THE SOCIAL, EMOTIONAL AND BEHAVIOURAL

DIFFICULTIES OF 8-12 YEAR-OLD

PRIMARY SCHOOL CHILDREN IN GREECE:

AN INVESTIGATION OF SOCIAL INTERACTION BIASES

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Thesis submitted for the degree of

Doctor of Philosophy (PhD)

2011

Declaration of Own Work

I hereby declare that, except where explicit attribution is made, the work presented in this thesis is entirely my own.

Signed: ....

Declaration of Word Count

The exact number of words of the thesis is 79,991. Bibliography and appendices are excluded from the word count.

Acknowledgements

This has been a long journey with ups and downs, twists and turns culminating in many more things that just the thesis. Few people along the way were very instrumental in helping me on my journey without whom reaching this destination would have been impossible.

First and foremost I would like to express my deepest gratitude and appreciation to my supervisor Professor Susan Hallam. She has been an inspiration and a bottomless well of positive energy at times when the going was tough. Her professional expertise, her generous devotion of time where it mattered, her thorough revisions and her constructive and wise feedback are invaluable. Thank you Sue, I am grateful.

I would also like to thank Andrea Creech for acting as an independent reader and for offering valuable, thorough and constructive feedback on the final draft of the thesis.

I would like to thank my friends for being there for me through difficult times over the years it took.

Last but not least, I dedicate this thesis to my beloved son Giorgo. His love and support has inspired me to try through this work and make some difference in children's lives. His patience was remarkable over the years when he had to miss his dad being around, and the phrase "I have to work on the thesis" must be one of his childhood aversions by now! Efxaristo Giorgo mou. I hope you understand now what you were part of. This one is also for you.

Last but not least in my mother's loving memory.

ABSTRACT

A number of research studies on the prevalence and intensity of Social, Emotional and Behavioural Difficulties (SEBDs) have expressed growing concern as problems continue to worsen for children, adolescents, and a new "sample" of preschoolers. 1 in 5 children and adolescents may have an identifiable mental health disorder requiring treatment. The severity and nature of these problems affect how children think, feel, and act, exposing them to seriously heightened risk of school failure, family conflicts, child abuse, later juvenile delinquency, early drug/alcohol abuse, violence, and even suicide. If untreated these factors may lead to maladjustment in adulthood, aggressive and anti-social personality disorders, alcohol dependency syndrome, criminal behaviour and marital breakdown.

The present study attempts to further the investigation of the effects of variables of social cognition **and** emotion on psychopathology by using a simultaneous design. Specific aims are to:

1) Develop and test a school-based standardised model for better screening of SEBDs in Greece for 8-12 year-old children. The predictive power of the simultaneous "independent variables" (social-cognitive and self-esteem/self worth) on "dependent" ones (psychopathology profiles) is explored by means of improving variance prediction.

2) Discover and analyze possible social interaction biases within groups of experimental children with particular types of emotional and behavioural problems.

The sample included 240 children assigned in 2 groups, the experimental and the control, each with closely matched 120 cases. Multiple regression, discriminant, factor, and cluster analyses were used. Results revealed that the experimental group were clearly biased to attribute hostile intent on an instigator and to respond aggressively not only in negative but especially in ambiguous outcome stories. This is a paradox. More in depth analysis revealed 2 profile groups within the experimental group of children: One group with children that, although biased in their causal attributions, were still able to control their reactions to comply within acceptable norms, and one group with children that "explain and deal with" social cues in generalized hostility. The latter suggests a "hard-wired" bias in thinking and behaving. The simultaneous independent variables model was only able to predict Mixed type of problems of which Social problems was the sole contributor in variance prediction.

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CHAPTER 1

INTRODUCTION:

RATIONALE, AIMS AND RESEARCH QUESTIONS

1.1 Introduction

Children are brought up in a multitude of social milieu in a diversified world from industrially developed countries with great social wealth to impoverished countries with poor environments and social support networks. Within countries there are microenvironments with communities of widely differing standards of living, social norms, economic advantage and/or disadvantage, and varying educational and support networks.

Despite these sometimes extremely diverse social and economic backgrounds, all children have in common their need for learning, for evolving, for coping, and for surviving. In the course of their development, evolution and progress towards adulthood, they must adapt and adjust to the prevailing social norms, follow behaviours expected of them to achieve acceptance, deal with their feelings in response to a multitude of events, and develop skills for coping constructively in order to excel. In doing so they utilize a set of multileveled and

complex behaviours and skills, including learning, forming attachments, understanding, goal-setting, motivation, assimilating and implementing family and social attitudes, strategies for coping, behavioural expressions and values, using selective memory, and executive functions. All these make a sophisticated mosaic that represents human behaviour across a variety of situations and environments. The present study aims to provide the Greek school context with an applied screening model for emotional and behavioural difficulties.

Though, all the facets of development described above are generic in depicting human and hence children's behaviour (I am going to use the term "children" to represent both children and adolescents in the thesis), not all children cope in the same way or equally successfully. Some of them grow up making enduring, healthy and long lasting friendships, show joy in learning, signalling a constructive and successful acquisition of the various developmental milestones.

In contrast, other children form troubled social relationships, are caught up in unfulfilling social interactions, very often get into trouble and exhibit unacceptable or worrisome behaviour. In school these behaviours can be manifested as defiance to teachers and authority, poor learning, problems with concentration, loneliness, excessive shyness, and repeated acts of aggression against others and/or their possessions. This range of externalized or internalized behaviours can be observed, analysed and tackled from different paradigms of scientific research and practice.

It is well accepted nowadays (Cefai & Cooper, 2009; Cross, 2004; Dodge, K.A., & Pettit, G.S., 2003) that the aetiology of these behaviours can be traced to

variables operating at a multifactorial basis, including biological, hereditary, peri-natal/post-natal, environmental, health and familial factors, as well as the child's acquired coping skills (Cicchetti & Hinshaw, 2002; Cicchetti & Rogosch, 1996). In addition, people sometimes neglect to acknowledge the socio-economic correlates of children's disengagement and their social, emotional and behavioural difficulties (Cooper; in Cefai & Cooper, 2009). An interesting definition is offered by David Smith (2006; in Cefai & Cooper,2009) identifying "attachment to school" as a crucial factor linked with educational and social interaction failure. In this view:

> *"Weak attachment to school is characterised by indifference or hostility towards teachers and scepticism about the value of schooling [...which] can lead to disaffection and alienation [... which are] problems of a psychological nature that impair the individual's capacity for social and academic engagement"*
>
> *(P. Cooper; in Cefai & Cooper, 2009).*

In spite of the polarity between pro-social behaviour and the experiencing and/or the portrayal of problems or maladaptive interactions between a child and their social environment -as identified through a school-based assessment- there is a mediator key category variable in operation referred to as resilience. Its role helps resist the common stereotypical assertion that *all children with problems will ultimately become clinical cases.* This mediator can alter the experiencing of problems in a period of a child's life, enabling coping (time given), so that the child avoids further problems. Resilience consists of mechanisms (voluntary and involuntary) which children utilize to cope with adverse and stressful situations.

Some researchers suggested that <u>resilience</u> is composed of children's "hard-wired" (i.e. temperament) cognition and reaction styles, their socially and cognitively acquired behaviours, and the metacognitive processing that mediates personal experiences and their interpretation (Calkins et al., 2007; for a review). It is proposed by Calkins et al., (2007) that through the multidirectional influences of these processes and their subsequent operative functions, children manage to shape a personal style of understanding and reacting to events and feelings.

Until twenty or thirty years ago, the clinical training of professionals involved with "diagnostic assessment" or "clinical screening" both in the UK and the US (two of the leading countries in research, intervention programs and legislative Acts to cater for children with SEBDs) indicated that the behaviour of a child was termed problematic, concerning, challenging or "psychopathological" (many theorists and practitioners are at odds with rooting the problem solely or primarily within the child, which is discussed in the following paragraphs) at a given time if it was of a certain intensity and negative complexity (Cicchetti & Dawson, 2002). However,   Should the latter seriously affect the quality of a child's social relationships, and consequent social adjustment, then a maladjusted behaviour label was applied. Concern about the quality of children's social relationships has been emphasized by research evidence repeatedly suggesting a link between social adjustment and later life difficulties and/or maladjustment (see Parker & Asher, 1987, for an early review).

Remarkably, these assessments made no reference to the issue of "age-appropriate behaviour". This began to change about twenty years ago with the

proliferation and dissemination of the ideas of the discipline of Developmental Psychopathology, which introduced the concept *developmentally appropriate multi-informant empirically-based assessment* (Achenbach, 1985, 1990, Achenbach & McConaughy, 1987, Achenbach et al., 1987). The latter concept was reinforced by the construction of a series of checklists or scales by Achenbach, aimed at holistically screening for "psychopathology" in preschool, and school age children and adolescents, as well as young adults. The intention was to bridge the gap between a broad clinical assessment and a crude test-oriented diagnostic assessment procedure.

Even before the above scales were tested empirically, questions arose regarding the onset of maladaptive behaviour in children of different ages and the possible consequences for the identification of problems and their severity. In simple terms, a group of items leading to a high score in one age range could identify a child as portraying intense problems or ones of a "psychopathological" degree (in clinically based language), whereas the same items could render this child "average" at another age. Hence, age was deemed crucially important (Cicchetti & Dawson, 2002; Achenbach, 1990) alongside the typology of problems, to render validity to any screening with attached categorisation of a child's behaviour.

Seriously challenging behaviour at school, or "child psychopathology" as other researchers call it (Rutter & Sroufe, 2000; Cicchetti & Hinshaw, 2002) is most commonly referred to recently as Social, Emotional and Behavioural Difficulties (SEBDs, a subheading of Special Educational Needs in England and

Wales; MacNab, Visser, and Daniels, 2008; Visser, 2005; Visser, Daniels, and MacNab, 2005; Visser & Stokes, 2003; Visser, 2001).

A school of theorists and researchers are inclined to categorize "maladaptive" (Harter, 1990b; Stromquist & Strauman, 1992; Dodge & Pettit, 2003) social behaviour according to clinically derived standards or labels. Although most researchers did so in the pursuit of finding "a better and more accurate diagnosis" in order to inform more potentially successful interventions, it has alienated many educators, parents, educational psychologists and social scientists. It appears to presuppose (and in many instances, it did) that the problem lies **within** the child who could be "fixed". Social psychology, post-modernism, and social-constructionism have found a way to influence the conceptual thinking of researchers in the field, along with the growing sophistication of the methodologies of research designs around maladjustment. Consequently, researchers began to realise that a balanced view of investigating both **within** child correlates and **between** child and environment interactions *simultaneously* was accounting for a much larger percentage of the variance of challenging behaviours with these children.

The past couple of decades have also seen an increase in the significance of emotions in education and social behaviour (Schultz, Izard, & Bear, 2004), with a shifting tendency to use a humanistic, holistic and social-emotional approach to school-based practices.

1.1.1. The UK legislation on SEBD provision

In the UK in December 2002 the Government set out to improve behaviour and attendance in schools. The resulting national programme for improving behaviour and attendance in schools was an amendment upon the Education Act of 1996, and has several important aims:

- to raise standards of behaviour and improve school attendance in schools, making every school a place of inclusive learning in which pupils achieve their potential and have respect for others
- to ensure all children receive a high quality education including those who have been excluded or who have fallen out of the education system
- to engage pupils and parents more actively in behaviour and attendance in schools.

Fundamental to the national programme is the Behaviour Improvement Programme (BIP). A key component of the BIP is implementation of multi-agency teams, known as behaviour and education support teams (BESTs). Their role is to promote emotional well-being, positive behaviour and school attendance, by identifying and supporting those with, or at risk of developing, emotional and behavioural problems.

In the 2008 Education and Skills Act (see: http://www.dcsf.gov.uk/educationandskills), a definition of special educational needs is provided as well as guidance on how Social, Emotional and Behavioural difficulties (SEBDs) may be a special educational need. The amendment defines that children and young people with SEBDs have SEN if they have a learning difficulty that calls for special educational provision, that is provision that is additional to or different from provision that is generally available. Pupils with

SEBDs cover the full range of ability. Their difficulties may cause a barrier to learning. Equally, a learning difficulty may lead to or exacerbate social, emotional and behavioural difficulties.

The term SEBDs covers a wide range of SEN. It can include children and young people with conduct disorders, hyperkinetic disorders and less obvious disorders such as anxiety, school phobia or depression. There need not be a medical diagnosis for a child or young person to be identified as having SEBDs, though a diagnosis may provide pointers for the appropriate strategies to manage and minimize the impact of the condition. The present thesis will refer to child maladjustment using the abbreviation SEBDs in accordance with the official England and Wales clinical and research label and despite international literature's use still of the abbreviation EBD (MacNab, Visser, and Daniels, 2008; Visser, 2005; Visser, Daniels, and MacNab, 2005; Visser & Stokes, 2003; Visser, 2001).

A new fine grained chapter in the Education Bill (2008) went further than the previous descriptions of support for children with Special Needs, to be called "Supporting emotional wellbeing and mental health". In its guidelines it specified that:

> "We want to give all children and young people the best chance of a happy and healthy life. Their emotional wellbeing and mental health is fundamental to this ambition.
>
> To improve the mental health of all children and young people we are providing support for local areas to:
>
> - commission services that promote children and young people's emotional wellbeing
> - ensure partnership working between multi-agency services to promote the mental health of all children and young people

- provide access to mental health care for all children, young people and their families.

Multi-agency service provision is at the heart of child and adolescent mental health services (CAMHS). The term embraces all those services that contribute to the mental health care of children and young people whether provided by health, education or social services, or by other agencies.

The DCSF is funding Targeted Mental Health in Schools (TaMHS), a three-year pathfinder programme aimed at supporting the development of innovative models of therapeutic and holistic mental health support in schools for children and young people aged 5 to 13 at risk of, and/or experiencing, mental health problems, and their families.

The mental health and psychological wellbeing of children and young people is one of the 11 standards of the National Service Framework for Children, Young People and Maternity Services (the Children's NSF)."

(REF:*http://www.dcsf.gov.uk/everychildmatters/healthandwellbeing/mentalhealthissues/mentalhealthissues*)

On 30 September 2009 the Secretary of State launched the new Behaviour Challenge to encourage and support all schools to achieve consistently higher levels of behaviour and attendance. It reflects the key recommendations of Sir Alan Steer's final report on behaviour practices, and also links with the *Twenty-First Century Schools* White Paper proposals.

1.1.2. Viewing SEBDs through a life-cycle perspective

Nowadays, SEBDs are perceived from a combined perspective. One aspect involves the context of developmental "psychopathology", and the other involves screening the socially constructed application of the "problem" label on a child's behaviour taking into account "the context on the person's behaviour effect", both

of which typically occur across the life cycle. In my view, this combined perspective provides a better and more balanced understanding of maladjustment in relation to the milestones and sequences in physical, cognitive, social-emotional, and educational development.

SEBDs involving children and adolescents have received growing attention in various countries and different cultures. This is particularly so over the last 15 years as SEBDs have fallen under the rubric of community sensitization for the promotion of mental health services. The year 2003 was officially named as the year of mental health worldwide by the World Health Organization (WHO). The actions proposed during the year were designed to foster better understanding, assessment, intervention and prevention, and epitomize the realization that too many problems pass undetected especially at school age. In an August 2010 WHO internationally-based research it is reported that in any given year, about 20% of adolescents will experience a mental health problem, most commonly depression or anxiety (WHO, 2010).

It is a growing concern for communities, researchers, educators, politicians, clinicians and all involved professionals, that only 15-20% of children in need of remedial help will actually get it. This leaves a large proportion of children and adolescents in need unaccounted for. They progress through their developmental milestones utilizing only their very modest personal skills and whatever alliances they can make within their immediate social milieu. Often the problems they face call for a demanding set of social and cognitive skills in order for them to be tackled successfully. If this does not occur, these problems can have a considerable

impact on their lives, those of their families, their schools, and society overall.

In order to reverse the negative prospects of these young people and to reinforce the methods that work to assist them, better models for diagnostically assessing their individual differences are required. Researchers need to help design and implement better strategies for coping with the problems.

Explicitly, in the last twelve years many studies have attempted to create a map of the possible factors that could provide better predictions of maladjustment or psychopathology in school children, by attempting to identify a combination of independent variables which account for variations in levels of psychopathology. Initially, crude measures of non-social cognitive skills associated with performance were explored (i.e. perspective taking, role taking, and referential communication; Flavell et al., 1968; Selman, 1971). With the influence of social psychology and the advancement of social information processing theory, it became apparent that understanding, processing, and predicting the nature of maladjustment was extremely complicated. The next step for researchers was to try and identify or propose those variables that seemed to have a preponderant effect on SEBDs or specific maladjustment problems.

From the theoretical perspective, children's Maladjustment has been studied mostly in relation to **either** Social Cognitive **or** Emotional factors. Researchers have used theoretical models based either on the former or the latter to attempt to better predict or account for a larger percentage of variance in children's psychopathology. Various measures and variables have been used and investigated in different combinations but always within either the Social Cognition or the

Emotion framework.

For example, in Dodge's **social information processing** paradigm of Social-Cognitive measures, a 6-step model has been suggested to account for social adjustment/maladjustment outcomes (Crick and Dodge, 1994):

I.   Encoding of cues

II.   Interpretation of cues (causal attributions, intent attributions)

III.   Clarification of goals (arousal regulation)

IV.   Response access or construction

V.   Response decision (Response evaluation, Outcome expectations, Response selection)

VI.   Behavioural enactment.

These different stages involved in processing social information were originally formulated to be working in a linear way. But there has been strong suggestive evidence that behavioural responding is not always a mere summation of different components in a sequential processing model. It seems that it follows a more interactive and/or parallel organization (Dodge and Somberg, 1987; Costanzo and Dix, 1983, and lately, Crick and Dodge, 1994; 1996; Dodge, 2002; 2006).

Emotion was largely neglected as operating alongside social information processing in past models of social adjustment (Dodge, 1986; Gottman, 1986). The weakness of ignoring the primary role of emotion was not only limited to processing models but, rather, was a seriously neglected issue in the literature

within experimental cognitive psychology and social cognition (Winfrey & Goldfried, 1986). It was not until the late 1990's that Carroll Izard (1993; 1998; 1999; 2000; 2002) and colleagues shed light on the functions of emotions in development and the prevention of behaviour problems and psychopathology. I had already begun to consider these issues in the early 1990's when the design and methodology of the present thesis was conceptualized. I developed the conceptual basis for a simultaneous cognition-emotion-action research design to explore how to screen behaviour problems in schools with the aim to early detect and prevent their occurrence (Cicchetti & Hinshaw, 2002).

Early in the 1980's some theorists defined emotion as distinct and separate from social information processing (Gottman, 1986; Zajonc, 1980), while others argued for the need to integrate affect and cognition in one model (Greenberg & Safran, 1984). Empirical support for such an integrated model was, however, slow to develop (Winfrey & Goldfried, 1986), as was the development of prevention and/or intervention programs incorporating a substantial emotions component within a multileveled, multitheory, multimethod intervention (Beland, 1997; Greenberg, Kusche, Cook, & Quamma, 1995, PATHS; Spivak & Shure, 1989, ICPS; Conduct Problems Prevention Research Group, 1999a, 1999b; Greenberg and Kusche, 1993; Shure & Spivak, 1979; Van Schoiack-Edstrom, Frey, & Beland, 2002).

In addition, most of the relevant studies of emotion focused on the relationship between social adjustment and emotion **to the exclusion** of social

information processing (or have assessed the relation between only two of these variables at one time), (Crick & Dodge, 1994). Few researchers have attempted to investigate the possible relationship between social information processing and emotion as having an integrated simultaneous impact on social adjustment (see Ladd & Crick, 1989). Even fewer researchers have included social maladjustment as a focus of their design. The present study attempts to remedy both of these shortcomings.

In addition to attempting to move beyond the weaknesses and discrepancies found in the international literature, the present study aims to provide the Greek school context with an applied screening model for emotional and behavioural difficulties. In order for the latter to be better understood by the reader a description of the Greek context is presented below.

1.2 THE GREEK CONTEXT

1.2.1 The Greek school ethos, inclusive practices and pedagogical approaches

The schools in Greece are divided into public/state schools and private schools. Public/state schools comprise 95 percent of the total, are financed through the taxation system by the national government, and do not charge parents any fees. On the other hand, private schools are profitable organisations that depend on tuition fees.

The Greek school ethos values education as paramount in "shaping"

responsible and generally educated citizens of the future. Since the influx of many culturally and ethnically diverse families over the last 20 years, Greek schools have shifted their ethos to include children of diverse backgrounds as equals in the learning process. The curriculum has also been changed to a slower pace to reflect the ethnic and cultural diversity of the school population that in some inner city schools amounts to as high as 65 percent of non-Greek students. The only ethos that remains unchanged is the religious one, that is, Christian Orthodoxy is always taught in primary and junior secondary schools as a secondary subject. The education system is teacher-centric, and the information or taught subject is mostly teacher-provided and only minimally self-exploratory for children. Primary schools contain no support staff for "challenging" pupils, and the teacher has to accommodate their needs within the mainstream class. The ethos also does not tolerate bullying, without having an ethnic anti-bullying strategy in place per se. Racially prejudicial behaviour or treatment is also not tolerated, without having an ethnic strategy in place. Teachers are sent guidelines for the equal treatment of children and information on strategies of no tolerance of racially provoked abusive name-calling. However, no specific check points of dealing with such behaviours are in place.

Inclusive practices in the state schools are based on the availability of a special class or school in the vicinity that a child with "special needs" could attend. A statement -granting Special needs children exclusion- is provided largely on the basis of physical or mental challenges. Pupils with SEBDs are largely accommodated within regular classrooms by regular teachers. Another partially exclusive education or teaching support is provided on the basis of a Greek

language handicap for children new to the country who legally have to attend a Greek school. In addition, the pedagogical approach adopted in the teaching at Greek schools is largely either focused on an entire class or is individualistic. No group teaching organisations are involved in the learning experience.

1.2.2 Special Educational Needs (SEN): Background Context

In Greece there have been major changes recently relating to the organisation of Special Needs provision. Though, these changes are not of the same magnitude as those found in north Europe, progress has been made towards the European Union's aim for integrating as many pupils as possible within mainstream education. Pilot schools (in various catchment areas) have been set up to provide one or more special classes attached to the main school. Special Needs teachers are formally appointed to posts to teach the special classes.

As is set out in the official Annual Education Yearbook "The Greek Education System: Facts and Figures (Education Research Centre of Greece, Papakyriakopoulos et al.; 2003) and in accordance with European Union policy and guidelines regarding the integration of as many special needs pupils in mainstream education (where possible):

[…] In Greece too, educational policy and practice work in the direction of the integration of almost all students in mainstream education […] A prerequisite for the inclusion of special needs children […] is mainly the school's ability to cover the needs of the integrated students while

preserving the educational standard for the rest of the students."

<div align="right">(pp.30, Section: Special Education)</div>

Despite this being the background as it relates to international policies, in practice, a lot is left to be desired as far as the introduction and application of these well meant theoretical standpoints is concerned, regarding proper screening, assessment, special educational planning, teaching, and remedying children's SEBDs.

1.2.2 SEN Provision-Social, Emotional, and Behavioural Difficulties

In the Greek system children with all types of problems are not appropriately catered for. There is provision only for the major categories of developmental deficiencies or physical handicaps. Children experiencing mild to moderate behaviour and learning difficulties are only offered mainstream schooling, with specialist support only for language and reading difficulties. In particular, every medium size primary school (statistically defined as having 200+ children) has a designated teacher or two who are assigned with remedial education responsibilities for children who are either falling behind in Greek language comprehension (mainly immigrants) or have some form of reading-learning difficulties. As most SEBDs children also exhibit learning difficulties, they are often hidden within the category of "learning" problems and are only offered remedial help. Only in the event of total failure of handling a child's case

by the teacher and the head teacher is the external school counsellor called in, with his/her contribution limited to setting up a meeting with the parents and asking for their permission in most cases to forward the "problem" to a Medical-Education Centre.

The system is characterised by slow responses and rigidity and there is no planned special provision for children with mild or moderate SEBDs to support these children effectively. Therefore, mainstream teachers have to accommodate children with special educational needs with very limited resources and no teaching assistance or behavioural support. However, a growing number of teachers aged 25-40 have qualifications relevant for offering support and dealing with challenging behaviour in the class.

To meet this pressing social need and the gap in provision the state has taken the following steps:

Each school belongs to a local authority district that has a school counsellor who is called in to address issues related to a specific child's problems, to resolve disputes between parents and teachers as well as between teachers. Over the last 8 years, the state has put in place Centres of Diagnosis, Assessment and Support (formerly **ΚΔΑΥ**, recently renamed **ΚΕΔΔΥ**) which are intended to bridge the gap between the problems children, schools and educators face, and develop proper specialized assessment systems. Despite this improvement, ΚΔΑΥ are assigned a forbiddingly large number of schools, are understaffed and not appropriately equipped (test wise) to perform the duties expected of them by school communities.

Thus, teachers and parents are left to seek professional help either in the

private sector (only open to those who can afford it, and these are not the majority of parents whose children attend public schools) or in **Medical-Education Centres**, also recently developed in the boroughs. These Centres are normally staffed by special educators, a doctor, a clinical psychologist and a child psychiatrist. These, in practice, are those who undertake the major load of diagnostic and treatment work needed in relation to children and their families. They also accept people through national insurance routes, therefore providing an economic way of service provision for low-income families. Of course, this has a cost; generally waiting times for appointments extend over a period of several months because of the centres' workloads. Thus, SEBDs/maladjusted children are, in practice, everyday at school and at home dealt with through the resources of the school, teachers and parents.

Some new special schools have also been established in Athens and other cities. Children with severe problems are placed there, when the provision and physical resources offered in the special classes of a mainstream school are not sufficient to accommodate their needs. However, the criteria for selection are not set out clearly. Referral to a special school placement relies primarily not on the diagnostic assessment of a child's needs, but on the availability of special provision in the school (or another designated school with special classes). If the provision needed is not available in mainstream school (in terms of resources and staffing) then the child would be statemented for placement from a special class to a special school.

1.2.3 Facts and Figures

In the Greek education system the official statistical data regarding students highlight a paradox. In these statistics, Primary schools seem to be "burdened" with the task of identifying (through diagnosis) and educating (through special school or class placement) children with special needs. However, preschool statistics (i.e. before official primary education, 4-6 year-olds) suggest that provision for diagnosis and intervention is scarce and that the numbers of children receiving some sort of remedial help are very small. Moreover, the educational system does not have an appropriately standardised system of identifying these children that is accepted by all expert parties involved.

At secondary level special provision is scarce although logically it should extend the path of special provision set out in primary education. Statistically, children with problems in the primary school do not "appear" in the statistics for secondary education (Greek National Stats, 2007; see Table 1.1, page 32 below). In fact many of them become school drop-outs early in secondary education, and others are "squeezed" back into mainstream education, due mainly to the very limited placement capacity of secondary special schools (far fewer in numbers and resources than primary schools), and to the pressure exerted by parents on the system in order to avoid what they perceive as the social stigma attached to special school placement. Where children are squeezed back into mainstream education a great many of them do not receive the attention needed for their SEN. The additional physical and/or material resources are not on offer in most cases.

In addition, since the tests used for diagnostic assessment are selected from a pool by a special needs counsellor, a psychologist, or a special needs teacher

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(though most of these have a postgraduate degree), identification depends on the particular assessment instrument, the report of the mainstream teacher, and the empirical report of the assessor, for a child to be statemented for exclusion from a mainstream class. Sometimes this exclusion is "forced" before a standardised assessment yields any conclusive results, due to the perceived immediate need of a child for specialised placement and, therefore, exclusion.

1.2.4 The Statistics

1.2.4.1 Students

The rate of students attending special (i.e. separate) classes or schools in Greece is about 1.2% (Greek Ministry of Education, 2007). This number is not in accordance with the latest European Union as well as International figures (U.S. Education Demographics and Stats, 2004; Costello et al., 2005) on cross-cultural prevalence rates that report 10-30% of children in a class having some form of special needs[1] that require a degree of special needs provision (for instance material, human or educational resources in tailor-made programs). In addition, three exhaustive reviews (Costello et al., 2005; Canino, Bird, Rubio-Stupec, & Bravo, 1995; Offord, 1995) of epidemiological surveys across several countries over 40 years suggest that at any given time there are between 3-22% of children school-age children with psychiatric disorders. Noam and Hermann (2002) report that more than 25% of U.S. children are estimated to be at risk for school failure and significant social, emotional and behavioural problems (i.e. depression,

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[1] Defined by consensus as including specific learning disability, speech or language impairment, mental retardation, social-emotional-behavioural disturbance, autism, hearing impairment, and visual impairment.

anxiety, aggression, suicide, and unhealthy risk taking). Furthermore, in their study 20% of regular U.S. inner-city school children were as symptomatic in externalizing and internalizing behaviours as a comparison sample from an inpatient psychiatric unit.

The question then is why are numbers so small in Greece? The answer lies within the particularities of the Greek school system discussed above.

In the Annual Education Yearbook "The Greek Education System: Facts and Figures (Education Research Centre of Greece, Papakyriakopoulos et al., 2003), under the section on Special Needs and in line with European Union policy and guidelines for integrating special needs pupils in mainstream education, is the following:

> "Special Education is intended for persons with special educational needs, particularly those with significant learning difficulty and adjustment problems due to physical, cognitive, psychological, and social differences. After the mid '80s in Europe, the integration of special needs pupils in mainstream education schools has prevailed [...]"
>
> (pp.30, Section: Special Education)

Presented below are the official statistics of the Greek Ministry of Education regarding Special Needs School Units, Special Classes in mainstream schools, teachers and supporting staff as well as pupil numbers and categories of problems statemented. In practice the introduction and application of policy is limited, regarding proper screening, assessment, special educational planning,

teaching, and remedying children's SEBDs problems as the national statistic of 1.2% of children in its aegis suggests.

Table 1.1. Special Education in Greece: Students, Staff, School Units and Classes per level of education (2007)

Level of Education		Schools & Classes	Students	Qualified Teachers	Permanent and/or Substitute Staff *
Kindergarten	School Units	118	385	352	152
Kindergarten	Inclusion Classes	147	248	352	74
Primary	School Units	170	2,857	352	800
Primary	Inclusion Classes	1,325	12,559	352	920
Secondary	Lower Level-Schools	10	237	In Schools 104	153
Secondary	Upper Level-Schools	4	80	In Schools 104	78
Secondary	Inclusion Classes in Lower & Upper	279	1,019	In Schools 104	131
Secondary	Special Technical Vocational Schools (TEE)	12	186	In Diagnostic Assessment Centres 215	87
Secondary	Special Vocational Education and Training Workshops (EEEEK)	78	1,575	In Diagnostic Assessment Centres 215	400
NATIONAL TOTALS		**2,037**	**19,146**	**671**	**2,795**

* Additional Professional Staff consist of in total 669 people of the following specialties: 203 Psychologists, 200 Social Workers, 41 Ergotherapists, 43 Physiotherapists, 47 Speech therapists, 40 Nurses, 88 Special Assisting Staff, 5 personnel specialised for children with vision and hearing disabilities, and 2 Child Psychiatrists.

1.2.4.2 School Units and Classes

At the end of the school year 2007, there were 312 Special Education School Units out of 15,865 schools in total, a percentage of 1.2%. There were also 1,751 Special Needs inclusion classes that operated within mainstream schools and were distributed as follows:

Figure 1.1. Special Education in Greece: School Units & Inclusion Classes (2007)
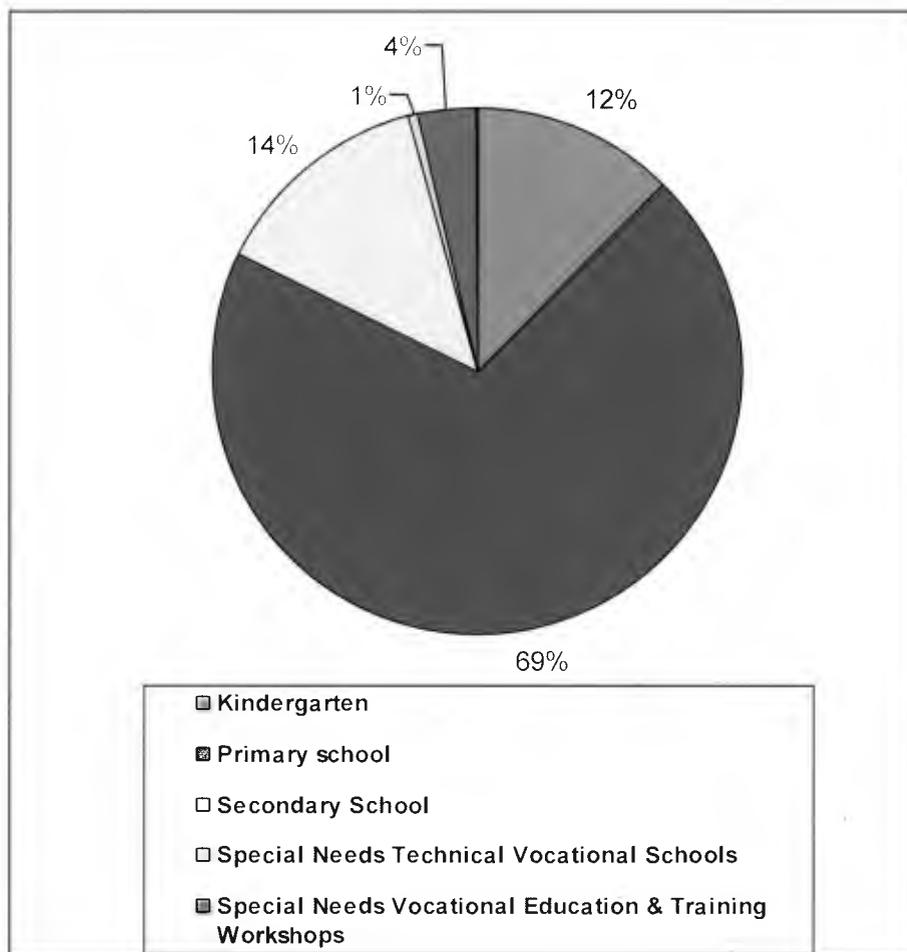
The spectrum of problems is officially categorised to be of 12 kinds, according to the needs of children some of which overlap with the exhibition of problem behaviours. These are set out in Figures 1.2, 1.3 and Table 1.1 above:

Figure 1.2. Special Education in Greece: School units & Inclusion classes per category of disability (2007)
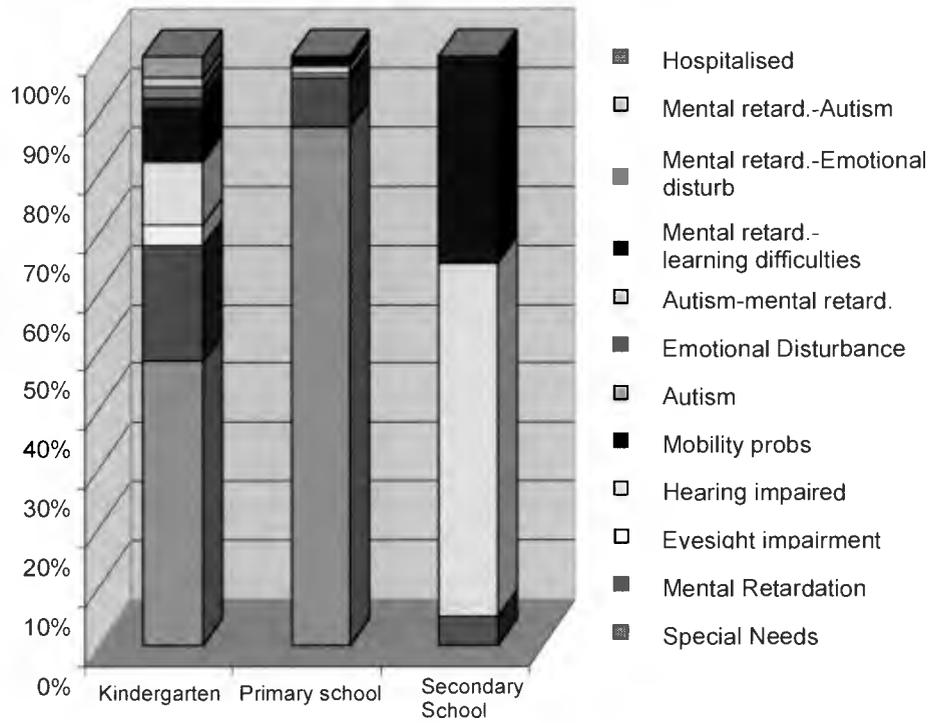
Figure 1.3. Special Education in Greece: School Units & Inclusion Classes per level of education (2007).
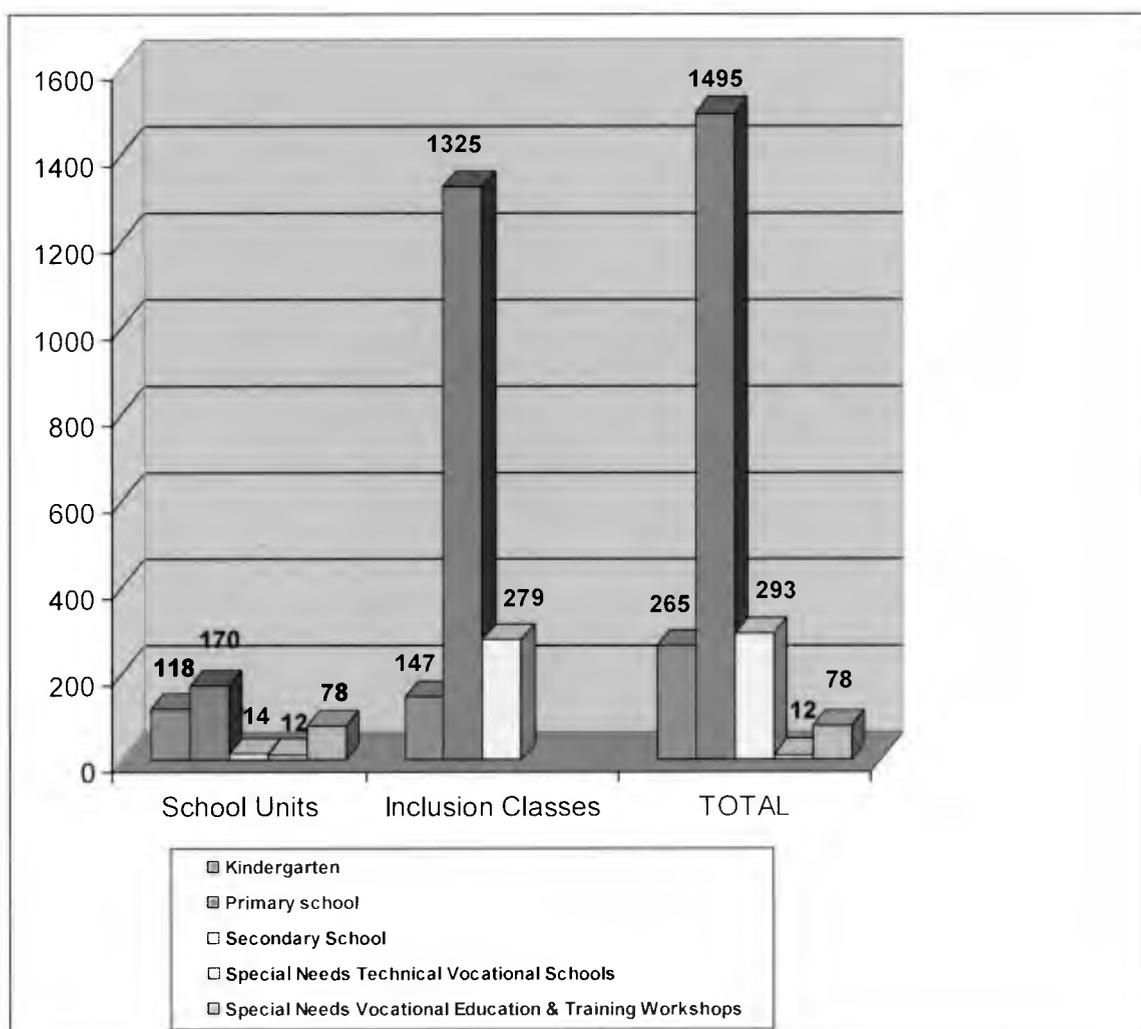
Figure 1.1 shows that primary schools have the responsibility of identifying and educating children with special needs. While the provision of inclusion classes is not high in preschool education this seems acceptable in a system that does not have a functional and standardised system of identifying special needs. In contrast, the lack of provision in secondary schools which should continue the special provision set out in primary education is curious. It is as if children with problems in the primary school disappear when they transfer to secondary education. It could be discussed whether this is because the system does not keep a good track of these

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children, there are no laid out resources for their needs, or faced with unsurmountable educational problems they fall within the cracks of the system and vanish or they just drop out of schooling.

