developing ego apparatus in these children (Fries, 1944; Gilmore, 2002; Rothstein et al., 1988).

Evidence of impaired perceptual accuracy, consistent with the above findings, has also been found in Rorschach studies on children diagnosed with CD (Gacono & Meloy, 1994), ODD (Holaday, 2004), LD (Acklin, 1990; Champion et al., 1984; Harper & Scott, 1990), Asperger's Disorder (Holaday et al., 2001), and inpatient children and adolescents (Smith et al., 2001).

7.3.2 The object relations variable

7.3.2.1 Hypothesis Three: Concerning representations of object relations

As predicted, the present ADHD sample provided a statistically equivalent number of RIM responses, depicting severely maladaptive representations of object relations, indicated by MOA Scale scores of 6 or 7, to the Gacono and Meloy (1994) sample of children diagnosed with CD.

Accordingly, out of the total number of RIM responses (assigned MOA Scale scores) produced by the present ADHD sample, 21 percent were assigned MOA Scale scores of 6 or 7. Responses assigned these MOA Scale scores are regarded as maladaptive, according to Urist (1977), because they depict object relations where one figure attacks and threatens the autonomy of another (i.e. aggression and domination, MOA Scale score of 6), and in some cases, the very existence of another is destroyed by an omnipotent figure or force (i.e. destruction and annihilation, MOA Scale Score of 7). Examples of RIM responses produced by the present ADHD sample that were assigned MOA Scale scores of 6 or 7 can be found in Table 14, Section 6.3.1.2 of the previous chapter.

The above finding, however, was based on the assumption that the two ADHD sub-groups, namely those with and without ODD, comprising the entire sample, would produce similar frequency of RIM responses depicting severely maladaptive representations of object relations (assigned MOA Scale scores of 6 or 7). The findings from post-hoc analysis did not support this assumption, and instead

demonstrated that the ODD sub-group produced a statistically greater number of these responses than did the non-ODD sub-group (e.g. 16 vs. 6 percent). Accordingly, support for Hypothesis Three would appear to have been largely due to the influence of the ODD sub-group of ADHD boys.

It is indeed interesting that while the ODD sub-group produced significantly more RIM responses assigned MOA Scale scores of 6 or 7 than the non-ODD sub-group, both sub-groups produced a similar frequency of RIM responses assigned MOA Scale scores of 1 or 2 (e.g. 12 percent, ODD sub-group, and 15 percent, non-ODD sub-group), depicting very adaptive representations of object relations.

This seemingly dichotomous pattern of representing object relations in RIM responses strongly points to the influence of primitive mental processes, namely primary processes and paranoid-schizoid mental states, within the psychic functioning of the ODD sub-group of ADHD boys¹⁰. Such mental processes tend to be governed by primitive aggression and existential anxiety, threatening the subject's tie to internal objects and the integrity of their ego. According to Klein and Segal, these primitive affects tend to be managed through the defensive mental operations of splitting and projection of mental representations of self and other. In all likelihood, the presence of these mental processes, evidenced, particularly, by the frequency of severely maladaptive representations of object relations in the RIM responses of the sub-group

¹⁰ This finding seems consistent with the pattern of object representations in the RIM responses of children with CD sample in the Gacono and Meloy (1994) study, as revealed in Table 13 in Section 6.3.1.2.

of ADHD boys with ODD, indicates that the ego structure of these children has not been sufficiently integrated. In other words, the representations of self and others tend to be dichotomous (i.e. good and bad representations), rather than integrated and rounded. Which, according to Kernberg (1975, 1976), is usually a significant marker of psychopathology.

While none of the published Rorschach studies on children with ADHD have sought to specifically measure the quality of representations of object relations using the MOA Scale, they have nevertheless found, consistent with the above findings, that these children display limited capacity to represent object relations in a realistic and whole, rather than fantasised and part, manner (Bartell & Solanto, 1995; Cotugno, 1995; Gordon & Oshman, 1981; Meehan et al., 2008).

Further, the above findings are consistent with the psychoanalytic perspective that the processes of identification, internalisation, and the quality of mental representations of object relations are compromised in children with ADHD, arising due to a combination of impaired ego structures, and the internalisation of strained and conflicted interactions with significant others (Fonagy et al., 2002; Gilmore, 2000, 2002; Willock, 1986, 1987; Rothstein et al., 1988; Rothstein & Glenn, 1998).

7.3.3 The sense of self variable

7.3.3.1 Hypothesis Four: Concerning depressive features

As predicted, the present sample of boys resembled the Cotugno (1995) ADHD sample in terms of depressive features, indicated by the statistical equivalence of the mean Depression Index (DEPI) scores between them.

The present sample obtained a mean DEPI score of 4.65, which is above the CS (2003) individual marker for clinical significance (i.e. $DEPI > 4$). Given that 47 percent of these boys obtained DEPI scores above this clinical marker, it can be safely inferred that depressive features were widespread. The nature of depressive symptoms experienced by the present ADHD sample is summarised in Table C of Appendix VIII below, which lists frequency data for constituent variables of the DEPI.

The support for Hypothesis Four is consistent with the high prevalence rates of co-morbid depression in children with ADHD, ranging from 25 to 30 percent for Major Depressive Disorder, reported in the epidemiological literature (Barkley, 2006).

Further, the above finding lends support to the psychoanalytic conceptualisation, derived from development research and case study evidence, of these boys as possessing negative self-concepts, characterised by a sense of defectiveness, and experiencing chronic difficulties maintaining adaptive levels of self-esteem (Fonagy et al., 2002; Willock, 1986, 1987; Rothstein & Glenn, 1998; Rothstein et al., 1988).

Regarding the vulnerabilities experienced by children with ADHD in the domain of sense of self, research studies have found that children with ADHD employ cognitive distortions (i.e. exaggeration of their capabilities) in an attempt to buoy self-esteem when confronted with obvious deficiencies in important domains of functioning. These findings are also consistent with the support for Hypothesis Four.

7.4 Interpretation of findings involving comparisons between ADHD boys diagnosed with and without ODD

7.4.1 The ego functioning and object relations variables

7.4.1.1 Hypothesis Five: concerning quality of thinking

As predicted, the proportion of boys evidencing disturbed thinking, signalled by clinically significant Weighted Sum of six Critical Special Scores (WSum6), was significantly greater in ADHD boys with ODD (i.e. 78 percent) compared to those without this co-morbidity (12 percent).

Consistent with the upholding of Hypothesis Five, the mean WSum6 scores for the subgroups of ADHD boys with and without ODD were, respectively, 18.22 and 9.63. Thus, while both ADHD subgroups evidenced some degree of thinking difficulties, these difficulties were clearly more pronounced in ADHD boys with ODD.

The range of clinically significant WSum6 scores obtained by ADHD boys with ODD was further evidence of their severity of thinking difficulties. These included, ranging

from lowest to highest, scores of: 16.00, 18.00, 23.00, 25.00, 30.00, and 32.00. In accordance with the CS (Exner, 2003) interpretive guidelines, these WSum6 scores fall within the moderate to severe categorisation of thought disturbance.

Notwithstanding evidence that most of the WSum6 scores of ADHD boys with ODD signified the presence of moderate to severe thinking problems, psychosis did not appear to be indicated. Firstly, these boys demonstrated a near absence of Level 2 Special Scores, considered by Exner (2003) to be strongly suggestive of psychotic thinking. In fact, only two responses by ADHD boys with ODD were assigned Level 2 Special Scores. Secondly, only two boys, rather than the majority, obtained a clinically elevated Perceptual-Thinking Index, which is a sensitive and reliable measure of seriously disordered thinking and impaired reality testing. Thus, while psychotic processes may have been present in the sample of ADHD boys with ODD, it seems more likely that the disordered thinking of these boys was influenced by psychological processes associated with the co-morbidity of ODD. Table 18 located in Section 6.3.2.1 of the previous chapter provides examples of RIM responses assigned Critical Special Scores, demonstrating the presence of loose, implausible, and fantastic thinking, suggestive of the intrusion of primary processes into thinking, rather than of psychotic thinking.

From a psychoanalytic perspective, the disturbance of thinking in ADHD boys with ODD might be attributable to the impact of ADHD and its associated neuropsychological dysfunction on ego functioning, as well as the influence of intrapsychic factors underlying ODD. These intrapsychic factors might include a propensity for expressing negative affect, the behavioural discharging of affects,

egocentricity, and inadequate superego structuring, especially concerning the acceptance of limits and boundaries (Fonagy et al., 2002; Gilmore, 2000, 2002; Willock, 1986, 1987; Rothstein & Glenn, 1998; Rothstein et al., 1988; Weil, 1971). RIM studies of children with CD (Gacono & Meloy, 1994) and ODD (Holaday, 2004), both of which detected the presence of thinking problems, particularly in the CD sample, have gone some way towards supporting this psychoanalytic conceptualisation.

Regarding the influence of aggression and negative affect on thinking, Fonagy et al. (2002) suggested that where such affective states cannot be consistently contained by a child's attachment figures, children tend not to develop the capacity for regulation of these affects, and as a consequence, tend not to develop adequate capacity to think about their own and others' internal processes, a capacity termed mentalization. Deficits in the capacity to mentalize, according to Fonagy et al., tend to make children prone to unrealistic thinking about their interactions with others, and their thinking tends to be strongly influenced by their affects. Given the negative emotionality of children with ODD, it is indeed plausible that the processes described by Fonagy et al. contributed to the thinking difficulties of ADHD boys with ODD.

The developmental-psychoanalytic conceptualisations of Fonagy et al. (2002) are indebted to the work of Klein (1946), being the first psychoanalyst to study the deleterious impact of prolonged uncontained aggression, and associated anxiety, on child personality development. According to Klein, a child burdened by uncontainable aggression and anxiety attempts to cope through the splitting of internal object representations into mutually exclusive good and bad parts, and through

projection of unwanted, unpleasant experiences or characteristics onto other people. However, these paranoid-schizoid mental processes, as termed by Klein (1946) and later discussed by Ogden (1989), seriously disrupt thinking and reality testing, as splitting leads to dichotomous rather than balanced thinking, and excessive use of projection can confuse the distinction between internal and external reality.

Willock (1986, 1987), too, has documented the disruption of perceptual-cognitive processes in children with severe behaviour as a result of the influence of primitive internalised object relations. Similarly, research studies on social cognition in children with Disruptive Behaviour Disorders has found that they are prone to distorted thinking, especially where social cues are ambiguous, characterised by a tendency to attribute hostile intentions to others (Dodge, 2006; Dodge and Schwartz 1997).

Thus, on the basis of the aforementioned psychoanalytic conceptualisations and research study findings, it is plausible that primitive mental processes contributed to the thinking difficulties observed in the present study among ADHD boys with ODD, rather than those without this co-morbidity.

Of course, the above findings do not demonstrate a causal connection between Disruptive Behaviour Disorders such as ODD and CD and disturbed thinking in ADHD boys with co-morbid ODD. Nevertheless, they do suggest that the psychological processes underlying a co-morbid diagnosis of ODD in ADHD boys may have had a destabilising influence on their quality of thinking. More research is required to clarify this suggestion.

7.4.1.2 Hypothesis Six: Concerning capacity for empathy

As hypothesised, the proportion of boys evidencing lack of empathy, signalled by the production of at least one Distorted Form Human Movement response (M-), was significantly greater in ADHD boys with ODD (i.e. 78 percent) compared to those without this co-morbidity (i.e. 12 percent). The mean M- scores for these subgroups were, respectively, 1.56 and 0.37.

Although the M- variable has not been investigated by previous published RIM studies on children with ADHD, consistent with the above finding, Bartell and Solanto (1995) reported that ADHD children with ODD demonstrated “deficient ability to respond empathically to others” (p.540). This was indicated by the production of significantly fewer Whole Human (H) responses as compared to ADHD children without this co-morbidity.

Findings concerning M- responses in children with CD (Gacono & Meloy, 1994) are comparable to those of the present study. Gacono and Meloy found that 45 percent of children with CD produced at least one M- response in their RIM protocols. They argued that children with CD tended to lack empathy, were detached from others, and were greatly impaired in their capacity to represent adaptive object relations. While this does not prove that support for Hypothesis Six was due to psychological factors associated with a co-morbid diagnosis of ODD in ADHD boys, it points to a likely relationship between impaired empathy and a diagnosis of either ODD or CD.

Further, it is meaningful that the frequency data for $M^- > 0$ in the present ADHD-ODD sample and the Gacono and Meloy (1994) CD sample significantly differs from that of the CS (Exner, 2003) child normative data. Five to 22 percent of non-patient children aged between 7 and 13 produced at least one M^- response, whereas 78 percent of the present ADHD-ODD sample, and 45 percent of the Gacono and Meloy CD sample produced such responses. Lack of empathy is not a common feature in non-patient children, but appears to be relatively common in children diagnosed with Disruptive Behaviour Disorders (DBD).

Support for Hypothesis Six coheres with the Fonagy et al. (2002) conceptualisation of impaired empathy in children with DBD, which they argue arises from repeated failure in the co-regulation of affect and shared understanding of mental states between the infant/child and primary caregivers. Consequently, affects, especially aggression and anxiety, remain uncontained. This renders such children prone to the behavioural discharge or enactment of their affects, rather than to consistent mental representations and reflection upon them. These children may not learn to adequately or consistently interpret and understand the mental states of others.

Further, due to an impaired capacity for empathy and mentalization, such children are prone to evoke interpersonal conflict, but then find themselves unable to resolve such conflicts flexibly and appropriately (Fonagy et al., 2002). The end result of such cycles of interpersonal conflict is reflected in the findings of prospective studies concerning the chronic social difficulties and social isolation of ADHD children, especially those with co-morbid ODD/CD (Barkley, 2006). It is indeed regrettable

that the recurrent conflict and social isolation of these children may serve to reinforce their underlying psychic structure.

Distorted Form Human Movement (M-) responses produced by children have been found to have implications beyond their direct relevance to capacity for empathy (Exner, 2003). Smith et al. (2001) found, for example, that the presence of a single M- response, produced by inpatient children and adolescents, was sufficient to distinguish between clinically significant and non-significant scores concerning thought disorder on behaviour rating scales. Thus, support for Hypothesis Six, as well as support for Hypothesis Five, confirms the presence of thinking problems in ADHD boys with ADHD. Further, the support for both of these hypotheses points to a bi-directional relationship between the capacity for rational (secondary process) thinking and the capacity for empathy.

Consistent with the posited connection between the capacity for rational thinking and the capacity for empathy, Donahue and Tuber (1993), in a study of psychological resilience of children living under stressful conditions, found that Elaborate Form Human Movement Responses (M+) were positively correlated with three measures of resilient psychological functioning, namely sound reality testing, sustained attention, and adaptive representations of object relations portrayed in Rorschach responses (as assessed by the MOA Scale). They interpreted these findings as evidence of a strong association between the capacity for deliberate and rational thinking and the capacity for adaptive representations of object relations.

It is therefore plausible that the sound capacity for mentalization mediates the adaptive capacity of both rational thinking and empathy in children. This is because the sound capacity for mentalization requires accurate perception and thinking regarding the internal states of one self, as well as those of others. It also requires the capacity to interact and solve social problems so that the feelings of others are taken into account (Fonagy et al., 2002; Twemlow, in press). Thus, where the capacity for mentalization is reduced, so is the capacity to realistically think about and have empathy for other people.

7.5 Considerations of an updated emerging Rorschach Inkblot Method profile of the personality functioning of children with ADHD

By way of preparing for discussion of the implications of the research, an updated version of the emerging profile of the personality functioning of children with ADHD is first presented. This profile constitutes an integration of important findings from the present and published RIM studies on these children, and should therefore assist in illuminating the theoretical, clinical, and research implications flowing from the findings of the present study. It does not, however, constitute any basis in clinical practice for determining whether a boy has ADHD with or without co-morbid ODD.

The updated profile uses the same organisational layout as that of the original emerging personality profile presented in Section 3.4 of Chapter Three. In other words, it is organised according to Pine's (1994) psychoanalytic conceptualisation of the three core domains of personality functioning, namely ego functioning, object relations, and sense of self.

The integrations of findings from the present and past RIM studies pertaining to all ADHD samples, irrespective of the presence of co-morbid diagnoses, is initially presented, followed by presentation of the characteristics specific to ADHD children with co-morbid ODD.