1.3 The Importance of the Present Study.

1.3.1 History

In international terms, developmental research often seeks to demonstrate a relevance to psychopathology, child care, or education. Yet, surprisingly, very few links have been set up between such research and the service systems intended to help children. Greece is no exception, and as most services are not created on the basis of developmental theory and data, children seldom benefit directly from developmental research.

The weakness lies in the fact that in the average public school in Greece there are not highly trained people attached to each school that could carry out emotional and behavioural assessments of children. Researchers and educators are preoccupied with each other's status instead of making children profit from experimental methods, advances and interventions that need to be school-based. There is a distance between teachers and child psychologists, a clash of responsibilities and an observed power status struggle in the school context.

A more collaborative approach could yield better results in accommodating the individual needs of pupils. Achenbach and Edelbrock (1981), conducting research in the U.S. school context, suggested that:

"a more fruitful liaison between developmental researchers and practitioners requires a common data base on which both research and services can build. Such a data base would be most useful if it fulfilled the following criteria: (a) it was obtained by methods readily utilized in service as well as research contexts; (b) it took account of key demographic variables, such as age, gender, socioeconomic status, and race; and (c) it permitted comparisons between children thought to need professional help for maladaptive behaviour and representative samples of otherwise similar children not needing help."

Under current legislation in Greece children at primary school level are not assessed normatively in each class in terms of behaviour. However, there is a common realization among Greek professionals, that a type of screening assessment is needed, in part, for reasons of standardization of international cross-cultural tests measuring clinical behaviour. Moreover, national prevalence data need to be sought as an index of the percentage and preponderance of behaviour problems.

Up until the mid-1990s prevalence rates in Greece existed only for SEBDs assessed through parental reports (McDonald et al., 1995) using the Child Behavior Checklist (CBCL, Achenbach & Edelbrock, 1981). There was no formal attempt on a large scale to gather normative data on SEBDs within average schools in both rural and inner city areas using the Teacher's Report Form (TRF, Achenbach & Edelbrock, 1986).

The first use of the Teachers Report Form for screening problems in schools was comprehensively introduced in the course of the present study's design and data collection in Greece (1992). Rather than researching clinical prevalence, the

aims were to standardise the translation of the clinical language used in the behaviour description items of the scale.

A formal standardization of the TRF's clinical validity in a large Greek school population was conducted by Hartman, Roussos et al. (1995) based on my standardised translation.

This standardization conducted on a nationally representative sample helped monitor the prevalence of pupils' behaviour problems in every grade. This could facilitate any intended course of action to deal effectively with SEBDs.

1.3.2 Present Importance

From the discussion of the Greek system's weaknesses outlined above it is apparent that critical time is lost between the onset of problems for the child and the provision of any form of professional assessment and support. This has made the conceptualization of the present study important.

The aim of screening children for possible problems has been criticised on the grounds of potential misclassification, fixed "labelling" by teachers and poor predictive validity, as pointed out by repeated empirical findings (Lindsay & Wedell, 1982). Although, this criticism might relate to how the data were analysed. Therefore, the Greek educational system is in need of finding convenient and effective as well as statistically sound instruments that can be used for identifying and monitoring children who have special educational needs.

The aim of this study (among others) was to provide a standard school-

based assessment of young children's emotional and behavioural development. In principle, standardised assessments should help to organize and direct human and material resources towards the children, classes and schools most in need of them, so that when a crisis assessment is needed, it can be overseen by a specialized teacher or an external psychologist to assist in addressing problems very quickly once they are identified. This assessment would need to be fast, timely, make appropriate use of school resources where available, and use standardized instruments to make valid and reliable assessments, while being informative to teachers and the school and in this way strengthening a whole school approach to tackling problems.

1.4 General Aims of the study

In most studies and critical discussions the impact of social information-processing on social adjustment or maladjustment has dominated the field **at the expense of** any simultaneous investigation of the possible reciprocal role that social adjustment[2] variables might play in shaping particular social cognitions. The importance of such reciprocal considerations, though well recognised in various studies (e.g. Coie, 1990; Dodge & Feldman, 1990; Franke & Hymel, 1984; Ladd & Crick, 1989; Shantz, 1983), has so far not been translated into detailed empirical research. The present thesis aims to remedy this by attempting to investigate social adjustment variables that could be considered alongside other independent variables as exerting a simultaneous effect on the formation of psychopathological

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[2] Social adjustment may be defined in various ways, for example in terms of peer evaluation and other social experiences in the life of a child, of experts' professionals evaluations, and of collective information gathered from important others across a variety of contexts, i.e. parents, family, teachers, friends.

behaviours and behaviour tendencies.

Within the present study, it has been recognised that a complete model incorporating variables of social adjustment would need to take into account their role as antecedent to social information processing strategies, and indeed to self-worth perceptions. The suggestion is that the latter are associated with experiences that are stored in, derived from, executed in memory and which are based on previous patterns of social interaction in specific or multiple contexts.

At the same time the present study limits itself to investigating social likeability (a sociometric measure; Bukowski and Cillessen, 1998) by gathering information in the class through simultaneous peer evaluations (nominations) of social status.

There is strong suggestive evidence that studies with a design based on a single univariate[3] influence over children's maladjusted behaviour have failed to account for a sufficient proportion of the variance. This clearly leaves room for the formulation of more sophisticated multivariate models as alternatives, both in theoretical conceptualisations and the design of empirical investigations.

The present study adopts a multivariate perspective and seeks to increase the proportion of predictable variance accounted for in children's maladjusted behaviour. It seeks to do so both in terms of theoretical modelling and the statistical modelling of empirical data. In its modelling the present study proposes

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[3] One factor causal influence

that social cognitive variables need to be measured by more than a single type of measure (i.e. interpersonal problem solving competence and causal/response biases), and that emotional variables in the present context are best measured by scales of self-worth or self-esteem. The Harter scale (1982) of perceived self-competence is a typical example that takes full account of the potential distinctive contribution to variance accounted for by each of the subscales namely Perceived Cognitive, Social, Physical competence and Perceived Global Self-Worth.

The use of more complex patterns of variables in both social cognitive and affective domains, as described in the previous paragraph, represents an increase in sophistication and constitutes an important way in which the present research seeks to make a contribution to knowledge.

Previous research has not always adopted detailed differentiated measures of social adjustment. The present research attempts to remedy this by its use of the Achenbach TRF Profile subscales (1985). Thus, it also attempts to make a contribution to current knowledge by increased sophistication of fine grained measurements of social adjustment as dependent variables, with the possibility that independent variables may predict different aspects of social adjustment differentially.

Many of the previous studies have relied on data gathered largely within an American or British context. Data in the present study were obtained in Greece and will provide a unique contribution to knowledge which will be useful to current

developments in psychological research in Greece. The research will facilitate the provision of a standardised scale for collecting behaviour problem data at a school level, something not currently possible in Greece. This includes standardisation information on the Rutter scale (1965) as well as data that relates to the TRF.

1.5 Specific Aims of the Study

To summarize the present study's aims are twofold:

1. to provide a new perspective on SEBDs in Greece by developing a school-based model for better screening of the school-enacted emotional and behavioural problems of 8-12 year-old children by gathering information via the use of standardised methods and instruments designed for this purpose. In doing so the relationship between "independent variables" (social-cognitive, social information processing, social likeability, and self-esteem/self worth) and "dependent" ones (measures of psychopathological behaviour profile symptomatology in various levels of pre-standardised syndrome categories i.e. broad band/narrow band) will be explored with the ultimate aim to improve the prediction of the variance accounted for by the covariance effect of social cognition and emotion (independent variables) on measures of problem behaviours (dependent variable).

2. To provide school psychologists, Special Educational Needs Co-ordinators (SENCO) and teachers with a battery of tests and a model of standardised assessment for the early identification of potential "problem" children in

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their school or classroom, that is cost-effective, not time-consuming and which also provides feedback to the teacher. In addition, this model assessment system could serve as a lever for raising teacher's awareness of children with SEBDs in their classroom or school and the potential for developing a whole-school approach for dealing with such problems.

In more detail, the aim (1) is to study 8-12 year-old children in the Greek school context by using designated "diagnostic" scales that gather data on emotional, social, social-cognitive processing and problem behaviour manifestations. The goal of the analysis of the data is to attempt to identify a causal structure of the proposed factors associated with the end product of problem behaviour, as the latter is diagnosed through a battery of scales. This is posited by assigning some factors (independent variables) with linear causal effect over other variables (dependent), in an effort to try and account for a substantial amount of the total variance. The ultimate goal is to be able to develop a standardised procedure of assessment that could be applied in the Greek school context with the aim of providing the means for a sound, valid, and efficient early screening of behaviour problems.

Subsequently, the fulfilment of the second aim (2) could serve towards alleviating teachers' sense of loss of control and their feelings of inadequacy in dealing with children's problems, and could in turn help them to prioritise possible interventions or remediation in terms of alternative methods and group or individual work organisation, as well as providing children and their families with urgently needed help and support, within the resources of a school unit and class.

In addition, a step in this direction could facilitate schools and local mental health services working more closely together in exchanging information about a child or a family's social functioning across different environments and could also save valuable time currently wasted in parallel diagnosis. In this light, schools could extend the network of social support from a microenvironment to a "whole system" approach, facilitating the triangular interconnection between home-neighbourhood-school.

The appropriateness of the present study's design is reinforced by the latest England and Wales Education and Skills Act (2008) guidelines to provide for children with the SEBD disability. A similar increased awareness is shared among health professionals, educators, special needs staff and education policy makers, that an early identification may provide pointers for the appropriate strategies to manage and minimize the impact of the condition with the best interest of children in mind. The 2008 Act states that schools, local authorities, and early years settings should use their best endeavours to ensure that the necessary provision is made for any pupil who has special educational needs, caring for these children not to be discriminated against or treated 'less favourably', while reasonable adjustments are made for them.

The findings aim to inform greater effectiveness of applied services for children in Greece through better intervention strategies based on richer assessment information. These issues will be explored in the final chapter, where recommendations for policy and practice will be considered.

1.6 Research Questions

Based within the Greek education system and on the theoretical position outlined above, the specific research questions to be addressed are:

Can school-enacted emotional and behavioural problems of 8-12 year-old children, as assessed via Achenbach's TRF, be predicted by the social information processing "independent variables" of Marsh's Interpersonal Problem Solving Competence (IPSC) alone?

Can SEBDs be predicted by Dodge's social information processing variables of Biased Causal Attribution or Biased Response to proposed stories of negative or ambiguous outcome to social interactions alone? Do Negative outcome stories as opposed to Ambiguous outcome stories reveal any further differences in the thinking and behaviour patterns of particular clusters of children within the SEBDs children group?

To what extent can problems be identified in the sample of 8-12 year-old Greek school children through measures of Harter's self-perceived competence alone (consisting of 4 independent variables), and in particular by child-reported self-esteem or global self-worth, i.e. the emotion related variable in the proposed model.

To what extent can the independent variables in different group combinations account for the variance in children with problems? Do similar

measures, for instance, Social Cognitive (i.e. Dodge and Marsh variables) combined predict SEBDs?

Can a simultaneously entered multivariate model account for a larger percentage of variance of the dependent "behaviour problem" variables than a univariate model derived from the independent variables separately selected.

Is there any preponderant effect linked to a global index of problems i.e. total problem score (dependent variables), as opposed to a particular or cluster of behaviour problem subcategories?

Do personal characteristics such as gender, age, and parental education level influence the predictability of SEBDs?

Can different pupil group types be identified? If so, what is the relationship between each group type and a problem behaviour profile type and do the latter reveal fixed behaviour attitudes in a group's social information and/or emotion processing and distinct social acting repertoire?

Chapter 2 will explore the definition, the measurement and the incidence levels of SEBDs, Chapter 3 will introduce the theoretical underpinnings of the present study, Chapter 4 will critically discuss and present the social information processing model, Chapter 5 will deal with emotions and affect and in particular self-esteem or global self-worth. Chapter 6 will analyze the theory on

Developmental Psychopathology used in the thesis, Chapter 7 provides the choice of methods and measures in the present study, Chapter 8 provides the operational methodology, Chapter 9 will present the preliminary findings of the analysis, Chapter 10 will overview the analysis and the variable correlations, Chapter 11 will present data from multiple regression analysis, Chapter 12 from discriminant analysis, Chapter 13 from factor analysis, Chapter 14 from cluster analysis, and finally, Chapter 15, the discussion, returns to the research questions to explore the extent to which they have been addressed, considers the limitations of the study and sets off the implications for future research.

CHAPTER 2

SEBDs: DEFINITIONS, MEASUREMENT,

and INCIDENCE LEVELS

2.1. SEBDs: a Global Issue Exploration

A historical review of the educational responses to SEBDs in the United Kingdom and elsewhere shows a growing realisation of the importance of the context within which they occur, and the way the teacher is now expected to possess the ever-growing expertise to deal with them on a day-to-day basis. The origins of modern approaches to dealing with pupils with SEBDs can be traced to the early part of the 20th century. These early approaches were based on medical, psychological and psychiatric models (Cooper et al., 1994). Until educational psychology became prominent in the 1960s and 1970s, and undertook the responsibility of developing an alternative approach for managing challenging behaviour that was education/school-based, the "treatment" of cases was left to the medically-oriented professionals. Nowadays, the assessment and definitions used for SEBDs still reflect some of these medically-based origins, despite the lack of clear evidence of a within child-biological basis for their explanation, in many instances. The advent of educational psychology has also enabled schools to bridge the gap between the assessment, which is viewed as distant and mechanistic by

"experts" on the one side (Varma, 1990), and children and their families on the other side, who are expected to comply with the decisions. In this way, the balance of power has shifted back to the parents and the child; their opinions are sought and reservations respected to create a collaborative model of intervention aimed at improving the well-being of children whilst tackling worrisome behaviour.

Over the years, clinicians, researchers and theorists alike have attempted to "understand" the nature of social, emotional and behavioural difficulties in children and adolescents or attribute causality to particular factors, be it predominantly: 1) genetic, hereditary or perinatal, which presupposes a biological dominance on the behaviour outcome (Izard et al., 2002; Dodge, 2006); 2) environmental, social, and familial, which presupposes that "nurture" has the preponderant effect (Izard et al., 2002; Cefai & Cooper, 2009); or 3) socio-economic adversity, educational failing, child/family disengagement, and diversity (Cefai & Cooper, 2009), which presupposes political, economic and organisational influences impinging on the family, based on socially constructed views of "maladjustment" (Speed, 1991; in Cooper, Smith & Upton, 1994, p.16).

The author does not adopt or lean toward a single model of suggested underlying causality in the present thesis, as emotions and behaviour are much more complex than any model can account for on its own. Equal distances have been kept from the three models of causality suggested above. At the same time, this study remains loyal to an open exploratory perspective based on the data collected and the findings drawn from the analyses. The suggestions presented in

the conclusions chapter reflect this, and links made between the findings and particular theoretical perspectives or positions need to be viewed as only suggestive in a proposed narrative of meaning. Thus, the use of terms such as "psychopathological", "disorder" or "diagnostic assessment of problems" in the following paragraphs does not in any way reflect a firm position, on the author's part, on the "true" nature of children's SEBDs, as being either "within" or "between" children. It is merely an attempt to briefly describe some of the major tenets of one amongst many positions. The present thesis presents the position that SEBDs can be "understood" only as a parallel effect simultaneously working with both "within" **and** "between".

For example, a preponderant "clinical" perspective would be interested in whether such SEBD behaviours are repeated beyond the norms of the expected culture and average prevalence rates, and whether they continue in intensity, time-length and complexity. If so, they would be considered problems of a clinical nature. From the latter standpoint, these behaviours could be referred to as inattention, socialisation problems, anxiety, depression, thought problems, health problems, aggression, antisocial behaviour, or hyperactivity (Achenbach, 1991, 1985, 1990; Achenbach & Edelbrock, 1981, 1986; Achenbach & Howell, 1993; Achenbach, Howell, McConaughy, & Stanger, 1995a, 1995b) to mention only a few of the major psychiatric syndrome categories.

There have been a number of research studies over the last 10 years contributing to the growing concern about heightened intensity and frequency of

numbers of childhood SEBDs or "disorders", as conditions and problems, according to some researchers, continue to worsen for children and adolescents (McMahon et. al., 2003): *"Levels of poverty, violence and family adversity appear to be increasing (Children's Defence Fund, 1999), along with rates of emotional and behavioural problems in young people (Achenbach & Howell, 1993)"*.

In addition, *"[t]here's a further association between educational failure and social, emotional and behavioural difficulties"* (Cefai & Cooper, 2009), and also *"[...] an association between social, emotional and behavioural problems and social disadvantage (Schneiders, Drukker, Ende et al., 2003)"*, (Cefai & Cooper, 2009).

At the same time, the development of fine tuned research methodology and the application of more sensitive techniques for screening SEBDs in younger children have identified a new "sample" of youngsters with problems very early in their lives.

In the USA, where often a more "clinically-inclined" approach is chosen for tackling SEBDs, in a critical review by Egger & Angold (2006) of a large volume of studies it was pointed out that the number of preschool-age children receiving psychopharmacological treatment tripled from 1990 to 1995 (Zito, 2002; Zito et al., 2000 –in Egger & Angold, 2006) and shows signs of continuous growing (Barbaresi, 2003; Blackman, 1999; DeBAr, et. al., 2003; Greenhill, 1998; Greenhill et al., 2003; Minde, 1998; Patel et al., 2005; Rappley et al., 2002; Stubbe & Martin, 2000 –in Egger & Angold, 2006). These data are seriously concerning while a body of literature also shows (retrospectively or longitudinally) that a substantial proportion of psychiatric disorders in adults start in childhood or

adolescence (Kessler et al., 2005a; Kim-Cohen et al., 2003 –in Egger & Angold, 2006). Egger and Angold (2006) point out that "Thomas Insel, current Director of NIMH [American National Institute of Mental Health], recently concluded that psychiatric symptoms and disorders *'begin early in life, are chronic, and protracted'* (Insel and Fenton, 2005, p. 590)".

2.2 Theoretical underpinnings of SEBDs

In the UK Social, Emotional and Behavioural Difficulties (SEBDs) is a subgroup within the array of Special Educational Needs, other SEN category groups being: communication and interaction problems, cognition and learning, sensory and physical needs, medical conditions (Code of Practice, DfEE, 2004).

Like adults, children and adolescents can have mental, social, emotional, and behavioural problems that are real, painful, and costly. These social, emotional and behavioural difficulties, also called "disorders" in international clinical terminology, are sources of stress and pose a challenge for families, schools, teachers, support services, communities, and themselves in their social functioning. The number of young people and their families who are affected by SEBDs is significant. It is estimated that as many as one in five children and adolescents may have a mental health issue that can be identified and require treatment. The severity and nature of these problems interfere with the way children think, feel, and act. It has for a long time now been established that children in their middle childhood with a formal diagnosis of SEBDs are at a seriously heightened risk of school failure, family conflicts, child abuse, later juvenile delinquency and early drug and alcohol misuse or abuse, violence, and even suicide (Kazdin, 1985).

Further evidence suggests that untreated or unresolved mental health problems in childhood correlate significantly with maladjustment in adulthood (Achenbach, Howell, McConaughy, and Stanger, 1995a, 1995b; Cowley & Ramo, 1993; Shaffer, 1994; Ferdinand, Verhulst, & Wiznitzer, 1995; Rheinherz, 1995). Long term follow-ups have also shown that many of these children develop aggressive and anti-social personality disorders, alcohol dependency syndrome, criminal behaviour and marital breakdown in later life (Connolly, Sharry & Fitzpatrick, 2001). The burden of untreated mental health disorders falls on adult mental health services and the criminal justice system (Loeber, 1991), while being at the same time very costly to families, communities, and the health care system. Finally, aggressive pre-schoolers are at particular risk of being missed by the screening procedure due to their very young age, and hence can have persistent problems or psychopathological symptoms throughout childhood and adolescence (Campbell, 1991).

It is suggested that mental health problems in children and adolescents are caused by biological factors, environmental factors, or a combination of the two (Izard et al., 2002). Examples of biological factors are genetics, chemical imbalances in the body (Dodge, 2006), and damage to the central nervous system, such as a head injury. Many environmental factors also can affect mental health, including exposure to violence (physical, emotional or psychological), extreme stress, and the loss of an important person. Families and communities, working together, can help children and adolescents with such mental disorders (Cowan & Cowan, 2002). A broad range of services is often necessary to meet the needs of these young people and their families. For children to be identified before they are

offered any services, screening has to take place. Referrals are the formal procedures through which any worrying behaviour in a child is brought to the attention of the appropriate professionals for a formal diagnosis.

There is evidence internationally that the number of pupils being referred to educational psychologists for assessment is and has been increasing (McCall & Farrell, 1993; DfES, 2006) for the last 10 years. It might be questioned as to why this is so. There are various plausible explanations:

(1) It could be that children are experiencing more problems associated with their behaviour due to, in some cases, deterioration of social standards or the breakdown of the family network as a supportive mechanism.

(2) Psychological services have become, in general, more widely available for families and schools have access to them. Thus, more cases are brought to the attention of services and specialists, in several countries.

(3) Teachers have become more aware and "sensitised" to identifying the "odd" or worrying behaviour with both positive and negative repercussions. The positive is manifested through genuinely seeking out help for the "difficult" cases making use of the appropriate channels. The negative is manifested by a tendency to "push" difficult cases through a statementing procedure because they are clear "threats" to their classroom authority and challenge their competence and adequacy as teachers. As one of the Heads in one of the schools involved in the data collection of the present study put it "Quite frankly, who wants a non-cooperative, defiant and conflict-ridden child in their class"? In addition, teachers are burdened by increasing responsibilities

regarding administration, Individualised Plans preparation, and devising and implementing strategies for inhibiting and remedying conduct and emotional problems for their pupils. Thus, lack of time and building frustration may subsequently lead to lowered levels of tolerance for challenging behaviour. This may lead them to refer children for psychological evaluation more quickly than in the past.

From the explanations and the analysis offered above, it needs to be admitted that screening for problems plays a crucial part in the statistics and the assignment of descriptive, dichotomous category labels for particular SEBD experiencing children.

2.3 Definitions of SEBDs: Difficulties and Realities

Emotional and Behavioural Difficulties (as still internationally largely used) or Emotional and Behavioural Disorders (a term originally suggested and widely used by the medically oriented professionals) was first recognised as a distinct label of a group of children relatively recently; in England and Wales it was introduced in the Warnock report on SEN in 1978. There were another nine groupings alongside it: visual and hearing disabilities, physically handicapped, epileptic children, children with speech and language disorders, children with specific learning difficulties (e.g. dyslexics), and finally children with mild, moderate, and severe learning difficulties. The aim of the setting up of the committee that wrote the report was to define and quantify special educational needs with the immediate aim to meet these needs. The report was oriented

towards change in educational legislation rather than clinical classification. Prior to this report, the term *maladjustment* was in use.

Apart from any mere attempt to describe the advancement in educational philosophy and the legislation in the last decades, trying to conceptualize and explore issues inherently pertinent to this category's classification title is important if SEBDs are to make any diagnostic sense. Visser (2003) refers to Kelly & Gray, 2000 and Daniels et al., 1998 in pointing out that:

> "[...] pupils deemed EBD had displayed pronounced behavioural difficulties, usually involving a degree of violence and aggression, often mixed inextricably with emotional and social difficulties that had interfered with educational progress. Experience of failure and rejection, usually mingled with unsettled home circumstances had commonly led to low self-esteem (certainly in relation to their educational potential) and damaged confidence. Traumatic life events involving loss and bereavement were not uncommon (also noted in Daniels, Cole, Sellman, Sutton and Visser, 2003)".
>
> (Visser, 2003, p. 12)

The England and Wales Circular of the Department for Education (DfE, 1994b) clearly states that

> "Children with EBD are on a continuum. Their problems are clearer and greater than sporadic naughtiness or moodiness and yet not so great as to be classed as mental illness." (DfE, 1994b, p.4)

Further down (p. 8) the circular clearly states that assessment criteria over

whether a child has SEBDs depend on "frequency, persistence, severity or abnormality and the cumulative effect of the behaviour in context as compared to normal children" (DfE, 1994b, p.8). Visser (2003), based on the same circular, highlights that:

> "Social, psychological and sometimes biological factors or, commonly, interactions between these three strands, are seen as causing pupils' EBD. There follows detailed amplification in which 'within-child' emotional factors are counterpoised with difficult externalised behaviours including truanting, aggression, violence and destructive behaviour" (Visser, 2003, p.13).

The incorporation of emotion and behaviour in the title of this category presents problems of scientific and philosophical proportions regarding definition. Scientists have notoriously struggled with problems for many decades now, over whether emotions precede cognition or vice versa in a behavioural manifestation (see the opposing arguments of Lazarus and Zajonc, 1984, in chapter 3).

Furthermore, are emotions instinctive libidinal drives (whatever we mean by that), and what is their link to sensuality on the one hand and the higher sentiments on the other (R. Higgins, 1990)? Could we infer that human beings have an internal conscious emotional state that is not necessarily observable but which can have a determining power over a person's subsequent response to others' "provocations" in social interactions?

All of the above questions are based on the assertion that emotion and

behaviour are two separate entities that can be identified in sequential order: i.e. the one precedes the other in a time frame. Despite this position being postulated for some time, empirical evidence maintains that there is a large overlap between these two factors. This has led psychologists to exhaustive debate trying to demonstrate which factor is subjected to the causal influence of the other.

Another problem is the apparent categorical difficulty in placing Emotional and Behavioural Difficulties alongside learning difficulties and physical handicaps. SEBDs appear to be present within or parallel with some of the other nine categories of Special Needs. Simply put, children can, potentially, experience and manifest SEBDs as a consequence of their handicaps and difficulties. Conversely, the same is not equally likely to be true: there is no reason to assert that children with SEBDs will develop physical handicaps or suffer severe learning difficulties as a consequence.

The SEBDs category, empirically, is a pool of descriptively different (and sometimes of opposite spectrum) problem behaviours that are identified in children. In this light, SEBDs as a general category has little common distinguishing features between children. Conceptually, SEBDs children are the ones that do not fit into their surrounding environment. In turn, this concept overlaps with the notion of pupils being identified as maladjusted. In the original Warnock report in England (1978), the terms adjustment and maladjustment are used repeatedly. The term maladjustment as distinct from SEBDs, is used very often in the American (and correspondingly sometimes in the British) psychological literature. Visser, (2003) makes an interesting discussion on the term

maladjustment (based on Laslett's, 1983/1998, view) exploring its "catch-all" effect for children showing a wide range of SEBDs and learning problems. These types of problem children could have been also described as "socially deprived, disruptive, disaffected, delinquent, mentally ill, or mentally deficient" (Visser, 2003, p. 11). It is important to point out that maladjustment is most of the time intrinsically related to the context in which it occurs. Therefore, using the term alongside traditional clinically oriented terminology (e.g. disorders) adds to a more serviceable description (Higgins, 1990). SEBDs and maladjustment overlap as category classifications. It is not the intention of this study to attempt to distinguish between these two terms. They will, hence, be used interchangeably.

Since SEBDs involve evaluations of a given person's behaviour by others, it is pertinent to the aims of the present study to discuss the issues involved around the formation and application of these evaluations. Implicit in the use of the terms SEBD and maladjustment is a model that is shaped on a central norm basis. In or around the inner core rests the behaviour that is termed normal, that the ruling agent (i.e. the society) expects to be performed, the desirable way that behaviour should be manifested (Kauffman, 2001). Any behaviour that is outside of this spectrum and clearly defies these expectations is labelled deviant. Hence, "[d]efining an emotional or behavioural disorder is unavoidably subjective, at least in part" (Kauffman, 2001, pp. 22-23). SEBDs behaviour rests at the more extreme part of the undesirable end of these deviations.

As evident in the above theoretical framework, one group of societal environments or microenvironments (i.e. society, the school, the parents, important

others) is judging another with criteria that are related to this group's ethos, expectations and cut-off points. The ultimate aim is to define the "normal us" as different from the "abnormal them". The subsequent point is the emergence (or evolution) of rules that govern the actions of the evaluating group. With the emergence of rules and deviations, desirable social change and permissible means to bring it about become evident, and attention shifts to the effectiveness and constraints on agencies appointed by society for bringing about and maintaining this social change. The imposition of rules by definition creates polarities: conformers and rebels. Relating to the present study of children's behaviours it becomes apparent that the outcome of the application of rules is either social assimilation or deviance. To make the latter theoretical point more explicit a case description is given below:

> *"Tom's parents kept a spotless house where, as he told his friend Jim (with apparent pride), even the toilet is carpeted. His parents had been brought up with very clear ideas about cleanliness and hygiene. Being clean ("in body and mind") was desirable, good, and healthy. Being dirty was undesirable, bad, and sick. People appreciated you if you were clean. They did not want to know you if you were dirty. So you naturally made every effort to present a clean face to the world and to hide the other end of yourself, which had to do with sex and excretion, as though it did not exist. Unmentionable. These attitudes which his parents held in common were what had brought and welded them together. These and their work as Court Ushers. The attitudes and the work played a significant part in prompting Tom to respond by what his parents called at different times his maladjustment, sickness, or plain God-damned wickedness. Tom's immediate responses took two forms: soiling and stealing. His less*

immediate responses were guilt and confusion."

(R. Higgins,1990;pp 4-5)

Higgins explores the boundaries of adjustment and/or maladjustment through this example. Was Tom "deviant" as his parents so firmly asserted? To answer someone has to look at the criteria for selection or exclusion from the label of maladjustment. If the parents' ethics of clear separation of clean/good/healthy from dirty/bad/sick are to be adopted, then Tom was clearly challenging the lines of conduct set by the parents and he could be called maladjusted. Conversely, if we do not accept the parents' ethics, then Tom's behaviour was possibly a healthy attempt to break free from a morbid system of family organisation and thinking. He has set a new way for himself and the family.

In summation, putting SEBDs in perspective, we must try and answer the questions: "maladjusted to what?", "assessed by whom?", "under what circumstances?", and "in social interactions with whom?" It becomes explicit therefore that, SEBDs cannot be studied out of the context in which they occur. This context is filled with value judgements including power influences (religious, political, economic), and those attributed to childhood rearing patterns across generations, stereotyping, psychological (mis)conceptions, e.t.c.

All the above points strengthen the need for a better and more sound diagnostic assessment of SEBDs in children if psychopathological classification and its subsequent remediation and intervention are to have any meaning. The

latter coincides with the intentions and the aims of the present study. One major aim will be to explore an empirical model that could account for a better diagnostic prediction of psychopathology in primary school children.

It is the intention in the present thesis to refer to factors appearing first, in a chain of phenomena of maladjustment in children, as **antecedent** as opposed to what many psychologists prefer to call "causal". The notion of "causality" implies a unidirectionality of some factors over others, a thesis which is empirically disputed to be far from conclusive. Therefore, since great caution is needed when using terms like "causal", the term "antecedent" serves the empirical arguments better. The latter becomes more explicit in the recognition that as researchers we are (by definition) limited as to what part of the delineating process of observed maladjustment we are evidencing.

Simply put, since it is argued that maladjustment does not appear in a vacuum but in most cases involves a comorbidity of factors, and human beings portray signs of maladjustment after some critical period of helplessness, it is very difficult (if not impossible) to pin point the factors that a research design can claim are causal.

The UK circular on SEBDs (DfES, 2004) adopts the international research and clinical practice conceptualization in the field which points out that at any given point psychopathology must be seen on a developmental continuum. Hence, three "types" of SEBDs are specifically identified for their intensity and pervasiveness measured in time:

The first type of antecedent potential problems are seen as recent stress

factors, for instance, *bereavement* or *change of living environment and school* or *substantial decrease of the family's financial state* or *any form of abuse*. Such negative life events are usually associated with some degree of problem behaviours, which can have a short span and can be displayed by a great many pupils. These problems could be categorized by others as periodic disturbances especially if they are limited in time and intensity and, thus, are unlikely to be described as emotional and behavioural problems.

However, if these problems are persistent (to indicate stability of symptoms), heightened in intensity, and affect more and more aspects of a child's social functioning, then this second type of problems may require more refined and formal assessment of the special needs of a pupil and usually other agencies are called upon to contribute to this.

A small number of cases include more seriously disturbed children suffering from clear psychiatric problems like anorexia nervosa or childhood schizophrenia. It is highly unlikely that this third type of problem child will be the client of a regular class teacher, partially because acute cases like these would have been easily identified and followed through with immediate intervention, and partially because of their very low prevalence rate (1 in every 40,000 pupils; US National Institute of Mental Health, 2003) in the general school population.

As was maintained earlier in this chapter, collectively, schools and their varying rules and standards can also influence the definition of where problems arise. There is no "objective" definition of SEBDs. Yet, since identifying any

problem of this sort presupposes a level of diagnostic assessment, **where** and **when** we place the label on an individual becomes a very crucial factor for any subsequent evaluation of an intervention. It is, thus, imperative at this point to explore and discuss how SEBDs are formally identified internationally.

2.4 SEBD Measurement

From the aforementioned difficulties inherent in defining SEBDs, their measurement is also challenging. Any assessment system needs to identify characteristics that can validly distinguish between the normal and abnormal. To measure normal versus abnormal two approaches are available:

1. The categorical, clinical or "top-down" approach that is represented by *The Diagnostic and Statistical Manual of Mental Disorders IV-TR* (American Psychiatric Association, 2000). In this approach diagnostic criteria are mainly the result of clinical consensus among professionals. Disorders are defined by a rather arbitrary set of criteria. For most disorders this DSM system does not provide more information than that the disorder is "present" or "absent", which is not informative about the severity of a disorder or the number of symptoms.

2. The empirical/quantitative or "ground-up" or "bootstrapping" approach. This uses, in contrast, quantitative procedures to determine empirically which symptoms tend to co-occur in particular syndromes. Multivariate statistical procedures are used with datasets from large clinical samples in order to investigate which symptoms constitute a syndrome. Quantitative

scores for psychopathology are usually derived via rating scales, obtaining information about the number and severity of problems, in comparison with other subjects in clinical or normative samples, instead of scoring just presence versus absence of symptoms. Hence, any decisions on the number and severity of problems can be supported by actual distributions of scores in populations rather than on a priori criteria.

Whether specific aspects of the normal versus abnormal are better measured with quantitative or categorical assessment and instruments, it needs to be recognised that rigorous assessment of SEBDs is a measurement process. Thus, we must know how to measure human behaviour and must be sensitized to cope with the inherent errors that affect all measurement. For measurement to be useful (Achenbach, 1997):

1. It needs to be reliable and valid,

2. The normal and deviant criterion samples need to be representative of the larger population to which findings are to be generalised,

3. The normal and deviant samples should be matched for demographic variables, such as age, gender, ethnicity, and socioeconomic status (SES), that might be linked with the target problems, over and above the associations with the criterion variable of normal versus deviant status,

4. The behaviour problem sampling should be wide enough to allow comparisons of the degree to which various problems tell apart normal and deviant criterion groups and to determine whether the discriminative power of specific items co-varies with the subject's age, gender, ethnicity, and

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SES characteristics.

5. It should test for cross-situational variation by sampling across different contexts as reported by different informants,

6. Samples should be in order to allow for adequate statistical power for detecting a broad array of associations with multiple subject variables and for reliably quantifying the strength of the association,

7. The problems should be in quantitative form to maximize power for detecting their associations with each other and with other variables.

8. It needs to take into account the developmental significance and meaning of the problem, as problems do not "hold still" to be conveniently measured by mechanical procedures. As a consequence, no single measurement can provide a sound portrait of SEBDs. It is therefore necessary for measures to be repeated within a short period of time to check for stability of symptoms.

For all the above reasons, advances in theoretical, statistical and clinical thinking have allowed developmental psychopathologists to prefer to use empirically derived instruments in assessment. Of such instruments, probably the best example to date is the Achenbach set of checklists to gather data from multiple informants, and evaluate behaviour traits across multiple continuous dimensions. Symptoms are assessed through carefully worded item descriptions falling within particular factor-analytically derived subscales, allowing for children's score comparisons to be matched with age and gender empirically derived norms (Achenbach, 1991).

2.5 SEBDs Prevalence

Many studies have reported substantial progress in identifying the nature and prevalence of emotional and behavioural problems in school-age children (Achenbach & Edelbrock, 1981; Hughes, Pinkerton & Plewis, 1979; Richman, Stevenson & Graham, 1982; Rutter, Cox, Tupling, Berger & Yule, 1975). Such behaviour is found to be relatively stable over time in many cases (Chazan & Jackson, 1971; Garrison & Earls, 1985; McGuire & Richman, 1987; Stevenson, Richman & Graham, 1985) and to be a factor contributing to poor development in general.