7.5.1 Emerging personality profile concerning all children with ADHD

7.5.1.1 Ego functioning domain

Table 22, on page 168 below, integrates important findings, concerning the ego functioning of children with ADHD, from the present and previously published Rorschach studies of these children. The relevant CS variables, authors of the study, and year of publication, are also documented in the table.

Inspection of Table 22 reveals evidence of pervasive impairment of ego functioning in children with ADHD, which accords with the psychoanalytic conceptualisation of personality functioning of these children (Fonagy et al., 2002; Gilmore, 2000, 2002; Rothstein 1998, 2002; Rothstein et al., 1988; Rothstein & Glenn, 1999), as discussed in Section 2.3 of Chapter Two. Such ego impairment is indicated by inadequate capacity for delay and symbolisation of internal states, pervasive inaccurate perception of reality, difficulties mentally representing affects, and the possible narrowing of attention to cope with feelings. Similarly, the above findings accord with the global adjustment difficulties of these children, whereby most aspects of their functioning is impaired, as demonstrated by numerous prospective studies (Barkley, 2006).

Table 22

Summary of an Updated Personality Profile of Children with ADHD Concerning the Domain of Ego Functioning

Aspects of Ego Functioning	Corresponding Comprehensive System Variables	Supporting Studies
Capacity for Coping		
Global coping difficulties: inadequate (ideational and expressive) internal coping resources, and social incompetence.	CDI EA	Cotugno (1995); Present study Bartell & Solanto (1995); Meehan et al. (2008)
Capacity for Delay and Symbolisation		
Impaired capacity for delay and symbolisation and reflection.	M	Gordon & Oshman (1981); Bartell & Solanto; Meehan et al.; Jain et al. (2005)
Quality of Reality-Testing		
Pervasive perceptual distortion and difficulties recognising conventional aspects of reality.	X-% X+%, F+% (Klopfler) P	Bartell & Solanto; Cotugno Present study Cotugno; Jain et al. Cotugno; Jain et al.
Capacity to Regulate and Mentally Represent Affects		
Difficulties representing and aversion of strong affects.	CF & C Afr	Bartell & Solanto; Cotugno Cotugno
Use of denial or constriction of stimulus field to cope with affective experience. Meehan et al. proposed that children with ADHD might adopt a bi-modal means (i.e. constriction of affect or acknowledgement of affect, where the latter can lead to disorganisation) of coping with affects.	Lambda	Cotugno

This shows that the present study has extended this emerging profile by drawing attention to the impaired ego functioning of these children, particularly their inadequate internal coping resources and social incompetence and poor reality-testing.

7.5.1.2 Object relations domain

Table 23, on page 170 below, integrates important findings concerning the object relations of children with ADHD from the present and previously published Rorschach studies of these children. The relevant CS variables, authors of the study, and year of publication, are also documented in the table.

It is evident from Table 23 below that children with ADHD, particularly those with co-morbid ODD, tend to depict object relations in a dichotomous manner in RIM responses. Despite evidence of their capacity for adaptive representations of object relations, they have a propensity to produce RIM responses depicting severely maladaptive representations of object relations. This pattern might be a product of ego-splitting, whereby the associative network of signifiers concerning objects become divided into good and bad representations, so as to protect good object representations from angry and anxious feelings associated with bad object representations. Regarding interpersonal relationships, Table 23 highlights the social incompetence of children with ADHD, a finding confirmed by numerous prospective studies, as well as those specifically examining social functioning (Barkley, 2006; Braaten & Rosen, 2000; Hinsham & Melnick, 1995; Kelfner, Moffitt, & Stouthamer-Loeber, 1995).

Table 23

*Summary of an Updated Emerging Personality Profile of Children with ADHD
Concerning the Domain of Object Relations*

Aspects of Object Relations	Corresponding Comprehensive System Variables	Supporting Studies
Social Competency		
Social ineptness characterised by poor understanding of people and inappropriate social interaction	CDI	Cotugno (1995); Present study
Quality of Object Representations		
Propensity for maladaptive representation of object relations, including the splitting of the associative network concerning objects into dichotomous good and bad categories.	MOA scores of 6 and 7, and 1 and 2	Present study
Quality of Interpersonal Expectations		
Tendency to not expect interactions with others to be reciprocal and rewarding (projection of an underlying position of basic mistrust).	COP	Cotugno
Tendency to not represent aggression or domination in human or human-like interactions in Rorschach responses. This may reflect the disowning, possibly via splitting or dissociative means, of such intentions by ADHD children.	AG	Bartell & Solanto (1995); Cotugno

This shows that the present study has extended this emerging profile by highlighting the problematic internal object relations of these children.

7.5.1.3 Sense of self domain

Table 24, below, integrates important findings concerning the sense of self of children with ADHD from the present and previously published Rorschach studies of these children. Again, the relevant CS variables, authors of the study, and year of publication, are also documented in the table below.

Table 24

Summary of an Updated Emerging Personality Profile of Children with ADHD Concerning the Domain of Sense of Self

Aspects of Sense of Self	Corresponding Comprehensive System Variables	Supporting Studies
Quality of Identifications		
Propensity to identify with part, rather than whole, or fantasised objects. This trend possibly compromises identity formation.	Pure H, H% (Klopfer)	Bartell & Solanto (1995); Cotugno (1995); Gordon & Oshman (1981)
Quality of Subjective Experience		
Proneness to experiencing of depressive features, namely internalisation of dysphoric affect, self-critical ideation, and poor self-esteem.	DEPI Egocentricity Index	Cotugno; Present study Cotugno

Significant difficulties in the domain of sense of self are reflected in the findings summarised in Table 24 on page 171 above. Overall, children with ADHD appear prone to experiencing depressive features, that is, they tend to view themselves critically, struggle to maintain adaptive levels of self-esteem, and internalise negative affects. In addition, the identity of these children tends to be based around identifications with part and fantasised objects, rather than real people.

This shows that the present study has extended this emerging profile by illustrating the narcissistic vulnerability of these children, manifested in a variety of depressive features.

7.5.2 Emerging personality profile concerning ADHD children with ODD: Ego functioning and object relations domains

Table 25, on page 173 below, integrates important findings concerning ego functioning and object relations from the present and previously published Rorschach studies on ADHD children with ODD, children with ODD, and children with CD. The relevant CS variables, authors of the study, and year of publication, are also documented.

The findings described in Table 25 suggest the presence of greater disturbance of personality functioning, especially in the domains of ego functioning and object relations, in ADHD children with ODD, as compared to those without this co-morbidity. This appears attributable to the thinking problems and lack of empathy of ADHD children diagnosed with co-morbid ODD.

Table 25

*Summary of an Updated Emerging Personality Profile of ADHD Children With ODD
Concerning the Domains of Ego Functioning and Object Relations*

Aspects of Personality Functioning	Corresponding Comprehensive System Variables	Supporting Studies
Ego Functioning		
Quality of Thinking		
Disturbed thinking: propensity for thought processes to be arbitrary, illogical, and fantastic. This would appear to be the product of executive dysfunction, as well as the intrusion of primary processes or paranoid-schizoid mental states.	WSum6 Level 2 Spec Sc, M- SCZI	Present study; Holaday (2004) sample of children with ODD Gacono and Meloy (1994) sample of children with CD Gacono & Meloy; Holaday
Object Relations		
Capacity for Empathy		
Lack of empathy: others are possibly viewed as objects to be dominated and necessary for the fulfilment of narcissistic gratification. In other words, ADHD boys with ODD probably relate to others from a position of basic mistrust.	M- H	Present study; Gacono and Meloy (1994) sample of children with CD Bartell and Solanto (1995)

This shows that the present study has extended this emerging profile by highlighting the thinking difficulties and lack of empathy of these ADHD children with ODD.

7.6 Implications of this research

Implications of this research for theory, clinical practice and research are derived from the updated emerging RIM profile of the personality functioning of children with ADHD, which was described in Section 7.5 above.

7.6.1 Implications for future theorising

The updated emerging profile of personality functioning of children with ADHD potentially has important and practical implications for the theoretical conceptualisation of the significant and pervasive psychological difficulties experienced by these children. Firstly, the updated profile re-conceptualises the varied difficulties of these children, that collectively impair their functional capacity, in terms of indicators of troubled personality functioning arising from a combination of interrelated neurobiological, developmental, and psychosocial factors. This may encourage researchers and clinicians to adopt a more comprehensive understanding of the complex nature of the psychological difficulties experienced by these children. Furthermore, it may lead to greater recognition of the need for psychological treatment in conjunction with pharmacological therapy, which is discussed in the next section.

Secondly, the updated emerging personality profile of children with ADHD represents the basis for a comprehensive psychoanalytic theoretical framework for conceptualising the personality difficulties of these children. As it currently stands, the core domains of personality functioning, according to Pine's (1994) conceptual

framework, appear to be disturbed in children with ADHD. Impairments are evident in the ego apparatus of these children in that they struggle to reflect, contain and mentally represents affects, and to tolerate stress. The object relations of these children also seem problematic in that representations of object relations tend to be dichotomous or split, depicting either adaptive or extremely maladaptive object relations. Finally, concerning sense of self, compromised identity formation, defective self-representations, and proneness to depression is evidenced.

Thus far the psychoanalytic conceptualisations of children with ADHD have been primarily grounded in ego-psychology, object relations or attachment theories. While these theories have proved very helpful in making sense of a great deal of the troubled personality functioning of these children, they do not necessarily clarify the nature of the subjective difficulties (e.g. compromised identity formation, sense of defectiveness, depressive affects) encountered by these children, as described above in Section 7.5.1.3 concerning the domain, sense of self.

From a theoretical perspective, the subjective difficulties encountered by these boys, indicated by the several RIM studies to date, allude to the disruption of mirroring processes (i.e. the quality and consistency of responsiveness and understanding displayed by caregivers, and later on by peers, towards their child) in a pervasive way. The importance of mirroring in the formation of a coherent and buoyant sense of self has been conveyed in numerous psychoanalytic concepts, notably the mirror stage (Lacan, 1949), mirroring (Winnicott, 1967), parent-affect mirroring (Fonagy et al., 2002), affective attunement (Stern, 1985), and idealising and mirroring self-objects (Kohut, 1971, 1977).

It is hoped that the aforementioned psychoanalytic conceptualisation, derived from the updated emerging Rorschach personality profile of these children, will lead to further theorising, closing conceptual gaps regarding the personality development and functioning of children with ADHD. The ultimate goal of theoretical advancement is the establishment of the most effective methods of psychological intervention for these children, taken up in the next section.

7.6.2 Implications for clinical practice

Given that the findings from the present and past Rorschach studies point to significant ego-impairment in children with ADHD, characterised by difficulty representing intense affects, and mental states, a traditional form of psychoanalytic psychotherapy is unlikely to be appropriate. Due to an emphasis on the interpretation of defences and lifting repression, such traditional forms of psychotherapy run the risk of evoking unmediated affect, especially strong anxiety that is liable to be behaviourally discharged. This pattern would not be therapeutic, as it would only replicate the ways in which these children typically relate to the world, namely with impulsivity and hyperactivity, without reflective thought.

Thus, in order to foster in children with ADHD the capacity for secondary processing of affects and mental states, otherwise referred to as mentalization, the bedrock of self-regulation, a modified form of psychodynamic psychotherapy appears indicated. Such an approach, according to Verhaeghe (2005), would consist of a “largely supportive and name-giving relationship with a security-providing Other” (p.350). In other words, through a supportive rather than an interpretative therapeutic relationship

between the therapist and the child, the therapist seeks to help the child to name experiences as they arise in the here and now of the therapy, or as conveyed in the child's narrative of recent events, and to establish co-regulation of affect (Harris et al., 2006). Hurry (1998) has referred to such therapy as developmental therapy, where the emphasis is on enhancing reflective functioning in children. Klein (1930) documented a similar approach in her work with a child with attachment difficulties who was selectively mute, and who resisted symbolising her internal world.

The ultimate goal of such modified psychodynamic psychotherapy is, therefore, to help children with ADHD to construct narratives concerning interpersonal events, including their corresponding intrapsychic events, which are temporally sequenced and logically reasoned.

With respect to ADHD children with ODD, whose disturbed personality functioning appears also to involve thinking problems and inadequate empathy, an additional form of psychological intervention is possibly indicated, namely group psychotherapy. The clinical utility of group psychotherapy stems from its capacity to introduce behaviourally disturbed children lacking empathy into a group whereby mentalization is encouraged and fostered, at both collective and individual levels. Furthermore, participation in a group capable of reflection and governed by rules confronts behaviourally disturbed children with the habitual ways in which they process and handle affect, conceive of relationships, and relate to others (Twemlow, Fonagy, & Sacco, 2005a, 2005b).

These interventions are obviously recommended in conjunction with parent or family therapy, and pharmacological intervention, both of which have been shown to be highly beneficial to helping children with ADHD (Barkley, 2006; Pliszka, 2009).

7.6.3 Implications for future research

Although the updated emerging personality profile of children with ADHD clearly remains a work in progress, due to the scarcity of published RIM studies and their associated methodological weaknesses, it nevertheless has the potential to serve as a useful guide for future researchers. The merit of the said profile derives from its synthesis of important findings from disparate investigations, often conducted without adequate rationale and theoretical grounding, into a cohesive framework concerning the psychoanalytic conceptualisation of personality structure and functioning. Irrespective of whether future researchers adhere to a psychoanalytic conceptualisation of personality, the profile provides a synthesis of important findings of CS (Exner, 2003) RIM variables, which may encourage researchers to build upon and clarify the research that has gone before them. It is anticipated that this could lead to improved quality of research and the establishment of a sound body of knowledge in which to ground understanding of the complex personality functioning of children with ADHD.

Thus far, it has only been the psychoanalytic literature that has discussed the relationship between compromised personality development and functioning and neuropsychological dysfunction in children with ADHD. Future research could explore the correlation between findings on the RIM, concerning important aspects of

personality functioning, and neuropsychological tests measuring executive functioning.

A further implication of the present research is that ADHD boys with ODD appear to have more troubled personality functioning than those boys without this co-morbidity, indicated by arbitrary and illogical thinking and a lack of empathy. This lends support to Barkley's (2006) view that this ADHD subgroup is a distinct clinical group, requiring different conceptualisation and treatment. Future RIM research on ADHD boys with ODD is needed to illuminate disturbed aspects of personality functioning identified in the present study, as well as to clarify the types of psychological intervention likely to help this ADHD subgroup of children.

7.7 Conclusions

Despite the merits of the present study, its findings are limited in the extent to which they can be generalised, largely as a result of the small sample size. Nevertheless, with the integration of the findings from the present and past Rorschach studies on children with ADHD, presented as an emerging profile of personality functioning of these children, the present study does provide some evidence that can help guide future RIM research on this clinical population.

Replicating the findings of past studies, the present sample, as predicted, was found to resemble the Cotugno (1995) sample of children with ADHD in terms of degree of coping difficulties and social incompetence, and depressive features. The present sample, as predicted, was also found to resemble both the Bartell and Solanto (1995)

and Cotugno ADHD samples in terms of perceptual inaccuracy. In a fresh line of inquiry, the present sample, as predicted, was found to resemble the Gacono and Meloy (1994) sample of children with Conduct Disorder, the only available suitable comparison group, in terms of their propensity to depict maladaptive representations of object relations in RIM responses. This was interpreted to be reflective of a broader pattern of splitting of internal object representations.

Due to the high rate of co-morbid Disruptive Behaviour Disorders in children with ADHD, which have been regarded as a distinct clinical group in their own right, the present study compared the personality functioning of subgroups of ADHD children with and without ODD. Children with ODD, compared to those without this co-morbidity, were found, as predicted, to display thinking problems and lacked empathy. Although these findings are promising, future research is required to clarify the extent to which these personality processes are associated with the co-morbid diagnosis of ODD in children with ADHD.

Overall, the present study confirms that children with ADHD, due to their complexity, require careful and thorough assessment of their psychological difficulties, including investigation of their personality functioning. The RIM, on the basis of the present and published studies, has the capacity to play both an idiographic and nomothetic role in the personality assessment of these children. Through attempting to comprehensively assess and understand the personality functioning of children with ADHD, conceptualised from developmental and psychoanalytic perspectives, the neurobiological vulnerability of these children can be regarded as linked to, rather than separate from, their compromised personality functioning. Accordingly,

psychopharmacological treatment alone is unlikely to help these boys to become better adjusted.