Emotional and behavioural problems have been associated with inadequate functioning in social relationships (Lahey, Lober, Quay, Frick, & Grimm, 1997; French & Waas, 1985; Strauss, Forehand, Smith & Frame, 1986), with social cognitive biases and deficits in selective responses (Dodge & Frame, 1982; Pettit, Dodge & Brown, 1988; Dodge, Murphy & Buchsbaum, 1984; Downey & Walker, 1989; Kaslow, Rehm & Siegel, 1984), with negative self-image (Strauss et al., 1986) with poor academic performance (Croll & Moses, 1985; McMichael, 1979), and with substantially increased risk for antisocial behaviour and difficulties in work, in interpersonal functioning, and psychiatric disorders as adults (Robins, 1991; Moffitt et al, 2002). Children with SEBDs are also more likely to be involved in violent marriages and/or cohabitations, which, in turn, serves as an important risk factor for the next generation (Moffitt & Caspi, 1998).

Conduct problems are the most common form of childhood behaviour

problems in terms of both referrals to child mental health facilities and the most often reported reason for worry in schools (Frick, 1998; Loeber, Burke, Lahey, Winters, & Zera, 2000).

As was mentioned earlier in this chapter, the majority of children portray symptoms that could be classified as problematic at least once in their school life. The important question becomes how many pupils show emotional disturbance at some time during their childhood and, subsequently, what proportion of this is assessed as serious disturbance.

Disturbance is defined as behaviour not normal or usual for the child's age. Emotional and behavioural problem estimates have been obtained primarily from reports by teachers and other important adults. In longitudinal studies, it has been shown that the majority of children diagnosed were thought to have a behaviour problem by at least one teacher at some time in the span of their school career (Kauffman, 1985). However, slightly over 10% were considered a problem by every teacher who rated them over a 3-year period. Researchers in various studies seem to agree that the range of the estimate of serious emotional and behavioural problems for some periods in childhood is between 6-10% of all children (Kauffman, 1985), whereas Visser (Cole, Daniels & Visser, 1999, 2003) reported for England to be 4-5% (0.3% - 0.4% of school population in SEBDs special schools and PRUs).

Since the 1950s, a considerable number of epidemiological studies have been conducted on mental health problems of children in developed countries. Shatkin and Belfer (2004) have reviewed a large number of them and completed a

thorough cross cultural search. Thus, the references of these studies presented below can be found in their article. From these studies it has been established that the estimates of the prevalence of mental health problems in children range from 14–20% (Brandenburg, Friedman, & Silver, 1990; Costello, 1989; Puura et al., 1998; Verhulst, Akkerhuis, & Althaus, 1985). Furthermore, psychiatric disorders in the school age population of 4-12 years in India have been reported at a rate of between 7-20% (Malhotra, 1998–see in Shatkin & Belfer, 2004). Rates of psychopathology also ranged between 12-29% in 5-15 year-old children in Sudan, the Philippines, India, and Colombia (Giel et al., 1981–see in Shatkin & Belfer, 2004). Thabet and Vostanis (1998–see in Shatkin & Belfer, 2004) reported a prevalence rate of 21% for anxiety problems in school children in the Gaza Strip, a rate directly comparable to the one found in western countries, and Tadesse et al., (1999–see in Shatkin & Belfer, 2004) reported child behaviour disorders at 17.7% in Western Ethiopia. A WHO Western Pacific region collaborative study reported psychopathology among 12-15 year-olds to be 7% in China, 12% in Japan, and 19% in Korea (Matsuura et al., 1993; Wong, 1988–see in Shatkin & Belfer, 2004). In the USA, nearly 21% of children between the ages of 9-17 have been found to portray diagnosable mental or addictive disorder with at least minimal impairment (Shaffer et al., 1996–see in Shatkin & Belfer, 2004), and in Europe studies have reported 15% in Finland for ages 8-9 (Almqvist et al., 1999–see in Shatkin & Belfer, 2004), 17% in Sweden for ages 11-13 (Svedhem, 1991–see in Shatkin & Belfer, 2004) and 39% in Greece for ages 12-15 (Papatheophilou et al., 1981).

As Shatkin & Belfer (2004) conclude, "Diagnosable psychopathology annually affects roughly 10-20% of our youth worldwide and accounts for five of

the top ten leading causes of disability in the world for those aged 5 years and over (Murray & Lopez, 1996–see in Shatkin & Belfer, 2004). Recent analyses of the burden of disease associated with neuropsychiatric disorders impacting on youth provide impressive evidence of the lifelong societal costs associated with disorders beginning in childhood and adolescence (WHO, 2003; Scott et al., 2001)".

It seems widely accepted nowadays that human behaviour and emotions or emotional states are affected by a great variety of factors, including those intrinsic to the person and others impinging from the wider environment. Because of the high variation of these factors, their combined effects on the child are bound to be different from situation to situation and from time period to time period. All assessment should, therefore, take into consideration the variability in children's functioning and be sensitive to feedback data from different sources of information about pupils' behaviour in different environments.

At this point it becomes appropriate to put under a focused exploration the theoretical underpinnings of behaviour maladjustment and its underlying links to personality, developmental psychopathology, social cognition and the special relationship it shares with major emotional aspects like self-esteem or global self-worth. These recent theoretical developments are considered in the three following chapters due to the considerable volume and perplexity of theory and research associated with their development. Chapter 3 will explore the Theoretical Underpinnings, Chapter 4 will explore Social Cognition, Chapter 5 will explore Affect and Emotions, and Chapter 6 will explore Developmental Psychopathology.

CHAPTER 3

THEORETICAL UNDERPINNINGS:

Introduction to the Theory and Research that influenced the present study

3.1 Introduction

In this short chapter, an introduction to the three major axes of variables that have culminated in the design of the present thesis is offered. This leads to the analytical exploration of these three categories of variables in three separate chapters due to their complexity. Evidence, discussion and analysis of the theoretical thinking that has particularly influenced the conceptualisation and methods of the present thesis are also presented. Many of the previous notable research studies cited in this and the following chapters, as well as the presentation of the pioneering work reviewed that led to the development of the conceptualisation, design and methodology of the present study, may appear to be somewhat U.S.-centric. The reason is that after critically reviewing numerous studies with very complex, elaborate and analytical work in depth on social information processing and emotional literacy or regulation, the research designs in the United States appeared to address the particular aims and hypotheses of the present study more often. This was particularly the case for the models explaining the mental processing of social behaviour. At the same time, UK-based research

theory and practice with SEBDs in schools has greatly influenced the present thesis' theoretical underpinning from a sociological approach, by balancing the focus of the study and exploring the effect of the context on the portrayal and development of SEBDs observed at school.

An a priori crucial question in assessment is whether a pupils' behaviour is specific to particular events or whether there is a degree of consistency across situations. This question has generated a major debate over whether behaviour is attributed mainly to situational factors, or to persistent and fairly stable personality characteristics/"traits", or is attributed to an interaction between them -a central theme for personality theorists (Pervin, 1985). The debate was generated originally by disagreements between traditional behavioural theories versus trait and psychodynamic theories. The behavioural perspective gives more weight to environmental contingencies that cause behaviour to differ across situations (Achenbach, 1985). The contrasting view of trait and psychodynamic perspectives gives more emphasis to the characteristics of the individual that are expected to remain stable across situations (Achenbach, 1985; 1991).

Some theorists have adopted an interactionist position (Achenbach, 1985; for a review), but this is not easily applied when psychometric constructs have to yield substantive validity on classifications. Therefore, a practical consequence of the widely differing perspectives and rationales identifiable within personality theories is that they lead to no agreed common taxonomy of what constitutes problem behaviour in a person. This weakness in forming a coherent theory seems

to have been responsible for problems arising around the construction of a generally approved model of behaviour classification among behaviour psychologists.

Nevertheless, one of the basic goals of scientific taxonomies is the definition of centrally clustered domains within which large numbers of specific episodes can be understood in a simplified way. Thus, a taxonomy would, in principle, permit researchers to study specified domains of personality characteristics, instead of examining separately the multiple particular attributes that make human beings behave individually and uniquely. Moreover, a generally accepted taxonomy would greatly facilitate the accumulation and communication of empirical findings by offering a standard vocabulary or nomenclature (Angleitner & Ostendorf, 1988).

A further complication is to be found in that personality can be conceptualized at various levels of abstraction or breadth. Personality means different things for theologians, philosophers, and sociologists and even within psychology it has been defined in various ways (Allport, 1937). Thus, not only do the terms we use to conceptualize personality vary (e.g. goals, motives, instincts, traits), but perspectives vary as well (e.g. indirect perception of reality based on observable behaviour communicated through our senses differing from social significance or knowledge we attribute based on our socially learned models; Hampson et al., 1988).

Regardless of the theoretical standpoint adopted, the debate raises crucial and practical questions about what characteristics to assess, the way to assess them, and how to normatively analyze and aggregate data across situations and occasions (Epstein & O'Brien, 1985; Mischel, 1984).

Mischel (1968) developed a model to explain behaviour in the context of personality, attempting to move further away from the weaknesses of the extreme perspectives of Freudians and Skinnerians. In his book (1968) "Personality and Assessment", he introduced an approach that seemed to account for fresh -at the time- empirical evidence. He proposed to highlight "situation-specificity". Mischel suggested that changes in environmental or external conditions modify how people behave. Such changes result in relatively situation-specific behaviour: each environmental situation acting independently to affect individual behaviour.

The debate among personality theorists about whether persons or situations are the prime movers of behaviour has been based on elaborated empirical evidence and theory. The prevailing view is that both are important and interact with one another, as was also shown in the work of Endler & Magnusson (1976; 1977).

Almost all researchers nowadays place an emphasis on person-situation interaction, even though some fundamental disagreements still remain. These relate to the quality and nature of factors influencing or determining the situation-specific behaviour. Thus, even when persons, situations, and interactions are accepted as important "pool" variables in an analysis, theoretical differences arise concerning the question of *what* in the person interacts, *how* and *with what*. The

"nature vs. nurture" or internal versus external determinants debate continues and needs to be taken into account when trying to accommodate various theoretical perspectives in a research model (Pervin, 1985).

The question of consistency or, respectively, analysis of inconsistencies across situations is of the utmost importance for the clinical assessment of pupils, which requires data feedback from different informants who see children in different contexts and different circumstances. Rather than accept a single perspective regarding behaviour as mainly situation-specific, determined by personality or by a bi-directional interaction between them, a significant alternative perspective should be to examine the degree of consistency actually found between different informants. Such a framework describes one of the distinctive elements which Achenbach and his colleagues have contributed to the study of human behaviour. The richness of their empirical findings and their innovative clinical approach allowed them to construct a multiaxial battery of scales recording data from all possible perspectives. This is embedded in the research design of the present study. Although Achenbach's work has proved influential, the scale employed is not without limitations. These will be considered later in the methodology chapter.

It is sufficient to note here that recent research into emotional and behavioural problems has moved away from the traditional "medical" model of a child "trait" conceptualization, to recognise the need for a more multidimensional in context and dynamic approach, a "multiaxial" assessment (Achenbach & McConaughy, 1987; Achenbach, 1991; Rutter, Tuma & Lann, 1988; Cicchetti,

1993; Rutter & Sroufe, 2000).

The manifestation of emotional and behavioural problems or maladjustment is a phenomenon likely to have numerous factors associated with its causality. A number of causal factors have been suggested as placing children at heightened risk. Parental factors (Downey & Walker, 1989) (for instance, parental maltreatment, parental abuse, neglect), wider social factors (for instance, the lack of a supportive network in crisis situations), and biological factors (for instance, traits, differences in neurological arousal -as appraised by contextual information), have all been suggested. If we accept that all of these factors possibly contribute to or at least correlate with psychopathology in children, we have at the same time to note that **not all** children at risk develop psychopathology. The latter has led for some time (Garmezy, 1987; Rutter, 1979; Werner & Smith, 1982) to a search for the particular factors that can address significantly the question of *what distinguishes resilient from vulnerable children.*

To answer this and other questions regarding the varying outcomes of children's social behaviour and consequent maladjustment researchers have explored other more up-to-date and scientifically valid theoretical approaches. This has culminated in the singling out of social cognition theory, and in particular the social information processing of social events, and theories of emotion as they relate to the complex discussion of self-esteem/global self-worth and its impact on behaviour motivation, social processing and response selection to social situations.

3.2 The Bandura Early Model of Causation in Social Cognitive Theory

Bandura's Social Learning theory of causation served as the foundation of social cognitive theory. A critique of this explains how social learning theory was succeeded by social cognition theory and more recently emotional theories. In considering the nurture versus nature question Bandura (1989) favoured a causational model encapsulated in a triadic reciprocal determinism proposing that **Behaviour, Cognition** (and other intrinsic factors), and **Environmental** factors reciprocally interact. Reciprocal causation need not imply that the different influential factors are of equal weight; nor do they all occur simultaneously. For Bandura and other theorists (Bandura, 1986; Bower, 1975; Neisser, 1976) the reciprocal causation model proposed between factors intrinsic to the person and the observed behaviour reflects the interaction between thought, affect, and action. Behaviour is seen to be shaped by expectations, beliefs, self-perceptions, goals, and intentions, which are in turn developed and modified by social influences that convey information and activate emotional reactions through modelling, instruction, and social persuasion (Bandura, 1986).

3.2.1 The Critique

All the factors proposed by Bandura's theoretical explanation above are often termed a child's general competencies. Missing from the above definition of competencies was consideration of any possible deficits in the acquisition of those competencies. People evoke different reactions from their direct social setting through factors such as physical characteristics, age, gender, body size, ethnic group, and physical attractiveness, quite unrelated to their behaviour (Lerner,

1982).

In addition, Bandura states that social influences that convey information seem to carry a holistic notion. Social influences do not necessarily convey "universally" approved information, but rather individually perceived information as filtered through the same channels (i.e. expectations, beliefs, needs, emotions, and other social competencies or lack of them). Social interactions are bidirectional in effect (Dodge, 1995); research has shown that behaviour changes environmental conditions while being changed by them. Thus, the environment does not have a fixed effect on individuals. People constrained in a specific environment become influenced by its *situation-specificity*, i.e. parents usually do not praise their children without a reason but rather expect something praiseworthy to elicit their positive response.

Bandura suggested that people tend to select activities and associates from the vast range of possibilities in terms of their acquired preferences and competencies (Bandura & Walters, 1959; Bullock & Merrill, 1980; Emmons & Diener, 1986). However, claiming that through their actions, people create and select environments, is deterministic. Another assertion of the Bandura model is that *"aggressive persons produce hostile environments wherever they go, whereas those who act in friendly manner generate an amiable social milieu"* (Raush, 1965). Such assertions facilitated the development of more sophisticated research designs and theoretical frameworks to challenge them (e.g. social information processing) through investigating the complexities of human performance and social interactions.

The work of Bandura, Raush and others on Social Cognition points to a

unidimensional social information-processing conceptualisation of social interactions **in the absence of affective characteristics**. Their research also suggests that individuals behave in a learned-helplessness manner, since "labelled" persons are "expected" and "predicted" to behave in a way that is suggested by the typology of their behaviour label, which is originally created in specific contexts in interactions with particular persons.

There is also an absence of study of the dynamic forces present in the contexts described above, which have the power to *"prescribe or assign"* (directly or indirectly) behaviour labels and roles in a socializing group of children. Also, absent is any reference to **biases in recall** of past and present social cues. Nevertheless, Bandura's theoretical model can be related to measures of self-esteem, Interpersonal Problem Solving Competency, and diagnostic measures of the nature of SEBDs.

3.3 The Social Cognition Development

Inspired by the emphasis on cognition in research on adult adjustment (late 1980s, early 1990s) and the recent broadening of cognitive-developmental enquiry to cover social domains, some researchers (e.g. Erdley & Asher, 1996, 2002; Fontaine, Burks, & Dodge, 2002, 1998; Guerra, Nucci, & Huesmann, 1994; Huesmann & Guerra, 1997; Cicchetti & Lynch, 1995; Dodge, 2006, 1993; Farrington, 1993; Fontaine & Dodge, 1998; Rieder & Cicchetti, 1989) have claimed that **social cognition** is associated with social behaviour in children. Some have long postulated that **social cognition may be** *a modifying agent of the risk*

for psychopathology (Beardslee, Schultz & Selman, 1987; Garmezy, 1987).

Since the 1990s cognitive and social psychologists have turned their attention to the role that emotions or more generally affect play in influencing such phenomena as selective attention, selective retrieval and schematic organisation. These studies have explored the significance of emotions, perceived competence or global self-worth on children's and adult's wider social behaviour as psychologists have come to recognize the importance of *internal processes* regarding the quality and the self regulation of emotions in social interactions, a research orientation which was abandoned in the 1960s due to its inferential nature.

3.3.1 Does Cognition or Emotion Shape Behaviour? An important debate

The importance and significance of the relative contribution of social cognitive and self-esteem/emotion factors for human behaviour has long being debated. The issues raised by Lazarus and Zajonc in the late 1970s and the 1980s are characteristic and had implications for the conceptualization of children's social adjustment. Both theorists worked within the Cognitive Theory paradigm and their research was conducted attempting to provide evidence and lend support to one **or** the other standpoint.

In a series of studies (1980, 1984) **Zajonc** suggested that a) affective reactions can be elicited without the need for a prior cognitive process, thus sometimes preceding it in the behavioural chain-reaction; b) there is an occasional independence of emotion from cognition. He proposed that although they usually

function together they are not fully overlapping, but are rather separate and partially independent systems. In his studies with animals, Zajonc showed that simple affective stimuli are processed faster (i.e. before) and the processes are different to cognitive processing (e.g., Murphy & Zajonc, 1993). However, these studies' conclusions have little relevance to everyday life. He also suggested that there are clear differences in neuroanatomical levels for affect and cognition (see Izard, 1984, pp.25; Tucker, 1981; Ross & Mesulam, 1979; Nauta & Haymaker, 1969; Moore, 1973; Steiner, 1974).

Lazarus strongly opposed these arguments suggesting that (1982, 1991) cognitive appraisal is a key part of the emotional experience. This cognitive appraisal has six components (Smith and Lazarus, 1993). **Primary appraisal**, i.e. 1) Motivational relevance (Related to personal commitments); 2) Motivational congruence (Consistent with the individual's goals), and **Secondary appraisal**, i.e. 3) Accountability (Who deserves the credit/blame?); 4) Problem-focused coping potential (Can the situation be resolved?); 5) Emotion-focused coping potential (Can the situation be handled psychologically?); 6) Future expectancy (How likely is it the situation will change?)

According to this model different emotions involve different appraisal components. Cognitive appraisal, which may not be conscious, precedes emotional experience and according to its quality leads to the experience of particular emotions. Figure 3.1 demonstrates the sequence:

Figure 3.1. Lazarus' cognitive appraisal preceding specific emotions.
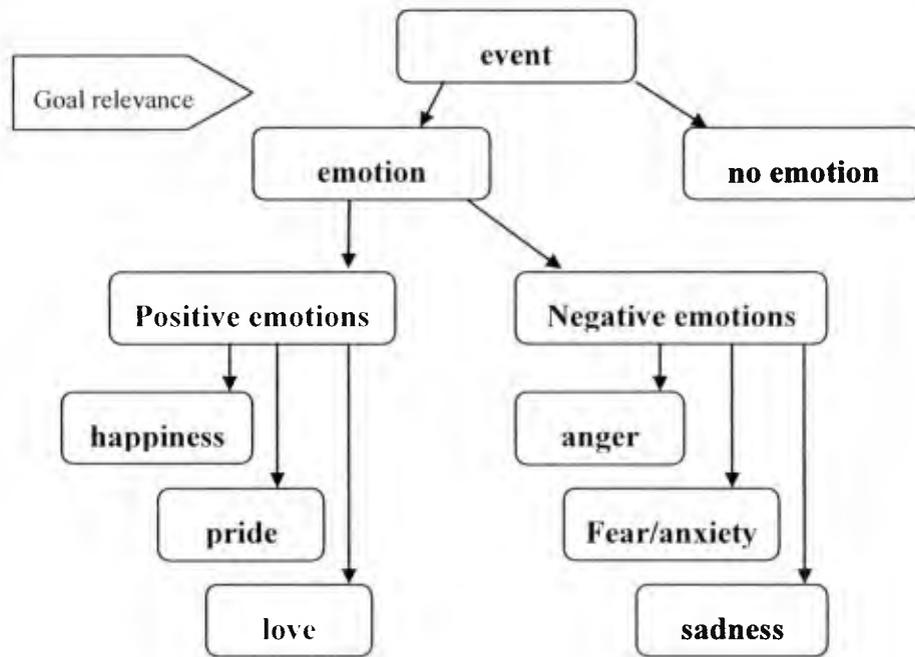
3.3.2 The critique

Both researchers were able to provide some support for their approaches. **Zajonc's** position was criticised by theorists suggesting that having no conscious awareness of cognitive processing before affective responses does not imply absence. Some theorists have proposed that you cannot separate emotion and cognition (e.g., Power & Dalgleish, 1997). Zajonc showed that emotional reactions could be generated without the need for cognitive appraisals to precede them, which discredited Lazarus's argument for the primacy of cognition over emotion. However, he failed to find clearly supporting evidence of the primacy of emotion over cognition in the absence of simultaneous cognitive appraisals. Zajonc's rather limited definition of cognition is inconsistent with the use of the term in social psychology today. Much social information processing happens quickly,

automatically, and without awareness (see Dodge, 2006; Fontaine, Burks & Dodge, 2002). Finally, the latest neuroimaging (fMRI) studies show that the visual and frontal cortices are activated by mere exposure and affective priming procedures. Hence, there is no neurological direct perception-emotion link, as Zajonc had proposed in his emotion independence and supremacy over cognition (McClure et al., 2004).

Lazarus's position advocated that processes play an important part in emotional reactions to stimuli. Individual differences in cognitive appraisal explain individual differences in emotional reactions. However, appraisal is rather a vague term. Lazarus ignores the social context of emotional experience. There is some doubt that appraisal processes could be involved in non-conscious processing as Lazarus suggests.

3.4 Summary

It seems fruitful for the purposes of this study, to move to a more comprehensive account of both cognition and emotion as overlapping entities that can precede, be preceded by and simultaneously co-occur, depending on the context, the situation and time specificity, as well as the transactional specifics in social interaction. The present study assumes that problematic behavioural reactions can occur as generated by negative emotions or the application of negative emotional states independently of any reliance or dependency on cognition. However, the present study will not attempt to measure emotions per se (a particularly difficult task); instead, self competence will be investigated and in particular global self-worth (Harter, 1987) which is well documented as providing

an emotional (affective) and psychological measure of the value placed on ourselves. This in turn may help to explain the "environment" within which a behaviour action/reaction occurs. Since emotional and cognitive factors are pivotal in the proposed design of this study they are explored separately in detail in relation to the seminal work by Dodge, Marsh, Harter and Achenbach in the following chapters.

CHAPTER 4

SOCIAL COGNITION THEORY

4.1 Introduction

Social Cognition is concerned with how children make sense of other people and themselves (Fiske & Taylor, 1991). Relevant to this is the study of attitudes (Zimbardo & Leippe, 1991), person perception (Schneider, Hastorf & Ellsworth, 1979), stereotyping (Hamilton, 1981a; Jones, 1972), and small groups (Fiske & Taylor, 1991). In essence, the term social cognition refers to the **social information processing** that goes on when perception and action are brought into play. Social information processing skills have been recognised as primary factors strongly linked to the quality and nature of social behaviour manifestations at the more technical and operational level of social behaviour analysis (Fontaine, Burks, & Dodge, 2002; Dodge, 2006; Crick & Dodge, 1994). These issues will be considered in greater depth when Dodge's extensive work is reviewed, as the latter has influenced the major theoretical underpinnings, instrument selection and use in the present research.

Social Cognition research shares some basic features: "unabashed mentalism, orientation toward process, cross-fertilization between cognitive and social psychologies..." (Fiske & Taylor, 1991). Some researchers have suggested

that "social cognition may modify risk for psychopathology" (Beardslee, Schultz & Selman, 1987; Garmezy, 1987). In particular, in Garmezy's findings, children with greater assets (defined by higher IQ, higher Socio-Economic Status, and positive family attributes of stability and cohesion) were more competent and more socially engaged under stress. These assets appeared to be protective factors against disruptive-aggressive responses to stress, thus serving as a modifying agent. The quality of a child's social engagement in school was also related to social comprehension, a factor proposed to reflect interpersonal understanding and problem-solving ability.

The suggestion that social cognition may act as a modifying agent has been further supported by several studies in the late 1980s demonstrating an association between social cognitive skills and child adjustment (Dodge et al., 1986; Pelligrini, 1985; Rubin & Krasnor, 1986; Selman, 1980; Spivack et al., 1976). Furthermore, increasing negative judgment of a child by peers (taken to averagely refer to child adjustment) correlated negatively and significantly with an increasing level of interpersonal conception (referring to social cognitive skills, Selman, 1976b). Conversely, positive peer sociometric ratings were not significantly correlated with any quality of interpersonal understanding. In other words, the higher the ratings of rejection (i.e. disliked or poorly thought of) by peers a child receives, the (relatively) lower the levels of social cognitive skills (i.e. interpersonal understanding) that the child seems to portray in subsequent assessments. Furthermore, children with "adequate" or "average" levels of expressed interpersonal understanding can be either liked or disliked by peers. This suggests

that an "adequate" level of interpersonal understanding is a necessary but by no means sufficient condition for children to receive positive peer evaluations. Good interpersonal conceptual ability does not necessarily influence peers' judgments, whereas, poor interpersonal conceptions clearly do.

Initial exploration of pupils' interpersonal understanding by developmental and cognitive psychologists, proved valuable in identifying a specific relationship between social cognitive factors and poor adjustment. In the 1980's researchers furthered the investigation of these factors substantially by developing clearer and situation-specific theoretical conceptualisations and methodological techniques. These studies, with the pioneering work of Dodge (for a review see Dodge, 2006), proved very influential in making the leap from the study of general social cognitive patterns to the characteristic aspects (i.e. styles, or biases) of social information processing. In particular, poor or **biased** processing was significantly linked with maladjustment and child psychopathology. Poor social cognitive skills have for a long time been linked with aggression and peer rejection, two of the most consistent behavioural precursors of adult psychopathology (Cowen et al., 1973; Hartup, 1983; Kohlberg et al., 1972; Robins, 1966; Dodge et al, 1986; 1995; Dodge & Pettit, 2003).

Another dimension, not accommodated in the research findings reported above is that of negative social cognitive skills. The term **poor** in some studies is considered to encompass the meaning of **negative** as well, but in the present study these two possible causal factors are considered as quite distinct since they orientate practitioners towards a different intervention plan by making assumptions

based on different explanations. A child with *poor* social cognitive skills (denoting low levels in quality and quantity) is characterised by *a lack of* such skills and would need an intervention approach that focused on and fostered enrichment in quantity and quality. Conversely, a child with negative social cognitive skills, likely the product of socially modelled but *inappropriate* skills, would need a more complex intervention plan that concentrated on the unlearning of **already acquired** hostile and/or inappropriate skills, while in parallel fostering new and acceptable ones.

In an initial exploratory account of the possible causal factors involved (Pettit, Dodge, & Brown, 1988), **poor social cognitive skills** were attributed to a lack of average exposure to alternative behaviour reactions, or to a neglectful (in social modelling) family environment, which placed children at risk for maladjusted behaviour through frustrating social experiences. Early studies suggested that such behaviours as altruism, 'aggression, communication style, as well as positive and negative social behaviours, could be acquired through a direct modelling process. It was further reported (e.g. Putallaz, 1987; Rubin & Sloman, 1984) that modelling may be involved in the acquisition of the general orientation applied in a social interaction, where a child could imitate a parent's behaviour style (for an early review see Maccoby & Martin, 1983), suggesting that family experiences play a crucial role in the development of social skills (positive or negative) and consequently social likeability among peers in the school context. Furthermore, inconsistent and incompetent parental practices can predict the development of socially incompetent (e.g. aggressive) behaviour in children (Baldwin, 1955;

Baumrind, 1967; Eron, 1982; George & Main, 1979; Winter & Rau, 1962).

However, it is difficult in some instances to disentangle *specific* skill modelling from modelling of a more generic interaction style. In practice, when confrontations are created, a child within a *specific skill modelling* perspective, could be classified as consciously selecting to employ socially acquired negative strategies **by acting them out**, whereas under *a social orientation explanation* he/she may face difficulties because he/she does not know how to resolve his/her conflicts with others (learned helplessness), suggesting that he/she is **not acting** at **all** (e.g. using avoidant behaviour, running away from fights). For example, it may be that lower status children are perceived as more disagreeable by their peers because they **lack the necessary prosocial skills** to keep their disagreements from escalating, thus making their social interactions generally appear negative. On the other hand, **negative social skills** are significantly attributed to early-family exposure to inappropriate basic and alternative reactions in social situations, or to a bias toward a limited directionality in reactions (negative selective recall), i.e. physically, verbally aggressive behaviour or both. A positive association has been reported between levels of aggression in parents and children since the 1950s (e.g. Bandura & Walters, 1959; Becker et al., 1959; Glueck & Glueck, 1950; McCord & McCord, 1958). Becker et al. (1959) reported that parents who displayed their emotions in an uncontrolled way tended to have children who behaved in an aggressive and similarly uncontrolled manner.

4.2 Analysing Empirically Derived Social Information Processing Factors

Research within the social-cognitive framework (e.g. Erdley & Asher, 1996, 2002; Fontaine, Burks, & Dodge, 2002, 1998; Guerra, Nucci, & Huesmann, 1994; Huesmann & Guerra, 1997) and Developmental Psychopathology (Chandler & Moran, 1990; Cicchetti & Lynch, 1995; Dodge, 2006, 1993; Farrington, 1993; Fontaine & Dodge, 1998; Rieder & Cicchetti, 1989) has analysed the relationship between cognitive processing and the developmental perspective of social maladjustment. However, many researchers have expressed reservations regarding the adequacy of empirical attention to social cognitive processes and antisocial behaviour in childhood and adolescence (e.g. Fontaine, Burks, & Dodge, 2002; Garber, Quiggle, Panak, & Dodge, 1991; Lochman & Dodge, 1994; Shantz, 1983).

One area that has evoked discussion about its lack of clarity is the relation between evaluative decision processes (the processes children adopt to choose between main and alternative courses of action to a social cue) and aggressive behaviour (Fontaine & Dodge, 1999; Guerra, Nucci, & Huesmann, 1994; Huesmann, Guerra, Miller, & Zelli, 1992). Social cognitive variables are said to provide a plausible explanation for the wide variability of developmental paths from childhood into adulthood (Allen, Weissberg, & Hawkins, 1989; Inkeles & Leiderman, 1996). From this perspective, models of social information processing have played a central role in furthering our understanding of the link between social cognition and externalizing problems.

Social information processing theory (SIP; Crick & Dodge, 1994; Dodge, 2006, 1986; Huesmann, 1986, 1988) *"explains behaviour in youth as the*

cumulative product of mental operations that are activated during social exchanges. A central hypothesis of SIP is that youths who develop tendencies to process information in aggressogenic ways are more likely to engage in recurrent or chronic aggressive behaviour. In turn, developing behavioral patterns may affect one's processing style" (Fontaine, Burks, & Dodge, 2002). SIP has importantly helped to develop a better comprehension of how elaborate, complex, intertwined and bidirectional are the relations between social cognitive and behavioral processes. Hence, SIP originally appeared to be very important to theorists within the transactional model[4] of social inquiry.

Two aspects of social cognition are consistently reported to be central to several influential theoretical perspectives (e.g., Bandura, 1986; Dodge, 2006; Dodge et al., 1986; Fontaine, Burks, & Dodge, 2002; Mischel, 1973): *interpersonal problem-solving competency* (IPSC; D'Zurilla & Goldfried, 1971; Spivack et al., 1976) and *attributional and aggressive response biases* (e.g., Dodge, 2006 for a review, 1991, 1980; Dodge & Frame, 1982). Early research demonstrated the relationships between these two social information processing aspects and aggression (the most frequently reported externalising behaviour problem) and peer rejection.

The definition of these two social-cognitive features is as follows (Downey

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[4]This Theory with roots in Psychoanalytic psychotherapy is based on the belief that everyone has a child, adult and parent self within them and, within each social interaction, one self predominates. By recognising these roles, a client can choose which one to adopt and so change behaviour. This form of therapy has produced the term "inner child", used to describe unfulfilled needs from childhood. Unproductive or counterproductive transactions were considered to be signs of ego state problems. Analysing these transactions, according to the person's individual developmental history, would enable the person to "get better". Theorists thought that virtually everyone has something problematic about their ego states and that negative behaviour would not be addressed by 'treating' only the problematic individual.

& Walker, 1989):

> *"**Hostile attributional bias** refers to a tendency to attribute hostile intent to the perpetrator of aversive experiences even when the underlying intent is ambiguous.*
>
> ***Aggressive response bias** refers to a tendency to respond aggressively following aversive experiences, regardless of the perpetrator's intent."*

Dodge (1982, 1984, 1986, 1994, 2002, and 2006) and his colleagues have shown that such biases are common in aggressive and rejected children.

Although these aspects of social cognition that seem to be importantly related to the phenomenology of human behaviour and emotions have been distinguished theoretically, the extent to which they are distinct empirically is unclear because, at present, few studies have compared children on a variety of social cognitive measures (for an early exception, see Dodge et al. 1986).

4.3 The Dodge Studies

4.3.1 Introduction

Recently, emotional and behavioural problems have been put under the spotlight from the perspective of the financial cost/burden for societies worldwide. For instance, the problem of antisocial criminal behaviour has been estimated to cost the American state over one trillion dollars a year (Anderson, 1999).

Individuals with chronic antisocial or conduct problems are estimated to cost society about 1.6 to 2.2 million dollars each over the course of a lifetime (Cohen, 1998). The education system calls these children seriously emotionally disturbed, the justice system calls them delinquents and the mental health field calls them psychiatrically conduct disordered. These children are notoriously difficult to handle in their school environment, in social interactions and at home.

The pressing need for finding new methods for prevention and intervention has prioritised the search for etiological factors. Researchers have utilised advances in the sciences which have contributed to modern scientific thinking. Findings from **Ethology, Neuroscience, Social Psychology, Personality Psychology and Developmental Psychology** have all made a contribution. These are explored below before a detailed account of the Dodge studies theory and research contributions is provided.

4.3.2 Ethology

Theories of human aggression over the years have tended to fall into two general areas of causal explanation: On the one hand Social Learning Theory (Bandura originally 1973; lately 1986, 1999) proposed that aggression is a socially acquired instrumental act, taught by important others, governed by rules, and controlled over time by its associated consequences. In contrast the Frustration-Aggression model (originally proposed by Dollard, Doob, Miller, Mowrer, & Sears, 1939) postulated that aggression is an automatic hostile reaction to a negative, aversive social exchange instigated by a specific other driven by an

accumulated frustration. Perception and hence processing, plays an important role in this model which revolves around the notion of hostility. Researchers have focused on the antecedents of a specific aggressive reaction, for instance triggering indicators i.e. goal blocking, heightened anger, threat to the self, building frustrated expectations. One theory emphasizes the pro-active, goal-directed, incentive based nature of aggression (Bandura 1999), whereas the other emphasizes the negative dynamic in social interaction brought about by aversive treatment (Dollard, Doob, Miller, Mowrer, & Sears, 1939).

The ethologist Lorenz (1966) tried to move away from these polarities and offered instead a model of explanation that was meticulous in describing the varied range of aggressive behaviours displayed naturally by a whole range of species from sea animals and mammals to primates. He synthesized his observations and studies to 2 types of aggressive behaviour: the so called cold-blooded predatory aggression, which he asserted was non emotional and was aimed at preserving food, territory, or dominance; and the frenzied anger, an outburst of aggression that appeared to serve as a defensive mechanism, and is a reaction to provocation, threat, or frustration. This latter type he said was more violent and unpredictable in outcome and less controlled. This was an important contribution towards a better understanding of aggression and its triggering factors.

Following these theoretical developments, other researchers distinguished between instrumental (pro-active) and hostile (reactive) aggression, and attributed these differences to discernible psychobiological mechanisms hard-wiring each behaviour tendency (Moyer, 1976; Scott, 1972).

The difference in these types of aggression from a developmental

perspective is that reactive aggression seems to be universal and hard-wired as a protective mechanism in primates and effort is needed in order for it to be socially "unlearned" or controlled through developmental maturation, whereas instrumental aggression may be universal in some species but its acquisition seems to be environmentally reinforced.

More recent theoretical advances (Boyce and Ellis, 2005) try to integrate the contributions of ethology, evolutionary psychology, and psychobiology to articulate a generalized theory of reactivity to environmental stressors, focusing on the particularities of specific personal provocation. In their general theory, Boyce and Ellis propose that humans have evolved in response to adaptational necessities with an integrated biologically sensitive system to environmental threats and perceived dangers that include elevated heart rate, adrenalin rush, metabolic forwarding of nutrient disposal to the blood and muscles, and "augmenting vigilance to threats and dangers" (p. 272).

Hostile attribution bias is considered as a potential cognitive element of this tendency to heightened reactivity, explaining that this system is within adaptive norms when controlled by appropriate appraisal of social situations, but becomes maladaptive when it fails to switch off in the absence of any immediate threat to the self, leading to a generalized tendency to treat all social situations indiscriminately. Therefore, recognition through processing that an instigation *has ceased* to be threatening is deemed crucial to the extinction of the stress response. This skill is said to be acquired by the 4th year of children's lives, but some children clearly fail to reach this social milestone. Ellis, Essex, and Boyce (2005) in their study with 249 children were able to show that very stressful early

environments create a persistently stable heightened level of reactivity arousal to later stimuli, suggesting a developmental perspective in the acquisition of hostile attributional bias.

This Ethological perspective, which has identified a type of aggressive behaviour as an emotionally frenzied self-defensive and retaliatory response to the perception of threat, has led to this being investigated with children in more detail.

4.3.2.1 Ethological Translational research: The first Dodge studies

The distinction between pro-active and reactive types of aggression was first directly observed by Price and Dodge (1989). They found support for the discriminant validity of these behaviours and were able to identify different contexts purporting to facilitate the appearance of different types of aggressive act. Rough play was linked to reactive aggression. The latter was further correlated with lower play ratings from peers, whereas instrumental or pro-active aggression was not negatively evaluated by other children.

Dodge and Coie (1987) found support for the aforementioned assertion in recording an association between hostile attribution bias and reactive (but not pro-active) aggressive behaviour, despite the fact that the two types of aggressive behaviour were positively correlated with each other. The study identified four groups of 1st and 3rd grade African American boys as reactively aggressive, proactively aggressive, combined aggressive, and non aggressive, and screened their reactions to a race-sensitive adapted measure of intention-cue detection like the one used by Dodge (1984). The two reactively aggressive groups were less

accurate at detecting benign intentions in their classmates, and instead overattributed hostile intent. When peer intent was hostile, these groups were the most successful in attributing intent. When the intent was ambiguous the reactively aggressive groups were more likely to attribute hostile intent. Furthermore, direct observation of these boys showed that the number of errors in their judgment of hostility in the laboratory environment predicted the rate of reactive aggression, but not pro-active aggression.