REFERENCES

- Acklin, M.W. (1990). Personality dimensions in two types of learning disabled children: A Rorschach study. *Journal of Personality Assessment, 54*, 67-77.
- Albright, S.C., Winston, W.L., & Zappe, C. (2004). *Data analysis for managers* (2nd ed.). Belmont, CA: Thomson.
- American Academy of Child and Adolescent Psychiatry. (2007). Practice parameters for the assessment and treatment of children and adolescents with attention-deficit/hyperactivity disorder. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 894-921.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders: DSM-IV* (4th ed.). Washington, DC: American Psychiatric Press.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR* (4th ed. Text Revision). Washington, DC: American Psychiatric Press.
- Angold, A., Costello, E.J., & Erkanli, A. (1999). Comorbidity. *Journal of Child Psychology, 40*, 57-87.
- Barkley, R.A. (1997a). Behavioural inhibition, sustained attention, and executive functions: Constructing a unifying theory of ADHD. *Psychological Bulletin, 121*, 65-94.
- Barkley, R.A. (1997b). *ADHD and nature of self-control*. New York: Guilford Press.
- Barkley, R.A. (1998). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (2nd. ed.). New York: Guilford Press.

- Barkley, R. A. (2006). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment (3rd. ed.)*. New York: Guilford Press.
- Barkley, R. A., & Cunningham, C.E. (1979). The effects of methylphenidate on the mother-child interactions of hyperactive children. *Archives of General Psychiatry*, *36*, 201-208.
- Barkley, R.A., Fischer, M., Edelbrock, C.S., & Smallish, L. (1990). The adolescent outcome of hyperactive children diagnosed by research criteria I: An 8-year prospective follow-up study. *Journal of the American Academy of Child and Adolescent Psychiatry*, *29*, 546-557.
- Barkley, R.A., Fischer, M., Smallish, L., & Fletcher, K. (2002). The persistence of attention-deficit/hyperactivity disorder into young adulthood as a function of reporting source and definition of disorder. *Journal of Abnormal Psychology*, *111*, 279-289.
- Baron, I.S. (2007). Attention-deficit/hyperactivity disorder: New challenges for definition, diagnosis, and treatment. *Neuropsychology Review*, *17*, 1-3.
- Bartell, S.S., & Solanto, M.V. (1995). Usefulness of the Rorschach Inkblot Test in assessment of attention deficit hyperactivity disorder. *Perceptual and Motor Skills*, *80*, 531 - 541.
- Bauermister, J.J., Alegria, M., Bird, H.R., Rubio-Stipec, M., & Canino, G. (1992). Are attentional-hyperactivity deficits unidirectional or multidimensional syndromes? Empirical findings from a community survey. *Journal of the American Academy of Child & Adolescent Psychiatry*, *31*, 423-431.
- Beck, S.J. (1961). *Rorschach's test: Vol I. Basic processes*. New York: Grune & Stratton.

- Beck, S.J., & Molish, H.B. (1967). *Rorschach's test: Vol II. A variety of personality pictures*. New York: Grune & Stratton.
- Birelson, P., Sawyer, M., & Storm, V. (2000). The mental health of young people in Australia: Child and adolescent component of the national survey – A commentary. *Australasian Psychiatry*, 8, 258-262.
- Blatt, S.J., Tuber, S.B., & Auerbach, J.S. (1990). Representations of interpersonal interactions on the Rorschach and level of psychopathology. *Journal of Personality Assessment*, 54, 711-728.
- Bombel, G., Mihura, J.L., & Meyer, G. (2009). An examination of the construct validity of the Rorschach Mutuality of Autonomy (MOA) Scale. *Journal of Personality Assessment*, 91, 227 – 237.
- Bowlby, J. (1958). The nature of the child's tie to his mother. *International Journal of Psycho-analysis*, 39, 350-373.
- Bowlby, J. (1969). *Attachment and loss, Vol. 1: Attachment*. London: Hogarth Press and Institute of Psycho-analysis.
- Bowlby, J. (1973). *Attachment and loss, Vol. 2: Separation: Anxiety and Anger*. London: Hogarth Press and Institute of Psycho-analysis.
- Bowlby, J. (1980). *Attachment and loss, Vol. 3: Loss, Sadness and Depression*. London: Hogarth Press and Institute of Psycho-analysis.

- Braaten, E.B., & Rosen, L.A. (2000). Self-regulation of affect in attention-deficit hyperactivity disorder (ADHD) and non-ADHD boys: Differences in empathic responding. *Journal of Consulting and Clinical Psychology, 68*, 315-321.
- Breton, J., Bergeron, L., Valla, J., Berthiame, C., Gaudet, N., & Lambert, J., et al. (1999). Quebec child mental health survey: Prevalence of DSM-III-R mental health disorders. *Journal of Child Psychology and Psychiatry & Allied Disciplines, 40*, 375-384.
- Bronowski, J. (1977). Human and animal languages. In *A sense of the future* (pp. 104-131). Cambridge, MA: MIT Press.
- Burke, J.D., Loeber, R., Lahey, B.B., & Rathouz, P.J. (2005). Developmental transitions among affective and behavioural disorders in adolescent boys. *Journal of Child Psychology and Psychiatry, 46*, 1200-1210.
- Burns, G.L., Boe, B., Walsh, J.A., Sommers-Flanagan, R., & Teergarden, L.A. (2001). A confirmatory factor analysis on the DSM-IV ADHD and ODD symptoms: What is the best model for organization of these symptoms? *Journal of Abnormal Child Psychology, 29*, (4), 339-349.
- Campbell, S.B. (1987). Parent-referred problem three-year olds: Developmental changes in symptoms. *Journal of Child Psychology and Psychiatry, 28*, 835-846.
- Caplan, R., Guthrie, D., Tang, B., Neuchterlein, K.H., & Asarnow, R.F. (2001). Thought disorder in attention-deficit hyperactivity disorder. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*, 965-972.
- Castellanos, F.X. (1996). Quantitative brain magnetic resonance imaging in attention deficit hyperactivity disorder. *General Psychiatry, 55*, 605-616.

- Cepeda, N.J., Cepeda, M.L., & Kramer, A.F. (2000). Task switching and attention-deficit hyperactivity disorder. *Journal of Abnormal Child Psychology*, 28, 213-226.
- Champion, L., Doughtie, E.B., Johnson, P.J., & McCreary, J. (1984). Preliminary investigations into the Rorschach response patterns of children with documented learning disabilities. *Journal of Clinical Psychology*, 40, 329-333.
- Coates, S., & Tuber, S. (1987). Object representations in the Rorschachs of extremely feminine boys. In P. Lerner & H. Lerner (Eds.), *Primitive mental states on the Rorschach* (pp. 647-654). New York: International Universities Press.
- Cole, P.M., Zahn-Waxler, C., & Smith, D. (1994). Expressive control during a disappointment: Variations related to preschoolers' behaviour problems. *Developmental Psychology*, 30, 835-846.
- Costello, E.J., Egger, H.L., & Angold, A. (2005). The developmental epidemiology of anxiety disorders: Phenomenology, prevalence, and comorbidity. *Child and Adolescent Psychiatric Clinics of North America*, 14, 631-648.
- Cotugno, A.J. (1995). Personality attributes of attention deficit hyperactivity disorder (ADHD) using the Rorschach Inkblot Test. *Journal of Clinical Psychology*, 51, 554 - 561.
- Cukrowicz, K.C., Taylor, J., Schatschneider, C., & Iacono, W.G. (2006). Personality differences in children and adolescents with attention-deficit/hyperactivity disorder, conduct disorder, and controls. *Journal of Child Psychology and Psychiatry*, 47, 151-159.

- Diener, M.B., & Milich, R. (1997). Effects of positive feedback on the social interactions of boys with attention deficit hyperactivity disorder: A test of the self-protective hypothesis. *Journal of Child Clinical Psychology, 26*, 256-265.
- Dies, R.R. (1995). Conceptual issues in Rorschach research. In J.E., Jr. Exner, (Ed.) (1995), *Issues and methods in Rorschach research* (pp. 25-51). Mahwah, NJ: Lawrence Erlbaum Associates.
- Dodge, K.A. (2006). Translational science in action: Hostile attributional style and the development of aggressive behaviour problems. *Developmental Psychopathology, 18*, 791-814.
- Dodge, K.A., & Schwartz, D. (1997). Social information-processing mechanisms in aggressive behaviour. In D.M. Stoff, J. Breiling, & J.D. Maser (Eds.), *Handbook of antisocial behaviour* (pp. 171-180). New York: Wiley.
- Donahue, P.J., & Tuber, S.B. (1993). Rorschach adaptive fantasy images and coping under severe environmental stress. *Journal of Personality Assessment, 60*, 421-434.
- Douglas, V.I. (1983). Attention and cognitive problems. In M. Rutter (Ed.), *Developmental Neuropsychiatry* (pp. 280-329). New York: Guilford Press.
- Douglas, V.I., & Parry, P.A. (1994). Effects of reward and non-reward on attention and frustration in attention deficit disorder. *Journal of Abnormal Child Psychology, 22*, 281-302.
- Doyle, A., Ostrander, R., Skare, S., Crosby, R.D., & August, G.J. (1997). Convergent and criterion related validity of the Behaviour Assessment System for Children – Parent Rating Scale. *Journal of Clinical Child Psychology, 26*, 276-284.

- Dryer, R., Kiernan, M.J., & Tyson, G.A. (2006). Implicit theories of the characteristics and causes of attention-deficit hyperactivity disorder held by parents and professionals in the psychological, educational, medical and allied health fields. *Australian Journal of Psychology, 58*, 79-92.
- DuPaul, G.J., Power, T.J., Anastopoulos, A.D., & Reid, R. (1998). *ADHD Rating Scale-IV: Checklists, norms, and clinical interpretation*. New York: The Guilford Press.
- DuPaul, G.J., Power, T.J., Anastopoulos, A.D., & Reid, R., McGoey, K., & Ikeda, M. (1997). Teacher ratings of attention-deficit/hyperactivity disorder symptoms. *Journal of Psychoeducational Assessment, 9*, 436-444.
- DuPaul, G.J., Power, T.J., McGoey, K., Ikeda, M., & Anastopoulos, A.D. (1998). Reliability and validity of parent and teacher ratings of attention-deficit/hyperactivity disorder symptoms. *Journal of Psychoeducational Assessment, 16*, 55-68.
- Erdberg, P. (2007). Using the Rorschach with children. In S.R. Smith & L. Handler (Eds.), *The clinical assessment of children and adolescents: A practitioner's handbook* (pp. 139-147). Mahwah, NJ: Lawrence Erlbaum.
- Exner, J.E., Jr. (1974). *The Rorschach: A comprehensive system* (Vol. 1). New York: Wiley.
- Exner, J.E., Jr. (1986). *The Rorschach: A comprehensive system: Vol. 1. Basic foundations* (2nd ed.). New York: Wiley.
- Exner, J.E., Jr. (1991). *The Rorschach: A comprehensive system: Vol. 2. Interpretation* (2nd ed.). New York: Wiley.
- Exner, J.E., Jr. (1993). *The Rorschach: A comprehensive system: Vol. 1. Basic foundations* (3rd ed.). New York: Wiley.

- Exner, J.E., Jr. (2003). *The Rorschach: A comprehensive system: Vol. 1. Basic foundations and principles of interpretation*. (4th ed.). New York: Wiley.
- Exner, J.E., Jr. (2004). *The Rorschach workbook for the Comprehensive System* (5th Ed.) Asheville, NC: Rorschach Workshops.
- Exner, J.E., Jr., Kinder, B.N., & Curtiss, G. (1995). Reviewing basic design features. In J.E., Jr. Exner, (Ed.) (1995), *Issues and methods in Rorschach research* (pp. 145-158). Mahwah, NJ: Lawrence Erlbaum Associates.
- Exner, J.E., Jr., & Weiner, I. B. (1995). *The Rorschach: A comprehensive system: Vol. 3. Assessment of children and adolescents* (2nd ed.). New York: Wiley.
- Farone, S.V. (2005). The scientific foundation for understanding attention-deficit/hyperactivity disorder as a valid psychiatric disorder. *European Child and Adolescent Psychiatry, 14*, 1-10.
- Fonagy, P., Gergely, G., Jurist, E., & Target, M. (2002). *Affect regulation, mentalization, and the development of the self*. New York: Other Press.
- Foangy, P., Moran, G., & Target, M. (1993). Aggression and the psychological self. *International Journal of Psycho-analysis, 74*, 471-485.
- Fonagy, P., & Target, M. (1998). An interpersonal view of the infant. In A. Hurry (Ed.), *Psychoanalysis and developmental therapy* (pp. 32-73). Madison, CT: International Universities Press.
- Froehlich, T.E., Lanphear, B.P., Epstein, J.N., Barbaresi, W.J., Katusic, S.K., & Kahn, R.S. (2007). Prevalence, recognition, and treatment of attention-deficit/hyperactivity

- disorder in a national sample of US children. *Archives of Pediatrics & Adolescent Medicine*, 161, 857-864.
- Freud, S. (1978). A project for a scientific psychology. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud*, (Vol. 1, pp. 281-397). London: Hogarth Press. (Original published 1895).
- Freud, S. (1978). The interpretation of dreams. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud*, (Vol. 4-5). London: Hogarth Press. (Original published 1900).
- Freud, S. (1978). Formulations on two principles of mental functioning. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud*, (Vol. 12, pp. 215-226). London: Hogarth Press. (Original published 1911).
- Freud, S. (1978). Inhibitions, symptoms and anxiety. In J. Strachey (Ed. & Trans.), *The standard edition of the complete psychological works of Sigmund Freud*, (Vol. 20, pp. 75-175). London: Hogarth Press. (Original published 1926).
- Gacono, C.B., & Meloy, J.R. (1994). *The Rorschach assessment of aggressive and psychopathic personalities*. Hillsdale, NJ: Lawrence Erlbaum.
- Ganellen, R.J. (2001). Weighing evidence for the Rorschach's validity: A response to Wood et al. (1999). *Journal of Personality Assessment*, 77, 1-15.
- Garb, H.N. (1999). Call for a moratorium on the use of the Rorschach Inkblot Test in clinical and forensic settings. *Psychological Assessment*, 6, 313-315.
- Gergely, G., & Watson, J. (1996). The social biofeedback model of parent-affect mirroring. *International Journal of Psycho-analysis*, 77, 1181-1212.

- Gergely, G., & Watson, J. (1999). Early social-emotional development: Contingency perception and the social biofeedback model. In P. Rochat (Ed.), *Early social cognition: Understanding others in the first months of life* (pp. 101-137). Hillsdale, NJ: Lawrence Erlbaum.
- Gilmore, K. (2000). A psychoanalytic perspective on attention-deficit/hyperactivity disorder. *Journal of the American Psychoanalytic Association, 48*, 1259-1293.
- Gilmore, K. (2002). Diagnosis, dynamics, and development: Considerations in the psychoanalytic assessment of children with ADHD. *Psychoanalytic Inquiry, 22*, 372-390.
- Goddard, R., & Tuber, S. (1989). Boyhood separation anxiety disorder: thought disorder and object relations psychopathology as manifested in Rorschach imagery. *Journal of Personality Assessment, 53*, 239-252.
- Gordon, M. & Oshman, H. (1981). Rorschach indices of children classified as hyperactive. *Perceptual and Motor Skills, 52*, 703-707.
- Gray, C.D., & Kinnear, P.R. (1998). *SPSS for MacIntosh made simple*. Hove, UK: Psychology Press.
- Greenspan, S.I. (1992). *Infancy and early childhood: The practice of clinical assessment and intervention with emotional and developmental challenges*. Madison, CT: International Universities Press.
- Groth-Marnat, G. (1997). *Handbook of psychological assessment* (3rd ed.). New York: John Wiley & Sons.

- Halasz, G. (2002). A symposium on Attention Deficit Hyperactivity Disorder (ADHD). *Australian and New Zealand Journal of Psychiatry*, 36, 472-487.
- Halasz, G. (2004). Hidden truths: the politics of brain, mind and soul in Australian psychiatry. *Australasian Psychiatry*, 12, 3-10.
- Halasz, G., & Vance, L.A. (2002). Attention deficit hyperactivity disorder in children: Moving forward with divergent perspectives. *Medical Journal of Australia*, 10, 554-557.
- Harada, Y., Yamazaki, T., & Saitoh, K. (2002). Psychosocial problems in attention-deficit hyperactivity disorder with oppositional defiant disorder. *Psychiatry and Clinical Neurosciences*, 56, 365-369.
- Harper, G., & Scott, R. (1990). Learning disabilities: An appraisal of Rorschach response patterns. *Psychological Reports*, 67, 691-696.
- Harris, B.H., Reynoso, J.S., Meehan, K.B., Ueng-McHale, J.Y., & Tuber, S. (2006). A child with ADHD: Convergences of Rorschach data and case material. *Journal of Infant, Child, and Adolescent Psychotherapy*, 5, 499 – 517.
- Hartmann, H. (1958). *Ego psychology and the problem of adaptation* (D. Rapaport, Trans.) New York: International Universities Press.
- Hartmann, H. (1964). *Essays on ego psychology: Selected problems in psychoanalytic theory*. New York: International Universities Press.
- Healy, J.M., Newcorn, J.H., Halperin, J.M., Wolf, L.E., Pascualvaca, D.M., Schmeidler, J., et al. (1993). The factor structure of ADHD items in DSM-III-R – internal consistency and external validation. *Journal of Abnormal Child Psychology*, 21, 441-453.

- Hiller, J.B., Rosenthal, R., Bornstein, R.F., Berry, D.T.R., & Brunnel-Neuleib. (1999). A comparative meta-analysis of Rorschach and MMPI validity. *Psychological Assessment, 11*, 278-296.
- Hinshaw, S.O., & Melnick, S.M. (1995). Peer relationships in boys with attention-deficit hyperactivity disorder with and without comorbid aggression. *Development and Psychopathology, 7*, 627-647.
- Holaday, M. (2000). Rorschach protocols from children and adolescents diagnosed with posttraumatic stress disorder. *Journal of Personality Assessment, 75*, 143-157.
- Holaday, M., Moah, J.M., & Shipley, M.A. (2001). Rorschach protocols from children and adolescents with Asperger's disorder. *Journal of Personality Assessment, 76*, 482-495.
- Holaday, M., & Sparks, C.L. (2001). Revised guidelines for Urist's Mutuality of Autonomy Scale (MOA). *Assessment, 8*, 145-154.
- Hoza, B., Gerdes, A.C., Hinshaw, S.P., Arnold, L.E., Pelham, W.E., Molina, B.S.G., et al. (2004). Self-perceptions of competence in children with ADHD and comparison children. *Journal of Consulting and Clinical Psychology, 72*, 382-391.
- Hoza, B., Pelham, W.E., Dobbs, J., Owens, J.S., & Pillow, D.R. (2002). Do boys with attention-deficit/hyperactivity disorder have positive illusory self-concepts? *Journal of Abnormal Psychology, 111*, 268-278.
- Hoza, B., Waschbusch, D.A., Pelham, W.E., Molina, B.S.G., & Milich, R. (2000). Attention-deficit/hyperactivity disorder and control boys' responses to social success and failure. *Child Development, 71*, 432-446.

- Hurry, A. (1998). Psychoanalysis and developmental therapy. In A. Hurry (Ed.), *Psychoanalysis and developmental therapy* (pp. 32-73). Madison, CT: International Universities Press.
- Jacobvitz, D., & Sroufe, L.A. (1987). The early caregiver-child relationship and attention-deficit disorder with hyperactivity in kindergarten: A prospective study. *Child Development, 58*, 1488-1495.
- Jain, R., Singh, B., Mohanty, S., & Kumar, R. (2005). SIS-I and Rorschach diagnostic indicators of attention deficit hyperactivity disorder. *Journal of Projective Psychology and Mental Health, 12*, 141-152.
- Jensen, P.S. (2000). Commentary: The NIH ADHD consensus statement. Win, lose, or draw? *Journal of the American Academy of Child and Adolescent Psychiatry, 39*, 194-197.
- Jensen, J.B., Burke, N., & Garfinkel, B.D. (1988). Depression and symptoms of attention deficit disorder with hyperactivity. *Journal of the American Academy of Child and Adolescent Psychiatry, 27*, 742-747.
- Johnston, C., & Mash, E.J. (2001). Families of children with attention-deficit/hyperactivity disorder: Review and recommendations for future research. *Clinical Child and Family Psychology Review, 4*, 183-207.
- Katan, A. (1961). Some thoughts about the role of verbalization in early childhood. *The psychoanalytic study of the child, 16*, 184-188.
- Kaufman, A.S. (1994). *Intelligence testing with the WISC-III*. New York: John Wiley & Sons.

- Kaufman, A.S., Kaufman, J.C., Balgopal, R., & McLean, J.E. (1996). Comparisons of three WISC-III short forms: Weighing psychometric, clinical, and practical factors. *Journal of Clinical Child Psychology, 25*, 97-105.
- Keltner, D., Moffitt, T.E., & Stouthamer-Loeber, M. (1995). Facial expressions of emotion and psychopathology in adolescent boys. *Journal of Abnormal Psychology, 104*, 644-652.
- Keppel, G. (1991). *Design and analysis: A researcher's handbook* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Klein, M. (1930). The importance of symbol-formation in the development of the ego. *International Journal of Psycho-analysis, 11*, 24-39.
- Klein, M. (1986). Notes on some schizoid mechanisms. In J. Mitchell (Ed.), *The selected Melanie Klein* (pp. 175-200). Harmondsworth, UK: Penguin. (Original published 1946)
- Klopfer, B., Ainsworth, M.D., Klopfer, W.G., & Holt, R.R. (1954). *Developments in the Rorschach technique: Vol 1. Technique and theory*. Yonkers, NY: World Book.
- Kohut, H. (1971). *The analysis of the self*. New York: International Universities Press.
- Kohut, H. (1977). *The restoration of the self*. New York: International Universities Press.
- Lacan, J. (2002). The mirror stage as formative of the I function. In B. Fink (Trans.), *Ecrits: A selection* (pp. 3-9). New York: W.W. Norton. (Original published 1949).
- Lufi, D., & Parish-Plass, J. (1995). Personality assessment of children with attention deficit hyperactivity disorder. *Journal of Clinical Psychology, 51*, 94-99.

- Luria, A.R. (1961). *The role of speech in the regulation of normal and abnormal behaviour* (J. Tizard, Ed.). New York: Liveright.
- Mackey, P., & Kopras, A. (2001). *Medication for Attention Deficit/Hyperactivity Disorder (ADHD): An analysis by Federal electorate*. (Current Issues Brief No. 11 2000-01). Canberra, Australia: Department of the Parliamentary Library, Information and Research Services.
- McGuire, H., & Exner, J.E., Jr. (1995). Issues of probability and Rorschach research. In J.E., Jr. Exner, (Ed.) (1995), *Issues and methods in Rorschach research* (pp. 159-179). Mahwah, NJ: Lawrence Erlbaum Associates.
- Mannuzza, S., Gittelman-Klein, R., Bessler, A., Malloy, O., & LaPadula, M. (1993). Adult outcome of hyperactive boys: Educational achievement, occupational rank, and psychiatric status. *Archives of General Psychiatry*, *50*, 565-576.
- Maughan, B., Rowe, R., Messer, J., Goodman, R., & Meltzer, H. (2004). Conduct disorder and oppositional defiant disorder in a national sample: developmental epidemiology. *Journal of Child Psychology and Psychiatry*, *45*, 609-621.
- Meehan, K.B., Ueng-McHale, J.Y., Reynoso, J.S., Harris, B.H., Wolfson, V.M., Gomes, H., et al. (2008). Self-regulation and internal resources in school aged children with ADHD symptomatology: An investigation using the Rorschach inkblot method. *Bulletin of the Menninger Clinic*, *74*, 259-282.
- Meyer, J.R., & Tuber, S. (1989). Intrapsychic and behavioural correlates of the phenomenon of imaginary companions in young children. *Psychoanalytic Psychology*, *6*, 151-168.

- Milich, R., & Dodge, K.A. (1984). Social information processing in child psychiatric populations. *Journal of Abnormal Child Psychology*, *12*, 471-490.
- MTA Cooperative Group (1999a). Fourteen-month randomized clinical trial of treatment strategies for children with attention deficit hyperactivity disorder. *Archives of General Psychiatry*, *56*, 1073-1086.
- MTA Cooperative Group (1999b). Moderators and mediators of treatment response for children with attention deficit hyperactivity disorder. *Archives of General Psychiatry*, *56*, 1088-1096.
- Newcorn, J.H., & Halperin, J.M. (2000). Attention-deficit disorder with oppositionality and aggression. In T.E. Brown (Ed.), *Attention-deficit disorders and comorbidities in children, adolescents, and adults* (pp. 171-208). Washington, DC: American Psychiatric Press.
- Newcorn, J.H., Halperin, J.M., Jensen, P.S., Abikoff, H.B., Arnold, L.E., Cantwell, D.P., et al. (2001). Symptom profiles in children with ADHD: Effects of comorbidity and gender. *Journal of the American Academy of Child and Adolescent Psychiatry*, *40*, 137-146.
- Nigg, J.T. (2001). Is ADHD a disinhibitory disorder? *Psychological Bulletin*, *127*, 571-598.
- Ogden, T.H. (1989). *The primitive edge of experience*. Northvale, NJ: Jason Aronson.
- Parker, K.C.H. (1983). A meta-analysis of the reliability and validity of the Rorschach. *Journal of Personality Assessment*, *47*, 227-231.

- Parker, K.C.H., Hanson, R.K., & Hunsley, J.H. (1988). MMPI, Rorschach, and WAIS: A meta-analytic comparison of reliability, stability, and validity. *Psychological Bulletin*, *103*, 367-373.
- Pfiffner, L.J., McBurnett, K., Lahey, B.B., Loeber, R., Green, S., Frick, P.J., et al. (1999). Association of parental psychopathology to the comorbid disorders of boys with attention-deficit hyperactivity disorder. *Journal of Consulting and Clinical Psychology*, *67*, 881-893.
- Piaget, J. (1936/1952). *The origins of intelligence in children*. New York: International Universities Press.
- Pine, F. (1990). *Drive, ego, object, and self*. New York: Basic Books.
- Pliszka, S.R. (2009). *Treating ADHD and comorbid disorders: psychosocial and pharmacological interventions*. New York: Guildford Press.
- Porrino, L.J., Rapoport, J.L., Behar, D., Sceery, W., Ismond, D.R., & Bunney, W.E. Jr. (1983). The naturalistic assessment of the motor activity of hyperactive boys: Comparison with normal controls. *Archives of General Psychiatry*, *40*, 681-687.
- Rasmussen, P., & Gillberg, C. (2001). Natural outcome of ADHD with developmental coordination disorder at age 22 years: A controlled, longitudinal, community-based study. *Journal of the American Academy of Child and Adolescent Psychiatry*, *39*, 1424-1431.
- Reddy, L.A., & De Thomas, C. (2007). Assessment of attention-deficit/hyperactivity disorder with children. In S.R. Smith & L. Handler (Eds.), *The clinical assessment of children and adolescents: A practitioner's handbook* (pp. 365-387). Mahwah, NJ: Lawrence Erlbaum.

- Reynolds, C.R., & Kamphaus, R.W. (1998). *Behaviour Assessment System for Children manual*. Circle Pines, MN: American Guidance Service.
- Rorschach, H. (1942). *Psychodiagnostics: A diagnostic test based on perception*. Bern, Switzerland: Hans Huber. (Original work published 1921).
- Rothstein, A. (1998). Neuropsychological dysfunction and psychological conflict. *Psychoanalytic Quarterly*, 67, 218 - 239.
- Rothstein, A. (2002). Plea for a balanced conception of AD/HD and its diagnosis and treatment. *Psychoanalytic Inquiry*, 22, 391-412.
- Rothstein, A., Benjamin, L., Crosby, M., & Eckstein, K. (1988). *Learning disorders: An integration of neuropsychological and psychoanalytic considerations*. Madison, CT: International Universities Press.
- Rothstein, A.A., & Glenn, J. (1999). *Learning disabilities and psychic conflict: A psychoanalytic casebook*. Madison, CT: International Universities Press.
- Rutter, M. (1982). Syndrome attributed to minimal brain dysfunction. *Journal of Psychiatry*, 139, 21-33.
- Rutter, M. (1983). Concepts of brain dysfunction syndromes. In M. Rutter (Ed.), *Developmental neuropsychiatry*, (pp. 1-14). New York: Guildford Press.
- Rutter, M. (1989). Attention deficit disorder/hyperkinetic syndrome: Conceptual and research issues regarding diagnosis and classification. In T. Sagvolden & T. Archer (Eds.), *Attention deficit disorder: Clinical and basic research* (pp. 1-24). Hillsdale, NJ: Erlbaum.

- Ryan, R.M., Avery, R.R., & Grolnick, W.S. (1985). A Rorschach assessment of children's mutuality of autonomy. *Journal of Personality Assessment*, 49, 6-12.
- Santostefano, S., Rieder, C., & Berk, S.A. (1984). The structure of fantasised movement in suicidal children and adolescents. *Suicide and Life-Threatening Behaviour*, 14, 3-16.
- Satterfield, J.H., Faller, K.J., Crinella, F.M., Schell, A.M., Swanson, J.M., & Homer, L.D. (2007). A 30-year prospective follow-up study of hyperactive boys with conduct problems: Adult criminality. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46, 601-610.
- Sattler, J.M. (1992). *Assessment of children* (3rd ed., rev.). San Diego: Author.
- Sawyer, M.G., Arney, F.M., Baghurst, P.A., Clark, J.J., Graetz, B.W., R.J., Kosky, et al. (2001). The mental health of young people in Australia: Key findings from the child and adolescent component of the national survey of mental health and well-being. *Australian and New Zealand Journal of Psychiatry*, 35, 806-814.
- Schmidt Neven, R., Anderson, V., & Godber, T. (2002). *Rethinking ADHD: Integrated approaches to helping children at home and at school*. Crows Nest, Australia: Allen & Unwin.
- Segal, H. (1957). Notes on symbol formation. *International Journal of Psycho-analysis*, 38, 391-397.
- Seidel, W.T., & Joschko, M. (1990). Evidence of difficulties in sustained attention in children with ADHD. *Journal of Abnormal Child Psychology*, 18, 217-229.

- Shea, T., & Fisher, B.E. (1996). Self ratings of mood levels and mood variability as predictors of Junior 1-6 impulsivity and ADHD classroom behaviours. *Personality and Individual Differences, 20*, 209-214.
- Shontz, F.C., & Green, P. (1992). Trends in research on the Rorschach: Review and recommendations. *Applied and Preventive Psychology, 1*, 149-156.
- Smith, S.R., Baity, M.R., Knowles, E.S., & Hilsenroth, M.J. (2001). Assessment of disordered thinking in children and adolescents: The Rorschach Perceptual-Thinking Index. *Journal of Personality Assessment, 77*, 447-463.
- Smith, S.R., & Handler, L. (2007). The clinical practice of child and adolescent assessment. In S.R. Smith & L. Handler (Eds.), *The clinical assessment of children and adolescents: A practitioner's handbook* (pp. 1-15). Mahwah, NJ: Lawrence Erlbaum.
- Stefanatos, G.A., & Baron, I.S. (2007). Attention-deficit/hyperactivity disorder: A neuropsychological perspective towards DSM-V. *Neuropsychology Review, 17*, 5-38.
- Stern, D. (1985). *The interpersonal world of the infant: A view from psychoanalysis and developmental psychology*. New York: Basic Books.
- Swanson, J.M., McBurnett, K., Christian, D.L., & Wigal, T. (1995). Stimulant medications and the treatment of children with ADHD. In T.H. Ollendick & R.J. Prinz (Eds.), *Advances in clinical child psychology* (Vol. 17, pp. 265-322). New York: Plenum Press.
- Swanson, J.M., Kinsbourne, M., Nigg, J., Lanphear, B., Stefanatos, G.A., Volkow, N., et al. (2007). Etiologic subtypes of attention-deficit/hyperactivity disorder: Brain imaging, molecular genetic and environmental factors and the dopamine hypothesis. *Neuropsychology Review, 17*, 39-59.