Crick and Dodge (1996) were able to replicate the association between hostile attributional bias and reactive aggression, but not pro-active, in a sample of 624 9-12 year-olds of both genders. The same association was found in a study by Graham and Juvonen (1998) among middle school children; Schwartz et al. (1998) with 66 8 year-old African American boys; Dodge, Lochman, Harnish, Bates, and Pettit (1997) with 3rd graders; and finally Dodge, Price, Bachorowski, and Newman (1990) with 128 adolescent boys in a maximum security prison. The latter study found that hostile attributional biases were positively associated with the number of interpersonally violent crimes committed (rated from official records), undersocialized conduct disorder, and the reactive aggression subscale of the Revised Problem Behaviour Checklist, but not with the nonviolent crimes and proactive aggression subscale. These findings were controlled for differences in intelligence, socioeconomic status, and ethnicity.

4.3.3 Neuroscience

Neuroscience has long been involved in attempting to answer questions about executive operations and the specific regions of the brain associated with

them, as well as the locus of control of emotional arousal and behaviour. Until very recently these scientific investigations were limited to deductive reasoning relations to particular regions of the brain after injury. Magnetic resonance imaging and, particularly, lately functional magnetic resonance imaging (fMRI) have shed light on the activity of regions of the brain that are involved in various types of behaviour and, in particular, aggressive behaviour. The amygdala has repeatedly been associated with emotion processing and aggressive behaviour, but only recently has it also been linked to the processing of the detection of threat, its source and the meaning of threatening stimuli. In a study by Adams et al. (2003), two categories of threatening and ambiguous stimuli were presented. The fMRI data revealed that left amygdala signal intensity discriminated clearly and significantly between the two categories of controlled variables, with greater intensity symbolizing harder "work" and occurring during the ambiguous stimulus.

Other fMRI research has revealed that the paralimbic cortex and other limbic regions linked to the midbrain dopamine system are involved in impulsive, fast reward-seeking behavioural choices such as "getting even"; while frontparietal activity is linked to reasoning before behavioural decisions such as exercising restraint from impulsive and punitive aggression (McClure et al., 2004). The findings have been interpreted as suggesting that human behaviour is a constant tug of war between lower level social cognitive and automatic processes that are fast and, hence, serve an adaptational purpose in our evolution, and recently evolved higher order social processing capacity for generalizable, abstract reasoning and planning (p.506).

De Quervain et al. (2004) utilized positron emission tomography (PET) to

investigate aggressive revenge among adults and established that the region of the dorsal striatum is activated in anticipating satisfaction from revenging wrongdoers (a region associated with primary satisfaction such as material gains and pleasant tastes). Humans seem to be intrinsically motivated to act with revengeful aggression as this brings pleasure to the brain, despite the social or other costs (Knutson, 2004).

In all of the above studies the implied hypothesis is that since the amygdala is an "older" brain region than the frontal cortex from an evolutionary perspective, the inclination to apply hostile interpretations to experiences of negative valence must be an "older" stance than the more "sophisticated" and later acquired ability to distinguish hostile from nonhostile intent in others. Further, the capacity to "see" benign intent may have been crucial for establishing social cooperation, which was a milestone in the evolution of human civilization.

4.3.3.1 Neuroscience Translational Research

These findings have revealed that humans may be born with a prefixed aggressive retaliation response repertoire which is deeply rooted in the neural basis of behaviour and has a long evolutionary history. Cumulatively, this leads to the conclusion that humans may develop the ability to inhibit aggressive retaliatory responses with the development of social skills over their lifetime.

4.3.4 Attribution Theory

Social Psychology first elaborately described the tendency of human beings to infer cause to social events. Attribution theory attempted to bridge the gap between external events and the choice of personal responses, under conditions of specifically scrutinized types of attributions.

Epstein and Taylor (1967) demonstrated that experimentally manipulating the conditions leading to a person's victimization by a provocateur, led to different degrees of attribution of hostile intent, which were directly linked to retaliatory aggressive behaviour. This culmination invigorated the significance of attribution theory in social psychology and the behavioural sciences.

Kelley (1971) and Jones & Davis (1965) set out the fundamental principles of attribution theory, which are:

1. Human beings seem to be inclined to persistently search for a cause of behaviour events involving the self and/or others;

2. Assigning causes seems to be characterized by systematic rules; and

3. The actual nature and degrees of causal attributions heavily influence affective and subsequent behavioural responses.

Principle 1 is well documented in studies considering a range of problems from aggression to depression (Joscelyne & Holttum, 2006; Hazler et al., 1997; Michela & Wood, 1986).

The 2nd principle has been demonstrated in studies that discriminated specific logical principles in human beings' attributions (Nasbu, Hayden, and

dePaulo, 1980; de Castro, Veerman, Koops, Bosch, & Monshouwer, 2002; MacBrayer, Milich, & Hundley, 2003), such as:

- *Covariation*, the tendency to attribute the outcome to a covarying cause

- *Distinctiveness*, the tendency to systematically favor one attribution after ruling out other possible ones, and

- *Personalism*, the tendency to faster attribute hostile intent if the provocateur has not behaved like this to others but only the self (Kelley, 1971; Jones & Davis, 1965).

An important finding was associated with the following links of significance: a provocateur's act builds up frustration in the receiver, who then searches for causes for this provocation. Pastore (as early as 1952) was able to show that arbitrary frustrations (arbitrary = uncalled for in the "eyes" of the perceiver), and with no alternative plausible explanation in sight, were more likely to be labeled by the receiver with hostile intentional behaviour on the part of the frustrator than were non arbitrary frustrations (i.e. frustrations that can be considered to have plausible alternate causal explanations).

Common plausible alternate factors are:

1. An obvious and superimposing physical cause for the frustration,

2. A pressing and strict institutional rule that must have guided the frustrator,

3. Knowledge of mental illness in the frustrator, and

4. Valid consideration of the perceiver's involvement in "earning" the attack

(Pastore, 1952; Jones and Davies, 1965).

In the case of the 4th factor, Jones and Davies (1965) postulated that *"if the perceiver believes he has done something to earn attack, insult , or rejection, he will presumably be less inclined to appraise his attacker negatively than if the attack was unreasonable or arbitrary"* (p. 249).

Jones and Davies (1965) also introduced an important qualifying factor; they proposed that what they called *hedonic relevance,* i.e. motivational significance, significantly increased the "severity" of a provocation and, hence, the receiver's likelihood to make correspondent inferences about the act. Put simply, if a child suffers a "blow" to his peer status, his self-respect, or the stability of his relationships (all important factors in sociopsychological wellbeing), he/she will be more inclined to fast attribute hostile intent to the provocateur than if the provocation involved a factor of secondary importance.

The 3rd principle in Kelley's Attribution Theory states that the factors dictating the selection of a perceived cause of a provocation influence the quality and intensity of the emotional response (the affective arousal), which in turn leads to the choice of a particular behavioural response.

Aggressive behaviour was a more likely response when the provocation was intentional as opposed to accidental (Rule & Duker, 1973), foreseeable than unforeseeable (Dyck & Rule, 1978), and experimentally manipulated to be freely chosen than constrained (Costanzo et al., 1974). Aggressive retaliation was reduced with the introduction of a mitigating circumstance peripheral to the

provocation (Darley, Klossen, and Zanna, 1978).

4.3.4.1 Translational research in Attribution Theory.

Dodge (1980) in his initial studies found that when a child attributed hostile intent to a peer's action, the probability of a retaliatory aggressive response was .60. When the attribution was benign (accidental) the probability dropped to .24. Although the links between attributing hostile intent to a peer's actions and responding with retaliatory aggression, as well as attributing a peer's act to an accident and exercising restraint from retaliatory aggression, seem straightforward and apparent, the reality seems to be more complicated. People take into account a more varied spectrum of conditions when making attributions about others. These varied inferences are called inferences of "indirect responsibility", e.g. the inference that someone acted with willful neglect of self, that another child put his/her perspective above that of the self, that a classmate showed insufficient attention to the self, that a peer failed to predict the consequences of his/her actions, that another child acted irresponsibly (viciously kicking a football in a large crowd of children in the playground) ending up harming the self (the child making the attribution).

The preponderant principle in children's processing of these cues as they make an attribution seems to be whether the child's actions lead to the self being hurt or aggressed, then the child is a-priori instantly held responsible, unless another plausible explanation is accessible or identified. Inferring nonhostile intent may need more time and resources, for it uses more "cognitive" power and

complex processing. This suggests a developmental dimension, as younger children lack the ability to simultaneously and equally (in terms of merit) process the perspectives of the self and involve others in a social interaction. It also identifies contributory incapacitating conditions affecting the performance of the necessary cognitive operations, for instance mental, physical and psychological fatigue, as well as stress (Dodge, 1980).

4.3.5 Nonrational attributions

Social Psychology has helped to identify the systematic "rules" people follow in making causal attributions. These rules include some universal **non-rational tendencies**, which have aided the understanding of problematic behaviour in young people. The major processes that lead to biased attributions fall within 3 categories (Petty, Wegener, and Fabrigar, 1997): **I)** objective-cognitive adequate or inadequate information, **II)** personal-motivational reasons and **III)** situational factors.

I) Objective-cognitive factors have as a basis the fact that in any social interaction the information available and exchanged is overwhelming at any given moment. It is asserted that humans use heuristic rules to tackle this simultaneous information overload before an expected action. Heuristics lead to efficient and quick ways of reaching accurate conclusions, but in some cases they lead to clearly non-rational and false judgments. These heuristic rules involve the following:

1) The "Availability" heuristic (Tversky & Kahneman, 1973): The tendency to

make judgments consistent with a category merely because this category has been "commonly" (in terms of frequency) used in the past, e.g. if a child has been victimized throughout the week, then he/she is more "ready" to interpret the actions of others as of hostile intent.

2) The "Salience" heuristic (Jones and Nisbett, 1971): People engage in a *fundamental attribution error* in which there is a pervasive tendency for actors to attribute their actions to situational/context requirements, whereas observers tend to attribute actions to the actor's stable personality characteristics. This can lead to escalating conflicts, e.g. the "aggressor" child can view his/her actions as based on the moment and context, whereas the "victimized" child sees the same behaviour as intentional and typical (thus, stable).

3) The "Accessibility" heuristic (Petty et al., 1997): more recent information tends to be weighted more heavily, e.g. a child that has acted repeatedly with aggressive behaviour towards other peers in the same week that he has a new interaction with the recipient, tends to be judged by the recipient as still acting as an "aggressor".

4) The "Representativeness" heuristic (Kahneman & Tversky, 1973): The tendency to classify a stimulus to a category if it resembles features that other category members have, e.g. a child that has experienced bullying by other children who were male, large, and unfamiliar, is more likely to treat children of a similar typology as "mean".

These heuristics provide a more efficient response to time pressured social

interactions, but can deviate to non-rational and faulty judgments. Other non-rational biased tendencies are:

- A general tendency to match motives with acts (Pepitone & Sherberg (1957): in controlled social interactions when actors were asked secretly to constrain their options, perceivers underestimated the potential of externally imposed constraints on actors' behaviour and overestimated actors' willful intention.

- Parsimony (Simon, 1967): the tendency to accept as sufficient the first salient cause, which in turn leads to the brain shutting down further information processing for other credible alternatives.

- The tendency to weight negative information more strongly than positive (Kanouse & Hanson, 1971; Kogan & Wallach, 1967). In affective risk-taking costs for failure have more deterrent value than prospects of gains from success. Three possible explanations for this stable non-rational tendency are offered:

  a) Negative prospects are more salient in a predominantly positively inclined world.

  b) Negative signals threaten survival (which is essential), whereas positive signals are motivational and very welcomed but are not seen as ultimately essential for survival. This means that the negative tendency may be evolutionary adaptive.

  c) In judging a complex stimulus, a negative component may

"preempt" subsequent processing; hence it may be a simpler and clearer strategy with little computational and processing requirements than weighing pros and cons in any situation prior to a decision.

- Another positive non-rational tendency is the "mere exposure effect" (Zajonc, 1965), where a person tends more favorably toward a stimulus based on the frequency of previous contact with the actor, e.g. strangers are bound to be attributed with hostile intent when measured against friends (Dodge, 1980). This tendency is further enhanced if it has led to a successful interpretation and outcome in the past (based on a response selected), which is then re-applied in new circumstances leading to self-confirming the cognitive processes used, what has been called *the halo effect*.

II) Another category of reasons for non-rational tendencies (except cognitive-objective) is motivational factors: People want and do create personal cognitive systems/schemas in order to facilitate their understanding (making sense) and their adaptation and potential success in a social ecosystem. Inconsistencies in elements of the system (caused by "disconsonant" –Festinger, 1957- information) is dealt with by "choosing" *confirmation biases*, i.e. attribution processes are engaged that are biased toward confirming pre-existing schemas/hypotheses, despite contradictory evidence (resembles a psychoanalytically described stance of "denial"). Confirmation and hence reinforcement of the schema is provided by

purposefully weakening contradictory cues and overweighting supporting cues.

III) There are situational factors affecting the tendency to employ non-rational conclusions to situations, for instance, the mood state that someone is in has been shown to be in the same direction as someone's causal attributions (Wegener & Petty, 1996; Mayer & Hanson, 1995; Petty et al., 1997), which are affected by tiredness, levels of stress, and individual differences in temperament/biology.

4.3.5.1 Translational Research of Non-Rational Attributions

One of the key contributions of this field of study has been the finding of 4 factors that seem to account for the largest percentage of variance in biased hostile attributions:

1. Emotional involvement, (there is a marked association between attributional biases and emotional involvement. Emotionally important factors appear to set a working "environment" for systematic attributional biases e.g. provocations that strike at a child's social relationships are more likely attributed to hostile intent than are provocations that involve overt physical contact (MacBrayer et al., 2003); attributions involving the self as the object of provocation are especially prone to biases whereas no hostile attribution biases were found when children were asked to imagine and assess the provocation of child A to B (Dodge & Frame, 1982).

2. Prior experiences, (children are more likely to attribute hostile intent to peers with an aggressive reputation, (Dodge, 1980); children are more

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willing to accept provocations by acquaintances than by strangers -except when an acquaintance is a known aggressor (Steinberg & Dodge, 1987).

3. Contextual constraints, (the context of the interaction plays a role, in that competitive contexts elicit more hostile attributions than cooperative ones (Lochman & Dodge, 1998); in addition, *"attribution theory predicts that hostile attributions are more likely to be made under ambient conditions of threat, due to salience"* (Dodge, 2006, p.803); non-aggressive children were indifferent to this situational context (Dodge & Somberg, 1987).

4. Individual differences, (aggressive children seem to be unable to change to make non-hostile attributions when the context changes from competitive to cooperative, although non-aggressive children are clearly able to do so (Lochman & Dodge, 1998).

4.3.6 Personality and Trait Theory in Social-Cognitive Processes

Personality and Trait theorists have argued that despite social psychology's explanation of the chain of action from cognitive processing to hostile attributions and, consequently, aggressive behaviour responses, the proposed models fail to explain how chronic and stable patterns of aggressively "inclined" children are linked to these processes. 'Old school' personality theorists (Goldberg, 1993; McCrae & Costa, 1997) have asserted a rather inflexible (and directly contrasting to attribution theory) view that the static, biologically determined characteristics present at birth in a child drive all the actual and future individual differences of that child. This assertion disputes the hypothesis that hostile attribution biases can

shape and guide behaviour, but rather asserts that biases are a byproduct of the underlying aggressive personality trait.

Contemporary social-cognitive personality research (Cervone & Shoda, 1999) has moved away from this rather constrained perspective and based on the formulations of Mischel (1999) and Bandura (1999) has argued that personality coherence is not driven by traits but by situation specificity in social cognitive processes. Thus, instead of a top-down model (all variability in behaviour is explained by fixed underlying traits); behaviour is seen as bottom up (stable cognitive processes lead to particular behaviours in specific situations). This suggests that we tend to see stable cognitive processes and infer personality traits, not the other way round. Traits are descriptive and not causal. Processes and cognitive structures provide the causal engine for personality coherence. Coherence comes as people are inclined to categorize past events in anticipation of future ones in a way that makes sense, tells a story about the meaning of the world around them (Higgins, 1990; Stromquist & Strauman, 1992). These organized experiences have been termed knowledge structures (Cervone & Shoda, 1999), schemas (Kelley, 1971; Wyer, 1981), heuristics (Kahneman & Tversky, 1973), scripts (Huesmann, 1988), stereotypes (Mackie & Hamilton, 1993), stories/narratives (Shank & Abelson, 1995), and working models (Bowlby, 1973, 1980, 1982). These schemas serve to organize memories of past events (Cantor & Kihlstrom, 1982; Markus, 1977), and if they are hostile in nature, they are likely to be used again by a child (in order to stay consistent with past event interpretations) in his/her future interpretations of stimuli through a process termed perceptual readiness (Hochberg, 1970).

Measured in many different ways (Burks, Dodge, Price, and Laird, 1999; Stromquist & Strauman, 1992; Burks, Laird, Dodge, Pettit, and Bates, 1999; Zelli, Dodge, Lochman, Laird, and CPPRG, 1999) hostile schemas have been shown to consistently correlate with aggressive behaviour and predict elevated levels of aggressive behaviour across development. Patterns of social cognition have also been shown to be situation specific (Dodge, Laird, Lochman, Zelli, and CPPRG, 2002). In addition the same study provided evidence that positive/negative understanding of emotion could predict hostile attributions, and in turn hostile attributions mediated the impact of mental schemas on aggressive behaviour.

Important is the conclusion of Dodge's work (Dodge & Newman, 1981) that hostile schemas affect attributional processes through selective recall of hostile cues[5] and rapid responding without a proper exposure to all the possible cues. The latter was significantly the case with aggressive children. The latter point is pointed out as it relates to the present research hypothesis that some SEBDs children should portray hostile attributions of intent to the other's actions and hostile responses even in manipulated social interaction stories where there is no threat to the self. Thus, supporting a specific typology in their social mental processing.

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[5] Heightened focus on the self, i.e. individuals who hold schemas about being threatened, leads a person to react quickly and aggressively to provocations before waiting for all the available information assisting the decision of whether the provocation was hostile or benign (Fenigstein, 1979).

4.3.7 Developmental Psychology

Personality psychology has suggested cross-time stability in the relationship between hostile attributional biases and aggressive behaviour, while developmental psychology has provided the when and how these patterns develop in the life course. It has been demonstrated (see reviews by Hay, 2005; Lemerise & Dodge, 2000) that aggressive behaviour is universal, retaliatory in nature, involves little cognitive processing and commences in the first 2 years of life. By contrast, the ability to process and infer intent develops in the 3rd and 4th years (Schult, 2002; Wellman, Phillips, & Rodriguez, 2000) with the start of the development of the theory of mind (Flavell & Miller, 1998). Despite this evolution in social cognitive skills, the tendency to match the valence of an action's outcome with the inferred intent remains strong until middle childhood. Bjorkqvist & Osterman (2001), showed that 7 year-olds distinguished act and actor more successfully than did 4 year-olds. Also, proneness to infer hostile intent in response to an ambiguous provocation decreases through toddler and middle childhood years (Dodge & Newman, 1981), and maturation seems to be the preponderant factor (Dodge & Price, 1994). In early adolescence, with the transition to formal cognitive operations, social processing skills slowly evolve to include alternative interpretations and subsequent hypothetical outcomes (Neimark, 1982). Dodge (2006) asserts that this is a good time for intervention to change patterns of biased social information processing.

Research evidence has shown that individual differences in attributional styles are not a mere function of maturation and neuropsychological handicaps

(handicaps -defined as impulsivity and poor cognitive ability to consider alternatives- correlated weakly with hostile attribution biases), but seem to rely heavily on the experiential component of a child's life (Caspi et al., 2002). Dodge's recent model (2006) proposes that pivotal to analyzing specific attribution patterns is our knowledge of the acquisition of the ability to attribute benign intent after a provocation with an adverse outcome. There are some principles that underlie the model: 1) early influences are more weighted than later ones (Shonkoff & Phillips, 2000); also, children begin their self-selection of environments which in itself limits their prospective experiences, 2) social information processing becomes more varied across different contexts and situations with maturity (Werner, 1948); hence situation specificity is introduced which adheres to variable behaviour in a person, 3) change in attributions and behaviour is possible and additional to earlier patterns. It is unclear whether early patterns are truly lost with change.

It is asserted that there are 5 mechanisms associated with the development of benign attributional biases:

1. Social learning through imitation (MacBrayer et al., 2003)

2. Acquired perceptual readiness based on stored previous experiences (Posner & Rothbart, 2005). This can gravitate to the positive but also to the negative (physically abused children attend selectively to hostile cues, Pollak & Tolley-Schell, 2003).

3. Facilitation of prosocial (socially skilled) behaviour models through establishing a secure attachment with a primary caregiver (Bowlby, 1988;

Bretherton, 1999; Cassidy, Kirsh, Scolton, and Park, 1996; Ziv, Oppenheim, and Sagi-Schwartz, 2004).

4. Ambient positive mood and recent task success (i.e. social, academic and life) is associated with a later tendency to attribute benign intent to others. The reverse leads to hostile attributions. (Petty et al., 1997; Dodge et al., 2003; Graham & Juvonen, 1998).

5. Culture-strong values affect social-cognitive responding and aggressive behaviour (Nisbett & Cohen, 1996).

4.3.8 Summary

Dodge's development of the model proposes that children as human beings are "wired" towards self protection early in life. This is a developmental drive. It is proposed firstly that this drive leads them to express aggressive behaviour under conditions of threat to the self. This is a developmental characteristic, non-acquired, that is universal for almost all species. Hence, it is suggested that the ability to control and subdue aggressive behaviour comes with age, is socially learned, and leads to the inhibition of aggressive responses to provocation.

Secondly, the theory postulates that as children mature neurocognitively they incrementally develop the capacity to infer intent in others, whereas in the early years this is not facilitated by self-centered developmental organization. Thus, in time children acquire slowly the ability to recognize and take into consideration the perspective and viewpoints of others as compared to theirs. Then they learn that some provocations are not hostile. This is the pro-social

perspective.

There are some children, though, that fail to acquire this stable pattern of inferring benign intent in response to non hostile or ambiguous provocations. This could be explained by acquired *negative* social learning behaviour and *poor* behaviour skills in the familial context, which may lead to unsuccessful behaviour inhibition and control of aggressive/hostile attribution biases and responses.

For these reasons, these children continue to match intent with outcome (negative). As a result, they systematically assign negative intent and steadily develop a hostile attribution bias. This over time becomes a negative personality characteristic. This failure for benign attribution may lead to a chronic hostile attributional style. This failure seems to happen as a function of: individual differences in the availability or the lack of remediate neural capacity, life experiences with traumatic events, and lack of bonding in secure relationships. In turn, these attributional styles become more and more embedded into the behaviour repertoire or expression of children, and eventually may become negative social schemas. The latter is particularly present in free recall. In itself the whole procedure can reinforce these children's self-fulfilling prophecy that the social environment is continuously hostile towards them, which leads to stability in their negative social processing. Dodge proposes that "[s]chemas grow out of experiences in early life and mediate the effect of these experiences on behavior" (Dodge, 2006, p.793).

Factors contributing to a benign attributional style are:

ʻʻa. A secure attachment relationship with a primary caregiver, […] in

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which trust and mutual exchange are fostered.

b. Modeling of benign attributions by valued adults or peers.

c. Success in important tasks.

d. Rearing in a culture that values cooperation and the whole community." (Dodge, 2006)

Factors contributing to a hostile attributional style might be:

"a. Physical abuse.

b. Modeling of hostile attributions by adults and peers.

c. Failure in important life tasks.

d. Rearing in a culture that values self-defense, personal honor, and retaliation."

(Dodge, 2006)

Although stability of persistent attributional styles may predict tendencies in behaviour, *the specific response to a given circumstance also depends on other aspects of neural responding (such as neurologically mediated tendencies to respond impulsively), social information processing (such as response accessing and decision making), and other intrapersonal and interpersonal features of the situation (such as fatigue, mood, ambient threat, and external contingencies)."* (Dodge, 2006; p.793).

To conclude, Dodge's studies (2006) support the association between aggressive outcome behaviour and the tendency to manifest social information biases only for reactive anger and appraised social failure, rather than instrumental success initiative as in bullying.

4.4 Conclusion

It may appear that the social information processing factors studied extensively by Dodge and his colleagues for 3 decades, adapted and included in the design of the present study as independent variables have been predominately researched in relation to their effect on aggressive and/or antisocial behaviour, i.e. the externalizing spectrum of behaviour problems, neglecting internalizing problems. This is not the case as even Dodge (2006, p. 793) -who has predominately researched aggressive behaviour causes- clearly states that *"not all children who display a stable hostile attributional style become chronically aggressive. Other outcomes are possible, including depression, anxiety, somatic symptoms, and other stress reactions."*

The current study aims to investigate particular associations of a "cause-effect" nature between independent variables and dependent variables of particular behaviour problem categories on an open ended basis, i.e. without a specific link to externalizing problem categories.

Dodge suggests that future initiatives should design strategies, prevention and intervention programs to tackle problems at school level, "engineering" an early years environment that would include elements that nurture benign attribution stances. Where stable hostile attribution biases are already learned and resistant to change, intervention should concentrate on altering the automatic cognitive response to foster alternative compensating cognitive responses that can override (but not eliminate) the initial hostile attribution tendency.

CHAPTER 5

EMOTIONS AND AFFECT

5.1 Etymology

Etymologically, the word emotion is a composite formed from two Latin words: e(x)/out, outward + motio/movement, action, gesture. This classical formation refers to the motivational elements that cause action or its ceasing from a source often hidden from conscious inspection but necessary even for rational acts.

5.2 A Historical Perspective: The Nature of Emotions

Emotions have been puzzling for researchers from the very beginning of psychology as a science in the end of 19th century. The definition of emotion even today has eluded universal agreement among scientists, researchers and theorists alike. Emotion colours all our lives, but until relatively recently it had not been a focus for psychological theory and research. Things began to change in the 1980s, with a gradual move away from the dominant cognitivism of the 1960s and 1970s. Social and personality psychologists have been at the forefront of emotion theory and research: Stanley Schachter, Richard Lazarus, Paul Ekman and Klaus Scherer

are some of the names that come to mind.

Emotions exert an influential role in development and in the prevention of SEBDs and psychopathology. Emotions directly affect what we perceive, the amount of sensory input we need to perceive it, the speed we perceive with, and as a consequence our mental processes and actions (Crick and Dodge, 1994; Zajonc, 1980). Positive emotions can broaden, and negative emotions narrow the range of cognitive processes and alternative behaviours (Fredrickson, 1998; McNally, 1996). For over a century, scientists in different disciplines have advocated for the adaptive nature of emotions and their critical role in individual and social behaviour utilized in survival and adaptation (Darwin, 1872/1965; Izard, 2001; James, 1890/1950). Some theorists have suggested that the emotions are central in motivating human behaviour (Izard, 1971). Whilst any emotion that gets out of control in intensity and frequency can have deleterious effects in socially adaptive efforts, all emotions, negative included, can benefit an individual's behaviour, well-being, social inclusion and social acceptance (Izard & Ackerman, 2000). Thus, a need exists to develop preventive interventions and programs to enhance children's skills used to understand and modulate emotions.

Emotions cannot be seen out of a developmental perspective (Infancy 0-2 years, Early childhood 2-5 years, Middle-Late childhood 6-12, Puberty 12-18, and Adulthood 18+ years) (Izard et al., 2002) and serve a social communicative function (Manstead, 2005; Izard et al., 2002).

Appraisal theorists argue (Manstead, 2005) that emotion arises from the meaning that an individual attaches to an event. An event in a social context (being hit by a ball) happens. How someone interprets this event affects if and of what

kind of an emotional reaction there will be.

> "First, emotions are 'intentional', in the sense that they are always 'about' something [...] Of course, we sometimes experience emotions in response to non-social stimuli (fear of heights or of spiders, for example), but social objects are much more likely than non-social objects to be the source of our everyday emotions (Scherer et al., 1986).
> Second, many emotions are either inherently or functionally social, in that either they would not be experienced in the absence of others, or they seem to have no other function than to bind us to others. Emotions such as compassion, sympathy, maternal love, affection, and admiration are ones that depend on other people being physically or psychologically present. Fear of rejection, loneliness, embarrassment, guilt, shame, jealousy and sexual attraction are emotions that seem to have as their primary function the seeking out or cementing of social relationships.
> Third, when we experience emotions we have a strong tendency to share them with others."
>
> (Manstead, 2005)

5.3 Emotion Theory: Recent Advancements

The cognitive approach to explaining human behaviour prevailed from the 1960s to the late 1990s. There was a resurgence of interest in the role of **affect** as a mediator of a variety of kinds of behaviour in the late 1990s, when there was recognition of the critical role of affect in both social behaviour and cognition that led to what is popularly termed among researchers as emotion science (Izard et al., 2002).

Researchers have turned their attention to studying how affect influences such phenomena as selective attention, selective retrieval and schematic

organisation. Those studies have been predominantly orientated towards achievement and performance rather than children's wider social behaviour. Nevertheless, psychologists have increasingly recognized the importance of *internal processes* in social interactions, a research orientation that was abandoned during the 60's due to its inferential nature.

In the late 1970s and 1980s there were two methodological advances that aided the empirical investigation of issues concerning emotions:

The first was the development of procedures that were valid and reliable for inducing emotion in children either experientially (Barden, Garber, Leiman, Ford, Masters, 1985; Isen, Horn, & Rosenhan, 1973) or cognitively (Masters, Barden, & Ford, 1979). These procedures have enabled researchers to design controlled studies of the influence of emotional states on children's behaviour and cognition (for a review, Masters, Felleman, & Barden, 1981).

The second methodological advance was the reinterpretation of introspective procedures. Scales based on self-reports were no longer interpreted to reveal mental structure as they attempted to do in early introspectionist psychology (for discussion see, Marx & Hillix, 1979) but were taken to reflect the individuals' implicit theories of their own or another person's psychological structures and processing style (Mischel, 1968, 1973). This advance furthered the study of children's understanding of emotion (see Masters & Carlson, 1984; Schwartz & Trabasso, 1984).

However, there has been no substantive comprehensive attempt to treat the identified variables (namely, social-cognitive processing, emotional states/self-esteem, behaviour reactions) bi-directionally. The latter could overcome the

apparent limitations of a linear and unidirectional model in the discussion of hypothesized causal factors' contribution to a behaviour reaction and its subsequent outcome. This critical perspective is strongly embedded in the present study's aims.

Emotion science is made up of contributions from several distinct disciplines (one of which is Developmental Psychopathology). With their contribution and over the course of the last 3 decades it has made considerable and numerous advances in the detailed analysis of defining normal and abnormal behaviour alike (see Cacioppo & Gardner, 1999; Davidson & Scheerer, 2000). Nevertheless, clear, coherent and precise methods and evaluation programs still remain elusive (for an exception, see Cicchetti, Toth, & Rogosch, 1999).

To date, research in the field is characterised by:

- Identifying the distinctive nature of affective representations; how other types of information differ from or are integrated with them; and identifying the neural systems involved. For example, the theory of basic emotions (Ekman, 1992; Panksepp, 1998) posits that humans are evolutionary predetermined with a limited set of them. Each emotion is independent of the others (behaviourally, psychologically, and physiologically) and each is instigated by activation within unique neural pathways of the central nervous system (Posner, Russell, and Peterson, 2005). Representations of the internal neural activation are, according to affective researchers, characteristic facial expressions.

- Increasing theoretical understanding of how such representations, and

associated processes, might exacerbate and maintain affective states and disorders. For example, emotions are seen as the consequence of a complex interaction between cognitions (placed at neocortical structures), and neurophysiological changes linked to arousal systems (Russell, 2003). Amygdala in the brain has been associated with the processing and regulation of emotions. Suggested pathophysiology in this region has been linked with mood and anxiety disorders (Gorman, 1996; Levine, Cole, Chengappa, & Gershon, 2001).

- Developing theories of how affective representations acquire their emotive properties and how these representations can be modified. For example, Differential Emotions Theory (DET; Abe & Izard, 1999a; Izard et al., 2000) creates the conceptual context for the primary versions of a generalised intervention and various targeted interventions.

- Understanding how existing psychological treatments for emotional disorders achieve their effects, and designing and evaluating improved interventions. For example, what is the nature of change in a treatment or intervention; how attachment problems or depression can be positively affected by cognitive behaviour therapy techniques (CBT) or emotional reframing of traumatic life events.

Some research is aimed at developing a theoretical specification of the mental representations and processes that underlie central executive functioning. One theory, Interacting Cognitive Subsystems, assumes that two different types of meaning play distinct roles in the central mediation of cognition and affect. They

are: **"propositional" meaning,** which represents reference to specific semantic entities and their inter-relationships, and **"implicational" meaning**, which represents a more holistic encoding of cognitive-affective dimensions.

Using a range of complex tasks involving language processing, memory, attention and decision making, specific empirical projects examine qualitative and quantitative differences in performance across both normal populations and those with particular cognitive-affective problems (e.g.: unipolar depression, and bipolar affective disorder). The mental representation of models of the self; the synthesis of multimodal information in implicational representations; and "propositional" versus "implicational" modes for regulating central functioning are representative of the issues being actively addressed (Cicchetti, Toth, & Rogosch, 1999).

Theoretical refinements and advances have enabled increasingly comprehensive statements to be formulated about the interactive role played among *affect, cognition*, and *social behaviour*. For example, different discrete emotions have been found to motivate specific perceptions, thoughts, and actions (Isen, 2002; Izard, 2001). The latter has led theorists to suggest that the frequent experience of a specific discrete emotion will lead to stable affective-cognitive patterns (Caprara, 1996; Izard, 1991). Researchers have identified stable individual differences in emotion processing that predict children's social adjustment (Schultz, Izard, Ackerman, & Youngstrom, 2001; Schultz, Izard, & Ackerman, 2000). Research has also shown that emotion knowledge related positively to adaptive behavioural outcomes and negatively to maladaptive outcomes (Denham & Burton, 2003; Halberstadt, Denham, Dunsmore, 2001; Izard, 2002); emotion knowledge related also to peer acceptance, interpersonal transactions, and the

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developmental task of making and keeping friends (Smith, 2001), as well as to social skills and the development of social competence (Cicchetti, Ackerman, & Izard, 1995; Denham et al., 2003).

Although the role *of affect*, *cognition*, and *social behaviour* has come to be accepted by theorists lately as *interactive*, in some of the aforementioned studies the orientation of their design presupposed a *preponderant effect*. The latter has meant practically that, by definition, one of these three main causal factors "was assigned" a predetermined heavier weighing over the other two (and other possible sub-factors) when attempting to explain a behaviour outcome. Specifically, there have been several helpful distinctions drawn relating to the ways that affect may act to influence social behaviour (Cicchetti, Ackerman, & Izard, 1995; Denham et al., 2003). Before we move this discussion further it is important to try to clarify what is meant by "affect".

The literature under the rubric of social and personality psychology contains many studies in which terms such as "emotions", "moods", and "affect" are used interchangeably. The relationship among these concepts is not well understood, but it may be possible to draw some important distinctions among them.

Moore and Isen (1990) argue that an important selective aspect of any definitional formulation should be its utility. In particular, it seems useful to isolate and study the dimensions of *pervasiveness* and *situation-specificity* when considering the nature as well as the effects of feelings and emotions.

*"[...] **Emotions** may be seen as more "interrupting" types of*

*experiences that are typically more focal in terms of both target and behavioural responses than are feeling states. **Feeling states** may be pervasive but nonspecific affective events that are not directed toward any particular behaviours. Because of this pervasiveness and nonspecificity, feeling states may influence a variety of behaviours and judgments and may be able to redirect thinking and behaviour."*

It appears that affect, which, as discussed by Moore and Isen (1990), primarily refers to feeling states, exerts developmentally formed complex (rather than directly imperative) influences on a wide variety of behaviours.

Furthermore, feeling states have been found to alter attention, memory, and behaviour (see Clark & Isen, 1982; Coyne, & Gotlieb, 1983; Isen, 1984; Isen, 1987) in a wide range of domains. The behaviour affected by feeling states seems often to be determined by chance encounters with behavioural alternatives offered by the environment after the induction of the feeling state. Thus, although a variety of social behaviours are influenced by affect, one would not expect **all behaviour** to be equally affected. The pattern of influence is likely to be subtle, and this subtlety may be a partial explanation for the relative lack of attention that such relationships have received until relatively recently.

A strong case may be made that these relationships are particularly important in understanding a variety of social behaviours, because feeling states are either positive or negative, and may act to shape people's reactions to themselves and others. It is well understood, that these affective states may be subtle and multifaceted in nature.

The demands placed on us by the complexities of modern life and social

challenges may render emotions and their effective and adaptive utilization more important than ever. A great body of theory and empirical research suggests that the emotions have clear adaptive functions (Cacioppo & Gardner, 1999; Campos, Mumme, Kermoian, & Campos, 1994; Izard, 1977; Malatesta, 1990). Each of the emotions has distinct motivational and adaptive functions that contribute to psychological and social adjustment (Izard, 2002; 1991).

In turn, the present thesis proposes that the way we feel about our emotions and the associated experiences we have in our social interactions affects our global self worth evaluation. For example, if a child has many confrontational or aggressive social interactions with other peers which often elicit anger, but values this emotion as he sees himself as "brave" and "assertive", then he/she will more likely have a positive sense of self-worth. In contrast, if a child has experienced repeated unsuccessful social interactions (i.e. is socially isolated, singled out, ignored, not well liked) which have left him/her with a feeling of sadness and a consequently depressive emotional state, he/she is more likely to have a low gathered sense of self-worth.

Emotions are not measurable entities, hence, researchers can only attempt to measure proposed competence or global self worth in children through self reports, indicative as representations of the personal scripts children and people utilize/apply in order to assign meaning to the self as placed in a social world.

This self reported self worth (Harter, 1990) then, is multidimensional and linked to aspects of a person's functioning. Therefore, the present study has included a scale of self reported self worth to cater for this perspective in the data collection, i.e. the global self-esteem. The aim is to identify particular groups of

children with low, average and high self-esteem that seem to predict some variance in SEBDs.

This definition of affect as a pervasive and non-specific affective event can be associated with the notion of "global self-worth" in children's self-concept, a theoretical perspective proposed by S. Harter (1990). The measure of this was formulated as an antidote to the weaknesses of other research instruments assessing self-esteem that were predominantly inferring self-esteem and self-concept based on situation-specific self-reported information. As Harter and others proposed (1990), having a positive sense of self is postulated to be crucial for the adaptive functioning of an individual. It has been repeatedly manifested (see Emler, 2001; Harter, 1999, for an overview) that people with high self-esteem are outgoing, independent, assume responsibility, tolerate frustration with prosocial ways, approach new tasks with confidence, and are willing and available to offer assistance to others that may need it.