- Teicher, M.H., Ito, Y., Glod, C.A., & Barber, N.I. (1996). Objective measurement of hyperactivity and attention problems in ADHD. *Journal of the American Academy of Child & Adolescent Psychiatry, 35*, 334-342.
- Treuting, J.J., & Hinshaw, S.P. (2001). Depression and self-esteem in boys with attention-deficit/hyperactivity disorder: Association with comorbid aggression and explanatory attributional mechanisms. *Journal of Abnormal Child Psychology, 29*, 23-39.
- Tuber, S.B. (1983). Children's Rorschach scores as predictors of later adjustment. *Journal of Consulting and Clinical Psychology, 51*, 379-385.
- Tuber, S.B. (1989). Assessment of children's object representations with the Rorschach. *Bulletin of the Menninger Clinic, 53*, 432-441.
- Tuber, S.B. (1992). Empirical and clinical assessment of children's object relations and object representations. *Journal of Personality Assessment, 58*, 179-197.
- Tuber, S., & Coates, S. (1989). Indices of psychopathology in the Rorschach's of boys with severe gender identity disorder. *Journal of Personality Assessment, 53*, 100-112.
- Tuber, S.B., Frank, M.A., & Santostefano, S. (1989). Children's anticipation of impending surgery: Shifts in object-representational paradigms. *Bulletin of the Menninger Clinic, 53*, 501-511.
- Twemlow, S.W., Fonagy, P., & Sacco, F.C. (2005a). A developmental approach to mentalizing communities: I. A model for social change. *Bulletin of the Menninger Clinic, 69*, 265-281.

- Twemlow, S.W., Fonagy, P., & Sacco, F.C. (2005b). A developmental approach to mentalizing communities: II. The peaceful schools experiment. *Bulletin of the Menninger Clinic*, 69, 282-304.
- Urist, J. (1977). The Rorschach test and the assessment of object relations. *Journal of Personality Assessment*, 53, 179-197.
- van der Gaag, R.J., Caplan, R., van Engeland, H., Loman, F., Buitelaar, J.K. (2005). A controlled study of formal thought disorder in children with autism and multiple complex developmental disorders. *Journal of Child and Adolescent Psychopharmacology*, 15, 465-476.
- Verhaeghe, P. (2004). *On being normal and other disorders: A manual for clinical psychodiagnostics* (Trans. S. Jottkandt). New York: Other Press.
- Viglione, D.J. (1995). Basic considerations regarding data analysis. In J.E., Jr. Exner, (Ed.) (1995), *Issues and methods in Rorschach research* (pp. 195-226). Mahwah, NJ: Lawrence Erlbaum Associates.
- Viglione, D.J., & Rivera, B. (2003). Assessing personality and psychopathology with projective methods. In J.R. Graham (Ed.), *Handbook of psychology: Assessment psychology* (Vol. 10, pp. 531-552). Hoboken, NJ: John Wiley & Sons.
- Vygotsky, L.S. (1966). *Development of the higher mental functions*. Cambridge, MA: MIT Press.
- Walker, J.L., Lahey, B.B., Hynd, G.W., & Frame, C. (1987). Comparison of specific patterns of antisocial behaviour in children with conduct disorder with and without coexisting hyperactivity. *Journal of Consulting and Clinical Psychology*, 55, 910-913.

- Weinberg, W.A., & Brumback, R.A. (1992). The myth of attention deficit-hyperactivity disorder: Symptoms resulting from multiple causes. *Journal of Child Neurology*, 7, 431-435.
- Weiner, I.B. (1996). Some observations on the validity of the Rorschach Inkblot Method. *Psychological Assessment*, 8, 206-213.
- Weiner, I.B. (1998). *Principles of Rorschach interpretation*. Mahwah, NJ: Lawrence Erlbaum.
- Weiner, I.B. (2000). Making Rorschach interpretation as good as it can be. *Journal of Personality Assessment*, 74, 164-174.
- Weiner, I.B. (2003). *Principles of Rorschach interpretation* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.
- Weiss, G., & Hechtman, L. (1993). *Hyperactive children grown up* (2nd ed.). New York: Guilford Press.
- Wender, P.H. (1971). *Minimal brain dysfunction*. New York: Wiley
- Weschler, D. (1991). *Manual for the Weschler Intelligence Scale for Children* (3rd. ed.). New York: Psychological Corporation.
- Willock, B. (1986). Narcissistic vulnerability in the hyper-aggressive child. *Psychoanalytic Psychology*, 3, 59-80.
- Willock, B. (1987). The devalued (unloved, repugnant) self – A second facet of narcissistic vulnerability in the aggressive conduct-disordered child. *Psychoanalytic Psychology*, 4, 219-240.

- Winnicott, D.W. (1971). Mirror-role of mother and family in child development. In *Playing and reality* (pp. 111-118). London: Routledge. (Original published 1967).
- Wood, J.M., & Lilienfeld, S.O. (1999). The Rorschach Inkblot Test: A case of overstatement? *Psychological Assessment*, *6*, 341-349.
- Wood, J.M., Lilienfeld, S.O., Nezworski, M.T., & Garb, H.N. (2001). Coming to grips with negative evidence for the Comprehensive System for the Rorschach: A comment on Gacono, Loving, and Bodholt; Ganellen; and Bornstein. *Journal of Personality Assessment*, *77*, 48-70.
- Wood, J.M., Nezworski, M.T., Lilienfeld, S.O., & Garb, H.N. (2003). *What's wrong with the Rorschach: Science confronts the controversial inkblot test*. San Francisco: Jossey-Bass.

**APPENDIX I: DESCRIPTIONS OF PUBLISHED RORSCHACH
INKBLOT TEST STUDIES OF CHILDREN WITH ADHD**

This Appendix presents detailed summaries of the five published Rorschach studies of children diagnosed with ADHD. They are presented in chronological order.

1. Study by Gordon and Oshman (1981)

Gordon and Oshman (1981) conducted the first investigation of the personality of “children classified as hyperactive” (p.703), contrasting the Rorschach Inkblot Test protocols of 20 hyperactive and 20 non-hyperactive boys (i.e., boys assigned other clinical diagnoses, namely “behaviour, personality or psychoneurotic disorders”, p. 704) ranging in age from 6 to 11 years, with an average of 9 years. Although important differences in the personality functioning of the hyperactive and non-hyperactive samples were illuminated, the extent to which they are comparable with later research findings is questionable. Firstly, this study employed a former method of interpreting Rorschach Inkblot Test data, namely that devised by Klopfer et al. (1954), which is only loosely compatible with the now more commonly used CS (Exner, 2003). Secondly, the clinical sample consisted of subjects diagnosed with hyperactivity rather than ADHD. It was unclear whether the hyperactive group here would have fulfilled the diagnostic criterion for ADHD, derived from the DSM, used in later studies.

While Gordon and Oshman (1981) primarily investigated Rorschach variables that had been considered to be associated with hyperactivity, they also attempted to

explore whether hyperactive and non-hyperactive boys differed on other Rorschach variables. Unfortunately, a conceptual rationale for including these additional Rorschach variables in their study was not provided. Of the sixteen Rorschach variables investigated by Gordon and Oshman (1981), only three statistically significant differences were found between the hyperactive and non-hyperactive samples. As predicted, Gordon and Oshman found that hyperactive boys produced significantly fewer Human Movement (M) responses, which was interpreted by the researchers as reflecting a lesser ability to control and delay responding to impulses or affects, a prerequisite for the production of M responses.

Other statistically significant differences between the hyperactive and non-hyperactive boys, albeit not hypothesised, were detected on two Rorschach variables. Hyperactive compared to non-hyperactive boys produced a significantly lesser percentage of Animal (A%) and Human (H%) responses. Gordon and Oshman believed that this was indicative of hyperactive boys' "overall immaturity and lessened capacity for identification and engagement with others" (p. 706).

A non-significant but nonetheless meaningful finding, contrary to the prediction of Gordon and Oshman (1981), was that hyperactive boys did not give significantly more C and CF responses, and less FC responses, than the non-hyperactive boys. Gordon and Oshman reasoned that this was the result of all subjects producing an unusually low number of these responses, thereby masking the possibility for any differences. Nevertheless, it is plausible that the low frequency of C, CF, and FC

responses in the hyperactive children reflected their limited capacity to mentally represent affect.

2. Study by Bartell and Solanto (1995)

Bartell and Solanto (1995) explored the usefulness of the RIM in the personality assessment of 24 children (22 boys and 2 girls) diagnosed with ADHD, 12 of whom had a co-morbid diagnosis of ODD, through a near replication of the Gordon and Oshman study, utilising a more rigorous methodology. The Exner (1986) CS was employed for the administration, scoring, and interpretation of the RIM. In addition, stringent diagnostic criteria for inclusion into the ADHD sample were used and strict exclusion criteria were applied, and clinical data were also obtained via both structured interviews and behavioural checklists. Notwithstanding these improvements, a significant weakness of the Bartell and Solanto study was the inclusion of an inappropriate comparison sample, namely one comprised of child normative data from the CS. This flaw is discussed in Section 3.2.1 of Chapter Three.

On the basis that children diagnosed with ADHD tend to have “greater impulsivity, poor attention span, and increased responsivity to external stimuli” (p. 531), Bartell and Solanto (1995) hypothesised ADHD children, compared to the child normative data, would show significant differences on CS variables: C, CF, FC, FC:CF+C, M, SumM:WSumC, EA, X-%, and D.

Contrary to the authors' predictions, only four of the eleven hypotheses were supported, namely those involving the M, X-%, EA, and FC variables.

Similar to Gordon and Oshman (1981), Bartell and Solanto (1995) found that the children with ADHD produced fewer M responses in comparison to the CS child normative data. This result was interpreted as an indicator of the limited empathy and tendency towards impulsivity of these children. Secondly, they found that the children with ADHD displayed greater perceptual distortion, as measured by the Distorted Form Quality (X-%) variable, than the child normative data. Bartell and Solanto explained the perceptual distortion of these children as the product of their impulsivity rather than of poor reality testing or ego impairment. This would seem to be an inadequate explanation, as it treats impulsivity as separate from the broader intrapsychic and personality processes of children diagnosed with ADHD. Whether perceptual distortion results from neuropsychological dysfunction, personality and intrapsychic processes, or, as is more likely, a combination of both, it is nevertheless reflective of poor reality testing.

A third hypothesis was confirmed, that the ADHD sample, compared to the child normative data, obtained a lower Experience Actual (EA) score, a measure of the availability of reflective and expressive internal coping resources (Weiner, 2003). Remarkably, Bartell and Solanto made little of this finding, interpreting it merely as the consequence of children with ADHD "responding impulsively without fully deploying their inner resources" (p. 539). While this explanation has some validity, it ignored a more profound possibility, namely that these children often have adjustment

difficulties, and lack adequate coping resources necessary to manage internally and externally produced stress. The overall psychological maladjustment of these children has been born out in numerous prospective studies, as reported by Barkley (2006).

The discovery that children with ADHD produced significantly fewer FC responses (i.e. responses that involve the determinants, form and colour, and signify the capacity for emotional regulation and control) than the child normative data supported another of the Bartell and Solanto (1995) hypotheses. However, contrary to prediction, children with ADHD produced significantly less CF responses than the child normative data. Further, they did not differ on the FC:CF+C ratio, the left side of which represents the capacity for emotional modulation and control, whereas the right side represents unrestrained emotional experience and expression. Accordingly, on these variables, children with ADHD were not found to be less regulated emotionally. Bartell and Solanto tempered this conclusion by hypothesising that these children might withdraw from emotional stimuli in an attempt to prevent further disorganisation of cognitive functioning. This obviously does not rule out the possibility for uncontained emotional expression where the said defence mechanism of avoidance of affect fails.

Finally, Bartell and Solanto (1995) also compared subgroups, namely ADHD children diagnosed with and without ODD. They found, consistent with their prediction, that the ADHD children with ODD produced statistically significantly fewer Whole Human (H) responses than those without ODD, which they understood as a “deficient

ability to respond empathically to others” (p. 540). It is significant that Gordon and Oshman (1981) had reached similar conclusions regarding their sample of hyperactive boys. No difference was found, however, between the Bartell and Solanato ADHD subgroups in terms of frequency of Aggressive Movement (AG) responses.

3. Study by Cotugno (1995)

Cotugno (1995), using the RIM, investigated the personality functioning of children with ADHD in order to better “understand the relationship between the occurrence of particular ADHD behaviours and socio-emotional functioning” (p.555). Similar to the studies already reviewed, but larger and methodologically superior, Cotugno compared the RIM protocols of children with ADHD with those of a matched non-clinical group and a non-specific clinical group. All 120 children (99 boys and 21 girls), 40 per sample, were 5 and 6 years in age. Cotugno, like Bartell and Solanto (1995), used rigorous diagnostic criteria and assessment procedures for subject selection into the ADHD sample. Being an exploratory study, Cotugno selected 25 variables from the Exner (1993) CS with which to examine personality functioning. A few variables were selected from each of the clusters of personality functioning that comprise the Structural Summary of the CS.

Meaningful findings were obtained from Cotugno’s (1995) analysis of variables within the Control and Stress Tolerance cluster of personality functioning. A significantly higher score was obtained by the ADHD sample, as compared to the clinical and normal samples, on the Coping Deficit Index (CDI), which suggested,

according to Cotugno, that the children diagnosed with ADHD were experiencing a greater degree of psychological disorganisation, marked by difficulties coping with interpersonal relationships, affect, and stress. While the studies already reviewed did not specifically examine the CDI, deficits in adaptive resources, ideational and emotional, had been found. Gordon and Oshman (1981) detected interpersonal immaturity and impaired capacity for identification in their sample of hyperactive children, while Bartell and Solanto (1995) discovered that their ADHD sample possessed inadequate levels of internal coping resources and were prone to experiencing interpersonal problems due to limited empathy and understanding of others. It would therefore be reasonable to hypothesise that children with ADHD are especially vulnerable to experience coping problems, along with associated feelings of helplessness.

Related to these coping deficits, Cotugno (1995) found that the ADHD sample had a significantly higher Lambda index than the children from the normal and clinical samples. The Lambda index is considered to measure the extent to which a person is closed or open to internal and external experience, assessing the ability to attend to and tolerate complexity, uncertainty and ambiguity, or whether a narrow focus of attention is maintained (Weiner, 1998). The clinically elevated Lambda index of the ADHD sample, according to Cotugno, suggested the use of the defence mechanisms of avoidance, withdrawal, or denial, as a means of minimising subjectively felt distress and preventing cognitive disorganisation beyond the levels with which these subjects were accustomed. Cotugno wondered whether this tendency accounted for the non-significant difference between the ADHD and normal samples in terms of

their state and trait levels of subjectively felt distress, which were negligible, respectively measured by the D and Adjusted D variables.

In the Affective cluster, all of the variables analyzed yielded statistically significant findings. In sum, the children with ADHD were found to experience more negative or painful affect than the normal sample, as measured by the Sum of Shading (Sum Sh) variable. They were found to markedly withdraw, as compared to the normal sample, from emotionally arousing stimuli or situations, as measured by the Sum of Pure Colour (Sum C) responses and Affective Ratio (Afr), and to simplify their experience of emotional complexity, compared to both the normal and clinical samples, signified by the number of Blended responses (i.e., RIM responses that when scored contain more than one determinant). Furthermore, and consistent with the stated findings within the Affective cluster, the ADHD sample had a significantly greater score on the Depression Index (DEPI) than the normal sample. The mean DEPI score for the ADHD was 4.81, suggestive of depressive features or a type of affective spectrum disorder (Weiner, 1998) experienced by these children.

Consistent with the depressive features identified in the sample of children with ADHD, Cotugno (1995) found that they yielded a significantly lower mean score on the Egocentricity Index ($3r+[2]/R$), compared to the normal sample, suggesting that they generally experienced low self-esteem and negatively compared themselves to others.

Further evidence of the interpersonal difficulties of children with ADHD, a finding common to all of the reviewed RIM studies, existed in the form of the ADHD sample producing significantly less Cooperative Movement (COP) and H responses than the normal sample (Cotugno, 1995). The latter findings were interpreted as evidence of the reluctance and discomfort of ADHD children in social relationships, as well as their impaired capacity for identification. Surprisingly, the ADHD sample produced less AG responses than both the normal and clinical samples. Somewhat similarly, Bartell and Solanto (1995) found that their children with ADHD, half of whom were diagnosed with co-morbid ODD, did not differ from the CS child normative data on this variable. These findings point to the possibility that these children have difficulties mentally representing hostile or aggressive interpersonal intentions and feelings.

Mediation, the manner in which people “perceive the objects of their attention” (Weiner, 1998, p. 58), was another analysed cluster of personality functioning that revealed important differences between the ADHD and normal samples of children in the Cotugno (1995) study, a finding consistent with that of Bartell and Solanto (1995). Clinically significant differences were found on the following Rorschach variables relevant to mediation: Number of P responses, and percentage of Ordinary (+%), Unusual (u%), and Distorted (-%) Form responses. On this basis, Cotugno concluded that children diagnosed with ADHD, compared to those in the normal sample, “view reality in an unconventional, unrealistic, and illogical manner and, in fact, grossly distort reality in their perceptions of situations” (p. 558). However, although their perceptual processes were found to be unusual or distorted, they were not considered to reflect underlying thought disorder. Regarding the latter, the ADHD sample scored

significant lower than the normal sample on the Weighted Sum of Six Critical Special Scores (WSum6), a measure of illogical and incoherent thinking. Cotugno explained the perceptual inaccuracy, yet intact thinking, of children with ADHD as the product of their tendency to narrow their stimulus fields, as well as their propensity to avoid complexity and to think simplistically.

4. Study by Jain, Singh, Moharty, and Kumar (2005)

In a large Indian study, Jain et al. (2005) sought to identify the Rorschach and Somatic Inkblot Series (a projective test similar to the Rorschach) diagnostic indicators of ADHD. Even though the study did not specifically seek to explore the personality functioning of children with ADHD, information pertaining to the personality functioning of these children can nevertheless be drawn from it.

Methodologically, the Jain et al. (2005) study was strong in that it had a large sample comprised of 111 ADHD and 113 non-clinical children (181 boys and 36 girls), ranging from 6 to 11 years of age, drawn from seven schools. It also employed rigorous inclusion and DSM-IV diagnostic criteria, and screened for subjects with confounding physical and mental co-morbidities. However, these methodological strengths were undermined by employment of the Beck (1961; Beck and Molish, 1967) procedure for administering and scoring the Rorschach Inkblot Test. This procedure is regarded as outdated and, unlike the CS for the RIM (Exner, 2003), does not have a substantial body of empirical research demonstrating its merits as a valid psychometric method of assessing personality functioning.

In terms of clinically significant differences between the ADHD and normal samples on Rorschach variables, Jain et al. (2005) found that their ADHD sample produced less M and A responses, more Colour (C+CF+FC) responses, less Common Detail (D) responses, a lower number of responses with accurate Form Quality (F+%), and fewer P responses. Jain et al. argued that these Rorschach variables might play an important role in clarifying the clinical diagnosis of ADHD in children.

Of particular interest here is that two of the previous studies (i.e. Bartell & Solanto, 1995; Gordon & Oshman, 1981) also found a significantly lower number of M responses in children with ADHD, which attests not only to their difficulties controlling impulses, but limitations in their capacity to represent and reflect on mental states. A curious finding of the Jain et al. study was the ADHD sample provided significantly more Colour (C+CF+FC) responses than the normal sample. None of the previous three studies have obtained this finding. In fact, Cotugno (1995) found that the ADHD sample's Sum of Colour responses (C+CF+FC) were significantly less than that of the normal sample. Similarly, Bartell and Solanto found that their ADHD sample produced less CF and FC responses than the normal sample. This anomaly is discussed in Section 3.3.7.1 of Chapter Three.

5. Study by Meehan, Ueng-McHale, Reynoso, Harris, Wolfson, Gomes, and Tuber (2008)

Meehan et al. (2008) employed the RIM to explore the personality functioning of a sample of 28 children (21 boys and 7 girls) with ADHD, contrasted with a non-specific clinical sample of 14 children (6 boys and 8 girls), derived from minority

ethnic groups in low to middle income communities in the United States. Specifically, the study sought to explore the “cognitive-affective disruptions” experienced by children with ADHD, which are commonly manifested as “difficulties accessing internal resources, impairments in children’s capacities for control and delay, and problems with the formation of ideational representations of self and others” (p. 263).

Using variables that measure the aforementioned problematic aspects of ego functioning in children with ADHD, Meehan et al. predicted that the ADHD sample, as compared to the non-specific clinical sample, would evidence lower EA and D (i.e. stress tolerance) scores, fewer M responses, a higher percentage of Pure Form (F) responses as signalled by the Lambda index, a lower percentage of responses with Conventional Form (X+%), and fewer Human Content [H, Hd, (H), (Hd)] responses.

Only two of the predicted differences in the personality functioning of the ADHD and non-specific clinical samples were supported. Firstly, regarding the availability of internal coping resources, the ADHD group was found to have significantly lower scores on the EA variable, a global measure of internal coping resources, than the non-specific clinical group. This finding was regarded as being “consistent with the notion that children with ADHD have difficulty accessing internal resources in the face of high stimulus demand in order to organise, process, and represent their experience” (Meehan et al., 2008, p.452).

Secondly, concerning the capacity for delay and ideational resources, the ADHD group produced fewer M responses than the comparison group. Meehan et al. (2008) suggested this finding reflected the impaired “capacity for delay and ideational resources” and “internal representations of self and others” in children with ADHD. Meehan et al. argued that this finding might also be due to a tendency “to shy away from percepts of an interpersonal nature”, as a defence against reminders of “dysregulation” evoked by social situations (p. 275). In addition, Meehan et al. suggested that the said finding indicated that these children are less able to use “internal relational models to regulate themselves” (p. 275).

Contrary to the predictions of Meehan et al. (2008), compared to the non-specific clinical group, the ADHD group was not found to evidence a lower capacity for stress tolerance (D score), greater constriction and avoidance of affect (Lambda), less conventional perception of form (X+%), and, a reduced overall capacity for object representations [H, Hd, (H), (Hd)] in their Rorschach responses. The authors speculated whether the nature of their comparison group, comprised of children with a range of learning and behavioural problems, might have contributed to these non-significant findings.

Meehan et al. (2008) offered an insightful hypothesis concerning the way children with ADHD process affect as an alternative explanation of the non-significant difference found on the Lambda index. Perhaps, the Lambda index did not capture the “dynamic interplay between [ADHD] children’s deficits in executive function and affect regulation”, as this relationship could not be “reflected in whether the [ADHD]

child simply represents colour or not over the entire protocol” (p. 276). To better measure the complex way in which children with ADHD manage affect, Meehan et al. proposed evaluation of a “child’s performance on chromatic relative to achromatic cards”, in order to see whether the strategy of constriction and simplification is “dependent and upon the complexity and intensity of stimuli” (p. 276). In accordance with this speculation, Meehan et al. hypothesised that children with ADHD might have a “bi-modal” way of handling affect and intense stimuli. On the one hand, they may employ a “strategy of simplification and constriction”, and at other times attempt a strategy of “acknowledgement of some vitality and affect” (p.276), with the attendant risk of becoming overwhelmed, and disorganised cognitively and behaviourally.

**APPENDIX II: DESCRIPTIONS OF PUBLISHED RORSCHACH
INKBLOT METHOD AND MUTUALITY OF
AUTONOMY SCALE STUDIES OF CHILDREN FROM
RELATED CLINICAL POPULATIONS**

This Appendix presents detailed summaries of published RIM and MOA Scale studies of children from related clinical populations. Included are studies concerning children diagnosed with ODD, CD, PTSD, and LD, as well as inpatient children and those living under stressful conditions.

1. Study of children with Conduct Disorder

Gacono and Meloy (1994) investigated personality functioning in 60 children (52 boys and 8 girls) diagnosed with CD, averaging 9.75 years of age, using the CS (Exner, 1993) for the RIM. Of these subjects, 26 had been either sexually or physically abused, and 8 had an additional diagnosis of ADHD. Two thirds of the subjects had been diagnosed with the aggressive variant of CD.

Not unexpectedly, Gacono and Meloy (1994) found that children with CD, compared to non-clinical children from the CS normative data, displayed pervasive and significant disturbance of personality functioning, evidenced as poor reality testing

(X+%, SCZI, M-), propensity for unclear thinking (Lvl2 Spec Sc, M-)¹, unconventional and distorted perception (Xu%, X-%), self-esteem problems (3r+[2]/R), limited capacity to relate to others as whole and real (H: [H]+Hd+[Hd]), chronic detachment from people (T), tendency to avoid and discharge feelings (Afr, C) and problems with aggression (AgContent, AgPast, AgPot). While these children, when compared to the Comprehensive System child normative data, exhibited similar “stress tolerance and controls, use of fantasy, Rorschach productivity, narcissism, oppositionalism, and visual perceptual organization” (p.28), Gacono and Meloy considered that these aspects of their personality functioning would, unlike normal children, not alter over time.

Additionally, Gacono and Meloy (1994) reported the following percentages of CD children with clinically significant elevations on global measures of disturbed personality functioning assessed by the CS for the RIM: 33 percent had an elevated SCZI, a measure of distorted thinking and reality testing; 27 percent had an elevated CDI, a measure of interpersonal ineptness and deficient coping skills; and 15 percent had an elevated DEPI, a measure of depressive features. These findings suggest that CD children are prone to dysfunction in the domains of thinking and reality testing, interpersonal relationships, coping and adjustment, and to a lesser extent, affective experience.

¹ This propensity was evidenced by 40 percent of the sample of children with CD giving at least one Level2 Special Score (Lvl2 Spec Sc), and 45 percent giving at least one Distorted Form Human Movement (M-) response, in their RIM protocols. The responses assigned Lvl2 Spec Sc were most frequently (i.e. 30 percent) coded as Fabulised Combinations (FABCOM). While the mean Weighted Sum of six Special Scores (WSum6) score of these children was 13.73 (11.03), with scores ranging from 0 to 60, it did not significantly differ from the mean score of the CS non-patient data for children aged 9. However, had categorical analysis been used, it is likely that numerous of the children with CD would have had clinically significant scores on the WSum6 variable. This hypothesis is in part affirmed by the high prevalence of clinical elevations on the SCZI in the CD sample.

1a. Mutuality of Autonomy Scale assessment of object relations in children with Conduct Disorder

Additionally, Gacono and Meloy (1994) employed the MOA Scale (Urist, 1977) to investigate patterns of object relations depicted in movement responses provided by children with CD on the RIM. The MOA Scale rates movement responses, along an ordinal scale ranging from 1 to 7, according to the adaptive quality of the depicted object relations. (Please refer to Section 5.2.2.2 in Chapter Five for a thorough description of the MOA Scale). For a comparison, Gacono and Meloy contrasted the MOA Scale results of their CD sample with those of a child non-patient sample reported by Tuber (1989).

Initially, Gacono and Meloy (1994) compared the MOA Scale means of the CD and non-patient samples, but did not detect any significant differences. However, categorical analysis, sample comparisons of the proportion of subjects (first category) and responses (second category) assigned specific MOA Scale scores did reveal differences. Regarding the first group of categorical analyses, Gacono and Meloy found that 22 percent of children with CD produced at least one MOA response scored 4 (i.e. depicting object relations of a mirroring, narcissistic kind), whereas less than 3 percent of non-patient children produced such responses. Further, 13 percent of children with CD produced a ‘worst’ MOA response scored 7 (i.e., depicting object relations of an overpowering and enveloping kind), whereas none of the non-patient children produced such responses. On this basis, Gacono and Meloy reasoned, “CD

subjects are more likely to represent objects as a source of narcissistic mirroring or an overwhelming, omnipotent, and malevolent force” (p.31).

The second group of categorical analyses performed by Gacono and Meloy (1994) found that 41 percent of all MOA responses of children with CD were scored 5 or above, reflective of severely maladaptive representations of object relations, whereas only 33 percent of MOA responses of non-patient children fell into that category. These findings became more meaningful when the frequencies of MOA responses scored 5, 6, and 7 were compared between the samples. Non-patient children offered a greater frequency of MOA responses scored 5 than did the CD children, 25 percent compared to 17 percent. By contrast, reflecting severely maladaptive representations of object relations, children with CD provided a greater frequency of MOA responses scored 6 and 7 than the non-patient children, 21 compared to 7 percent (MOA responses scored 6), and 3 compared to 0 percent (MOA responses scored 7). Finally, and in line with general expectations, non-patient children provided more adaptive MOA responses scored either 1 or 2, suggestive of adaptive (separate and mutual) object relations, than did the CD children, 50 compared to 40 percent.

Thus, the aforementioned findings from the second group of categorical analyses indicated that while children with CD possessed the capacity for adaptive representations of object relationships, they were particularly prone to maladaptive representations of object relating. When these children depicted maladaptive object interactions in their Rorschach Inkblot Test responses, they tended to do so in an extreme manner, depicting destructive, overpowering and enveloping types of

interaction, as evidenced by the preponderance of their maladaptive responses assigned MOA Scale scores of 6 or 7 (Gacono & Meloy, 1994). Under the influence of such primitive and aggressive patterns of object relations, it is understandable that these children have troubled and unstable relationship histories.

2. Comparison study of children with Post-Traumatic Stress Disorder and Oppositional Defiant Disorder

Holaday (2000) conducted a rare investigation of the personality functioning of children diagnosed with ODD using the RIM. ODD children (mean age of 11.02) were used as a comparison group, along with the CS child normative data (Exner, 2003), within a broader study of the personality functioning of children with PTSD (mean age of 10.91). Helpful information regarding the personality functioning of ODD children was thus derived indirectly. The ODD children, like those with PTSD, obtained RIM Test scores on all of the 12 variables under investigation (i.e., SCZI, DEPI, CDI, X+%, 3r+(2)/R, Afr, T, EA, P, WSumC, Sum6, WSum6) that were at least one standard deviation above or below the mean scores listed in the CS child normative data. Comparisons between the scores of the ODD and PTSD samples on these variables revealed differences, only for the SCZI and three of its constituent variables, X+%, Sum6, and WSum6. The PTSD children obtained significantly higher scores on these variables than did the ODD children, suggestive of a greater degree of overall cognitive disorganisation. Otherwise, ODD and PTSD children exhibited similar patterns of troubled personality functioning, namely proneness to experience depressive symptoms, interpersonal problems (characterised by limited

empathy and inaccurate perception of others), coping difficulties, self-esteem problems, and avoidance of affect.

With reference to global measures of personality dysfunction assessed by the CS (2003) for the Rorschach Inkblot Test, Holaday (2000) found that 34 percent of children with ODD had clinically significant elevations on the CDI, while 14 percent of these children also had clinically significant elevations on both DEPI and SCZI.

3. Studies of children with Learning Disorder

A high rate of co-morbid Learning Disorder (LD) has been reported among children with ADHD. According to Barkley (1998), 8 to 39 percent have a reading disability, 12 to 33 percent have a math disability, and 12 to 26 percent have a spelling disorder. Neuropsychological dysfunction believed to significantly compromise their personality development and functioning (Fonagy et al., 2002; Gilmore, 2000, 2002; Rothstein, 1998; Rothstein et al., 1988; Rothstein & Glenn, 1999) has also been found in both children with LD and ADHD. On these grounds, a review of the RIM studies on children with LD (Acklin, 1990; Champion et al., 1984; Harper & Scott, 1990) was undertaken.

These studies had sample sizes of 20 subjects or less, and only one study incorporated a genuine (normal population) comparison group. Nevertheless, despite the obvious

limitations flowing from these factors, consistency was found among findings. LD children in contrast to normal children or the CS child normative data, exhibited: 1) inaccurate perception of reality (Champion et al., 1984; Acklin, 1990; Harper & Scott, 1990), 2) discomfort and avoidance of emotional stimuli (Champion et al., 1984; Acklin, 1990), 3) poor self-esteem and negative self-concept (Champion et al., 1984; Acklin, 1990), and 4) unconventional and simplistic processing of information, along with rigid narrowing of their perceptual field, otherwise termed, avoidance or denial of complexity (Champion et al., 1984; Acklin, 1990; Harper & Scott, 1990).

3. Additional relevant studies exploring quality of thinking and representations of object relations in children

Discussion of the following RIM and MOA Scale studies proceeds on the basis that they examined aspects of personality functioning in children, namely quality of thinking and representations of object relations, that were extremely relevant to the present investigation of the personality functioning of children with ADHD. Both of these personality processes were explored in the present study.