In contrast, those with low self-esteem are likely to manifest symptoms of depression, become pregnant as teenagers, tend to suicidal ideation, experience unemployment, suffer from eating and personality disorders, and have systematic problems sustaining social relationships (Harter, 1990b; 1990c; 1999; Emler, 2001). However, people with low self-esteem seem no more likely to be involved in criminal activities, use or abuse addictive/drug substances, drink alcohol, abuse children or be academic failures (Harter, 1999). Emler (2001) proposes that this could be understood by hypothesizing that those with low self-esteem treat themselves badly which seems to invite others to do the same to them, but they do

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not treat others badly.

5.4 The Self-Esteem / Self Concept

By self, we generally mean the conscious reflection of one's own being or identity, as an object separate from other or from the environment. There are a variety of ways to think about the self. Two of the most widely used terms are self-concept and self-esteem. This concept of self is particularly important in the present study as it introduces an element of self-perceived competence, especially general self-worth, which is emotion-laden in its valuation. The data for each child will then be able to be compared against particular social information processing biases. This will try and answer the research question of what types of SEBD children can be identified within the general SEBDs group.

5.4.1 The Historical Perspective

The **self-concept** is a construct that has been theoretically and philosophically acknowledged as very important since the 1990s. For reasons, though, of weak methodological conceptualisations and theoretical refinements it has fallen in and out of grace repeatedly prior to the 1990s, partially overshadowed by behaviourism which was perceived as more valid and reliable in its methodologies in the 1960s.

In the 1980's, it became clear that cognitive, neo-cognitive, social-learning, and behavioural accounts, could not explain the whole picture and essence of

human social behaviour and experience. Therefore, theorists (Harter 1985; Hughes, 1984; Wells & Marwell, 1976; Shavelson & Bolus, 1982; Byrne, 1983; Harter, 1983; Wylie, 1979) recognised the need for development of self-concept issues and methodological formulations. In this light it became important to attempt to try to answer certain theoretical questions and concerns of central importance such as the following:

- What are the most influential models of self-concept? Does a single score diagnostically define self-concept best or does the model that highlights domain-specific judgments convey a more accurate picture of the self-system? Are there any developmental differences in the self-concept, and if so, how could they be addressed in a scale or interview assessment? Also, there were questions of how standardizable self-concept measures operate in particular with "abnormal" populations (namely, those with learning difficulties) (Harter, 1990).

- Harter notes (1985, pp.138) that, some models emphasized domain specific judgments of competence and adequacy whereas other models highlighted a global sense of self-worth. Are there any developmental differences and/or age-related capabilities that seem to enhance or restrict such judgments, and what processes do children employ to acquire or reinforce their sense of self-worth once it emerges? Where does the locus of the preponderant effect of the self-competence construction lie? Is the overall **sense of esteem** based on how one weighs one's competencies, or is it highly dependent on the social origins of the self and the collective attitudes of important others

about the self (James, 1892; Cooley, 1902)? Are there any operative meanings in the above, and is a domain-specific source of information more highly weighed than another?

- Does global self-worth affect or mediate situation-specific behaviours? Are predictions about children's motivation, affect, and behaviour, better based on situation-specific analyses or is self-worth a better picture?

- When does the developmental onset of contradictory facets of the self, that creates intrapsychic conflict, appear?

These questions became key for the rationales leading to the design of particular scales by several researchers attempting to measure children's self-esteem and self-concept.

5.4.2 The Significance of Self-Esteem

The notions of self concept and self-esteem have continued to attract the interest of clinical and social psychology as well as the public. Since a positive sense of self has been deemed central to the adaptive functioning of the individual (Harter, 1990), a body of literature has offered people and families advice and training in order to enhance their self-esteem.

The interest in self-esteem has been probed by educational and psychological philosophy resting on the notion and the empirical evidence that children with a healthy self-esteem are protected from a wide range of problems. It has been widely considered (Harter, 1999; Izard, 2002; Cacioppo & Gardner,

1999) that children with high levels of self-esteem act independently, assume responsibility, tolerate stress and frustration, try new tasks without hesitation, are confident, and offer assistance to others.

Humans seem to be the only species capable of self reflection (Andrews, 1998). This presupposes a sequence by which a person is able to perceive of itself, which James (1890) proposed to distinguish by calling it the self as "I" and the self as "me". The self as "I" is the subjective self, perceived in continuity (existing over time), individuality (the self as distinct from others), and reflective (the perception of self by the self), which has stirred philosophical or conceptual debate, due to its nature.

On the other hand, the self as "me" refers to the objective self, identifying ways people present themselves to others, which, by being observable, has most often formed the basis for investigating and measuring of the self.

The literature on self is filled with confusing terminology, i.e. self concept/self-esteem used synonymously (Hughes, 1984), and vague and confounding labels such as self worth, self belief, self concept, self awareness and self regard (McGuire, 1994).

Many definitions of self concept and self esteem have been proposed, with little agreement in taxonomy and issues of definition and terminology amongst academics still plague the field with self-esteem being referenced more than a thousand times a year in articles (Emler, 2001).

Self-esteem and self concept are hypothetical constructs generated to infer the summation of certain features of a person's behaviour (Wells & Marwell, 1976), but lack a universally accepted definition. However, salient themes within

the literature suggest the following general categories with regard to self:

1) the global superimposing view of self may be regarded as "self concept" (Shavelson & Bolus, 1982; Byrne, 1983);

2) the evaluative perspective refers to worth and "self-esteem" (Blascovich & Tomaka, 1991; Butler & Green, 1998)

3) the descriptive characteristics available to a person to define the self may be perceived as "self image" (Butler, 2000), and

4) a person's perceived competence on undertaking a new task, has been regarded as "self efficacy" (Bandura, 1977; McCoy, 1977; Butler, 2000).

Nowadays, there seems to be acceptance among researchers and theorists that the self and self-concept are to be regarded as a cognitive construct. The notion of self-concept seems to go beyond what the knower and the known represent, it relates to the cognitive processes used for knowing. Furthermore, there is stress on the processes involved in acquiring a generic acquisition of the "self" through developmental milestones, but also on cognitive appraisals generated about aspects of the self that are considered as dynamic and salient by the knower, for instance, how a person appraises his/her physical, or cognitive, or social ability, which are all influenced by specific dynamic interactions and the personal narratives people bring to meaning making of social cues.

5.4.3 Definition

Theorists use the terms "self-concept" and "self-conception" interchangeably. Some seem to clearly prefer the latter term because of its relation to a directly negative counterpart: misconception (not applicable as mis-concept, Mundle, 1970).

Self-concept is the cognitive or thinking aspect of self (related to one's self-image) and generally refers to

"the totality of a complex, organized, and dynamic system of learned beliefs, attitudes and opinions that each person holds to be true about his or her personal existence" (Purkey, 1988).

Self-esteem is the affective or emotional aspect of self and generally refers to how we feel about or how we value ourselves (one's self-worth). Self-concept can also refer to the general idea we have of ourselves and self-esteem can refer to particular measures about components of self-concept. Franken (1994) suggests that self-concept is related to self-esteem in that *"people who have good self-esteem have a clearly differentiated self-concept.... When people know themselves they can maximize outcomes because they know what they can and cannot do"* (p. 439).

Franken (1994) also states that *"there is a great deal of research which shows that the self-concept is, perhaps, the basis for all motivated behavior. It is the self-concept that gives rise to possible selves, and it is possible selves that create the motivation for behavior"* (p. 443).

This supports the idea that one's paradigm or world view and one's

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relationship to that view provide the boundaries and circumstances within which we develop our vision about possibilities. This is one of the major issues facing children and youth today (Huitt, 2004).

We develop and maintain our self-concept through the process of taking action and then reflecting on what we have done and what others tell us about what we have done. We reflect on what we have done and can do in comparison to our expectations and the expectations of others and to the characteristics and accomplishments of others (Brigham, 1986; James, 1890). That is, self-concept is not innate, but is developed or constructed by the individual through interaction with the environment and reflecting on that interaction. This dynamic aspect of self-concept (and, by corollary, self-esteem) is important because it indicates that it can be modified or changed. Franken (1994) states:

> *"there is a growing body of research which indicates that it is possible to change the self-concept. Self-change is not something that people can will but rather it depends on the process of self-reflection. Through self-reflection, people often come to view themselves in a new, more powerful way, and it is through this new, more powerful way of viewing the self that people can develop possible selves"* (p. 443).

People can and actually do have mis-conceptions about themselves, but these mis-conceptions (voluntary or not, depending on how they are reported) are also part of their self-concepts. People can even be consciously aware that the conceptions are incorrect (i.e., not supported by real experiences or others' descriptions), yet this does not prevent them from being included in the self-concept entity.

The latter seems to coincide with the issue of "objectivity" in self-reported measures of social competence or self-concept. In other words, respondents often appear to consciously distort their self-conception (through their reports) to match social standards "approved" by the context, selectively ignoring their "true/real" conceptions, feeding back potentially high loaded lie-items in their "objective" meant-to-be reports.

Rosenberg (1979) (originally one of the most influential pioneers in furthering scientific thinking in the meaning of self), in an overview, defined self-concept as a collective total ecosystem of:

"... the individual's thoughts and feelings with reference to himself as object". (p. 7)

If we extract the term feelings from the above argument to mean emotions as more commonly used, it follows in similar vein to Peters (1972) argument, that emotions are generated by "colouring" situations under aspects that are pleasant or unpleasant, beneficial or harmful in a wide range of dimensions.

Hattie (1992), in addition, elaborates this argument stating that:

"Emotions involve appraisals elicited by external conditions and differ from each other as a result of differences in what is appraised."

Alternatively, the same or similar emotions can be elicited from the same or similar situations in different individuals. But, emotions may lead to completely different affective consequences because, as emotions involve appraisals (in Hattie's view), these appraisals are uniquely individual.

Although emotions are clearly linked to changes in physiology, information processes, and social outcomes, there seems to be disagreement surrounding the issue of directionality in their influence.

This notion was extensively explored earlier in Chapter 3 with the critique and review of Lazarus and Zajonc's theoretical standpoints.

5.4.4 Measuring Children's Self-Perceptions

The *self-concept* or *self-perceptions* of children are crucial for attempting to analyse attitudes, styles in expressive behaviour, and to comprehend the pervasiveness of emotional states (see Harter, 1983; Hattie, 1992; Wylie, 1979; McGuire, 1994) and their effect on the domain and situation-specific behaviours in children's array of social interactions. It seems impossible to find any aspect of children's social life (school peer relations, neighbourhood or family friends, family, and teachers) that does not affect or is influenced by children's sense of self, their self-judgments.

In an attempt to define *self-perception*, some theorists have postulated that there are many aspects falling under its rubric, like self-recognition, self-control, self-evaluation, and self-motivation (McGuire, 1994). Since most of the attempts

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to encapsulate a measure of self-concept are based on self-reported *information*, then *self-evaluations* have formed the basis for the construction of scales.

Self-evaluation is collectively defined as children's judgments about their *performance or competence* (academic, physical, conduct) and their *general worth* as persons i.e., general self-esteem or, as termed by Harter (1986b, 1987), **global sense of self-worth**.

Harter postulates that *self-worth* assessment should not be conducted by merely adding up the judgmental responses of children to those items in the subscales or constructs (i.e. academic, physical, conduct performances) tapping specific domains. Rather, self-worth assessment should rely on a cluster-different set of items attempting to directly tap their construct.

5.4.5 Models of Self-Concept

An analysis and theoretical understanding of how the Harter conceptualisation was formulated, requires an overview of the most influential up-to-date approaches/models each of which has its own measurement procedures.

The first model is that developed by **Coopersmith** (1967) which postulated that the self-concept is a unidimensional construct which is assessed ideally by introducing to the child items designed to accommodate a range of content, like school, friends, family, and self-confidence. In this *unidimensional* fashion the calculations are based on a total score produced by summing items adopting an equal weight approach.

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An obvious disadvantage of this model is the lack of knowledge of the content areas under which clusters of items may fall, and therefore the absence of any significance in the weighting of importance attached to each element.

This approach has been challenged by theorists on the basis of its inflexibility to highlight any important distinctions that children make on a developmental basis.

An alternative to the above model is the *multidimensional* approach. Here children are given the choice of different content areas for the items for instance scholastic competence, athletic competence, social acceptance, physical appearance, and behaviour conduct (Harter, 1984). The self, therefore, is seen as a profile across different domain areas.

Other researchers (Mullener & Laird, 1971) adopting a similar model have identified other item categories; for instance intellectual skills, achievement traits, physical and interpersonal skills, and social maturity/responsibility.

An alternative approach that does not constitute a unique model is the **Piers-Harris** (1984) self-concept scale, which attempts to *combine the advantages of both the above models*. Originally, the Piers-Harris scale catered only for a unidimensional perspective, but subsequent factor-analytical experimentation has revealed the significant existence of several factors. As the design of the scale was not for a multifactorial construction and analysis, the factors identified were not clearly related to specific and theoretically differentiated dimensions of the self.

A third approach is the **hierarchical model** of the self. Here the self-concept, or self-esteem is perceived as a higher order category under which other subcategories fall. One example is Epstein's model (1973) which identifies the second-order categories as: competence, moral self-approval, power, and love worthiness. Other similar models are those of Shavelson et al. (1976) and of L'Ecuyer (1981). They both place at one end the self-concept and delineate it across main categories, which in turn are broken down in further subdivisions based on their specificity (i.e. academic category, which subdivided covers a range of specific subjects).

These hierarchical models are appealing and go beyond the formality of basing the organizational structure of the self merely on a general aggregate of evaluations or the specificity of various dimensions. Unfortunately, their operational potential is lacking because of confusing theoretical definitions of what is hierarchical and what measurement strategy should be adopted to coincide with the emerging hypotheses.

Another problem of these and similar models is their weakness to accommodate any person-based domain-specific importance to the self. They rather represent a conceptual model than a phenomenological one. Nevertheless, these models do offer advancement in our thinking about the self-system dimensions.

The fourth model emphasizes global self-worth and is attributed to the work of **Rosenberg** (1979) who was highly influenced by the theoretical debate between

James (1892) and *Cooley* (1902). Both these theorists were engaged in an attempt to identify whether individuals have a general sense of self-worth or self-esteem higher and above the self-evaluative judgments that are domain-specific across the life span. They agreed that this global evaluation was phenomenologically evident in adults.

Rosenberg argued that mutual inclusion of the individual's general sense of self-worth and evaluations of adequacy across domains was needed. It is important to highlight that Rosenberg moved away from suggesting that sense of global self-worth was simply an additive combination of single and discrete items revealed on a scale like that of Coopersmith. He suggested that a very sophisticated weighting, hierarchizing, and combining analysis takes place for that global feeling of worth to be constructed.

5.4.6 The Determinants of Self-Worth

Having posited **self-concept** as a *summing up procedure of domain-specific evaluations* about competence as well as a *global sense of worth*, the question is whether global self-worth represents an additive combination of domain-specific evaluations or is a whole greater than or different from the sum of the equally weighted parts.

It is suggested by Harter that to avoid extensive theoretical argumentation and exhaustively up-to-date reformulation the work of James (1892) and Cooley (1902) should be considered. These both made clearly and explicitly understood in

their theories that a person possesses a generic, global concept of self, which is superior to the more situation-specific self-judgments.

James (1892) postulated that adults engage in a cognitive appraisal of how successful they are in those areas of their life _they_ value as important or central. He positions the locus of the self-worth construction within the self. For James, global self-esteem is not about a mere averaging of a person's competencies. There is a distinctive difference in the value placed on success in numerous domains of life, a concept that points to a unique personal prototype for each individual, a unique identification code. Therefore, in James' model implicit was the notion that persons weigh their self-judged level of competence against the importance they place on success and performance in some areas. It follows that the outcome degree of congruence or discrepancy between these two perspectives will determine where people's level of self-esteem lies. Practically, this means that if somebody demonstrated (to himself) a level of success across domains in equilibrium or in accordance with that person's aspirations for success, then we would expect that person to exhibit the possession of high self-esteem in his social behaviour. Conversely, if a person's highly set goals or pretensions vastly or largely outweigh the actual level of success that that person has achieved, then we would expect that person to suffer from low self-esteem.

However, the theoretical conceptualisation of James' model was intended to highlight the formation of adult self-esteem **not** children's. Adults are expected to have constructed a hierarchy of their self-judged competencies over a large number

of social domains, as well as to have constructed a hierarchy that signifies the importance they place on success in each of these separate domains. These are therefore issues regarding the applicability of such a model for children. These will be discussed later.

Cooley (1902) suggested that the formation of the self-concept is influenced by the attitudes of significant others, who mirror to us information about our attributes. This perspective highlights the significance of the social nature of the self on the self. According to Cooley, people are motivated to appraise other people's opinions about the self, which are then imitated and assimilated, and become a dynamic part of the already existing self, a "looking-glass self". This approach overlaps with social learning theory's notions of "taught" and "assimilated" social behaviour in the form of "social adequacy" or "social skills". The latter are then perceived as the social "identity" of the individual. Cooley's approach resembles Mead's (1934) generic concept of the "generalized self" (according to Harter, 1990, p.75), which represents the collective judgments/opinions of important others towards the self.

The commonality between the work of James and Cooley is that Cooley also aimed to explain the level of **adult** self-esteem. If the formation of the self-concept operates as Cooley suggests, then it becomes important to clarify and define the cognitive processes necessary for one person to internalize the attitudes of others, and at what age this appears. Is this associated with higher-level processes such as perspective taking, as social learning and cognitive-

developmental psychologists have posited? Do these processes differ on the basis of a maturational point in their acquisition? Are people aware of the influence of the opinions of others about the self on the self?

5.5 Summary

This chapter discussed issues regarding theories of emotions, their association with the generation and pervasive nature of particular affective states, the basis of self perceptions and the subsequent exploration of the construct of self-worth or generalised self-esteem. These issues are pertinent to the research investigation in the present study as they are linked to the choice of the Harter instrument in an attempt to measure self perceived competence in both the groups of subjects in the study. The specific theoretical underpinnings of the Harter approach to measure self-perceived competence and global self-worth will be explored in more detail in Chapter 7 where the choice of methods and measures used in the present study will be discussed.

CHAPTER 6

DEVELOPMENTAL PSYCHOPATHOLOGY:

The taxometry of problems or the problem of taxometry?

6.1 Theory

There are a growing number of clinicians, experimental scientists and theoreticians in the discipline of psychopathology who are moving away from a traditional, rigid scientific perspective that has diagnosed and treated psychopathology through the use of categorical models to which it "fits" individuals. Influenced by the evolution and success of post-modern and systemic scientific thinking and therapy, many researchers have advocated the use of continuous models of psychopathology. Their arguments are based on philosophical, methodological, and pragmatic (real-world) principles.

These opposing stances among researchers were fuelled originally by strong differences relating to theoretical perspectives of psychopathology with regard to categorical classification on philosophical grounds, questioning what constitutes a disorder. Are mental disorders perceived as failures of biologically predetermined inclinations (Wakefield, 1992, 1993, 1997, 1999), or are they distinct behaviour categories arbitrarily defined by social norms and values (Lilienfeld & Marino, 1995, 1999)? Are a number of symptoms adequate to form a disorder if they are

caused by a high risk environment, or is proof of stability across contexts needed (Wakefield, Pottick, & Kirk, 2002)? Can we truly separate environmental risk and internal tendencies as causal factors (Bremner & Vermetten, 2001)? Can all of the 365 categories of pathology on DSM-IV be clearly distinct (American Psychiatric Association, 1994; Houts, 2002; Kendell, 1989)? Does the DSM-IV platform pathologize normal behaviour (Richters & Cicchetti, 1993)? Each of these questions highlights the issues that any diagnosis faces, i.e. defining which behavioural syndromes will be defined as "abnormal". In fact, some have argued that there should be no diagnosis whatsoever.

The answering of these questions has lead to two distinct and opposing views of human behaviour that philosophers of science have named *essentialist* and *nominalist* (Flanagan & Blashfield, 2002). Essentialists argue that the causes of mental health disorders lie within the individual, are part of an "objective" biological makeup that impacts heavily on evolutionary fitness (Wakefield, 1993, 1997, 1999). Yet, this very perspective has been criticised for being deterministic and inflexible downplaying the effects of socially constructed realities in behaviour (Beauchaine, 1999; Richters & Hinshaw, 1999).

On the opposite side stand nominalists who assert that psychiatrically described behaviour categories of deviance are really demarcations from the socially constructed behaviour norms and that there is truly no objective way of separating normal from abnormal behaviour. This post-modern ideology is typical in the work of Szasz (2000) and Lilienfeld & Marino (1995, 1999) who argue that unclear boundaries and the absence of objective defining features are inherent in

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most mental health disorders. Thus, nominalists predominantly interpret behaviour as being under the rubric of a developmental continuum defined by social acceptability; they perceive rigid diagnostic cut-offs as arbitrary, and are concerned about diagnosis overall. A nominalist philosophy is preferred by researchers for its "second order cybernetic" stance of carrying no assumptions about underlying phylogenic influences on behaviour (Flanagan & Blashfield, 2002). This choice is prudent when data making a direct link between behaviour symptoms and biological disorders is absent or lacking.

Despite the theoretical debate among developmental psychopathologists, most scientists in the field have recently concentrated their discussions on the pros and the cons of dimensional versus discrete models of psychopathology description and "diagnosis". These discussions have highlighted the limitations and the rigidity of categorical classifications of psychopathology while recognizing the apparent utility, multicontextual, and developmental information that dimensional assessment can provide (Cummings, Davies, & Campbell, 2000; Hinshaw & Park, 1999). Critical points of categorical diagnosis have focused on DSM's disposition that:

a) places the locus of pathology within the individual, ignoring important contextual, social network, developmental, familial, and other influences;

b) presupposes that the causal factors are always biological, despite a lack of solid theory behind this assertion and reliance on mere descriptive depictions of behaviour pathology;

c) it is insensitive to developmental milestones and subsequent guidelines for conducting assessment and diagnosis with children;

d) it does not accommodate cultural sensitivity for the observable differences in behaviour expression of maladjustment and distress, and social tolerance;

e) it is rather constrained in its clinical application because of problems in the discriminant validity of descriptive behaviour items within categories as well as between categories; and

f) it assumes that problem behaviour syndromes are categorically classifiable because of their underlying discrete etiologies (Cantwell, 1996; Clark, Watson, & Reynolds, 1995; Cummings et al., 2000; Hinshaw, Lahey, & Hart, 1993; Jensen & Hoagwood, 1997; Sonuga-Barke, 1998; Sroufe, 1997).

Finally, it is pointed out that applying dichotomous points of continuous scores on severity of symptoms, a side effect of categorization, hinders reliability and statistical power and may misdirect the outcome extraction in research assessing the antecedent, the associated and the consequential factors of psychopathology (see MacCallum, Zhang, Preacher, & Rucker, 2002).

For all the above reasons, advancement in theoretical, statistical and clinical thinking has empowered developmental psychopathologists to use empirically derived instruments in assessment. Such instruments, of which probably the best example to date is the Achenbach (1991) set of checklists to gather data from

multiple informants, evaluate behaviour traits across multiple continuous dimensions. Symptoms are assessed through carefully worded item descriptions falling within particular factor-analytically derived subscales. Children's scores on behaviour identified through these measures as of clinical severity allows for comparisons with matched for age and gender empirically derived norms (Achenbach, 1991).

Empirical assessment instruments like the latter carry no presumptions about biological factors, particular environmental influences, or causal origins adding to a particular behaviour profile. On the contrary, symptom overlap among subscales is treated as clinically important information instead of "noise" across diagnostic categories (Cummings et al., 2000).

All these elements are essential as developmental psychopathologists are predominantly interested in all the processes involved around the emergence of behaviour maladjustment rather than in the plain descriptive aspects of behaviour (Cicchetti, 1993; Rutter & Sroufe, 2000; Sroufe & Rutter, 1984). Along these lines, **equifinality** principles propose that a particular type of maladjustment can be the outcome of various courses of behaviour actions from various contexts, and **multifinality** principles suggest that children in very similar high risk environments can end up in very different end points following dissimilar trajectories, some of them maladjusted (Cicchetti & Rogosch, 1996).

Thus, the advantage of empirical instruments over categorical is their substantial flexibility for examining varied developmental pathways. This is because developmental evaluations of behavioural functioning are indexed across age-matched norms (children) and provide insights into the onset and offset of

psychopathology symptoms over time; an invaluable characteristic of the developmental psychopathology perspective (Cicchetti & Rogosch, 1996; Kagan, 1997) that is absent in categorical classifications. Furthermore, developmentally continuous scales allow monitoring of symptoms that would otherwise be cut-off, and hence, not picked up by a crude diagnostic categorization (Hinshaw et al., 1993).

6.2 The Debate on the Status of Traits

The elaborate advancements of developmental psychopathology research on the constraints and limitations of categorical diagnosis have aided the study of human behaviour profoundly. After all, it was rigid diagnostic norms that created stereotypes, prejudices and social exclusions, in the spectrum of human behaviour; which has impeded research progress (see Waters & Beauchaine, 2003). Nevertheless, this realization -and the debate over behaviour continuum on philosophical, methodological and empirical terms- should not lead us to lose sight of the ontology of behaviour traits. Whether a particular trait or disorder constitutes a distinct entity needs an empirical and not a methodological or theoretical verification (for a critique see Meehl, 1992, 1995; Sonuga-Barke, 1998). Investigating taxometry with adults has provided evidence that some disorders are of distinct classes, like

"endogenous depression (Ambrosini, Bennett, Cleland, & Haslam, 2002; Beach & Amir, 2003), schizotypy (Blanchard, Gangestad,

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Brown, & Horan, 2000; Lenzenweger, 1999), dissociative experiences (Waller, Putnam, & Carlson, 1996; Waller & Ross, 1997), psychopathy (Harris, Rice, & Quinsey, 1994) and Type A behaviour patterns (Strube, 1989)"

(Beauchaine, p.503, 2003).

By contrast, investigations of taxonomies with children are few (exceptions Fraley & Spieker, 2003; Skilling, Quinsey, & Craig, 2001; Woodward, Lenzenweger, Kagan, Snidman, & Arcus, 2000). Thus, the precise onset of the above disorder types in development is still blurred.

6.3 Problem Behaviour Typologies

It is important to be able to distinguish a trait in terms of its nature and degree from others, because it enables us to introduce functional rather than arbitrary cutoffs that distinguish children with and without a particular trait (Beauchaine & Waters, 2003). In addition, taxonicity (i.e. a factor's validity to belong to a taxonomy) adds weight to the construct validity of a syndrome, especially when variables from multilevel data collection (e.g., medical reports, behaviour observation, self-report, parental report, peer report) are used as discriminators of the presumed taxonomy (Beauchaine & Beauchaine, 2002). Criticisms of the validity of the DSM generalise to critique the whole classification system, but it seems that some behaviour typologies have higher construct validity than others. Then, the question becomes whether knowledge of a discrete typology of a high risk trait offers anything to prevention and intervention sciences. The

answer from empirical work is positive (Meehl, 1992, 1995). Therapeutic strategies are proven to be different (as well as increasingly precise in targeting particular problems) depending on a person fitting the high risk taxon[7] group criteria (e.g. schizophrenia).

Thus, through the use of empirically designed and derived instruments (like the Achenbach multi-informant scales) the aim is to identify problems when behaviour expression is symptomatic but still somewhat non-pathological; this may facilitate targeted family interventions that improve outcome and course and perhaps delay the onset of a disorder (Cornblatt, Obuchowski, Roberts, Pollack, & Erlenmeyer-Kimling, 1999).

Since the commencement of a distinct behaviour sciences framework about two decades ago, a central theme in developmental psychopathology has been that empirically verifiable syndrome behaviours arise from disparate developmental pathways and etiological factors and that most of the current diagnostic system fails to register heterogeneity among individuals within psychiatric classes (e.g. Cicchetti & Rogosch, 1996). For example, some cases of depression appear to be more influenced by environmental risk factors, whereas other cases by biological risk factors (Cicchetti & Rogosch, 2002; Harrington, Rutter, & Fombonne, 1996).

There seems to be a consensus among researchers based on the latest advancements in the field to suggest that developmental psychopathology should be concerned with identifying discrete behavioural syndromes, because of the

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[7] In taxometrics research, a taxon is typically defined by a boundary that separates taxon group members from nontaxon group members, i.e. from evidence that the 2 groups are formed from separate or discrete distributions.

basic and applied research advances with the potential to:

1. Identify early children who are at increased risk for developing psychopathology,

2. Identify discrete subtypes of syndromes within current diagnostic classes,

3. Locate critical onset periods in development of discrete pathological behaviour inclinations,

4. Discover moderators of treatment-outcome, and

5. Reveal the mechanisms leading to equifinality and multifinality.

Achenbach's family of empirically based assessment instruments is one of the most advanced dimensional systems. Major strengths are that it is a comprehensive, cost-effective, and user-friendly system for assessing competencies, adaptive functioning, and behavioral, emotional, and social problems at ages 1½ to over 90 years. ASEBA (Achenbach System of Empirically Based Assessment) rating forms are the most comprehensive professional screening instrument in the world as they record behaviour information about a child from across all possible informants and contexts; ASEBA is available for completion by parent figures, caregivers, teachers, youths, clinical interviewers, observers, administrators of ability and achievement tests, adults reporting on their own functioning, and acquaintances of the adults who are being assessed. ASEBA forms can be completed in classic paper-and-pencil format, machine readable format, and online. ASEBA scores can be displayed in relation to age-, gender-, and informant-specific norms on both computer-scored profiles and paper-and-

pencil profiles. Norms based on data from diverse societies around the world are provided by the computer Module for Ages 6-18 with Multicultural Options. This Module enables users to enter and score data from the Child Behavior Checklist for Ages 6-18 (CBCL/6-18), Teacher's Report Form for Ages 6-18 (TRF), and Youth Self-Report for Ages 11-18 (YSR). Manuals for the ASEBA instruments (2001) extensively document the development, psychometrics, reliability, validity, and applications of the instruments.

One of its specific strengths for this study is that it has also been normed with the Greek children's population.

The behaviour problem descriptive items forming part of TRF are aimed to cover all the known array of behaviour problems as evidenced through empirical research. Secondly, the TRF is designed to identify syndromes of problems that tend to occur together without an underlying particular model addressing the nature or causes of disorders. Instead of imposing a priori assumptions about existing (e.g. DSM) syndromes, the latter were derived quantitatively from TRF problem items scored by teachers for children referred for mental health or special education services.

To derive the syndromes Achenbach and colleagues applied principal components analyses (similar to factor analysis) to the correlations among items. In this way groups of items were identified whose scores covaried with each other.

A more detailed discussion of the merits of the Achenbach multidimensional system for screening psychopathology in children and adolescents will be provided in the following chapter where the choice of methods and measures will be explored, and in the in-depth statistical analysis of the main

data of the thesis.

Concluding comments, the research questions and the hypotheses generated by the present thesis based on the theoretical explorations in Chapters 3, 4, 5 and 6 follow.

6.4 Overview of the Thesis' Aims

The literature review has presented a critical analysis of the issues regarding the directionality of associations -i.e. whether affective reactions precede and instigate cognitions or cognitive appraisals precede and generate affective reactions. Undoubtedly, this relationship might be expected to be bi-directional with neither set of variables carrying a preponderant effect, with affective states engendering certain types of cognitive activity and cognitions leading to distinctive affective experiences.

It is not the purpose of the present study to try and find *preponderant causal* influences in the model of children's SEBDs as other studies have attempted to do. Such a study would have to be conducted with a retrospective or large scale longitudinal design that sought correlations between present problems and past events. These are not easily researched, and there are serious considerations regarding the validity of these assessments, as past events depend on individual memory and can be distorted over time.

The underlying assumption of the present study is that behaviour is highly

unpredictable in situational terms because it is dependent upon many social information processing factors and is influenced by a wide array of possible affective states that all contribute *multi-directionally* to the outcome, any observable behaviour and its subsequent outcomes.

This precludes a general conceptualisation and research design based on a *preponderant **causal analysis***.

It is also the case, in general, that the various "shades" of affect mentioned above, while pervasive and perhaps differing in important ways in their influences on a child's behaviour and social adjustment, have received little systematic investigation in conjunction with social-cognitive attributes until very recently (for a critical analysis see Gottlieb & Halpern, 2002; Schultz, Izard, and Bear, 2004). This line of investigation is a potentially fruitful one, as recent studies have begun to reveal. An important case is made regarding the bilateral effect of emotions and social information processing attributes (Schultz, Izard, and Bear, 2004; Dodge & Somberg, 1987; Crick and Ladd, 1993).

6.5 Research Questions and Hypotheses Generated

RESEARCH QUESTIONS 1,2,3.

The first, second and third research questions ask if school-enacted emotional and behavioural problems of 8-12 year-old children, as assessed via Achenbach's TRF, can be predicted by the four Marsh Interpersonal Problem Solving Competence (IPSC) "independent variables" alone (Q1) or by Dodge's variables of Biased Causal Attribution or Response to proposed stories of negative or ambiguous outcome to social interactions alone (Q2) or through measures of Harter's self-perceived competence alone -and in particular by child-reported self-esteem or global self-worth- (Q3)?

RESEARCH QUESTION 4

The fourth research question focuses on investigating which of the independent variables in different group combinations account for the variance in children with problems? Do similar measures, for instance, Social Cognitive (i.e. Dodge and Marsh variables) combined predict SEBDs?

RESEACH QUESTION 5

The fifth research question focuses on answering whether a simultaneously entered multivariate model accounts for a larger percentage of variance of the dependent "behaviour problem" variables than a univariate model derived from the independent variables separately selected.

RESEARCH QUESTION 6

The sixth research question asks whether there is any preponderant effect linked to a global index of problems i.e. total problem score (dependent variables), as opposed to a particular or cluster of behaviour problem subcategories?

RESEARCH QUESTION 7

The seventh research question asks whether personal characteristics such as gender, age, and parental education level influence the predictability of SEBDs?

RESEARCH QUESTION 8

The eighth research question asks whether different pupil group types can be identified. If so, what is the relationship between each group type and a problem behaviour profile type and did the latter reveal fixed behaviour attitudes in a group's social information and/or emotion processing and distinct social acting repertoire?

6.6 Links between Research Questions and Hypotheses

In the context of having outlined the theoretical underpinnings of the present study the previously (see also pp. 46) formed research questions are linked along with some related hypotheses as follows:

In the review of the literature it was noted that there is much interest in the emotional and behavioural difficulties faced by some primary school children. This

interest has been a concern shared by researchers, teachers, child and educational psychologists alike for some twenty years now. The reason for such interest lies in the association of emotional and behavioural problems with academic performance and sociopsychological well-being.

Hypothesis from Qs 1 and 2: Deficiencies in Interpersonal Problem Solving Skills are associated with higher total problem scores and lower academic achievement and adaptive functioning when this factor is present than when it is absent.

Hypothesis from Q 3: *If* prosocial children score high on Harter's perceived competence, especially in the self-esteem subcategory, *then* a significant negative correlation with total problem scores should be shown. Following this, if prosocial children's scores are low on the self-esteem subcategory then they should be higher on Broad-band problem groupings. Children with predominantly internalizing problems are expected to report lower self-esteem as in many studies they presented more willingness to admit wrongdoings and try to change behaviour patterns. Children with externalizing problems showed the reverse tendency by being more reluctant to express lower self-esteem in self-reports.

Generic Hypothesis from Q5: In terms of the present study it is hypothesized that where measures of *social cognition* and *emotion* are found to be at the lower or "poor" end for some children, then concomitant emotional and behavioural difficulties will also be observed, with possible variation according to age, sex, parents' level of education and peer status instigation. It is expected that **if** scores

on **Dodge**'s causal Attribution/ Proposed Response Bias are high, and if **Marsh**'s Interpersonal Problem Solving Competency (SPSS) variables (social information processing) combined with **Harter's** Self-perceived Competence/Self-esteem (emotion processing) variable are lower than average, then the clinical range of emotional and behavioural difficulties scores as defined by the Achenbach's (TRF) scale, will be significantly and better predicted as opposed to if the independent variables are not simultaneously combined. Conversely, the reverse scoring pattern on all of the above scales should be associated with non-clinical behaviour.

Variable-specific Hypothesis: *If* self-esteem scores are low on Harter's subscale *then* problem scores on Achenbach's Internalizing group will be higher. *If* self-esteem is low under conditions of high Causal Attribution and Response biases and at the same time low IPSS exist, *then* Internalizing problems, Total problems and some narrow-band syndrome scoring should all be significantly higher than if this was not the case, given the condition of experimental control of extraneous variables. If children's self-esteem scores are average or higher, Attribution & Response Biases are high, with low IPSS, *then* children are expected to have higher Externalizing Problem scores. *With* conditions of low self-esteem *no* significant effect on Externalising problem scale are expected to be evident because Externalizers are associated with more idealised self reports on self esteem measures. In addition, the theory suggests that Internalizers should be found to have higher Interpersonal Problem Solving Skills (IPSS) than Externalizers.

A cultural-specific hypothesis may also be generated here:

Hypothesis: Due to the unaccustomed use of behaviour scales, Greek teachers are expected (particularly in the pilot study) to report a higher number of children with SEBDs in their class using Rutter screening and TRF diagnostic assessment scales compared with British and American prevalence rates. It is hypothesized that Greek teachers' often enmeshed boundary definitions of problem behaviour items will result in them over reporting problems, as Greek teachers lack the trained perspective of differentiating abnormal from overenthusiastic behaviour.

Hypothesis from Q7: Some studies have shown that conduct problems (externalising) are higher among boys than girls, especially in the younger age group. It is hypothesized that if the present Greek sample's measures of SEBDs are controlled for Age, and Parents' Education level, the Externalizing problems will be greater among boys than girls. Respectively, Internalizing problems should be higher among girls especially in the younger age group (8-10 yr olds). In previous findings (Achenbach & Edelbrock, 1978; McConaughy, Achenbach, and Gent, 1988) Internalizers have been shown to have higher cognitive, academic, and social functioning than Externalizers. In addition, when boys with higher Internalizing scores above their Externalising ones were compared with boys with the reverse score pattern, the Internalizers portrayed significantly higher disparity between their real-self and ideal-self ratings. Similar findings were also consistently reported as early as 1975 by Katz, Zigler, and Zalk.

Hypothesis from Q8: There should be a group difference between children with

internalizing and children with externalizing problems on measures of social cognitive and emotion processing (i.e. Dodge ambiguous versus negative outcome stories as well as Harter self-esteem variable).

Achenbach & Zigler's (1963) study supported their original hypothesis that self-image disparity increases with cognitive differentiation and the incorporation of social mores. This is consistent with the suggestion that internal discomfort with self may potentially motivate internalizers towards greater change of problem behaviour than would be true for externalizers.