3a. Study of thought disorder in inpatient children

Smith et al. (2001) investigated the correlation between the CS (Exner, 1993) RIM and two behaviour rating scales, namely the Behaviour Assessment System for

Children (BASC, Reynolds & Kamphaus, 1998, cited by Smith et al) and the Personality Inventory for Youth (PIY, Lachar & Gruber, 1995, cited by Smith et al.), in a study of disordered thinking in a child and adolescent inpatient population. Numerous of their 42 subjects had primary and co-morbid Disruptive Behavioural Disorder diagnoses: 29 percent with a primary diagnosis, and 40 percent with a co-morbid diagnosis.

Smith et al. (2001) found a strong positive correlation between the presence of at least one Poor Form Human Movement response (M-) in the Rorschach Inkblot Protocols of inpatients, and clinically significant scores on the behaviour-rating subscales of the BASC and PIY that measured disordered thinking. Thus, the presence of at least one M- response was sufficient to distinguish significant from non-significant scores on the said behaviour rating scales measuring thought disorder in children and adolescent inpatients. None of the other variables or indices in the CS for the RIM used to assess disordered thinking, such as the Perceptual-Thinking Index (PTI), the SCZI, and the X-% variable, distinguished significant from non-significant behaviour rating scale assessments of thought disorder. On the basis of their findings, Smith et al. (2001) argued that M- responses were “robust indicators of thought disorder” (p.447) and poor reality testing in child and adolescent clinical populations.

3b. Study of adaptive fantasy, adaptive representations of object relations, and resilience in children living under stressful conditions

Donahue and Tuber (1993), like Smith et al (2001), were also interested in the personality correlates of the Human Movement (M) response in child CS RIM responses. They focussed on M responses with Elaborate Form Quality (M+) (i.e. there exists an excellent fit between the response and stimulus properties of the inkblot), which they defined as reflective of a child's capacity for adaptive fantasy images, and assessed its relevance for resilient psychological functioning in children, namely Black and Hispanic boys (24) and girls (22) from midtown Manhattan living under stressful city conditions.

The presence of a single M+ response in a child's Rorschach protocol was indeed found to be positively correlated with three indicators of resilient psychological functioning, namely 1) intact reality testing (assessed by the Percentage of Ordinary Form Quality [X+%] responses within the CS for the RIM), 2) sustained attention (assessed by the Fruit Distraction Test, Santostefano, 1988, cited by Donahue & Tuber, 1993), and 3) mutual and autonomous object relations (assessed by the MOA Scale scores of 1 through 3, Urist, 1977).

Regarding the connection between adaptive fantasy images (depicted in M+ responses) and mutual relatedness in representations of object relations (depicted in MOA Scale responses scored 1 through 3), Donahue and Tuber argued that the

capacity to produce M+ responses was a “necessary cognitive precursor” for a child to represent in RIM responses mutual and autonomous representations of object relations. In other words, the capacity for deliberate, rational, and logical thought, as well as the ability to imagine the internal states of one self and others, otherwise known as mentalization in the field of contemporary psychoanalysis (Fonagy et al., 2002), can be understood as being significant not just for object and interpersonal relationships, but for resilient psychological functioning generally.

APPENDIX III: PROTOCOLS OF SEMI-STRUCTURED INTERVIEW

DEVELOPMENTAL HISTORY

Client ID:

BIRTH / FEEDING / LANGUAGE / MOTOR / TOILET / MEDICAL:

	<i>Complications?</i>	<i>Nature of the Complications?</i>
PREGNANCY	Yes / No	
NEONATAL	Yes / No	
BIRTH	Yes / No	

FEEDING	Yes / No	<i>Age when Weaned?</i>
Breast Fed?	Yes / No	
Bottle Fed?	Yes / No	
		Nature of Difficulties (if any)?

VERBAL SKILLS <i>(Developmental Markers)</i>	<i>Delayed?</i>	<i>Age at Accomplishment?</i>
First word spoken with meaning? <i>[Approx. 44 weeks]</i>	Yes / No	
First two-word phrase? <i>[Approx. 21 months]</i>	Yes / No	
Additional information:		

MOTOR SKILLS <i>(Developmental Markers)</i>	<i>Delayed?</i>	<i>Age at Accomplishment?</i>
Sitting unsupported? <i>[Approx. 36 weeks]</i>	Yes / No	
Walking unaided? <i>[Approx. 15 months]</i>	Yes / No	
Additional Information:		

TOILET TRAINING <i>(Developmental Markers)</i>	<i>Delayed?</i>	<i>Age at Accomplishment?</i>
When was bowel control established? <i>[Approx. 4 years]</i>	Yes / No	
When was dryness during the day and night established? <i>[Approx. 5 years]</i>	Yes / No	
<u>Nature of complications (if any):</u> 		

MEDICAL COMPLAINTS: INFANCY & CHILDHOOD	
<u>Nature of Medical Complaints:</u> 	<i>Age</i>

EMOTIONAL / SOCIAL DEVELOPMENT (Greenspan, 1992)

HOMEOSTASIS (0-3 Months)	Yes / No	<i>Nature of the Complications?</i>
Regular sleep patterns?	Yes / No	
Able to relax & be settled & comforted?	Yes / No	
Consistently alert and interested in stimuli from caregivers & environment?	Yes / No	
Complication suggested by: <ul style="list-style-type: none"> • Uninterested & unresponsive to stimuli • Frequently upset, rigid • Distractible, over excited • 		

ATTACHMENT (2-4 Months)	Yes / No	<i>Nature of the Complications?</i>
Reacted (consistently) to parent's touch and speech with pleasure (i.e. smiling, cooing, etc.)?	Yes / No	
Complications suggested by: <ul style="list-style-type: none"> • Preoccupation with mother and father • Unable to be put down (i.e. excessive separation anxiety) • Unresponsive to communication of parents 		

SOMATOPSYCHOLOGICAL DIFFERENTIATION (3-10 Months)	Yes / No	<i>Nature of the Complications?</i>
Able to interact intentionally & display social emotions?	Yes / No	
Complications suggested by: <ul style="list-style-type: none"> • Interacts, but does not respond to parental communication • Demands constant attention 		

BEHAVIOURAL ORGANISATION, INITIATIVE, AND ORIGINALITY (10-17 Months)	Yes / No	<i>Nature of the Complications?</i>
Able to express a range of socially relevant feelings (i.e. pleasure, assertion-independence, curiosity-exploration, protest, and anger)?	Yes / No	
Able to shift between interaction and exploration (separation) and reunion whilst displaying appropriate affect (i.e. pleasure, apprehension, and protest)?	Yes / No	
Complications suggested by: <ul style="list-style-type: none"> • Passivity & Withdrawal • Negativism • Chaotic behaviour • Repetitive and rigid play 		

USE OF THOUGHT AND IDEAS: REPRESENTATIONAL AND SYMBOLIC CAPACITIES (17-30 Months)	Yes / No	<i>Nature of the Complications?</i>
Able to communicate with words or sounds in social interaction to express wishes and intentions?	Yes / No	
Able to play in a symbolic capacity with toys and dolls (i.e. assigning the characters intentions and feelings)?	Yes / No	
Complications suggested by: <ul style="list-style-type: none"> • Absence of symbolic behaviour (words and metaphorical play) • Disorganised symbolic activity 		

PURPOSEFUL, REALISTIC USE OF THOUGHTS AND IDEAS: REPRESENTATIONAL DIFFERENTIATION AND CONSOLIDATION (26 - 30 Months)	Yes / No	<i>Nature of the Complications?</i>
Able to determine reality from fantasy, but also able to be play imaginatively?	Yes / No	
Able to be self-limiting and to feel good about self?	Yes / No	
Complications suggested by: <ul style="list-style-type: none"> • Withdrawal and absence of relatedness • Confusion between reality and fantasy • Symbolic relatedness, but chaotic and impulsive • Labile self-esteem and mood • Narrow and rigid relatedness activity 		

PRE & PRIMARY SCHOOLING:

KINDERGARTEN	Yes / No	<i>Nature of the Complications?</i>
Behavioural problems?	Yes / No	
Social difficulties?	Yes / No	
Learning problems?	Yes / No	

PRIMARY SCHOOL	Yes / No	<i>Nature of the Complications?</i>
Behavioural problems?	Yes / No	Year level at onset?
Social difficulties?	Yes / No	Year level at onset?
Learning problems?	Yes / No	Year level at onset?

FAMILY HISTORY

Client ID:

GENOGRAM

--

QUALITY OF FAMILY RELATIONSHIPS

Mother:

--

Father:

--

Siblings:

--

--

HISTORY OF MENTAL ILLNESS & SUBSTANCE ABUSE

ADHD:

• **Mother:** **Yes / No**

• **Father:** **Yes / No**

Psychological Disorders (Other):

Substance Abuse:

MENTAL STATUS EXAMINATION & ADHD HISTORY

Client ID:

ADHD HISTORY

Age at first diagnosis?

Diagnosis made by whom?

Current treating medical practitioner / clinician?

Type of medication?

PAST PSYCHIATRIC / PSYCHOLOGICAL TREATMENT

Treating clinician & nature of difficulty?

MENTAL STATUS EXAMINATION

Mood & Affect (Control and Expression):

Thinking (Form / Obsessions / Worries):

Perception (Abnormalities):

Behaviour:

- **Fidgety & Restless**
- **Distractible**
- **Energetic**
- **Impulsive**
- **Disorganised**

Peer Relationships:

- **Unstable**
- **Satisfying**
- **Conflicted**

APPENDIX IV: INVITATION TO PARTICIPATE IN A RESEARCH STUDY

VICTORIA UNIVERSITY
SCHOOL OF PSYCHOLOGY

INVITATION TO PARTICIPATE IN A RESEARCH STUDY

To Whom It May Concern,

My name is Daniel Davis. I am a Registered Psychologist and Doctoral Trainee in Psychology. My research is supervised by Dr. Suzanne Dean and Dr. Alan Tucker, School of Psychology, Victoria University, St Albans Campus.

I am undertaking research on the personality style of 7 to 11 year old boys diagnosed with Attention-Deficit Hyperactivity Disorder (ADHD). I am hoping to develop an in-depth understanding of this group of boys whilst also comparing personality features of boys diagnosed with the Inattentive type of ADHD and those diagnosed with the Hyperactive/Combined type of ADHD. Research of this nature is rare, but it will tell us a lot more about appropriate psychological interventions for boys diagnosed with ADHD. It is expected to result in recommendations that are of clinical benefit to children suffering ADHD and to their families.

The following expands on the details of the study provided to you by your treating psychologist or medical practitioner. If you agree to participate, you will be invited to attend for two interviews. At the first interview, I would meet with you and your child to collect background information, and then conduct a brief cognitive assessment of your child, while you are asked to complete a standard behaviour checklist concerning your child's difficulties. In the second interview I would ask your child to participate in a perceptual task which gives a picture of how he views himself and his world.

A brief report summarising the findings of this assessment will be sent to you in the post. Should you wish to discuss with me any matter arising from the interviews or report, an appointment will be made available. Please be assured, that in the unlikely

event of your child feeling unable to manage the assessment process, you and your child would have access to immediate and appropriate support, in the form of supportive counselling.

All information obtained during the interviewing will remain confidential, being viewed only by my supervisors and me. This information will be securely stored in a locked filing cabinet, and no names will appear on documents apart from a list made by me. Parents may wish to share the brief report with the referring psychologist or medical practitioner. Although this is recommended, it is ultimately the parent's responsibility to make this decision. In the final report of my findings, only group results will be published, ensuring that all participants remain unidentifiable.

If you are willing to participate, please let your treating psychologist or medical practitioner know of this, and I will then telephone you to discuss things further.

Naturally, your written consent to participate is necessary before we could proceed. A consent form would be made available to you at the first interview, after you have had the opportunity to ask any questions you might have about the nature of the study.

As your participation is entirely voluntary, you would of course be free to withdraw at any stage during this research study, without any consequence for your child or you.

Should you have any concerns regarding the manner in which this research project is conducted, please do not hesitate to contact me on 0413 808 863 or my supervisors, Dr. Dean and Dr. Tucker, on 9365 2336. Alternatively you can contact the Victoria University Human Research Ethics Committee (tel. 9688 4710).

Kind regards

Daniel Davis

Registered Psychologist

Doctor of Psychology (Clinical Psychology) Trainee

APPENDIX V: PARTICIPANT RESEARCH STUDY CONSENT FORM

VICTORIA UNIVERSITY

SCHOOL OF PSYCHOLOGY

CONSENT FORM FOR PARTICIPATION

I,.....

of.....

.....

.....

certify that I am voluntarily giving my consent to participate, together with my child,

.....,

in the study entitled, *The Personality Functioning of Boys with Attention-Deficit Hyperactivity Disorder*, being conducted at Victoria University by Mr Daniel Davis.

I certify that the aims of the study, together with any associated risks have been fully explained to me by Mr Daniel Davis and that I freely consent to participate, together with my child, in the proposed procedures of the study.

I have had the opportunity to have any questions answered and that I understand that I can withdraw from this research at any time, and that this withdrawal will not jeopardise me or my child in any way.

I have been informed that the information I provide will be kept confidential.

Signed:

.....

Date:

Any queries about your participation in this project may be directed to the researcher (Mr Daniel Davis [0413-808-863] or his supervisors Dr. Suzanne Dean and Dr. Alan Tucker (9365-2336). If you have any queries or complaints about the way you have been treated, you may contact the Secretary, University Human Research Ethics

Committee, Victoria University, PO Box 14428 MCMC, Melbourne, 8001 (telephone no: 03-9688 4710).

APPENDIX VI: PARTICIPANT RELEASE OF INFORMATION FORM

VICTORIA UNIVERSITY

SCHOOL OF PSYCHOLOGY

CONSENT TO RELEASE INFORMATION

I,, hereby consent for the release of a psychological report on my son, prepared by Mr Daniel Davis, to the treating medical practitioner / psychologist that referred my son and I to the study (The Personality Functioning of Boys with Attention-Deficit Hyperactivity Disorder) being conducted by Mr Davis. I also give consent for Mr Davis to discuss the said report with my son's treating medical practitioner / psychologist.

Name of Medical Practitioner:

Address of Medical Practitioner:

.....

.....

.....

Telephone Number:

Signed:

Date:

**APPENDIX VII: FREQUENCY DATA FOR IMPORTANT
COMPREHENSIVE SYSTEM RORSCHACH INKBLOT
METHOD VARIABLES OF BOYS WITH ADHD**

This Appendix presents a detailed summary of frequency data of important CS RIM variables concerning the personality functioning of the present sample of boys diagnosed with ADHD. Tables A, B, and C organise frequency data pertaining to constituent variables of the three core domains of personality functioning, namely ego functioning, object relations, and sense of self.

1. Frequency data concerning ego functioning variables

Table A below contrasts the frequency data in the present sample of boys and the published CS frequency data for 10 year-olds, derived from a sample of 1390 non-patient children (Exner, 2004), for RIM variables pertaining to the domain, ego functioning. Within the domain of ego functioning, the frequency data for its constituent variables, each measuring a specific aspect of personality functioning, are discussed individually.

1a. Frequencies concerning coping styles

As evidenced in Table A, both the present and CS non-patient samples have similar percentages of subjects with Introversive (e.g. 29 and 20 percent, respectively) and

Table A

Frequency Data for Important Comprehensive System Rorschach Inkblot Method Variables Concerning the Ego Functioning of ADHD and CS Non-Patient Children

Rorschach Ego Functioning Variables	Frequency in Present Sample	Percentage in Present Sample	Percentage from Comprehensive System Non-Patient Data for 10 Year-Olds^a
<u>Coping Styles</u>			
Introversive	5	29	20
Ambitent	5	29	32
Extratensive	3	18	38
Avoidant	4	24	11
<u>Stress Tolerance</u>			
D > 0	0	0	2
D ≤ 1	12	71	17
Adj D Score ≤ -1	11	65	17
<u>Information Processing</u>			
Zd < -.30	7	41	16
<u>Reality Testing</u>			
XA% < .70	14	82	7
WDA% < .75	13	76	0
X-% > .20	16	94	8
X-% > .30	14	82	0
Xu% > .20	13	77	18
<u>Perception and Thinking</u>			
PTI ≥ 4	3	18	0
SCZI ≥ 4	10	60	-
Level 2 Special Scores > 0	2	12	8
<u>Emotional Regulation and Capacity for Representation of Affect</u>			
FC > (CF+C) + 1	8	47	12
(CF+C) > FC + 1	1	6	50
Afr < Age Cut-off Score	12	71	-
<u>Global Coping Deficits</u>			
CDI ≥ 4	11	65	15

Note. ^aData obtained from tabulated descriptive statistics and frequencies for 1390 non-patient children and adolescents (Exner, 2004).