CHAPTER 7

METHODOLOGY: CHOICE OF MEASURES

7.1 Introduction

This chapter explores the link between the conceptual orientation of the thesis (as developed in the review of the literature) and the philosophy and theoretical underpinnings of the instruments related to the proposed form of inquiry. The study is framed within a positivist empirical approach. This chapter provides information regarding the battery of scales used to collect the data that are the basis of the research and the aims of the present study. The rationale for the choice of instruments is given and the details of the instruments finally selected with their psychometric and statistical properties followed by details of the particularities of the sub-groups in the sample chosen and the access criteria. In addition, issues regarding classes and school years are explored. Details of the data collection are described. Since the data collection from the perspective of each child was seminal in the 2nd stage, the method for gathering the information is very important. Hence, the chapter begins with a consideration of the most appropriate methods for such a difficult task.

7.2 Methods

The **interview** is probably the most common method of obtaining information from people about a particular subject or issue. It is the most direct of methods as it presupposes physical proximity, face to face contact, cue analysis, and a range of other information that an indirect method could not yield. In psychological and sociological research reliable and valid data is of utmost importance. Therefore, wherever possible rarely are indirect methods used.

In general, in the literature there are two broad types of interview approaches: structured and unstructured or standardized and unstandardized. As Kerlinger (1992) asserts, in the standardized interview the questions, the wording and their order are given little freedom and are fixed. The extent to which there is freedom is carefully planned before hand by the researcher. Unstandardized interviews are freer and more flexible. The research purposes dictate the orientation of the interview, but the order of the questions, the answers and the phrasing or wording, are decided by the researcher during the interview. In this unstructured manner it is possible to clarify points, intentions and hidden meanings in the respondents' answers, by asking the respondent questions outside the script of the interview. It also makes children feel the free-flow of conversation as more inviting and less threatening, therefore incurring an advantage towards reliability.

Despite the fact that interviews are the most direct methods of inquiry, this can be both strength and a weakness. It is obviously a strength because, as

mentioned above, psychological research needs to ask respondents questions. Questions are asked carefully with a contained response in mind but, nevertheless, respondents will provide (in most cases) rich information. There is, however, information of a difficult nature, that respondents may feel uneasy answering, vulnerable or even reluctant to answer; for instance information on global self-worth, or information on disruptive or problematic behaviour. In such instances where there is personal and emotional involvement on the part of the respondent, direct questions may yield data that are invalid. Yet, properly handled, data relating to even personal or controversial issues can be fruitfully obtained with interviews.

The major weakness of the interview is the length of time it takes. This makes it costly financially and in time before analysis is completed to generate feedback to inform a course of action.

"The interview, in other words, is a psychological and sociological measuring instrument. Perhaps more accurately, the products of interviews, respondents' answers to carefully contrived questions, can be translated into measures of variables. Interviews [...] are therefore subject to the same criteria of reliability, validity, and objectivity as other measuring instruments. An interview can be used for three main purposes.

One, it can be an exploratory device to help identify variables and relations' ties, to suggest hypotheses, and to guide other phases of the research.

Two, it can be the main instrument of the research. In this case, questions designed to measure the variables of the research will be

included in the interview schedule. These questions are then to be considered as items in a measurement instrument, rather than as mere information-gathering devices.

Three, the interview can supplement other methods: follow-up unexpected results, validate other methods, and go deeper into the motivations of respondents and their reasons for responding as they do."

(Kerlinger, 1992).

With regard to the scientific points made by Kerlinger, the present research utilised the method of the interview, first as a means of gathering sensitive information from respondents that they would otherwise be reluctant or incapable of providing. The questionnaires, scales or vignette stories used were, though, clearly underpinned by statistical properties. Secondly, and most importantly linked to the 3rd purpose outlined by Kerlinger, the one-to-one interview method with the children provided the basis for the researcher to explore more deeply the motivations of respondents and to check that their answers to important questions were not "ideally" but sincerely depicted. This was an important methodological issue especially in relation to self-esteem or self-worth measures that are reported to carry a substantial risk of biased responses, as children judging the self tend very often to provide data of their ideal and not actual self. A detailed discussion regarding model of self-esteem or global self-worth and its measure using particular instruments (i.e. scales) is provided later.

An alternative method, observation, could have been used, especially as the

issue under consideration was possible psychopathological behaviour and its screening in the school context. Observation was considered as an important alternative for data gathering, but was not chosen. This is discussed below.

Observation is a method used more and more in social and psychological research. It does not need to be intrusive. Nowadays, cameras of sophisticated design may record and store many facets of human activity and/or behaviour unnoticed by those observed, from driving behaviour in the streets, to the quality of teaching within a school or a particular classroom. There have also been studies that have used effectively the strengths of the "clinical" observation of behaviour as it appears "raw", e.g. in the school playground (for a reference see the work of Blatchford, 2002; 2001; 1998).

Basically, there are two main modes of observation research: the direct and the indirect. The direct is based on observing what people do and say "raw" through our senses, or, more organised, through the use of technological equipment. The indirect is based on the researcher being given information by a third party (ie. parent, teacher or pupil). She/he then asks questions about this behaviour, interaction, or situation involving the respondent as a participant or an observer. Scientific enquiry does not accept subjective single-researcher perspectives and attributions of observed behaviours. The reason is that an observer is always a part of the event taking place as he/she makes value judgments, whether consciously or subconsciously. This weakness has been resolved by having a group of researchers undergo training under the supervision

of a principal investigator until the reliability of observers reaches at least 90% agreement (.90 correlation reliability estimates). Nevertheless, the major problems with observation still remain: 1) it is very time-consuming (setting up-observation-transcription of data-meaning added), 2) to minimise serious subjectivity issues more than one researcher is necessary, 3) the observer still remains at the core of its weakness, as behaviour observed has to be "transformed" into meaning, and meaning is determined through the eyes of the beholder. The inferences observers make are not tested in a direct interaction with the intentions or the versions of behaviour of the people/children observed. They are rather presumed to correspond. "When an interpretative burden is put on the observer, [...], validity may suffer (as well as reliability)" (Kerlinger, 1992; pp. 488).

The researcher of this study did not have the physical time or the technical resources to employ an observation method. As a consequence, observation was excluded as a method. The interview was, therefore, the major method of research enquiry. It is not assumed that the interview is a "perfect" method for collecting data. Rather that the advantages for the specific research study far outweighed the disadvantages, particularly so within the explicit educational context in Greece.

Another method for gathering information of a social dimension is Sociometry. **Sociometry**, as a scientific method, includes a number of methods of gathering and analysing data relating to people's choices, social preferences, social attitudes and patterns of behaviour. "One might say that sociometry is the study and measurement of social choice" (Kerlinger, 1992). Practically, we ask and

receive information about whom we like to work with; whom we prefer to play or be with, and whom we dislike to play or be with, which are straight-forward questions. However, there are issues sometimes ignored about the information we receive from respondents. Sociometric choices can also indicate information about interactions between children, social dynamics and groupings among classmates in the same class. They can also expose the social exclusion of particular children which is often directly linked in the literature with aggressive peer behaviour. Since the questions asked and the answers generated by pupils can have an impact on interviewees long after the interview, issues of sensitivity regarding the phrasing and context of the questions, as well as a debriefing are of significant importance.

Below follows a description of the theoretical approach adopted and some methodological issues.

7.3 Theory Background

As considered in the previous chapters, behaviour problems and psychopathology have been directly linked to the interaction of 2 primary factors, namely cognition and emotion. Multiple factors determine particular behaviours. It is well documented in the Social Information Processing literature that social behaviour is a function of people's processing of a set of social environmental cues throughout the human lifespan (for a seminal review see Dodge, K.A. et al., 1986). Dodge proposed a very comprehensive and complex model accounting for

5 sequential processing stages: encoding of social cues, mental representation of those cues, accessing of potential behavioural responses, evaluation and selection of an optimal response, and enactment of that response.

Therefore, since action relies on decisions often associated with detailed analysis of complex social cues, understanding the causal processes associated with behaviour manifestation needs an analysis of developmental change. This can be explored by studying the connections between these factors: emotions-cognition-action.

Since the 1980's the rise in absolute numbers and the complexity and quality of children's emotional and behaviour problems (as particularly observed in the social context of a school) has led educators and psychologists alike to the realization that they need to tackle problems collaboratively. This partnership has culminated in the development of many school-based programs of prevention and intervention with challenging children and teenagers. As Izard et al. have cited (2002), meta-analyses of the positive effects of these programs has produced a wide range of effect sizes "...from .24 to .93 (Durlak & Wells, 1997)". Interventions have been developed as a result of public and educational pressure because:

1. SEBDs have been directly and highly correlated with moderate to severely handicapped academic performance,

2. There have been concerns regarding the social maladjustment portrayed in children

3. Widespread bullying has taken place in schools leading to victimization and

psychopathological spill-overs

4. There is a projected and associated rise between children's school adjustment and behaviour problems, and later social problems in adulthood.

These factors and the pressures arising from them have already been theoretically explored in previous chapters. What is of concern in the present chapter is that these factors have led to the formation of school-based programs based on different theoretical standpoints that, according to Izard et al. (2002), only achieved a moderate impact because:

- Of the lack of manuals that could provide a detailed account of the philosophy and the techniques behind each program (Durlak & Wells, 1997),

- Of the lack of detailed information regarding content and intervention specifiers when manuals are available (Mathur & Rutherford, 1996),

- Of the in-depth focus on particular problems at the expense of a total effect ratio when other components are also introduced in the same program (Lochman & Lenhart, 1993; Quinn et al., 1999),

- [...] "almost all existing school-based prevention programs have multiple components, but no one has shown the relative efficacy of the different aspects of these interventions. Even when considering the programs in their entirety, evaluation of them in terms of long-term benefits and theoretical explanation of behavioral change shows that very few earn high ratings" (Izard et al., 2002, quoting Bear, Webster-Stratton, Furlong, & Rhee, 2000).

From all the critical points mentioned above Izard and her colleagues argue (citing Coie et al., 1993), that much work remains before we have a science of prevention.

> "Science demands methods that enable some precision in identifying the causes of measured effects. Precise attribution of causal processes for the effects of multicomponent preventions based on multiple theories poses serious problems. Adequate explanation of normal or abnormal behavioural change requires programs or program components and evaluation research to be developed within a coherent theoretical framework."   (Izard, 2002, p. 762)

Izard suggests that only Cicchetti, Toth, & Rogosch's (1999) program and comprehensive program evaluation have met this requirement, which "entails a design that enables a comparative evaluation of the theoretically distinct aspects of the program" (Izard et al., 2002, p.762).

The present thesis is not concerned with an evaluation of the construct philosophies of particular instruments as part of a robust program for problem prevention and/or intervention accepting that this is not possible within the scope of a single Ph.D. thesis. What this study attempts is to build on scientific methodology to develop, apply and test a model for a school-based screening assessment of general and particular SEBDs.

From the theory explored and discussed earlier and above, and the

subsequent research hypotheses generated, it becomes evident that to date most of the relevant research has attempted to study social cognitive, emotion, and social adjustment/maladjustment variables from a non mutually inclusive and equally weighted perspective. This is partially due to the high complexity of the proposed models associated with these issues, and partially due to confusion and lack of agreement in the field over whether social cognition or emotion variables are the more significant. Only a few attempts have been made to overcome this weakness in theory and methodology design (Ladd & Crick, 1989). There is a need for further development. The simultaneous-influence research design employed in the present study will attempt to overcome these difficulties.

In line with the arguments presented in previous chapters, it seemed fruitful to investigate the possible link between affective measures of self-concept (i.e. self-esteem/global self-worth) and social cognitive variables (i.e. social information processing, interpersonal problem solving competency). The issue of their combined predictive power on measures of adjustment is at stake. In the context of the present study the focus is on maladjustment rather than adjustment and on specific child psychopathology within the school setting.

The data presented in the research relates to:

1. Sociometric peer nomination of likeability

2. Self-reported general esteem or **global self-worth,**

3. Measures of **social information processing** (with the aim to explore possible competences and biases),

4. The screening of possible **emotional and behavioural problems** from within an 'average' and random school sample of 10 schools in Athens. The screening selection procedure involves two stages of "assessment" using respectively instruments of differing in-depth screening philosophy and theoretical and applied concepts of data collection regarding the identification of SEBDs children.

The two stages of "diagnostic assessment" of SEBDs, which reside at the core of this study, were deemed necessary in the design in order to facilitate, firstly, the selection of the children whose teachers were concerned over their behaviour and social functioning. This allowed for the formation of two groups of children, some assigned with "clinical" status, and the control group, selected from among pupils that scored lowest in the first screening stage.

The two groups, i.e. "clinical" and control, were also matched on parents' level of education to control for possible differences that may have influenced the proposed number of alternative responses to given social problems. In addition, these two groups had their behaviour profile completed by their teachers using a more detailed instrument of empirically based assessment of psychopathology, the Achenbach Teachers Report Form (TRF). Data were also collected by administering the Harter self-perceived competence scale, the Dodge attribution bias stories, and the Marsh interpersonal problem solving scales and questionnaires through one-to-one interviews with children. The conceptual framework for the second stage in the design aimed to explore whether it was

possible to make more predictively or diagnostically valid arguments about particular first-order categories of syndromes, i.e. generic problems of externalising, internalising or mixed nature, and to even extend this to specific narrow-band syndrome scales (anxious-depressed, conduct, social problems etc.).

In clarifying possible questions about exclusion criteria in the matching of the clinical and control sample parents, it is important to point out that at the time of this study's data collection no data on parents' socio-economic status in different parts of Athens, or in Greece existed. Therefore, data were collected on parents' level of education provided by official school records.

Details of the methods and the final battery of instruments used for the data collection are extensively presented in the following pages. The diagram below is a means of visually depicting the stages and the instruments used at each one of them and with various informants.

7.4 The Battery of Measures Used:

1) Rutter's Child Behaviour Checklist for screening children with SEBD.

2) Pupil self-reported social likeability nominations.

3) Harter's self-perceived competence (i.e. self-esteem/global self-worth) scale for children (self-reported).

4) Achenbach's Teachers Report Form (TRF) for the screening of SEBDs.

5) Dodge's Attribution Bias Stories administered in individual interviews.

6) Marsh's Interpersonal Problem Solving Competence –IPSC- (personal interviews).

Figure 7.1. Layout of Plan followed in the collection of data:

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┌─────────────────────────────────────────────────────────────────────┐
│                        Screening Stage (1)                           │
└─────────────────────────────────────────────────────────────────────┘
        │                        │                         │
        ▼                        ▼                         ▼
┌──────────────────┐   ┌──────────────────┐   ┌──────────────────┐
│  Parents level of│   │     RUTTER       │   │      Peer        │
│    Education     │   │   for teachers   │   │   sociometric    │
│ (school records) │   │  completed for   │   │   nominations    │
│                  │   │    whole class   │   │                  │
└──────────────────┘   └──────────────────┘   └──────────────────┘
```

┌───┐
│   Processing of Data collected   │
└───┘

```
        │                        │                         │
        ▼                        ▼                         ▼
┌──────────────────┐   ┌──────────────────┐   ┌──────────────────┐
│  Four categories │   │Factor analysis of│   │  Two categories of│
│ formed for parents'│ │scoring and       │   │ pupils with Negative│
│  education level │   │subsequent Groups of│ │   vs Positive    │
│                  │   │pupils formed: Clinical and│ │ nominations │
│                  │   │Control groups, rest normal│ │            │
└──────────────────┘   └──────────────────┘   └──────────────────┘
```

┌───┐
│   Diagnostic Assessment Stage (2)   │
│   │
│   Both Clinical and Control groups provided data for measures: │
└───┘

```
     │             │              │              │
     ▼             ▼              ▼              ▼
┌─────────┐  ┌──────────┐  ┌────────────┐  ┌─────────┐
│ HARTER  │  │ACHENBACH │  │   DODGE    │  │  MARSH  │
│  scale  │  │   TRF    │  │ COGNITIVE  │  │  IPSC   │
│         │  │          │  │ PROCESSING │  │         │
│         │  │          │  │BIAS STORIES│  │         │
└─────────┘  └──────────┘  └────────────┘  └─────────┘
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        ⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭
      (  6-week  RUTTER  random    )
     (  Test-Retest Reliability check )
     (  of the  Clinical vs  Control  )
      (  Group formation              )
        ⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭⬭
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Following is a detailed analysis of the scales, questionnaires and structured stories that were chosen to be used for the collection of data, further supported by the accompanying inclusion and exclusion criteria for this study.

7.5 Selection of Instruments

7.5.1 Sociometric Nominations

Data relating to social information processing, was gathered via personal one to one interviews with the children forming the two distinct "experimental" and "control" groups. In exploring the contribution of Dodge's theory in the field, it was imperative to gather data relating to particular pupils' likeability within their class through peer nominations. The aim was to identify high positives and high negatives in likeability that would lead to the names of two children used as reference protagonist names in the hypothesized stories collecting data on the social cognitive functioning and bias of children within a particular class.

Sociometry or sociometric nomination has been an attractive way of studying social choice and attitudes. Recently, it has been used less due to shortcomings in the theory and because researchers have developed complex models of similar data collection that embed some form of sociometric choice voiced by respondents. Nevertheless, we constantly assess those we work with, play with, socialise with, and live with at home. We base our judgments on our observations of their behaviour in different situations. Our judgment is "based on

our experience". The form of measurement a sociometric choice entails is based on people's many informal observations, or rather on remembered observations and the "inevitable" judgments we make of other people after interacting with them, as seen through "our own eyes".

Because of sociometry's empirical data gathering techniques and the choices made sometimes apparently in a light hearted manner but at other times more seriously, many academics and students doubt whether sociometric measurement is really a measurement at all. If we define sociometric responses as the result of personal experience and observation of this experience (as Kerlinger, 1992, asserts and many theorists accept as well –see Lindzey & Aronson, 1968), then they are measures. They can be used by individuals and groups to "make sense of" or classify people and other groups of people. Collecting data of these judgments is acquired by asking individuals straightforward questions of the sort: With whom would you like to play during playtime? Who are the three people in your class you would prefer to play with? Who are the three people in your class you would least like to play with? Who are your two best friends in this class?

Children, respond openly to such questions as they are simple to understand, and appeal to already "known experience" without asking for elaborate thinking.

Scientific forms of sociometric analysis include: 1) matrices, 2) sociograms or graphs, and 3) indices. At the core these are different ways of measuring and presenting results (i.e. respondents' nominations) in accordance with the aims of each study or investigation. In addition, the literature has suggested (see William

& Gilmoor, 1994) that 6 sociometric groups can be formulated indicating where each respondent can be placed, Popular, Rejected, Neglected, Controversial, Average, and Other (not fitting in any of the above). The scores have tended to be standardised to statistically separate the categories ensuring validity.

Despite the growing sophistication of the methods used for sociometric enquiry, as described above, the aim of the present thesis was simply to identify one child from each of the two opposite spectrum groupings: the popular, and the unpopular or rejected. For this reason, it was decided that no standardization was necessary. Scores were added in a raw frequency table for each class and children were identified in this manner, one with a very clear popular status and one with a clearly unpopular status. The questions asked in a whole class context were: - Name the three classmates you best like to play with, and the three you don't like at all to play with. Each child, then, provided individually information about the three proposed classmates on each spectrum on a sheet provided. The focus was on playing as the two persons identified would be protagonists in the hypothetical stories set in the school playground or during recess, presented at another point in the methodology chapter. The choice of questions about playtime specificity is supported as theorists have concluded that value judgments of behaviour are highly context specific.

7.5.2 Self-Esteem or Global Self-Worth

A measure of self-esteem was required as one of the main contributions of

the study was to introduce a triangular data gathering approach consisting of social cognitive, affective (global self-worth) and psychopathology variables. The self-esteem data though needed to go beyond a mere account of highs and lows in some aspects of a child's abilities to function in social contexts, for instance, athletic ability, social acceptance, academic/scholastic ability and physical appearance. The scale also needed to provide some description of a child's global self-worth, in other words, how the child globally felt about having or not having these qualities. In the theory, Harter had asserted that the items forming the Self-Esteem domain gravitated towards wordings that in essence assess the global self-worth of pupils. She postulated that this category in principle is and should be different from a mere comparison to the rest of the subcategories.

"Our model of the self-concept represents an integration of two approaches: we emphasize the need to consider the multidimensional nature of self-evaluative judgments as well as the individual's overall sense of self-worth. It is critical to appreciate the fact that global self-worth is a construct, in and of itself, namely an overall judgment about one's worth as a person [...] It is assessed, therefore, *not* by combining domain-specific judgments but by asking an independent set of questions that tap the construct of self-worth directly [...] By conceptually and empirically separating domain-specific judgments of competence or adequacy from the more global judgment of one's worth as a person, we are in a position to determine the relationship that specific competencies bear to global self-worth".

(S. Harter, 1990A, p.69)

To try and measure self-worth a personal appraisal was involved, which is a difficult task for children. Assessing self-esteem allows researchers to look into a child's link with the emotional aspect of his global assessment about himself/herself which is logical and under the functional rubric of information processing skills.

7.5.2.1 Main Arguments

Global evaluations of esteem or self-worth are, largely, functional parts of what theorists call the self-concept. In order to review the most important assessment tools of self-concept one has to be clear beforehand about the particular research hypotheses which, in turn, dictate the measurement procedures and strategies that need to be selected. This is important due to the large number of scales that researchers can choose from, some of which have significant theoretical and measurement differences.

Therefore, the selection of a *model of self-concept* is essentially antecedent to the selection of *an instrument* attempting to measure it. One major issue involves the lack of agreement between theorists over whether self-concept is perceived as a global, uniform construct or a more multidimensional average of self-evaluations across specific context areas.

In addition, *developmental differences* in the structure and content of the

self are very important, as well as the *psychometric properties* of the available scales (such as reliability and validity). Issues involved with *accuracy and stability* of the self-concept need also to be addressed, possible *determinants,* and the *functional role* of the self-concept.

7.5.3 Constructs attempting to measure Self-Concept

Two of the most important dimensions of self-concept are first the self viewed as a ***unidimensional*** construct and secondly the self viewed as self-evaluations of a ***multidimensional*** nature. These lead to different measurement strategies. For a revision see chapter 5, section 5.4.5.

Originally, in the 1960's models were *unidimensional* the most typical of these being **Coopersmith's** (1967) and the original version of the **Piers-Harris** (1969) measure. In these models the self-concept was assumed to be a unitary construct. According to these theorists, a child's self-concept measure in various areas of life was a product of *summing up* all the responses across all items which are assumed to have **equal weight**.

A *multidimensional* perspective has been offered as an alternative model with subsequent measurement strategies that have identified particular domains of self-evaluation, which are assessed separately (see Mullener & Laird, 1971; Harter, 1985a, 1986; L'Ecuyer, 1981; Shavelson, Hubner, & Stanton, 1976; Marsh, 1984, 1987; Marsh et al., 1984). Within this paradigm two

multidimensional instruments were conceived that have been supported by recent empirical evidence: The Harter (1979; edited 1985b; 1986a) Self-Perception Profile for Children which identifies initially four (and the edited version five domains) which form a subscale of the total score, and the Marsh (Marsh, 1987; Marsh et al., 1984) Self-Description Questionnaire with seven domains identified. The multidimensional nature of these instruments is empirically supported by factor analysis.

A **third** alternative perspective is Rosenberg's model (1979). Rosenberg attempted to avoid the polarization between unidimensionality versus multidimensionality and asserted in his theoretical framework that people possess a global sense of esteem or feelings of worth **in addition** *to* value judgments about their competencies across an array of specific domains. Nonetheless, in assessment he focused largely on global self-esteem (i.e. the collective regard a person holds for the self). This seems to overlap with Coopersmith's (1967) model. However, there is a significant difference in their theoretical models. Rosenberg *did not assume* that we could calculate an index of a person's global self-worth by merely *summing* the scores on items tapping heterogeneous content like Coopersmith and Piers-Harris. He posited that when a person is engaging in an attempt to evaluate the self, the wide array of all the discrete elements of the self are weighted, hierarchized, and clustered together based on a very complicated equation. This occurs without the individual's conscious awareness.

He considered that trying to assess the contextual factors underlying a

person's global self-esteem was not productive. Rather, he went on to assess self-esteem evaluation which he proposed was conscious, namely global esteem. This he assumed was as phenomenologically real for children as it was for adults. Thus, Rosenberg's construct is *unidimensional* yielding a single score of an overall self-esteem (tapping statements of personal satisfaction or feelings of worthlessness for self), in *the absence of* any assessment of the specific social-content categories that are inferred to influence the qualitative nature of an individual's global sense of worth.

A **fourth** alternative is offered by Harter (1979; 1985b; 1986), who attempts to bridge the difference and integrate multidimensional and unidimensional themes at *both the level of theory and measurement*. Global self-worth is assessed directly by items tapping a person's overall evaluation of the self (like Rosenberg's concept). In addition, four separate subscales (five in the revised version) profile domain-specific evaluations for a multidimensional perspective (e.g., scholastic competence, athletic competence, peer social acceptance, physical appearance, and behavioral conduct). The particular domains vary across developmental periods. In this approach light is shed on the relationship that domain-specific judgments have on the construction of global self-esteem.

The items in the Harter scale are randomised to avoid having too many negatively worded items at the beginning or the end. They are balanced to have roughly one item of positive and one of negative wording exchanged respectively. Therefore, I had the opportunity to identify any contradicting statements regarding

the Self as they emerged through the answers of a child, and ask clarifying questions or rephrase possible misconceptions that could have hampered a child's understanding. In itself, this method and the approach adopted reinforced the reliability and validity of a child's answers.

7.5.4 Measures of Self-Concept

In this section the psychometric properties and possible applications of the five most important self-concept self-reported measures are reported:

7.5.4.1 The Coopersmith Self-Esteem Inventory (1967).

For children ages 8 through 15, this is a 58-item questionnaire tapping four content areas of a child's life: school-academic, social-peers, home-parents, and general self. Originally, the items were based on an adult sample (see Rogers & Dymond, 1954) and then adapted for children. The wording of statements is short, e.g., "I'm easy to like", "I often feel ashamed of myself", and responses have a two-choice format ("Like me" or "Unlike me"). A total score across all items is calculated ranging from high 58 (all positive) to zero (all negative) and is considered to reflect overall self-esteem.

Internal consistency *reliabilities* range between .87 to .92 for grades four to eight (Coopersmith, 1967). Adequate *validity* is supported by Coopersmith (1967) as well as by Kokenes (1974; 1978). Six-week test-retest correlations for grades

four to seven range from .73 to .85 (Chiu, 1988), which falls to .42 and .64 respectively over a three-year interval for ages 9 to 12 (Coopersmith, 1967).

Initially, Coopersmith attempted to yield separate scores for the four content area subscales, but evidence revealed insufficient reliability and a lack of discrete factorial validity when factor-analysed (Coopersmith, 1967; Harter, 1983; Kokenes, 1974). This suggested a limitation in the instrument which Coopersmith attempted to defend by positing that children in this age range were not able to make distinctions between these content areas. However, recent evidence points to inadequacies in the construction of the scale, as closely and carefully constructed measures clearly reveal that children *do possess* the ability of making clear distinctions among these domains.

The Coopersmith Inventory is useful for a research design which requires a general estimate of self-esteem, preferably on a screening basis, but without any meaningful domain-specific analysis of self-evaluations. There is also a moderate correlation of the instrument with lie item reporting, which is inherent in self-report measures as well as in independent assessments of social desirability (Harter, 1983; Robinson & Shaver, 1973). The latter suggests that the Inventory is subjected to responses based on the implicit clash between a child's *actual* and *idealised* self-image (more limitations are detailed in Wylie, 1979).

7.5.4.2 The Piers-Harris Children's Self-Concept Scale (1969).

For children in grades 4 to 12, this instrument has 80 items and its construction rests on the assumption that the self-concept is relatively unidimensional. Items are based on a pool of statements produced by children when asked (Jersild, 1952) "which features about themselves they liked and which they disliked". Wording is in a first-person declarative statement e.g., "I worry a lot", and the responses are either "yes" or "no".

Although the scale was originally unidimensional, items tap six content domains: behaviour, intellectual and school status, physical appearance, anxiety, popularity, and happiness/satisfaction. A total score can range between 0 to 80 with internal consistency for this score from .89 to .93. Test-retest correlations range between .42 to .90 from a year to a few weeks. Convergent validity with other self-concept measures ranges from .32 to .85. The factorial validity of the six clusters of items was very limited and scarce in frequency, and only three factors - behaviour, intellectual status, and physical appearance- emerged consistently. The remaining three were very weakly reported. Cross-loadings (i.e. if some of the items in one category were also loading significantly in another) suggest purity on most of the factors. Critical analysis by researchers and psychometricians marks this instrument higher than Coopersmith's Inventory on the basis of its *suggestive value* for a *multidimensional approach and its psychometrically sound assessment* (Buros, 1970; Hughes, 1984; Robinson & Shaver, 1973; Wylie, 1974).

7.5.4.3 Rosenberg's Self-Esteem Scale.

Rosenberg's intent was not to follow the path of an inferential aggregate item-pool assessment (like Coopersmith and Piers-Harris did), but to directly tap phenomenological experience. In other words, measures of global self-esteem are not constructed based on inferential evaluations of particular descriptive items self-reported by children. Rather, it is assessed by directly tackling the conscious global feeling of self in general categories. Thus, the measure is clearly *unidimensional* and was intended for adolescents, but it has also been used with children and adults.

Items consist of 10 first-person statements (e.g., "I am satisfied with my life", "I certainly feel useless sometimes"), that have a four-option response format ranging from "strongly agree" to "strongly disagree". Item scores are summed to a total. Internal consistency is high (in the high .80s and .90s), test-retest reliability over several weeks is in the .80s.

Rosenberg devoted much attention to construct and predictive validity to demonstrate that his measures of self-esteem correlated well with other psychological and clinically relevant constructs like depression. Predicted effects are also calculated under the controlled variables of ethnicity and social class. Chiu (1988) demonstrated adequate convergent validity of the instrument. The scale seems to work very efficiently in studies where a brief and psychometrically sound index of self-esteem is sought directly (see Wylie, 1974).

7.5.4.4 Overview

The three scales for measuring global worth or general self-esteem reviewed above are designed to achieve clinical and/or statistical validity from a unidimensional basis of assessment. In this unidimensional context children presented themselves in a positive light, to report their "idealised self", rather than their actual self-image. Furthermore, the wording of the items attempting to yield a true or false answer format from the child seemed to produce a lot of problems with double negatives. Prior to Harter's scale empirical and clinical evidence clearly suggested that children are sensitive to evaluative distinctions between the different skill contexts or domains. Hence, there was a need to construct a scale that "recognised" and reflected these distinctions in its diagnostic scoring.

Very different is the case in orientation (theoretically and empirically) with the two scales following. These belong to the tradition of multidimensional assessment. Under this rubric, **the self-concept** is viewed as more importantly linked to specific-content social categories, where feelings of competency or incompetence for particular experiences arise. Feelings generated at this level have been identified as factors often highly associated with psychopathological behaviour.

7.5.4.5 The Marsh Self-Description Questionnaire.

The most recent multidimensional instrument on self-reported self-concept with availability for 6 to 11 year-olds is Marsh et al., (1984); and Marsh, (1991).

Based on Shavelson's model (Shavelson et al., 1976), it postulates a theoretically derived a priori 8-factor structure (i.e., subscales): Physical abilities, Physical appearance, Relationship with peers, Relationship with parents, Reading, Math, All school subjects, and General self-concept.

In each of these eight subscales there are eight items and children's answering format has a five-point variation ranging from "mostly false" to "mostly true". The items make for a possible 64 score and are all worded positively (e.g. I make friends easily) with the exception of 12 which are worded negatively, e.g.: "I do not like maths". These negatively worded items have been found to attenuate reliability (Marsh, 1990) especially for the younger ages and have, therefore, been excluded from respective scoring[5]. Internal consistency reliabilities (with these items excluded) is typically within the margin of .80s and .90s across subscales, dropping somewhat for the older children.

Factor analysis of the first seven subscales provides adequate support for this factor structure with minimum cross loadings. Construct validity is also supportive. The hypothesis, though, that the eighth (and excluded from factor analysis) factor i.e., general self-concept, is hierarchical in nature (as this model postulates) over the others is inconclusively supported.

Nonetheless, this instrument contains information on particular domain subscales e.g., math versus verbal self-concept scores, that are not represented in other scales. These content categories could be more informative for studies

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[5] This may be explained by observing that younger children tend to be more emotional and less rational in their self-attributions; hence, negatively worded acknowledgments of the self tend no to hold well in time since they "push" for a more positive assessment for emotional preservation reasons.

focusing on the achievement motivation element of self-concept, yielding more in-depth information about such aspects of a child's performance.

7.5.4.6 Harter's "Self-Perceived Competence Scale" for Children.

Harter's scale is also multidimensional and aims to tap the differentiated dimensions proposed in the author's theoretical model of self-concept. Briefly, the latter postulates the need to collect data on both domain-specific evaluations as well as on a global sense of self-worth (Harter, 1985b).

The scale is based on the recognition that *perceived competence* is an important correlate and mediator of a child's intrinsic motivation to be effective, in the expectation of a competent outcome. It is maintained that the more a child draws upon his/her motivation from within (locus of control), the greater the sense of competence. Conversely, if he/she draws upon motivation from factors external to the self (popularity, approval and feedback), the less stable and competent the self-perception is.

Harter (1979), in the first version of her Self-Perceived Competence Scale for Children, proposed three general competence areas (as factors) where each factor has specific items loading to them separately which tap evaluations from within these context areas. They are:

1) Cognitive Competence -Reflected largely in school or academic performance;
2) Social Competence -Indicating popularity among one's peers;

3) Physical Competence -Reflecting ability at sports and/or outdoor games.

In addition, there is a *fourth* subscale (4) attempting to assess a child's global worth. The items for this are worded in a more general evaluative format. The aim of a more general orientation in the self-esteem subscale is to link a child's feelings of "contextual competence" and his/her feelings of general self-worth.

7.5.4.6.1 Scale Structure of the 3+1 Competence Domains

The *Cognitive* subscale includes school and non-school performance. School related items refer to doing well at school work, feeling good about one's school performance, finishing school work within the expected time etc. Less specific items refer to being smart, remembering things easily and other similar items.

The *Social Competence* subscale attempts to assess interpersonal competence with regard to one's peers. Included are issues such as having a lot of friends, being easy to like, being an important member of one's class, being popular etc.

The *Physical Competence* subscale primarily taps athletic skills, for instance, doing well at sports, learning new outdoor games quickly, preferring to join in sports rather than being an observer, etc.

The *General Self-Esteem* subscale is qualitatively different from the preceding ones. It does not reference any specific or particular skill domain or activity. The items under its rubric include references to being sure of one's self,

being happy with the way one is, feeling good about the way one acts. The aim is to tap a child's feelings regarding his or her general worth.

7.5.4.6.2 Subscale Structure.

There are seven (7) items in each of the four (4) subscales making up a total of 28 items in the scale. Among them, fourteen (14) (i.e. half) are worded in a way so that the first part of the descriptive phrase reflects high competence and the second low competence. The remaining half of the items are phrased vice versa (i.e. low competence first, high competence second in the phrase). Within each of the four subscales (of 7 items each), three items are keyed in one *direction* and four in the other (i.e. high competence first as opposed to low competence). With regard to the *order* of the items two rules are applied: There are no two consecutive items from the same subscale, and no more than two consecutive items are keyed in the same direction.

7.5.4.6.3 Question Format.

The traditional *true* versus *false* type of format has presented researchers with several problems of psychometric validity in various studies through the years. The most commonly reported problem has been the high correlation of this format with tendencies to give socially desirable responses. Problems of this nature inadvertently heavily affect the reliability and validity of such scales. Harter attempted to move away from the weaknesses inherent in the design of such scales, by devising an alternative answer structure. It includes a four choice

format: two (2) of the answers are on the high end of self-perceived competence and the other two (2) are on the low end. An example is as follows:

Some kids often forget *what they learn*		**BUT**	*other kids can remember* *things easily*	
really true **for me**	**sort of true** **for me**		**sort of true** **for me**	**really true** **for me**
☐	☐		☐	☐

A child is first asked to decide which of the two proposed groups of kids does he/she identify with. Once one of the two groups is chosen, he/she is then asked to choose whether this is *sort of* or *really true for him/her*.

The *effectiveness* of the Harter proposed question format lies in the implication that equal numbers of children in the world "view" themselves in one of these groups. By using this pattern, an attempt is made to "legitimise" either choice in a child's mind, by minimising the power of the suggestive negative information that a single descriptive item expression could entail.

In administering the scale to children, an important point emphasized to them is that there are no right or wrong answers, just different answers. Harter reports confidence in this format, supported by children's verbal elaborations on the reasons for the answers selected. The latter indicates a good level of accuracy on self-perceived competence instead of a great number of socially desirable responses.

In the same line of preserving accuracy Harter has paid attention to the items' wordings and placements in the scale. Items are randomised to avoid having too many negatively worded items at the beginning or the end. They are balanced to have roughly one item of positive and one of negative wording exchanged respectively.

Despite the above theoretical and empirical support for such a scale design, a case may be made that all self-reported measures still have an important part of their answers correlating with lie-items, or "idealised self". In addition, we sometimes are eager to regard children as "accurate" or "inaccurate" in their perceived competence judgments, whereas evidence has shown that children are making judgments of adequacy on different bases (Harter, 1990c), for instance their potential sources include social comparison, comparison with one's past performance, comparison with one's ideal self, and the feedback received from significant others in one's life.

7.5.4.6.4 Scoring

The scoring pattern for the question format illustrated above ranges from 1 to 4 for each item, where 1 indicates low perceived competence and a score of 4 reflects high perceived competence.

Thus, in the example reported, the child indicating that he/she often forgets what he/she learns and at the same time says that this is really true for him/her, would receive a 1 and the child opting for sort of true, would receive a 2. On the

other side, a child stating he/she remembers things easily, would receive 3 if this was sort of true, and 4 if it was really true.

The scale was originally constructed for ages 8-12, but has been extended to 15 (Harter, 1985b). In addition, a younger version was also introduced for ages 5-8, based on a pictorial format alongside the descriptive items (Harter & Pike, 1984).

7.5.4.6.5 Item Construction

Harter has made many revisions to the scale to test its items' face validity with children, focusing on understanding of the phrasing and clarity of the descriptive information. After the initial individual administration, a group administration followed, testing different classes of children. The author strongly suggests administering the scale individually, as the theory behind the construction of the scale is to be used diagnostically rather than normatively. Furthermore, the examiner/interviewer has the chance to ask a child for any elaborative comments if necessary.

7.5.4.6.6 Inclusion-Exclusion Criteria

The one to one interview procedure with the children selected in the present study was one of the main bases for gathering data crucial for the analysis. This interview had to be smooth, had to avoid overstretching in terms of time, and had to be concise about the variables that needed to be covered and sound on theoretical grounds. The scale of self-worth or self-esteem had to be measured as

well as other variables. The difference between the Marsh and the Harter scales are: The Marsh has 64 items whereas the Harter has 28; the lengthier nature of the Marsh is said to be associated with a potential fatigue effect especially since the sample in the study were not adolescents, capable of making more easily abstract thoughts about their sense of being, but middle school children. The Marsh scale items form eight self-concept subscales, with three of them forming three total scores in detail, i.e. academic self-concept (the average of reading, mathematics, and school self-concept), non-academic self-concept (the average of physical, appearance, peer, and parent relations self-concept), and total self (the average of academic and non-academic total scales). Thus, the Marsh scale is based on measuring more the academic or vague nonacademic self-concept in more detail which was not the scope of the present study. The Harter (in its previous version as was used here) comprises the Physical, Social, and Cognitive subscales. This is similar to the Marsh scale, but with the additional subscale of Self-Esteem which is independent of the other three and could be analysed as such collecting information on global self-worth through its items. Therefore, it provided a far better match to the aims and the design of the study than Marsh's scale and was chosen for these reasons.

7.5.5 Measures of Social Cognition: Social Information Processing

The variable assessing the social cognitive behaviour of children and the subsequent measure of two of its facets, namely social information-processing

which is measured with Dodge's proposed stories procedure and interpersonal problem analysis which is measured with Diane Marsh's two devised stories, is central to the design of the present study.

7.5.5.1 The Dodge Measures

Dodge's development of theory over a course of almost 30 years, starting in 1980 and spanning until present (1980; 1982; 1985; 1986; 1987; 1990; 1993; 1994; 1996; 2002; 2006) and his subsequent empirical introduction of scripted stories designed to investigate children's biases in their social information-processing, has substantially influenced the conceptualization of the stories used in the present study to collect data. His initial exploration emerged from a breakthrough in systems thinking and assessment which attempted to answer the difficult and intriguing question of "what makes children's behaviour socially competent and what maladjusted".

The study of the origins of social competence has followed two different paths: The first path was followed by researchers who highlighted the quality of family relationships and early experience as the most important influential factor, and the second path by researchers who asserted that social problem solving skills and information-processing patterns were at the core of the issue. The present study has a clear orientation towards the second path as the first was excluded by contextually defining the setting: the school. Family relationships are not the focus

of the present research.

7.5.5.1.1 The Reformulated Model

As with Dodge's earlier model, in the reformulated version it is assumed that children enter a social interchange and receive as input social cues having a set of already existing *limited capabilities* and a *database* enriched by previous memories in their experiences. Dodge proposes that their behavioural response is based on the processing of those stimuli. In the configuration of the reformulated model, which now has a cyclical pattern to depict its recursive and dynamic formulation, the variables "biologically limited capabilities" and "social cues" are not clearly depicted but are implicitly considered present. In the centre of the cyclical design lies the **database**, which includes memory-stored information, acquired social rules, social schemas, and social knowledge. The steps of the reformulated model proposed (once a social cue is instigated) are as follows (Crick & Dodge, 1996):

- Encoding of social cues,

- Interpretation of social cues,

- Clarification of goals,

- Response access or construction,

- Response decision,

- And behavioural enactment

As Dodge (1994) asserts, "skilful processing at each step is hypothesized to lead to competent performance within a situation, whereas biased or deficient processing is hypothesized to lead to deviant social behaviour [...]" (Dodge, 1994; p.81-82).

Behaviour being so situation-specific and human choices so varied, one might ask what an exploratory analysis of potential patterns in children's social behaviour might serve. The answer is that an understanding of the patterns of social interactions that lead to biased or negative information processing may be associated with an attempt to map out projective associations in the future with subsequent further maladjustment (i.e. negative previous social experiences lead to problems in social information processing which, in turn, result in further maladjustment -see Coie, Dodge, and Kupersmidt, 1990; Dodge, 2006).

In the reformulated model it is clearly assumed (for all of the above reasons) that the relationship between social information processing and social adjustment is reciprocal. In other words, social exchanges have a transactional nature that may lead to the embedding of past events (as causal analysis of a child's impact on others) into the functioning of the social-cognitive processes that affect the next behaviour.

In his most recent writing, Dodge (2006) proposed a detailed causal milieu that influences social schemas in a child, which then leads to hostile attributional bias, which finally produces manifestations of aggressive behaviour. This model is described in figure 7.2 below.

Figure 7.2. The Dodge model of the development of hostile attributional biases.