Ambivalent (e.g. 29 and 32 percent, respectively) coping styles. The former coping styles suggests a preference for thinking and reflection, whereas the latter refers to a tendency to fluctuate between expressive and reflective coping methods.

An Extratensive coping style, a preference for expressive forms of coping and problem solving, was less commonly found in present sample than the CS non-patient sample (e.g. 38 and 18 percent, respectively).

The tendency to use the defences of avoidance and denial in dealing with psychological problems, suggestive of an Avoidant coping style, was more commonly found in the present sample than the CS non-patient sample (e.g. 24 and 11 percent, respectively).

Thus, it can be concluded that, overall, more maladaptive means of coping were evident in the present sample than the CS non-patient sample.

1b. Frequencies concerning stress tolerance

Table A above indicates that both the present and CS non-patient samples had similarly low percentages of subjects (e.g. 0 and 2 percent, respectively) displaying plentiful internal coping resources, as indicated by D scores above 0, that serve to inoculate them against stress.

Tellingly, however, the present sample, as compared to the CS non-patient sample, included a significantly greater percentage of subjects burdened with stress, evidenced D scores less than 0 (e.g. 71 and 17 percent, respectively). Such D scores indicate that a subject's internal coping resources are insufficient to cope with felt internal and external pressures.

Similarly compelling is the finding that the present sample, as compared to the CS non-patient sample, had a significantly higher percentage of subjects (e.g. 65 and 17 percent, respectively) experiencing chronic stress overload, where internal resources become overwhelmed, evidenced by Adjusted D scores below 0.

1c. Frequencies concerning information processing

Reported above, the present sample, as compared to the CS non-patient sample, included a significantly greater percentage of subjects (e.g. 41 and 16 percent, respectively) evidencing impaired information processing in the form of haphazard attention to detail, suggested by Processing Efficiency (Zd) scores of less than -3.

1d. Frequencies concerning reality testing

Reality testing is assessed via numerous CS variables, some of which are listed in the Table above. Not surprisingly, significant differences were found between the present and non-patient samples in terms of their frequency data on these variables.

Reduced overall capacity for accurate perception, indicated by Form Appropriate Extended (XA%) scores of less than .70, was more commonly found in the present sample compared to the CS non-patient sample (e.g. 82 and 7 percent, respectively). A score of less than .70 on the XA% variable means that less than 70 percent of a subject's responses demonstrated accurate perception.

Similarly, the reduced capacity for accurate perception in responses involving all areas of the inkblot (i.e. Whole [W] responses) or commonly identified areas of the inkblot (i.e. Common Detail [D] responses), indicated by Form Appropriate–Common Areas (WDA%) scores of less than .75, was more commonly evident in the present sample, as compared to the CS non-patient sample (e.g. 76 and 0 percent, respectively). Fulfillment of the said clinical marker means that less than 75 percent of a subject's responses, using common areas of the inkblots, demonstrated accurate perception.

Consistent with the above findings concerning reality testing, the present sample, as compared to the CS non-patient sample, included a greater percentage of participants (e.g. 94 and 8 percent, respectively) demonstrating a propensity for distorted perception in their responses to the inkblots, as indicated by Distorted Form Quality (X-%) scores greater than .20. The indicator of pervasive distorted perception, suggested by a X-% score of greater than .30, was also more commonly found in the present sample than the CS non-patient sample (e.g. 82 and 0 percent, respectively).

An idiosyncratic style of perception, as indicated by an Unusual Form Use (Xu%) score of more than .20, was more commonly found in the present sample compared to the CS non-patient sample (e.g. 77 and 18 percent, respectively).

Taken together, these findings suggest that the present sample, compared to the CS non-patient sample, displayed reduced overall accuracy of perception, even where more obvious aspects of the inkblots were involved in their responses. Moreover, the present sample displayed a propensity to distort their perceptions, which might be categorised as a pervasive trend. Finally, in addition to these problems, the present sample was prone to idiosyncratic perception.

1e. Frequencies concerning perception and thinking

Global assessment of perceptual distortion and thought disorder, both psychotic processes, are measured in the CS by the Schizophrenia Index (SCZI) and Perception-Thinking Index (PTI), the latter being a revised and more stringent assessor of thought disorder. An additional variable, the frequency of Level 2 Special Scores, indicates the severity of thinking problems. Frequencies for these variables are listed in Table A above.

Evidence of perceptual difficulties and thinking problems, indicated by a PTI score of 4, was more commonly found in the present sample than the CS sample of non-patients (e.g. 18 and 0 percent, respectively). Using the less stringent index to assess psychotic process, namely a score above 4 on the SCZI, 60 percent of the present sample fulfilled this clinical marker.

The presence of severe thinking problems, indicated by the assignment of at least one Level 2 Special Score within an overall protocol, was found to be very uncommon low in both the present sample and CS non-patient sample (e.g. 12 and 8 percent, respectively).

Thus, while perceptual and thinking difficulties were significantly more common in the present sample compared to the CS non-patient sample, this was typically not reflective of severe thought disorder or psychosis. Instead, these frequency data findings point to the common occurrence of difficulties with reality testing and logical thinking in the present sample of boys with ADHD.

1f. Frequencies concerning emotional regulation

The capacity for adequate emotional regulation, as indicated by a greater proportion of colour responses with rather than without form, or having minimal form on the Form-Colour Ratio (i.e. $FC > [CF+C]+1$), surprisingly, was more frequently evident in the present sample compared to the CS non-patient sample (e.g. 47 to 12 percent, respectively).

In a similar vein, the tendency for unregulated emotional expression, as indicated by a predominance of formless colour responses on the Form-Colour Ratio (i.e. $[CF+C] > FC+1$), was less frequently evident in the present sample compared to the CS non-patient sample (e.g. 6 and 50 percent, respectively).

At face value, and interpreted in isolation, the stated frequency data alludes to the superior capacity for emotional regulation in the present ADHD sample compared to the CS non-patient sample. However, these findings need to be considered along with other variables pertaining to ego functioning, if an alternative and more balanced interpretation is to be reached.

The capacity to comfortably process and regulate affect, through mental representation of affect, is further signaled by the Affective Ratio (Afr). Impairment in this ego function is signaled when an Afr score falls below an age determined clinical marker. The latter occurred in 71 percent of the present ADHD sample, thus contradicting findings from the Form-Colour Ratio.

Section 3.3.7.1 of Chapter Three summarises and interprets evidence from published RIM studies concerning the difficulties of children with ADHD to mentally represent affective experiences.

1g. Frequencies concerning global social and coping deficits

Consistent with the above evidence of widespread problematic ego functioning in boys with ADHD, global social incompetence and coping difficulties, indicated by a Coping Deficit Index (CDI) score greater than 4, was apparent in a greater percentage of the present sample compared to the CS non-patient sample (e.g. 65 and 15 percent, respectively).

2. Frequency data concerning object relations variables

Table B below contrasts the frequency data in the present sample of boys and the published CS frequency data for 10 year-olds, derived from a sample of 1390 non-patient children (Exner, 2004), for RIM variables pertaining to the domain, object relations. Within the domain of object relations, the frequency data for its constituent variables, each measuring a specific aspect of personality functioning, are discussed individually.

Table B

Frequency Data for Important Comprehensive System Rorschach Inkblot Method Variables Concerning the Object Relations of ADHD and CS Non-Patient Children

Rorschach Object Relations Variables	Frequency in Present Sample	Percentage in Present Sample	Percentage from Comprehensive System Non-Patient Data for 10 Year-Olds^a
<u>Attachment Difficulties</u>			
Sum T = 0	8	47	12
<u>Anticipation of Rewarding Interactions</u>			
COP = 0	7	41	5
COP > 2	2	12	18
AG = 0	7	41	3
<u>Anticipation of Aggressive Interactions</u>			
AG > 2	1	6	15
<u>Interpersonal Adeptness</u>			
GHR > PHR	4	24	78

Note. ^aData obtained from tabulated descriptive statistics and frequencies for 1390 non-patient children and adolescents (Exner, 2004).

2a. Frequencies concerning attachment difficulties

Evident in Table B, the deficient capacity to form close attachments to people, indicated by the absence of Texture (T) responses in an overall protocol, was more

commonly found in the present sample compared to the CS non-patient sample (e.g. 47 and 12 percent, respectively).

2b. Frequencies concerning anticipation of rewarding interactions

Table B above reveals that the reduced capacity to anticipate reciprocal and rewarding interactions with others, indicated by the absence of Cooperative Movement (COP) responses in an overall protocol, was more commonly found in the present sample compared to the CS non-patient sample (e.g. 41 and 5 percent, respectively).

Despite the previous finding, a comparable percentage of the present sample and CS non-patient sample demonstrated good capacity to anticipate friendly and rewarding interactions (e.g. 12 and 18 percent, respectively), signaled by greater than two COP responses in an overall protocol.

2c. Frequencies concerning anticipation of aggressive interactions

Table B above suggests that the present sample, as compared to the CS non-patient sample, included a lower percentage of participants that anticipated aggressive interactions (e.g. 6 and 15 percent, respectively), indicated by more than two Aggressive Movement (AG) responses in an overall protocol. As this finding contradicts what is known about the social difficulties of these children, it might suggest that the present sample struggled to mentally represent interpersonally related aggressive thoughts and feelings.

2d. Frequencies concerning interpersonal adeptness

As evident from Table B, interpersonal adeptness, indicated by a greater number of responses portraying Good Human Representations (GHR) compared to Poor Human Representations (PHR) in an overall protocol, was less commonly observed in the present sample compared to the CS non-patient sample (e.g. 24 and 78 percent, respectively).

3. Frequency data concerning sense of self variables

Table C below contrasts the frequency data in the present sample of boys and the published CS frequency data for 10 year-olds, derived from a sample of 1390 non-patient children (Exner, 2004), for RIM variables pertaining to the domain, sense of self. Within the domain of object relations, the frequency data for its constituent variables, each measuring a specific aspect of personality functioning, are discussed individually. Data pertaining to two miscellaneous variables are also included.

3a. Frequencies concerning quality of identifications

In accordance with Table C, a greater percentage of participants from the present sample, as compared to the CS non-patient sample, demonstrated identifications that consisted of part-object and fantasised representations of people (e.g. 71 and 30

percent, respectively), indicated by less than two responses portraying whole and realistic humans in an overall protocol (i.e. Pure H < 2).

Table C

Frequency Data for Important Comprehensive System Rorschach Inkblot Method Variables Concerning the Sense of Self of ADHD and CS Non-Patient Children

Rorschach Sense of Self Variables	Frequency in Present Sample	Percentage in Present Sample	Percentage from Comprehensive System Non-Patient Data for 10 Year-Olds^b
<u>Quality of Identifications</u>			
Pure H < 2	12	71	30
<u>Self-Esteem</u>			
3r + (2)/R > Age Cut-off Score	16	94	3
<u>Dysphoric Affect</u>			
(FM+m) < Sum Shading	8	47	7
<u>Self-Critical Ideation</u>			
MOR > 2	7	41	11
<u>Global Depressive Features</u>			
DEPI ≥ 5	8	47	0
<u>Miscellaneous Variables^b</u>			
R < 17	0	0	11
R > 27	5	29	0

Note. ^aData obtained from tabulated descriptive statistics and frequencies for 1390 non-patient children and adolescents (Exner, 2004). ^bTwo miscellaneous Comprehensive system variables are also included in the table. While these are of clinical interest, they do not relate to sense of self.

3b. Frequencies concerning self-esteem

A significantly greater percentage of participants in the present sample, as compared to the CS non-patient sample, experienced self-esteem difficulties (e.g. 94 and 3

percent, respectively), indicated by scores on the Egocentricity Index ($3r + (2)/R$) falling below an age determined clinical marker.

3c. Frequencies concerning dysphoric affect

Consistent with the findings concerning self-esteem difficulties, Table C above reveals that a significantly greater percentage of participants from the present sample, as compared to the CS non-patient sample, demonstrated a propensity to experience and internalise depressive affect (e.g. 47 and 7 percent, respectively). The latter is indicated when there are a greater number of responses containing the determinant, Shading (Sh), than the determinant, Animal Movement (FM), in an overall protocol.

3d. Frequencies concerning self-critical ideation

Evident from Table C, a proneness to self critical ideation, indicated by more than two responses portraying Morbid (MOR) content in an overall protocol, was more commonly demonstrated by the present sample compared to the CS non-patient sample (e.g. 47 and 7 percent, respectively).

3e. Frequencies concerning depressive features

Finally, and entirely compatible with the reported frequencies for sense of self variables, the present sample, compared to the CS non-patient sample, included a

significantly greater percentage of participants evidencing depressive features (41 and 0 percent, respectively), indicated by scores above 4 on the Depression Index (DEPI).

3f. Frequencies concerning miscellaneous variables

With respect to the two miscellaneous variables, Table C above indicates the present sample, as compared to the CS non-patient sample, included no participants whom provided less than 17 responses to the ten inkblots (e.g. 0 and 11 percent, respectively). Conversely, the non-patient sample compared to the ADHD sample included no participants whom provided more than 27 responses to the ten inkblots (e.g. 0 and 29 percent, respectively).

APPENDIX VIII: SUMMARY OF FINDINGS

The hypotheses involving comparisons between the present sample of boys with ADHD and samples of past ADHD studies were all supported, and are summarised in Table D below. Thus, the present sample of boys with ADHD were found to resemble other published samples of children with ADHD, as well as a sample of children with Conduct Disorder, in terms of their ego functioning, object relations, and sense of self, measured by variables from the CS (Exner, 2003) and the Mutuality of Autonomy Scale (Urist, 1977) for the RIM.

Further, inspection of Table E below highlights that the two hypotheses involving to comparisons between ADHD boys with and without ODD were both supported. Thus, the subgroup of ADHD boys with ODD, compared to those without this comorbidity, were found to significantly differ in terms of their ego functioning and object relations, measured by variables from the CS (Exner, 2003) for the RIM.

Table D

Summary of Findings of Hypotheses Involving Comparisons Between the Entire ADHD Sample and Samples of Past Studies

Hypotheses	Findings
Ego Functioning	
<p><i>Hypothesis One:</i></p> <p>The present sample of boys diagnosed with ADHD does not differ from the Cotugno (1995) sample of children in terms of mean Coping Deficit Index (CDI) scores.</p>	Supported
<p><i>Hypothesis Two:</i></p> <p>The present sample of boys diagnosed with ADHD does not differ from the Bartell and Solanto (1995) and Cotugno (1995) samples of children with ADHD in terms of mean Distorted Form Quality (X-%) scores.</p>	Supported
Object Relations	
<p><i>Hypothesis Three:</i></p> <p>The proportion of RIM responses assigned MOA Scale scores of 6 or 7 produced by the present sample of boys diagnosed with ADHD does not differ from that produced by the Gacono and Meloy (1994) sample of children with CD.</p>	Supported
Sense of Self	
<p><i>Hypothesis Four:</i></p>	Supported

The present sample of boys diagnosed with ADHD does not differ from the Cotugno (1995) sample of children in terms of mean Depression Index (DEPI) scores.	
--	--

Table E

Summary of Findings for Hypotheses Involving Comparisons Between ADHD Boys With and Without ODD

Hypotheses	Findings
Ego Functioning	
<p><i>Hypothesis Five:</i></p> <p>A sub-group of ADHD boys diagnosed with co-morbid ODD includes more boys evidencing disturbed thinking, signalled by Weighted Sum of six Critical Special Scores (WSum6) falling beyond age determined clinical cut-off points, than the sub-group without ODD.</p>	Supported
<p><i>Hypothesis Six:</i></p> <p>A sub-group of ADHD boys diagnosed with co-morbid ODD includes more boys evidencing lack of empathy, signalled by the production of at least one Distorted Form Human Movement Response (M-), than the sub-group without ODD.</p>	Supported