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┌──────────────────┐
│                  │
│  Neural          │ ─────┐
│  Dispositions    │      │
│                  │      ↓
└──────────────────┘   ┌──────────┐   ┌──────────────┐   ╭──────────────╮
                       │          │   │  Hostile     │   │  Aggressive  │
┌──────────────────┐   │ Schemas  │ → │ Attributional│ → │  Behaviour   │
│ Socialization by:│ → │          │   │  Bias        │   ╰──────────────╯
│ - Attachment     │   └──────────┘   └──────────────┘
│ - Physical abuse │
│ - Modeling       │
│ - Success/Failure│
└──────────────────┘
```
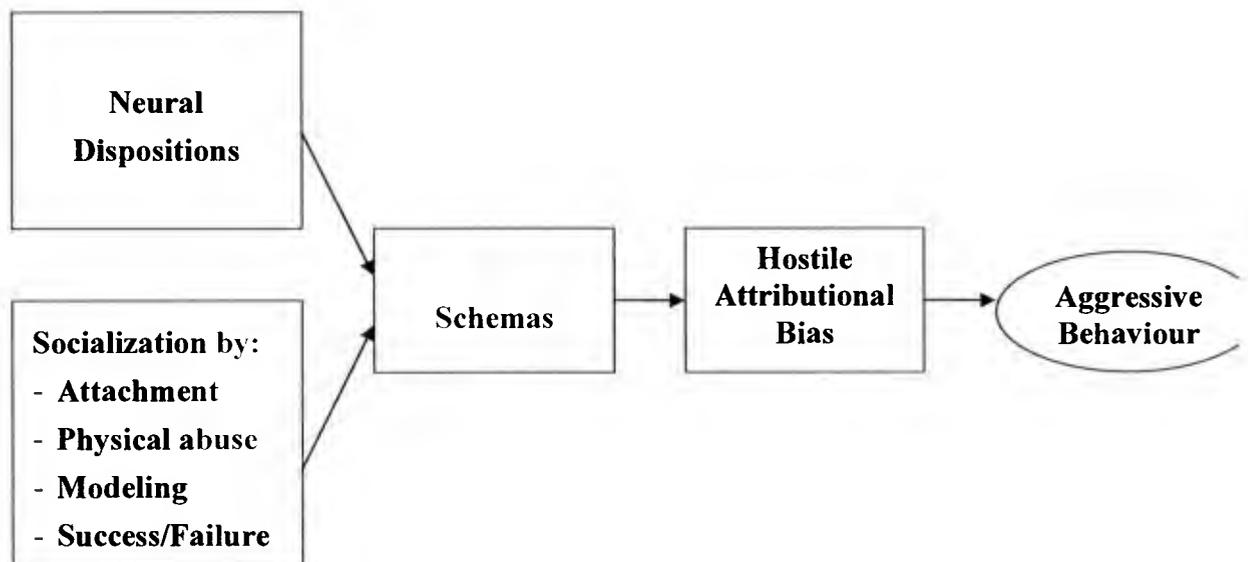
Dodge hypothesised that in both encoding and interpreting social cues, aggressive as compared to nonaggressive children were very different. His findings showed that aggressive children were biased toward attributing hostile intentions to peers in situations (stories or video vignettes) where the outcome was negative and the intent of the other person was not clear (i.e. ambiguous), whereas in clearly interpretable outcome stories (i.e. a negative intention by peer with a negative outcome for the child interviewed) both aggressive and nonaggressive children were accurate in assessing intent and offering similar proposed responses. Furthermore, by attributing hostile intent to the instigator, children tend to respond or propose to respond aggressively.

This hostile attribution bias was found to be consistent across different social environments (classroom, Dodge, 1980; child psychiatric clinic, Milich & Dodge, 1984; adolescent juvenile delinquency unit, Dodge et al., 1990) and differing clinical severity of cases. Furthermore, Dodge asserted that attribution

biases could be due to processing differences in the first two steps of his model (1986) (i.e. the encoding[6] and interpretation[7] of social cues). The meaning of an act (i.e. hostile, accidental or benign) is dependent on the intention attributed to the actor (Bandura, 1983; Berkowitz, 1977), which is a highly complex rule-applied procedure with components that may be species specific, culture and child specific. Empirical evidence has suggested that, for both aggressive and nonaggressive boys, acts evaluated as clearly hostile are responded to aggressively, and benign ones are responded to non aggressively (Dodge, 1980; Dodge and Frame, 1982; Dodge et al., 1984; Sancilio et al., 1989). Therefore, understanding the intent of the actor has been deemed as critical.

7.5.5.1.2 The Stories

In order to assess these biases Dodge developed a series of hypothetical stories that he presented to children of various ages. These stories had different outcome valence: positive, negative and ambiguous. The aim was by presenting children with the stories where the self was a participant, to ask them to present their processing of the situation regarding the causal intent of the people involved.

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[6] In this step of Dodge's proposed model the child must **encode** the presented social cues, something that involves attention, sensation, and perception of cues. **Encoding** is said to possibly occur automatically or with some effort, and the encoding can be divided to appropriate and inappropriate. In other words, one child may encode relevant cues, such as facial expressions of a peer, whereas another child may encode irrelevant cues, such as the color of a peer's shoes. It sounds logical that from a wide array of possible encoding patterns we may be led to divergent behavioural responses.

[7] This step of processing the social information is engaged with representing mentally the encoded cues as to be interpreted in an "accurate" and meaningful way. This step requires the application of a set of **interpretation** rules to the encoded cues to derive meaning. For example, if a child has developmentally acquired a rule structure that calls for an interpretation of peer hostility when a peer's scowled face is observed, then if a scowl is *encoded* the child will *interpret* the situation as one of peer hostility.

Usually the child being interviewed would be the recipient of an act. Secondly, a child was asked to use his social information-processing skills and propose a response decision to suit his/her interpretation of the causality of the situation. During this sequence of processing children evaluate possible behavioural responses to a particular situation heavily influenced by their attributions of intent of the other and the outcome intent they want to achieve out from situation. For example, if they see a child as being intentionally malicious when they see him/her holding one of their favourite, personal objects in their hands, they may value as more important to "teach them a lesson". Therefore, it is most likely that they would aggress towards them. In fact, aggressive children do not perceive themselves as acting inappropriately when their self worth is explored, as their aggression seems to lead them to "successful" resolution of conflicts, at the expense of others of course.

For the present research the stories developed based on this model were:

4 stories and 2 stages:

STAGE 1 – Causal Attributions of intent

Below are the two stories with a **negative outcome** valence affecting the child interviewed:

- First story: "You are walking in the playground and all of a sudden a ball hits you really hard and you see it was kicked by child... (a) Highly positive in social likeability scoring, and (b) Highly negative. How do you

think the event happened?"

- Second story: "While sitting on a bench in the playground talking to some friends, child X comes by holding a chocolate milk carton in his hands. All of a sudden the milk gets spilled all over you and completely messes your clothes. How did it happen?"

Below are two stories where the child being interviewed has to decide purpose in another peer's action, when the outcome valence is **ambiguous**:

- First story: "Your favourite pencil/rubber/pencil case goes missing during break time, you look everywhere and on your way back to the class you see your classmate X (positive) or Y (negative) holding it in his/her hand. How do you think it got there?"

- Second story: "You place your packed lunch on your table in the classroom, you go to the toilet for a few minutes and on your way back you see a classmate X (positive) or Y (negative) holding it in his/her hands. What do you think she/he is trying to do?"

In the research, each story had one version with a sociometrically positive instigator, and one with a sociometrically highly negative instigator. The stories were counterbalanced so that the first person acting was not always a child with a positive social status.

The responses to the story were scored as follows:

(2) if the child interviewed attributed hostile or malevolent intent on the part of the instigator

(1) if he/she attributed the situation to an accident or no bad intentions

(0) if attributed to the other's benevolent intentions.

STAGE 2 – Proposed Response Bias

In relation to each story (**4** stories by **2** status instigators = **8** versions) the child interviewed was asked what he or she would really do in such a situation. The pilot research conducted some months before the main study revealed that children responding to the second question were hesitant to answer honestly. They tended to present an ideal reaction to a provocation being concerned about "teacher approval" or to avoid possible punishment as physical reactions are known not to be tolerated at school. Through the children's comments it became clear that my status as teacher was associated with me being a powerful figure in school. In order to allow for more honest responses to be elicited to this question, preliminary analysis in the pilot study suggested that a negotiation with each individual child who was interviewed was needed. Therefore, in each case I made very clear to each child that however they responded the information was going to be confidential, that their teacher would not be informed about their answers, that there was no punishment pending, and no "right or wrong" answers to any of the questions. I clarified further that what I was after was information on what would **really** be their reaction to a situation like this.

The pilot data analysis revealed that 55% of children changed their responses to the Harter scale and to the Marsh and Dodge stories when this clarification was introduced (in a random sample of 40 out of a Pilot Total N =65).

This phenomenon was also in accordance with the theory about possible and ideal self, which suggests that people, and in particular children, in making evaluative judgments of their behaviour tend to answer gravitating their responses to an ideal self portrayal as compared to an actual self, due to sensitivity to social criticism, social acceptance, self-perceived self-worth, and subsequent social competence (see issues on self-competence, self-esteem and self-worth in, Markus and Wurf, 1987; Janis et al., 2006; Buckingham, 2006; Tafarodi, 2006).

The scores were allocated based on the following scale:

(3) if the child proposed that he/she retaliate, behave aggressively to "punish", "kill" or "teach the other a lesson".

(2) if the child suggested that he/she report or complain to an authority figure (teacher-Head) *with the intention of having the other child punished*

(1) if he/she refrained from doing anything negative to the other child and proposed asking for an explanation or calling parents to bring a clean set of clothes,

(0) if the child reacted positively in the ambiguous stories, e.g. "thank you for finding my pen or my packed lunch".

A qualitative open-ended question was added asking the children "why"

they would react in this way. The intention was to expose the underlying

processing and intentions of each child to explore potential communalities or

particular tendencies.

A recap of the manipulated conditions of the situation with respect to

scoring according to the explanation offered by the children is presented below in

table 7.1.

Table 7.1. Dodge stories manipulated conditions and scoring criteria.

CONDITION	SCORING	EXPLANATION
For Causal Attributions	2	"If other child did it on purpose (hostile intent)"
	1	"If it happened by accident"
	0	"If other child was doing something benevolent*
For Proposed Response	3	If they would retaliate aggressively
	2	If they would go to authority figure to have other child punished
	1	If they say they would do nothing, or try to reason with the other verbally, or they'd call parents for a new set of cloths
	0	If they would thank the other child**

* = this was not reported by any of the children which in effect makes it a dichotomous variable.
** = this was not reported by any of the children which in effect makes it a dichotomous variable.

7.5.5.2 The Marsh Stories

Since the aim of this study was to investigate the children's alternative thinking and the subsequent consequences of each exploring the link between "adequate", "poor" or "rich" social analytical skills and choice of behaviour an additional to the Dodge measure of social cognition was required that would focus solely on analytical skills in order to allow exploration of richer information. Diane Marsh's (1980) model of Interpersonal Problem Solving Competence (IPSC) was the best candidate, a social cognitive measure shown to have a central influence on consistent maladjustment, such as aggression and peer rejection. The model of the present research also considered the adaptation to Marsh's model developed by Downey and Walker (1989) which went beyond Marsh's data gathering, hence raising some points of concern for its application in the present study.

The original Marsh Interpersonal Problem Solving Competence (IPSC) model involved screening the social analytical thinking of children to provide generic data for the ability to analyze and resolve problems involving other people. It is related to the development of perspective taking, i.e. "children's increasing ability to recognize, articulate and coordinate the internal states of others" (Marsh et al., 1980). The measurement of such a variable generally reflects the conceptual framework proposed by D'Zurilla and Goldfried (1971) and is designed to assess the following abilities:

- Problem Definition (PD),

- Alternative Thinking (AT),

- Consequential Thinking (CT), and

- Solution Adequacy (SD).

The above abilities were analysed in terms of averaged means in 2 stories. The later developed model by Downey and Walker (1989) tried to enhance the data meaning by introducing the notion of competence. They termed their model Interpersonal Problem Solving Competence (IPSC) and the aim was to assess the ability of children to construct "effective or socially adequate" solutions to interpersonal problems. *"A solution was rated as adequate if it was not deceptive, benefited at least some of the parties involved in the situation, and went beyond the information presented in the story"* (p. 838). Scores were generated for the proposed problem-faced stories consisting of 4 categories:

- Total number of alternative solutions (alternatives)

- Total number of adequate solutions (adequate alternatives)

- Total number of separate consequences (consequences), and

- Total number of relevant consequences (relevant consequences)

As the notion of "adequate" or "effective" solution involved a value judgment on the part of the researcher, subjectivity was seen as a weakness and in

the present study the clearer the data gathering in relation to the scoring the better for the generalizability of the findings. Thus, the Downey & Walker model was excluded for the Marsh original, which was more appropriate.

In Marsh's model children were asked to imagine themselves faced with two interpersonal problems in two separate stories as follows:

Story – 1

"You are writing a very important test at school where your teacher has specifically made clear to you all that you are not allowed to help each other with the test. Half way during the test, a classmate (of "neutral" or positive sociometric status) is asking you for your help.

Story – 2

"You have promised to three of your best friends at school to get them tickets to go and see a very important sporting event (football, basketball match) but you manage to find only three tickets.

For each problem-story children were asked the following questions in this order:

1) What is the problem here? What are all the things that you need to consider here? **(Problem Definition).**
   Scoring: 2 was awarded for defining the problem mentioning the two sides of the dilemma, 1 for one side only, and 0 for none.

2) What are all the possible ways you can think of to solve this problem? (**Alternative Thinking**).

Scoring: Raw score of total number of solutions offered, averaged against the 2 stories. No upper limit.

3) What might happen with each of the solutions you have mentioned? What are all the possible consequences for each of the solutions? (**Consequential Thinking**).

Scoring: raw number of all consequences added. No upper limit.

4) Considering all these different solutions and their possible consequences, which solution do you think is best? (**Solution Adequacy**).

Scoring: scoring range **0-4**:

0 was scored for a child saying to the other 3 that their going to the venue is off and no one goes, because it profits no one of the 4.

1 was scored for telling the other 3 going is off and taking another 2 instead which satisfies only the 1 child in question.

2 was scored for leaving 2 of the classmates out and taking only 1 of them, e.g. best friend.

3 was scored for leaving himself or another child out of the group and giving the 3 tickets to 3 members of the team, and finally

4 was scored for the child selling all the tickets and making alternative plans for all the children to go somewhere else instead as a whole group, which satisfied all of the people involved.

The fourth question undoubtedly introduces a further issue of moral reasoning and emotional intelligence when an answer is generated, an interesting perspective to have in the data analysis. However, the model still served, as for children to answer in a prosocial, hence, more socially competent way they still had to rely on a level of indirect functional perspective taking to connect with the other peers' needs. In turn, low scoring on this variable does not necessarily

suggest inadequate perspective taking, but rather an emotional inadequacy, by taking care of the self first and over the others. This is explained in Table 7.2 that follows:

Table 7.2. Scorings of 4 internal variables on Marsh

	Scoring Range	Score meaning
Problem Definition (PD)	0-2	**2** = getting both points of dilemma **1** = getting one **0** = getting none
Alternative Thinking (AT)	Total number of added solutions averaged for 2 stories, no upper limit	
Consequential Thinking (CT)	Total number of added solutions averaged for 2 stories, no upper limit	
Solution Adequacy (SA)	0-4	**4** = if all were satisfied with the solution **3** = if one was dropped in favour of others **2** = if interviewee and one other chosen **1** = if satisfied only child in question, and **0** = if all not going anywhere

7.5.6 Emotional and Behavioural Difficulties

As was depicted in figure 7.1, the present research had a two stage procedure of data collection. The data gathered regarding psychopathological symptomatology in the behaviour of the children screened was provided by the use of two very well known and cross culturally tested instruments, the Rutter

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behaviour checklist for teachers in the 1st stage or screening for problems, and the Achenbach scale Teachers' Report Form (TRF) in the 2nd stage or analytical-"diagnostic".

7.5.6.1 The Rutter Checklist

The Rutter behaviour scale is a short questionnaire aimed at collecting information about the manifest behaviour problems (emotional and conduct) of children aged approximately 9 to 13 years. There are 2 versions to the questionnaire, one for teachers and one for parents. The scale is designed for epidemiologic research which means that it has to be accurate, brief to complete, and clear. Since the design of the present study in Stage 1 needed to use an instrument completed by teachers to screen for problems from all of the pupils in a class in order to identify the children that would form the 2 groups in Stage 2, the chosen instrument had to be short but well tested. The Rutter scale was the most appropriate for the aims of the study; it has been used for the past 35 years, and in hundreds of studies around the world, with well reported and detailed psychometric properties. The only weakness in the scales found by some scientists was that the two and later three identified subscales for problems were empirically and not factor-analytically derived; a statistical criticism. This "weakness" was addressed by Rutter and Elander (1996) and their statistically checked data approved the previously empirical and psychometrical derivation of the three factors: conduct, emotional, and hyperactivity disorder.

The Teacher version of Rutter's scale that was used in this study is made of 26 items describing problematic behaviour; it asks teachers to rate their class children on every item by "does not apply", "applies somewhat", or "certainly applies" in their respective boxes. Disturbance is indicated by the cutoff point of 9 and higher out of a possible 52. It is also possible to use total and subscale scores as continuous rather than categorical variables, and in some studies scores have been derived from slightly different subgroupings of items as they were derived from factor analysis.

In Greece the Rutter scale was first standardised both for parents and teachers in 1989 (Papatheofilou et al., 1989). In light of the fact that the sample in that study concerned 1st and 2nd graders (6-8 year olds) the cutoff point for problems of maladjustment was decided to be a score of 10 upwards, as adapted from Rutter's 9 upwards. This was probably more sensible as children in the first 2 years of primary schooling manifest more apparent "problems" in the face of challenges related with adapting and fitting into a totally new environment in school. These "problems" are normally resolved by the end of year 2. The study design focused on eliminating the possibility of heightened and unrepresentative screening of problems in the sample; therefore I opted for an 8-12 year old sample. Hence, the cutoff point of 9, as Rutter suggested, was retained.

7.5.6.2 The Achenbach TRF Scale

As has already been discussed in the theoretical section of the thesis, with the critical analysis of prior existing methods of "diagnostic assessment" of maladjustment in children scientists realized that any modern and hence validated method of screening for problems of psychopathology needed to be empirically based in its assessment and collect data from multiple informants from various contexts in the life of a child. Cross-informant comparisons can yield a better picture of overall balance in a child's emotional and behavioural aspects of being. In this light the Achenbach System of Empirically Based Assessment (ASEBA) was conceptualised in the 1980's and has been used throughout the world (Achenbach, 1991) in various studies and cross-cultural contexts and countries in the 1990's. The Teachers Report Form (TRF) was the scale from this system selected to be used in this study. Apart from the advantages of its psychometric properties as briefly mentioned above, it is a scale that allows for a far more eloquent description and screening of particular behaviour problems throughout 112 empirically worded items regarding behaviours that are readily observed by teachers in the school setting. It is also very flexible because it has a variety of open-ended questions (3), semi-structured (first section) and structured (the 112 behaviour description items).

The TRF in its first part collects descriptive information on the evaluation of each child by the teacher. This is followed by the information and scoring on Adaptive Functioning. The first section of adaptive functioning is focused on a child's performance in the main academic subjects compared to the rest of his/her

classmates. Scores range between 1= far below grade, to 5= far above grade. The second section of adaptive functioning is concerned with the assessment of a child's attitude and emotional state towards learning. Scoring is again compared against typical pupils of the same age and ranges between 1= much less (well) to 7= much more (well). The following section draws upon any latest achievement test scores or aptitude tests in the file of each child. Following and ending the first part of the questionnaire are the 3 open ended questions recording the teacher's major concerns about a child as well as his/her best aspects.

The last section consists of 112 behaviour problem items with two additional open items for any problematic behaviour not covered by the previous items. Each item is scored 0= if not true (as far as the teacher knows), 1= if somewhat or sometimes true, and 2= if very true or often true for that child during the last 2 months. The potential score is between 0-224.

The problem behaviour items in TRF constitute 9 subscales constructed from factor analytic loadings. A centroid cluster analysis permitted the grouping of children according to the highest intraclass correlations between their 9 profiles. In a repeated-measures sample, reliability testing of the narrow-band categories revealed 6 of them as reliable (Edelbrock & Achenbach, 1980). With hierarchical cluster analysis higher order relations among these 6 profile types were identified. By merging the six profile types two broad-band groupings were further identified. One of these was labelled **Internalizing**, in accordance with clinical classification, denoted by relatively high scores on individually identified profile scales, such as

those covering schizoid/anxious, depressed, and somatic complaints as internalizing dimensions. The other broad band grouping was named **Externalizing**, defined by elevated scores on hyperactive-aggressive and delinquent subscales (Achenbach & Edelbrock, 1983). In previous findings (Achenbach & Edelbrock, 1978; McConaughy, Achenbach, and Gent, 1988) Internalizers have been shown to have higher cognitive, academic, and social functioning than Externalizers. In addition, when boys with Internalizing scores 5 points or more above their Externalising ones were compared with boys with the reverse score pattern, The Internalizers portrayed significantly higher disparity between their real-self and ideal-self ratings. Similar findings were also reported by Katz, Zigler, and Zalk (1975). In other words, Externalizers were more reluctant to express lower self-esteem than Internalizers who were more receptive and willing to admit a willingness to change behaviour patterns. This lends support to the Achenbach & Zigler (1963) original hypothesis that self-image disparity increases with cognitive differentiation and the incorporation of social mores. It is also consistent with the suggestion that internal discomfort with self may potentially motivate Internalizers towards greater change of problem behaviour than would be true for Externalizers.

The scale offers researchers the possibility of looking at different levels of functioning and of empirically classifying children in categories: it can yield a total problem score; it can yield a broad band problem score, which is divided in Externalizing, Internalizing and Mixed (non Internalizing or Externalizing)

problems; and can also yield information on particular narrow-band or syndrome level of problems, i.e. Withdrawn, Somatic Complaints, Anxious/Depressed (3 internalizing), Delinquent, Aggressive (2 externalizing), Social, Thought, and Attention problems (3 mixed). The profile analysis is computer or hand-scored and the profiles are separate for the Problem scales and the Adaptive Functioning. The age of children for which TRF is scored ranges between 5-18 in the 1990's version; the latter was used in the present study. Individual scoring is plotted against a profile diagram for which scores in each syndrome are normalised to provide a T score across syndromes on the right side of the behaviour profile and a represented percentile on the left. The 98th percentile is the cut-off point of psychopathology in a child, which means that all scores lower than that in each of the syndromes is where 98 percent of normal children fall. Items are also profile scored and plotted separately for boys and girls, as well as for different ages. This profile calibration has been suggested by research which showed that in some syndromes for example a higher scoring for girls was considered normal whereas for boys it was at the clinical cutoff or within it and vice versa.

Achenbach's scales theory, the design, the application, as well as the statistical properties of the behaviour problem syndromes and the factor construction for his Empirically Based Assessment of child and adolescent psychopathology is presented in the book with the respective title (1997), and for the Teachers' Report Form (TRF) see the Manual and Profile (1991b). For a review of the standardization of the TRF in the Greek context see Roussos (2003; editor) translated Manual of the Achenbach original.

How the aforementioned scales were operationalized in the data collection

of the present thesis is described in the following chapter.

CHAPTER 8

OPERATIONAL METHODOLOGY

This chapter describes how the various measures selected in Chapter 7 were used in the study, outlines the nature of the sample and considers ethical issues.

8.1 Interview procedures

Apart from the scales for teachers (questionnaires) completed for each child, a substantial and major part of the data collection was completed through one-to-one **interviews** with children at the second stage of data collection. Each interview was planned to last for about 30 minutes and to be as sensitive, probing, and reliable (through rephrasing, elaboration and follow up on answers) as possible.

In the present study the interview was used as a means to study relations and test hypotheses without compromising the reliability and the validity of the data which an alternative indirect method may have risked, due to the respondents' age and/or attitudes to answering probing questions of a personal and especially self-evaluative nature.

The self-esteem/self-worth and/or wider perceived competence of a child

was in this study assessed through the use of the Harter scale. Concerned about the possibility of being given responses by children that provided a glimpse into an ideal and not an actual self (a common so-called positive bias of children if asked to evaluate the self) which was informed by the pilot study some months before, I felt it was important to differentiate myself from the school power system and state clearly to each individually interviewed child that there were no "right" or "wrong" answers to any given question, but only individual choices, preferences and actual occurrences. In the pilot study where the method was tested I sensed also, and in some cases was told too, that children worried about the aims of these questions and answers i.e. how their answers were going to be used (obviously worrying about how honest to be).

For this reason I added in my introductory discussion with each child a statement that the aim was to explore with them their individual perspectives and typical descriptions of their actual social interactions in order to reach towards a better understanding about the quality of their school experiences. I tried to make them feel at ease partly by indirectly showing them that they were not the focus of attention as individuals.

In addition, I had the opportunity to identify any contradicting statements regarding the Self as they emerged through the answers of a child, and ask clarifying questions or rephrase possible misconceptions that could have hampered a child's understanding. These interactions of questions and answers during the interview with a child were designed to be as flexible and as functional (regarding yielding scorable answers) as possible.

In itself, this method and the approach adopted reinforced the reliability and validity of a child's answers. The latter concern is of particular importance for cultural reasons, as Greek children are not at all used to being interviewed by a "stranger" in a secluded room in their school. Therefore, and particularly so with "clinical" group cases, the relative freedom that the semistructured approach introduced was seen by me as an important determinant of yielding valid answers from the children.

In practice, structure was provided by the use of the Harter's scale and Dodge and Marsh stories. The unstructured part was introduced when contradicting answers in the scale emerged. They were probed through an open question by the researcher to the child. In Dodge's and Marsh's stories the children had to propose their alternatives to resolve problems in their social interactions. These were further explored through open questions. The grouping of their answers, though, was based on a prescribed method prepared by the authors of the scales used in the method.

8.2 Sociometric Peer Nominations

The present thesis also utilised the method of **Sociometric Peer Nominations** as a means of identifying children within a class that seemed to be at opposite ends regarding their likeability to their classmates. This was an important first stage that facilitated the identification and pre-selection of the "protagonists" in the vignettes (structured stories) of the hypothetical situations, based on

Dodge's attribution bias research and model.

The sociometric measurement of social preference was focused around questions relating to three best and three least preferred pupils in the class with the aim to eventually identify (in absolute numbers) the highest nominated one at each end of the spectrum. The exercise was introduced in a whole class environment. Children filled in the information anonymously on a sheet that was given to them. This data were collected at the initial stage of the study and was used at a later stage where the hypothetical stories based on Dodge's work were introduced. The hypothesis was that pupils having different social status (positive vs negative) would have different causal attributions assigned to them and subsequently would elicit different kinds of response reactions to different situations by the particular children interviewed from the experimental and control groups.

8.3 Ethics

When research investigates issues which involve collecting data about or from children, the researchers have to make sure that children's rights are respected. Researchers need to be particularly sensitive to the needs and wellbeing of children. This is particularly so because children have been taken for granted in some instances in the past. Grown-ups have access to information regarding children who lack the power or the capacity to protect themselves against abusive use of information by scientists or researchers. There are now codes of practice and binding guidelines that protect the fundamental rights of children from

insensitive researchers. The most relevant ethical standards for research with children in England and Wales are provided by the British Psychological Society, and the British Educational Research Association. The way issues have been addressed in relation to the BPS guidelines are set out below.

8.4 Ethical Standards for Research with Children

The principles listed below are derived from the latest amendments in the *Ethical Principles for conducting Research with Human Participants* as reported on the BPS site on 31 October 2005, and the recent published Directory of the Society for Research in Child Development.

Principle 1. **Non-harmful procedures**: I, as the investigator, used a procedure ensuring that the children individually interviewed would not feel any stress during the time the interview lasted. I first explained to each child that I was also a teacher doing research in the ways children play and resolve their fights or misunderstandings once they happen. I let them know that the aim was for teachers to understand better their perspective, to improve the quality of pupils' social behaviour and their school environment, and that their view and contributions were of great importance. I added that I was not expecting a "right answer" since there were no **right** or **wrong** answers, and that the aim was to describe what really goes on in similar or same situations (as in the stories). This clarification seemed appropriate as children tend to view questions and answers as a school test they must not fail, which often creates performance anxiety. I

reassured them that all their answers were confidential and that their respective teachers would not have access to their answers nor any negative effect would be bestowed against them for "reacting" aggressively or "antisocially" in these make believe stories.

I was sensitive towards psychological issues regarding the self-awareness of children participating in the study of the questions and answers in the Harter Self-Esteem scale as well as the Dodge causal attribution and response bias stories. As a consequence, I ensured that the individual interviews took place in non-threatening environments (a quiet spare room) within each school, which meant not the principal's or the Head's office as they are often associated with reprimands and "punishment" visits for rule-breaking behaviour.

In addition, special attention was paid to my tone of voice in order to avoid a lack of commitment to answering my questions. Care was also shown not to rush the children to finish or come up with an answer in an "obligatory" manner. Each child was gently probed to think and choose what seemed closest to their preference, even if they were not very sure about it. Although the schedule of the interviews was designed not to exceed 30 minutes (25-35 min. in almost all cases) care was taken that the children were not made to feel pressured.

Principle 2. Informed consent: Based on the introduction of principle 1 to each child, followed principle 2 which meant that I was asking for their consent, that they understood what I had just explained to them, and that they were willing to help me gather this information by participating in this research. I explained that

this meant answering some questions that were going to be treated anonymously. Furthermore, I made clear to them that if they felt they did not want to answer some of the questions or if they wanted to ask me something to clarify the meaning of a question they had the right to do so and should let me know.

Principle 3. Parental consent: Before any child was interviewed I formally asked for their parents' consent in writing. I introduced myself in the form of a letter, stating that I was doing research as part of my doctoral thesis at the University of London and with the co-operation and approval of the School of Psychology of the University of Athens and having gained formal permission by the Greek Ministry of Education (the permit number was provided for them). I briefly mentioned the aims and the nature of the study, how children would be asked to participate in the 1st or 2nd stage of the data collection, and reassured them of the anonymity of any children participating and of altered names for publication. Thus, their agreement was sought in signing the form of approval while I explicitly reassured them that their subsequent consent or refusal regarding their children's participation would be equally respected without incurring any penalties for their children.

The research design catered for possible refused permission from some parents. The design required more than 100 cases for each of the two groups of children taking part through the 2nd stage of the assessment. To compensate for possible denied permission, more classes were included in the first part to ensure that attrition would not cause the total number of cases to fall below 200 for the 2 groups. About 1/3 (35%) of the parents approached declined to give permission

for me to interview their children or for their child to participate at any stage of the data collection. Finally, the 2 groups amounted to some 240 children aged 8-12 (120 in each group).

Principle 4. Additional consent: In addition to the above, I asked for the consent of the Local Educational Authorities' school counsellors, of the heads and the teachers involved.

Primary school teachers may feel pressured, low on energy and lack motivation to fill out paperwork. This can make them reluctant to invest their free time at school or home completing behaviour screening questionnaires for all the children in their class (1st stage prerequisite), despite it being straightforward and quick to complete (only 26 items). To address these issues in order to achieve adequate participation numbers, I appealed to their sensitivity and professionalism in trying to learn about the nature of the "odd" or worrisome behaviour in their class. The intention was to identify colleagues that would be self-motivated to do the work. If teachers "agreed" to undertake the "task" but I became aware that they had completed the forms reluctantly for "obligatory" reasons (due to the "weight" of the Ministry of Education formal permit), they were excluded from the sample. This exclusion ensured quality assurance in the collection of the data, as it protected against data feedback from teachers who were not committed, which could have caused serious concerns for the validity and reliability of the data collected.

Principle 5. Incentives: There were no positive incentives in my study apart from

the attempt to enhance pupils' experience of school life and school ethos. The same applied for teachers. No money or name citing was offered to teachers. Some of the teachers asked for feedback from the researcher, so that the time and energy they had expended would be useful. To meet these demands I made clear that the nature of the research did not entail intervention planning but rather assessing the nature, quality and extent (in absolute numbers) of problems in schools using the instruments at hand. Nevertheless, their request seemed fair, and in some cases feedback was provided along the lines of me offering general guidelines of how to tackle particular "deviant" or "worrisome" behaviours in the class. No names of individuals were communicated as having particular problems in accordance with **principle 13**.

In doing the interviews, though, I discovered that a positive incentive had been created without my intention in the form of the special attention that the procedure allowed by some children being selected to spend time with me. Therefore, I had some children asking me why they were not selected and their other classmates were. I also tried to avoid creating any negative incentive by, for example spending more time in the individual interviews with children from the "troubled" or experimental group, as this difference could be picked up by them and hence could make them more self-aware and possibly less co-operative or honest in their replies.

Principle 6. Deception: Since the aim of the study was to investigate emotional and behavioural problems in children within a class, it was not appropriate to fully

disclose information regarding identified groupings or identified problem behaviours in particular children, as this would have clearly hampered the validity and reliability of the data collection. This is common in methodologies where social behaviour analysis is observed, recorded, self-described or informed, as there are no other means to study human social behaviour and, therefore, its pathology if not by direct or indirect means. Therefore, withholding information regarding children's status after the initial screening and the assignment to one of the two groups was necessitated by the design of the study and the nature of the information gathered. At the same time special care was taken in order not to allow any of the "labelling" information to be revealed to any classmates or teachers and possibly cause a negative effect or a stigma for any child that participated in the procedure.

Principle 7. Anonymity: In the first stage of the data gathering, it was important to collect data on each participating child's parents' level of education. To do this I needed to gain access to the school records. To gain access I asked permission from the LEA school counsellors and the respective Head teachers under the condition that at every stage anonymity would be preserved.

Principle 8. Mutual responsibilities: From the beginning of the research investigation I kept a primary focus on honouring the agreement between myself as investigator, the child and the adults involved (i.e. the parents, teachers) by abiding by the responsibilities of each party.

Principle 9: Jeopardy: In keeping in line with this principle I was sensitised to

deal with it accordingly if, in the course of research, information came to my attention that might jeopardize the interviewed child's or another's well-being, by accepting the responsibility to discuss any issues with parents or other designated experts in the field. This could have taken the form of arranging the necessary assistance for the child. Fortunately, there were no extreme cases in intensity or number, and in some of those (4 cases) an expert had already being assigned by the system to create an individualised plan of action through a whole school approach.

Furthermore, in completing the self-reported Harter Self-esteem/Global Self-worth scale as well as the Dodge social cognition attribution bias stories, each child was asked two unrelated (to the prior part of the interview) questions relating to positive aspects of their school life to avoid them leaving the interview lingering on self-analysis. This supports the ethical aims of this study.

Principle 10. Unforeseen consequences: The main data collection took part six months after the pilot work was completed. The latter aimed at testing the whole procedure for possibly unforeseen consequences for the participants in real time. The pilot work facilitated the discerning of an oversensitization of teachers when screening and scoring behavioural problems. Teachers tended to unfairly label a great many children in their classes. To correct this, I redesigned the procedures and I introduced an advisory and didactic session with each of the teachers (for 10-15 min) to inform them of the latest scientific definition of what constitutes psychopathology or deviant behaviour. A repeated measures analysis following

this amendment in procedure demonstrated that the teacher screening for SEBDs in children fell back to the prevalence rates reported consistently cross-culturally i.e. between 10-25% of any school sample.

Principle 11. Confidentiality: The questionnaires (Rutter, Harter, Achenbach) regarding each participating child's profile were number coded to protect their identity, from any written or verbal reports amongst other teachers in the school, other professionals (e.g. LEA school counsellors) and research colleagues.

Principle 12. Informing participants: Immediately after the data were collected, I asked each child whether there was anything they needed to be clarified, or any misconceptions that may have arisen. In addition, in some cases where I had formed the opinion that some of the child's answers were contradictory or portrayed some possible elevated lie item, I shared my impression and asked for clarification.

Principle 13. Reporting results: Being aware that my words (regarding a child's behaviour) may carry unintended weight with parents and children, I exercised great caution in reporting primary results, making evaluative statements, or giving advice. In most cases this amounted to general guidelines based on the preliminary screening information.

Principle 14. Implications of findings: As a researcher I am mindful of the social, political and human implications of my research and I am especially careful in the presentation of findings. This principle, however, in no way denies my right

to pursue any area of research or the right to observe proper standards of scientific reporting.

Principle 15. Scientific misconduct: "Misconduct is defined as the fabrication or falsification of data, plagiarism, misrepresentation, or other practices that seriously deviate from those that are commonly accepted within the scientific community for proposing, conducting, analyzing, or reporting research. It does not include unintentional errors or honest differences in interpretation of data." This study abided fully and strictly to the criteria of a respectful scientific conduct.

Principle 16. Personal misconduct. This issue involves the moral standards of behaviour a researcher should have when conducting research involving children. This includes the pledged responsibility not to induce discomfort or harm of any kind to any child and carefully listen and respect any child's refusal either to participate or to continue an interview. The present study attested to these standards rigorously and no complained for the procedure was expressed.

8.5 The Sample

In Greece before starting any type of research in schools a permit from the National Educational Institute has to be obtained. I submitted a proposal providing the aims, the scope and the year groups that would be involved in the project, as well as a timetable indicating teachers' and pupils' time that would be spent in data collection. The potential benefits for the school population were set out. The

permit was granted.

The schools that were asked to participate in the study were all in the wider Athens area. Since no standardized taxonomy of schools based on indicators of socioeconomic status existed in Greece at the time of data collection, the schools were selected based on unofficial information provided by school counsellors with the aim to access a wide distribution of family backgrounds. In practice, this meant that the family population of the schools chosen varied between working and middle class. The latter categorization refers to the standard of the professional qualification of parents. For example, characteristic occupations were from cleaners, brick layers and unskilled employees to doctors, lawyers and educators. This did not refer to the economic status of these families or areas.

After a number of schools were contacted, 10 were finally selected with 60 teachers being given the Rutter screening scale to complete for every pupil in their class. This involved some 1,300 children. Final data were returned for 850 children. They were defined as the original sample. 240 of these were selected to be the final sample, 120 the "clinical" group and 120 the matched "control group".

8.6 Data Collection from Teachers and Children

The data collection procedure involved 2 stages: the screening stage and the main stage. Instruments used involved 2 scales filled in by the teachers (Rutter, TRF-Achenbach), an individual interview, a whole-class sociometric nomination

of likeability, a self-reported perceived competence scale by Harter, a social cognitive measure developed by Marsh, and an information-processing bias measure by Dodge.

As described above in Principle 10 teachers in the pilot phase of the study reported too high a rate of SEBDs in their class. By re-designing the behaviour scoring procedure I had the chance to introduce to teachers in each school what constitutes "problem behaviour" in the literature, and how behaviour checklist items should be scored. Further details are given in section 8.9 The Pilot Study, below.

8.7 The Standardization of the Instruments' Translation

Some of the instruments used in the present study (namely, Achenbach's "Teachers Report Form", The Harter "Self Perceived Competence", the Marsh "Interpersonal Problem Solving Competence", and the Dodge "causal attribution and proposed response social behaviour bias") had to be translated into Greek. Care had to be taken with regard to this process as there was the risk that even slight changes in wording could classify problem behaviour into another category.

This was particularly true with Achenbach's scale with its 112 behaviour descriptions (items) some of them with very slight variations in content analysis. This involved using a first translation of English to Greek (by English language teachers), semantic analysis of translation by experienced in-service educators, back translation from Greek to English by English teachers blind to the original

English version, and content analysis of the final draft. When the reverse translation and the content analysis of the original version and the reversed one were completed, the author of the scale (Prof. Achenbach) was contacted for further comments.

The same procedure was followed for Harter's scale of Self-Perceived Competence. For the Marsh and the Dodge stories this method was not required as both measures are not item specific.

The Rutter scale had already been translated and standardised (R. Papatheofilou et al., 1989). This translation was used in the present study. Only Rutter's teacher report version of the scale had been standardized prior to the present study and applied to a Greek sample, with prevalence rates for normal and "abnormal" school children population established (Papatheofilou et al., 1989). The standardization of the translations followed the clear and demanding guidelines dictated by international scientific standards.

In detail, the Achenbach and Rutter aforementioned scales, when translated, were given (in their English version) to 15 certified English language teachers (blind to the present writer's translation) to be translated. The common version of each item between my and their translation was accounted for as the first stage translation. My translation was considered as equal to preserve the psychological meaning of the terminology used. Where needed appropriate amendments were made.

Following this, the translated scales were given to sixty (60) experienced

(at least 10 years of experience) primary teachers studying for the two-year full-time Masters in Special Education course at the University of Athens, to comment on the meaningfulness and appropriateness of the translated text for them in terms of behaviour descriptors. Once their suggestions were recorded special care was taken not to alter the meaning and behaviour phenotype in the descriptive terminology used. The amended versions were collected for the next stage.

At this point the scales were given to another 15 certified English language teachers for back-translation of the amended Greek version back to English. These teachers were blind to the original English to Greek version. With this approach control was exercised over any unwanted changes in the basic meaning of the psychological terminology of the original English versions. The back-to-back comparison revealed no distortions in behaviour descriptions from the original versions. Where the translation of a behaviour item to Greek was not unambiguous, additional wording was added for enhanced clarification.

8.8 The Overall Data Collection Scheme

As was noted in chapter 7 the research was based on a two stage data collection from the 8-12 year-old children involved. Figure 8.1 sets out the research plan based on the **time frame** in which the scales and data were gathered:

Figure 8.1. The Time sequence of Data collection.
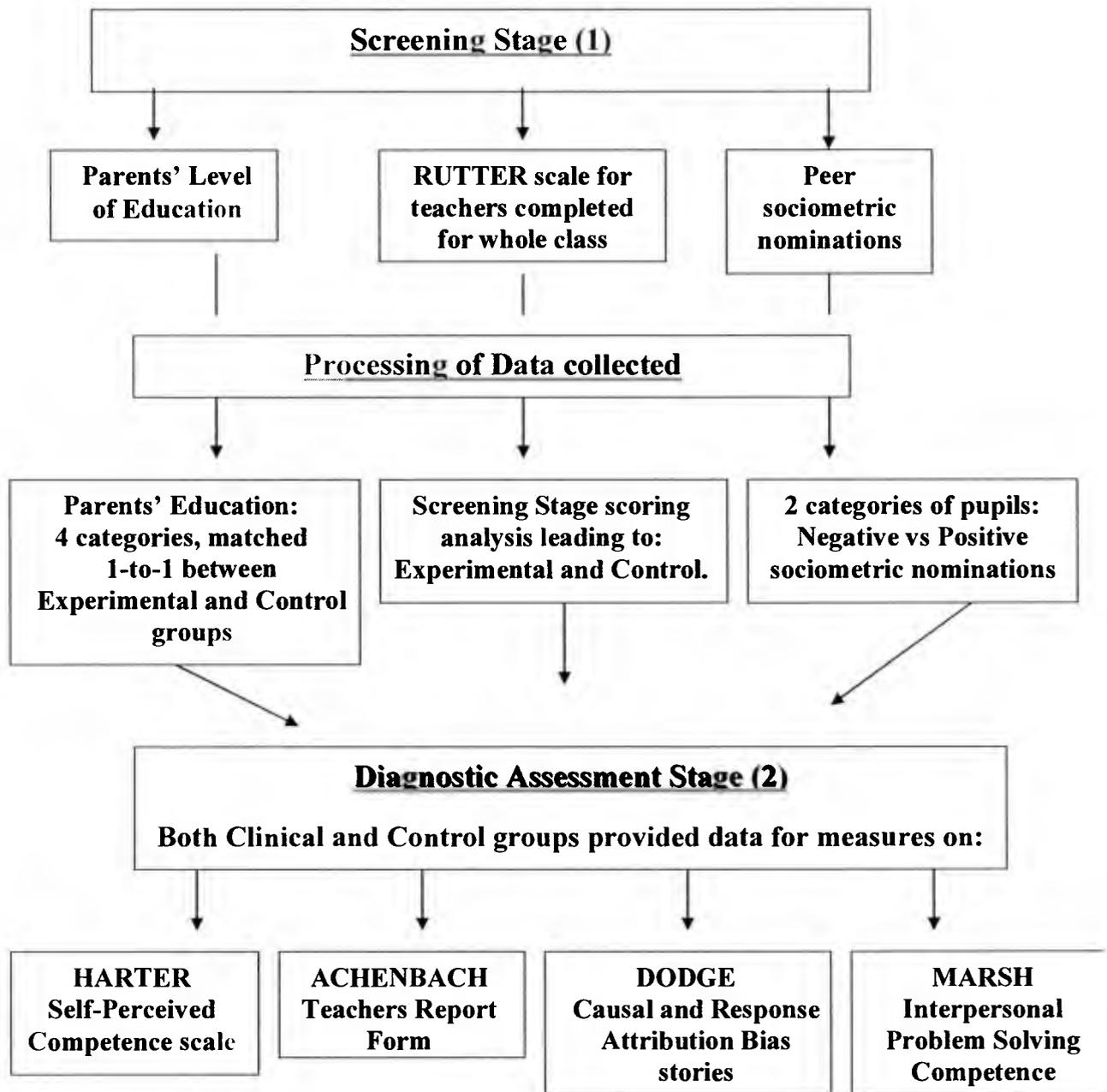
However, to consider the way the data were used and collected to establish the groups, a different scheme is required. This is set out in Figure 8.2:

Figure 8.2. Use of data for establishing experimental and control groups.

Screening Stage (1)

Parents' Level of Education

RUTTER scale: Teacher-scored for each child in class

RUTTER scores: 12 weeks test-retest reliability of cases assigned to the 2 groups completed for 10 pupils randomly selected from each class

Processing of 1st order Data collected.

Parents' Education: 4 categories matched 1-to-1 between Targets and Controls

Preliminary Analysis of Rutter, matching children on "Parents' Education", "gender", "same grade & class" and opposite spectrum of total problem score condition, helped form the Target and Control groups

Diagnostic Assessment Stage (2)

Both Clinical and Control groups provided data for measures:

Peer sociometric nominations whole class data gathering

2 categories of pupils with Negative vs Positive nominations

HARTER Self-Perceived Competence scale on 1 to 1 interviews

ACHENBACH's Teachers Report Form filled by class teacher

DODGE Causal Attribution and Proposed Response Bias stories

MARSH Interpersonal Problem Analysis

In the above plan, the methodological importance of each step is captured, as it highlights how crucial Stage 1 was for further data collection. It was at this stage that the children were screened (using the Rutter scale) and later selected, that led to the formation of the Experimental and the Control groups, further researched at the 2nd stage, i.e. "Diagnostic Assessment".

8.9 The Pilot Study for the Rutter Scale

The correct use of the Rutter scale for teachers was an imperative. For this, a pilot study was conducted 6 months prior to the main study's data collection. The aim of the pilot study was to test the whole model of collecting data using these instruments in the Greek context, as many of the instruments had not been used with a Greek population before. This hands-on experience put teachers' knowledge about screening out potentially problematic behaviour to the test. One of the very important points the pilot study helped to discern was Greek teachers' apparent unfamiliarization with scoring accurately particular descriptive items of problem behaviour on a semi-structured (Achenbach) or a structured (Rutter) scale. There was particular confusion between the grey areas, for instance, at what intensity a behaviour challenge becomes "a problem of clinical proportions". This became evident as about half the teachers (30) in the pilot study (N=65) reported behavioural problems of a "clinical" nature for about 50% of children in their class. This finding is in contrast to the international and cross-cultural prevalence rates of problems that indicate a 10-20% within each class.

Greek teachers were over-scoring problems in their class. Then, by discussing with the teachers what they perceived as a problem it became clear that they were scoring even minor nuances as "behavioural problems". This feedback suggested that an introductory presentation of 10 minutes with each teacher of what constituted behaviour problems was in order. When this change was implemented and the teachers re-completed the Rutter and then the Achenbach questionnaire, the scoring of problem cases fell within cross-culturally reported prevalence rates of 10-25%. This finding and the subsequent altered approach of the short presentation influenced the data collection of the main study by becoming standard procedure. In this manner, the pilot study added informed validity to the process of teachers' scoring of behaviour problems in the main study.

8.10 Selection of Children for Inclusion in the Main Study

In the process of selecting the children that would make up the Experimental group certain considerations applied. Firstly, the statistical design and hypothesis required a sufficient and meaningful number of cases to undertake multiple regression and other elaborate statistical analyses. This meant case numbers in excess of 100 for each group. Secondly, the pupils identified as portraying SEBDs (with the Rutter scale used as the screening instrument) needed to have a score of 9 or higher, which is the dichotomous point, as set out in the scale[8] manual. (Its structure validity and cut-off point have been tested with

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[8] For a discussion on the properties of the scale and relevant references see Chapter 5 - Method Theory,

hundreds of thousand of pupils in studies for more than 30 years now).

The RUTTER Problem Behaviour Checklist for teachers consists of 26 items loading to initially 2 and later 3 factors or broad band subcategories of problem behaviour. The checklist was administered in the present study by each teacher for all of the children in a class. The highest potential for problem scoring is 52, and the maximum set score accepted in the present study for the control group is 7.

To validate the scoring range for the children involved, teachers re-completed the Rutter checklist 12 weeks after the initial assessment for 10 randomly selected children in their class, indiscriminately of their original grouping. This repeated measure provided information for test-retest reliability. For such a length of time, acceptable reliability constitutes a measure of stability. For inclusion in the present study cases were accepted with a test-retest reliability correlation of .90 or higher.

One of the main aims of the present study was to pursue an in-depth assessment of the nature and associations of particular Emotional and Behavioural Difficulties with certain independent variables. To be able to conduct research on these lines, the experimental group had to be as "pure" as possible from "noise" variables. Therefore, children with additional problems (whether formally statemented —a minority of cases in the Greek context- or with observable

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The Rutter instrument.

neurological or motor difficulties) needed to be excluded from the target sample to ensure validity.

Initially the experimental group included 140 cases, but 15 cases were dropped immediately after the 1st stage i.e. the screening for the following reasons:

- 2 cases because their level of understanding of the questions and their performance at tasks set out for them in the clinical interview with me, was too poor to consider any answers they gave as valid,

- 3 for having mild motor skill difficulties,

- 9 because their parents refused to consent to their children's further participation in the study at a later stage (although initially accepted),

- and 1 for having a statemented language deficiency.

In addition, another 5 were dropped at a later stage when the test retest reliability, using the Rutter scale for teachers, revealed their total score was no longer within "clinical" range. All of them were cases who were just at the cutoff point of 9 and a minor change in scoring by their teacher (change from a 2 to 1 in one item only was enough to exclude them) meant that they were no longer acceptable and had to be excluded from the sample.

The experimental group was finally made up of 120 children from Years 3-6 inclusive, aged 8-12 years-old. Years 1 and 2 were deliberately excluded in accordance with the Literature (see Methodology chapter) which suggests that

SEBDs in Year 1 of primary schooling are highly associated with adaptation problems to a new school environment. Usually, reported problems in Year 1 are greatly diminished in the following years. In addition, the version of the Harter questionnaire used in the present study was a verbal and non-pictorial one (as the pictorial version provided by Harter is aimed at preschool and up to Year 2) for children of 8 years and older. This led to the exclusion of Year 2 children from the potential sample to protect the validity of the children's answers.

The reason for this decision was because all the other instruments used in the data collection at the 2nd stage i.e. the diagnostic, were designed for children between the ages of 8-12. It would weaken the internal consistency of the model and subsequently of the data collected if one version of the measures was mainly aimed at younger children, when another version was used with older children. The version for older children has an 8 years-old benchmark.

Once the 120 experimental cases were finalised, an exactly equal number of children in a control group needed to be assigned closely matched on the following variables:

1. Same Year **and** class,

2. Same Sex,

3. Lowest Scoring on the Rutter -screening for problems- instrument,

4. Same level of Parental Education.

The above variables were introduced in a stepwise selection model of

children to form the Control group. Firstly, a targeted child was matched with a control on the variables of Same Year/Class followed by Same Sex. Once these 2 preliminary variables were conditionally applied, children in the same class as the "problem" ones identified, were selected in the next stage starting from those with the closest score to 0 (i.e. Lowest score = no problems) on the Rutter scale. Once this 3rd condition was satisfied, the next and final step in the filtering of the selection of the children was to assign a 1 to 1 matching on Parents Level of Education. The intention for the introduction of this variable was to control for unaccounted differences between the experimental group children and their assigned control group children, in the scoring of main variables in the study, which could be attributed to a mismatch in the educational background of the family.

The data regarding **parents' level of education** were collected using school records and where further information was needed parents were contacted. 4 groups were formed relating to the level of parental education. Where the parents had different educational levels, the higher of the two was taken into consideration. The groups were formed as follows:

1. = for a parent who had finished primary education only,

2. = if parents had finished secondary compulsory education (up to age 15)

3. = where parents had finished full secondary education (age 18)

4. = where parents had finished some form of tertiary or technical further education.

Following in Table 8.1 are the reported means and standard deviations **between** groups (i.e. experimental and control grroups) that clearly portray the goodness of fit and success of the matching procedure.

Table 8.1. Parents' Education between groups.

	Educational Background of parents		
	Mean	**Std Error of M**	**StD**
Experimental group	2.66	0.10	1.06
Control group	2.66	0.10	1.06

The same variable was then investigated within each group but between parents. This demonstrated similar relationships between parents' levels of education.

Table 8.2. Parents' Education Mean for experimental and control groups

T test Paired Samples		Educational Background of parents		
		Mean	**Std Error of M**	**SD**
Experimental group	**Father**	2.55	0.10	1.15
	mother	2.56	0.09	0.97
Control group	**Father**	2.71	0.10	1.09
	mother	2.56	0.09	1.00

Table 8.3. Between parents correlations for experimental and control groups.

Education of Father & Mother	Paired Samples correlations		
	N	Correlation	Significance
Experimental group	120	0.63	0.001
Control group	120	0.59	0.001

Once the 2 groups were finally formed, the data collection moved to the 2nd stage steps (see Figure 8.2 above).

The teacher of each class completed the Achenbach scale for teachers (TRF) on each of the experimental and control cases in their class.

8.11 Sociometric Data

At the same time the author of the thesis collected Sociometric data in the form of peer nominations for each child filled in individually within a whole class context. Children were asked to name 3 classmates they best liked to play or be with and 3 they would not play with at all. The analysis of the sociometric information was grouped according to the following categories of data:

- the 2 raw scores of the absolute frequencies of positive nominations and negative nominations for each child,

- the z score for positive nominations,

- the z score for <u>negative nominations</u>,

- a standardized <u>social preference score</u> = liked most frequency − liked least frequency,

- and a standardized <u>social impact</u> score = liked most frequency + liked least frequency.

From these, based on the literature, the following categories were derived:

<u>Popular</u> =score 1 in the database if → z score of social preference > 1, z for positive nominations > 0 and z for negative nominations < 0.

<u>Rejected</u> =score 1 in the database if → z score for social preference < -1, z for positive nominations < 0 and z for negative nominations > 0.

<u>Neglected</u> =score 1 in the database if → z for social impact < -1 and sociometric positive raw score = 0.

<u>Controversial</u> =score 1 in the database if → z for social impact > 1, z for positive nominations > 0 and z for negative nominations > 0.

<u>Average</u> =score 1 in the database if → z for social impact and z for social preference are between -.5 and +.5.

<u>Remaining</u> =score 1 in the database if they are not classified in any of the other groups.

Once the data were collected, scored and analysed, they were used to identify a clearly positively nominated pupil and a negatively nominated one (least liked to play or be with). This stage was important for the script manipulation in

the stories that were designed to collect information on variables of biased causal attributions and biased proposed reactions to hypothetical social situations.

8.12 The Rutter scale for Teachers: Descriptive Statistics of the 2 groups

Table 8.4 shows the means and standard deviations of the 2 groups, experimental and control on the **Rutter** scale for Teachers scorings. The 2 groups are clearly different from each other in terms of reported problems by the teacher.

Table 8.4. Rutter scores:Between groups Mean comparisons and Significance.

	N	Mean	SE Mean	SD	p (2-tailed significance of paired samples)
Experimental group	120	12.42	0.32	3.46	0.001
Control group	120	3.45	0.22	2.411	0.001

Gender Differences in the Sample

In Table 8.5 it can be seen that that boys were reported by their teacher as manifesting problem behaviour of a considerable degree, more than twice as much as girls. This is interesting, but not surprising as it supports much of the literature. It may also indicate the qualities of behaviour that tend to be reported by teachers. In most studies teachers seem to consistently report more problems or more worries regarding behaviour of children in their class associated with the

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externalizing spectrum. It seems logical since, this behaviour is more easily observed and less easily tolerated by teachers, it defies their authority, and "breaks" the laws of controllable behaviour in a classroom more directly.

Table 8.5. The experimental group representation of gender on the Rutter scale.

Experimental Group	Frequency	Percent
Boys	94	78.3
Girls	26	21.7
N Total	120	100

Despite the above assumptions, the means between boys' and girls' total problems scores on the Rutter scale did not vary significantly, although it was slightly higher for boys (see Table 8.6).

Table 8.6. Differences in the Mean & SD between boys/girls on the Rutter scale

Experimental Group	N	Mean	SD
Boys	94	12.45	3.6
Girls	26	12.31	2.96
Total	120	12.42	3.46

8.13 Data Collection from the Control and Experimental Groups

The one-to-one data collection followed in which I interviewed each child making use of the following instruments:

- The **Harter** scale for Self-Perceived Competence (self-esteem or Global Self-Worth),

- The **Dodge** hypothetical stories and

- The **Marsh** social information adequate solutions to problems, both of which made use of the sociometric information acquired previously.

Chapter 9 sets out the findings overall relating to the identified clear differences between the experimental and the control groups.

CHAPTER 9

PRELIMINARY FINDINGS OF

THE STATISTICAL ANALYSIS:

A Comparison between Experimental and Control Groups

9.1 Comparisons between Groups

9.1.1 Findings

The preliminary findings for each group of children are presented below based on each of the main variables used in the study.

9.1.2 The Achenbach scale

Table 9.1 sets out the dependent variables of psychopathology as assessed through the Achenbach scale for teachers (TRF). The Mean, Error of Mean and Standard Deviation are depicted separately for the Experimental and the Control groups. The dependent variable consists of 3 layers or levels of data comparisons explored in the model: Firstly, a single Total Problem score; secondly 3 Broad Band Syndrome groupings of problems of Internalizing, Externalizing, and Mixed nature; thirdly data reporting the Narrow Band clinical syndrome level of identified behaviour, consisting of 8 subscales.

Table 9.1 below shows that there was a highly statistically significant difference between the means for the experimental and the control groups, which was expected.

Table 9.1. Descriptive Statistics of psychopathology symptoms between Target and Control groups on the Achenbach scale for teachers (TRF).

Achenbach TRF	Experimental group			Control group			Significance p (2-tail T)
	Mean	SE Mean	SD	Mean	SE Mean	SD	
Total Probs	49.59	1.64	17.94	12.54	0.65	7.08	.001
Broad Band Syndromes							
Internalizers	10.33	.60	6.61	5.59	0.34	3.76	.001
Externalizers	18.02	1.08	11.86	2.61	0.24	2.60	.001
Mixed	21.65	0.77	8.45	4	0.39	4.32	.001
Narrow Band Syndromes							
Withdrawn	3.53	0.32	3.49	1.26	0.11	1.24	.001
Somatic	0.62	0.11	1.23	0.29	0.07	0.81	.02
Anxious/Depressed	6.57	0.39	4.26	4.1	0.27	2.99	.001
Social	5.17	0.33	3.58	0.77	0.11	1.16	.001
Thought	0.22	0.05	0.54	0.03	0.01	0.16	.001
Attention	16.26	0.59	6.47	3.21	0.34	3.72	.001
Delinquent	3.08	0.20	2.15	0.79	0.08	0.90	.001
Aggressive	14.94	0.95	10.38	1.82	0.22	2.37	.001

From Table 9.1 above, it is clear that in the Total Problem category the difference between the means of the two groups is large because of the way the sample was chosen. In essence it could not be any different since in the first

screening stage (using the Rutter) acceptance into the sample of the study was established based on the highest score of problems of children at one end of the scale (experimental group) and lowest at the other (control group).

The data also show that in the **Narrow Band syndrome subscales** all the comparisons between the means of the two groups on each of the 8 subscales yield a clear and statistically significant difference. The standard deviation reveals that the control group had a smaller distribution of scores, as compared to the experimental group who have a wider distribution. All differences were highly significant at .001.

In addition, the behaviour problems seem to load heavily on externalizing and mixed **Broad Band** subscales, whereas problems of internalization were rarely reported. This may be because of the preponderance of boys in the sample, as boys tend to have problems of Delinquency, Aggression, and Attention (hyperactive, short concentration span), and because for the teachers, these are more salient, i.e. defiant, order threatening, and control undermining behaviour. Internalizing behaviour tends to be neglected as is empirically judged not to demand immediate attention.

It is important to note here that the comparison of means of raw scores across the subscales (narrow band syndrome labels) is misleading and a direct conclusion cannot be drawn, because each subscale/category of problems has a different potential highest score; therefore there can be no alignment in the scorings based on raw arithmetic value. However, Achenbach et al., produced a

scorable graph that has each subscale's clinically problematic scoring aligned horizontally at the same percentile. This is achieved by "normalizing" the scorings according to proprietary formula that will be discussed in more detail in the in-depth statistical analysis of the data.

9.1.3 The Harter "Self-Perceived Competence Scale"

Table 9.2 below shows the comparisons between the means of the two groups on the Harter scale. The scoring on the Harter scale for each of the items ranges from 1 to 4; 1 denotes low competence and 4 high competence. A mean is produced from each child's score on items within each domain. The theoretical model underpinning the present study predicted that the target group would self-report lower mean scores of competency across all domains compared to the control group. Essentially this can be explained by assuming that children (if given the chance to be open and honest about the self) will report their concerns or diminished confidence regarding their competence in domains of self-concept based on their experience of problems with classmates. This hypothesis is supported in the preliminary analysis between the two groups as shown in Table 9.2 below. All but the Physical Competence categories were statistically different in the mean scores between the two groups, although cognitive competence only approached significance. This was expected for physical ability which is systematically reported to be independent of other domains of child functioning, skills or evaluations of the self. The target group scored 2.78 on self-worth as

opposed to 2.94 for the control group, 2.91 as opposed to 3.07 on cognitive competence (approached significance), and 2.90 as opposed to 3.15 (the highest difference) on social competence. Physical competence scores showed no significant differences.

Table 9.2. Descriptive Statistics between the 2 groups on the Harter "Self-perceived competence" scale and its subscale scorings.

Harter subscales	Experimental group			Control group			p
	Mean	SE Mean	SD	Mean	SE Mean	SD	
Global Self-worth	2.78	.06	.64	2.94	.048	.53	0.03
Cognitive Competence	2.91	.06	.67	3.07	.055	.60	0.057
Social Competence	2.90	.06	.68	3.15	.049	.53	0.001
Physical Competence	2.82	.05	.58	2.87	.056	.60	0.53

What we can conclude from Table 9.2, is that if we accept that statistically the mean and median point of the possible scoring is 2.50 (highest score 4, lowest 1), both groups have means higher than this, but the control group have significantly and consistently higher scores reaching or above 3 (i.e. positive perceived competence most of the times) on the 3 categories of cognitive competence (Mean 3.07, Standard Deviation .60), social competence (Mean 3.17, SD .53), and self-esteem/self-worth (Mean 2.94, SD .53). In addition, the difference between the means is significantly higher for the control group, especially in self-perceived social competence (which is mostly associated with

social performance and acceptance) where the difference between the two groups is significant at .001. Analysis of the standard deviation between the groups suggests that the control group are a more homogeneous group in their self-reflection of competence across all categories than are the experimental group.

9.1.4 The Dodge Stories

Children tend to present idealised responses to questions being concerned about "teacher approval" or avoiding possible punishment due to "inappropriate" reactions to social situations e.g. physical retaliation. In order to allow for more honest responses to be elicited to the Dodge stories I made very clear to each child that however they responded the information was confidential, that their teacher would not be informed about their answers, that there was no punishment pending, and no "right or wrong" answers to any of the questions.

The manipulation of the conditions in the stories and the subsequent scoring in relation to their explanation or proposed action is presented below in Table 9.3.

Table 9.3. Dodge stories manipulated conditions and scoring criteria.

CONDITION	SCORING	EXPLANATION
For Causal Attributions	2	"If other child did it on purpose (hostile intent)"
	1	"If it happened by accident"
	0	"If other child was doing something benevolent*
For proposed response	3	If they would retaliate aggressively
	2	If they would go to authority to have other child punished
	1	If they say they would they would do nothing, or reason with the other and ask how had this happened, or they'd call parents for new set of clothes
	0	If they would thank the other child**

* = this was not reported by any of the children which in effect makes it a dichotomous variable.

** = this was not reported by any of the children which in effect makes it a dichotomous variable.

Table 9.4 following, provides details of the responses to the stories model:

Table 9.4. Statistics between the 2 groups on the Dodge stories controlled for same interviewee/protagonist gender, age, attending class.

	Positive Instigator				Negative Instigator			
	cause		response		cause		response	
	Exp	Contr	Exp	Contr	Exp	contr	Exp	contr
Negative Outcome, 2 Stories averaged	M=1.13 SD=.27	M=1.13 SD=.26	M=1.29 SD=.52	M=1.18 SD=0.41	M=1.26 SD=.34	M=1.26 SD=.34	M=1.47 SD=.59	M=1.35 SD=.54
SIGNIFICANCE	p=0.90		p=0.076		p=0.96		p=0.10	
Ambiguous outcome, 2 Stories averaged	M=1.41 SD=.49	M=1.22 SD=.52	M=1.27 SD=.51	M=1.01 SD=.35	M=1.60 SD=.44	M=1.47 SD=.44	M=1.45 SD=.69	M=1.19 SD=.49
SIGNIFICANCE	p=0.004		p=0.001		p=0.03		p=0.001	

Table 9.4 illustrates a point first made by Dodge and his colleagues. The data of the present study regarding children's social information-processing presented above suggests that when a negative outcome story is introduced to the interviewed child (regardless of the positive or negative social status of the suggested peer-instigator) the difference both in causal attributions of intent and proposed responses to this provocation is not significant between the two research groups of children, i.e. experimental and control groups. Hence, both groups know how to detect or attribute causal intentions in an instigator equally well, and highly agree on the proposed responses to such instigation regardless of the identified label of the instigator, as suggested above by the identical means in causal attribution regarding a positive (M=1.13) and a negative instigator (M=1.26), with probabilities well in the 0.90s. The same tendency is apparent when proposed responses are analysed unaffected by the status of the instigator but on a smaller scale, M=1.29 for the target/experimental group and M=1.18 for the control with a positive instigator, (p= 0.76) and a mean of M=1.47 and M=1.35 with a significance of p= 0.10 with a negative instigator.

When the condition involves stories of ambiguous outcome then the analysis of the data shows differences between the 2 groups that are statistically significant across all conditions, i.e. status of the peer-instigator as well as in causal attributions and proposed responses. The causal attributions of intent with a positive status actor have means of M= 1.41 for the target group and M= 1.22 for the control with a high significance of p= 0.004, whereas with a negative status

actor the figures are M= 1.60 and M= 1.47 respectively with a p= 0.03. Under the same story condition the proposed responses to these social situations have a mean of M= 1.27 for the target group and M= 1.01 for the control with p= 0.001 when the actor was of positive status, and a mean of M= 1.45 and M= 1.19 for the respective groups with p= 0.001 when the actor was of negative status.

This clearly suggests a bias from the experimental group of children, both in relation to causal attributions of intent and proposed responses, reiterating the findings of Dodge in his studies in the 1980s and 1990s.

In addition, the data presented above also suggests that the sociometric status of the instigator did play a role in affecting responses. Means between the groups are consistently and statistically significantly elevated under the condition where the act was instigated by a child carrying a negative social status valence, both at the point of attributing higher hostile intent in their causal analysis as suggested by M= 1.60 for the target and M= 1.47 for the control groups, and at the point of proposed higher aggressive response to the actions as seen of that peer, as suggested by M= 1.45 for the target and M= 1.19 for the control groups. The higher the scoring the more hostile/aggressive the indication is as depicted in the scoring key of Table 9.3.

Summary of Table 9.4: A suggested preliminary explanation of the data presented above is that, in the stories with a clearly negative outcome a non significant picture is consistently presented in intent attribution and suggested response, irrespective of the grouping of children and the status of the child

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instigator. In contrast, when the stories are manipulated to have an ambiguous outcome the statistically significant difference between the answers of the two groups is consistent across all variables accounted for.

9.1.5 The Marsh stories

In the Marsh stories the scoring had a range of 0-2 (see p. 203) for the Problem Definition, was based on the average between the 2 stories with no upper limit for Alternative Thinking and Consequential Thinking, and had a range of 0-4 for Solution Adequacy. Hence, the questions of the two stories were scorable in the format of two with a closed answer format and two with an open ended one. Table 9.6 reports the findings:

Table 9.6. Measures of association between the two groups on the Marsh variables.

Variables	Grouping		significance
	Experimental group	Control group	
Problem Definition	M=1.35 SD=.60	M=1.45 SD=.52	p=0.15
Alternative Thinking	M=2.98 SD=.93	M=3.11 SD=.83	p=0.26
Consequential Thinking	M=5.75 SD=3.04	M=5.70 SD=2.67	p=0.88
Solution Adequacy	M=6.08 SD=2.70	M=6.22 SD=2.81	p=0.68

Table 9.6 shows that children were able to define the problem they were faced with in a social situation better if they were in the control group but not significantly so as is suggested by the means M= 1.35 for the target and M=1.45 for the control group (p= 0.15). Likewise, the control group had a higher number of generated alternative thinking responses with regards to how to behave when faced with a social behaviour "puzzle" or dilemma, but not significantly so (p= 0.26, M=2.98 for target, M= 3.11 for control). With regards to the possible consequences to each of the proposed alternative thinking responses, there was no difference between the two groups (M=5.75 for the target, M=5.70 for the control group, p= 0.88). This means that both groups were able to follow through their thinking with adequate exploration of the entailed possible consequences. This issue eliminates the possibility of a processing handicap in the experimental group.

Finally, the solution adequacy factor did not show any significant difference between the two groups (M= 6.08 target, M= 6.22 control, p=0.68), which means both can separate between self-centred and altruistic decisions to solve a social problem they are faced with.

If we compare the findings as presented in table 9.6, where no difference was shown between the two groups on the measure of Interpersonal Problem Analytical skills, and Table 9.4 which also showed no group difference on the causal attribution and proposed response biases for the negative outcome stories, with the data for the ambiguous outcome stories in the same Table where there is a significant difference and, consequently, a bias identified on the part of the target group, then an interesting finding emerges. We are able to conclude that in the

ambiguous intent social situations with a negative outcome for a pupil, the "raw" mental processing skills that both groups seem to possess equivalently fades to the background. In contrast, the social processing line and generation of responses seem to follow a more "emotional" or erratic path, possibly linked to the status of the instigator and memory retrieval of other social cues, the popularity of a given pupil, the adequate number of other malicious intent behaviours of the instigator on other children, or even a generalised notion that the child interviewed might have about him/her attracting very often or "always" hostile and malicious intent actions by others (a borderline "paranoid" view) as retrieved from past experiences. These issues will be pursued in the in-depth analysis in the following chapters.

9.2 Conclusion

From the data in Table 9.6 above, it is clear that the small differences between the means of the two groups were not statistically significant. However, there was a trend towards (3/4 variables) the control group having a higher Mean score on the first 3 variables but not on the 4th which was a qualitative measure, i.e. "what solution is the best to choose", a question that carried a moral dimension. In addition, in all but the last measure the Standard Deviation was smaller in the control group, indicating more consistency of response than for the experimental group.

The non significant difference between the two groups in the Marsh

measure, as compared to the significant difference in the Dodge ambiguous stories, was expected in accordance with Marsh's conclusions. This was because we would expect that, in a social analysis of events with low emotional involvement, children in making their value judgments would show no difference in finding solutions to problems when detached from the situation. This finding links well with the point made earlier in the critical analysis of the Dodge data where the two groups showed a similar ability to analyze social events in social situations of low discrepancy. Therefore, the experimental group had no initial handicap when compared with their average classmates. This makes the effect of the significant difference between the groups in Dodge's variables of high discrepancy, i.e. unclear intention, ambiguous outcome and positive instigator, more powerful.

In the fine-grain analysis in the next chapter, the predictive validity of the proposed model will be tested; it was expected that of the experimental group children (those screened as portraying SEBDs) low self-esteem would be characteristic of all but those who have a combination of:

a) High scores on aggressive problem behaviour but are relatively normal on social status rankings (i.e. as defined by not high or the highest scores on negative likeability). This is related to a body of research proposing that there is a complex situation with some children clearly portraying SEBDs externalizing-aggressive spectrum behaviour, who are also instrumental in resolving situations

to their benefit. These children seem to be "protected" from a negative self-worth appraisal possibly instigated by self-reflection, because of a cognitive bias to judge success by the positive outcomes of clashes with classmates, even if these are achieved by using antisocial or bullying tactics (i.e. at the expense of others). In addition, there is strong indication that these children are considered by many peers as "likeable" or "role models" for their assertive, "winning" outcomes in social situations. All this will be further, elaborately explored in the next chapter which provides an in-depth analysis of the model and the hypotheses of the present study.

b) In contrast, children described as non aggressive-rejected (i.e. as defined by the high frequency of negative social status in the reports of their classmates) seem to be better matched to the assessed "actual" social status, as defined by professionals and teachers. In comparison, aggressive-rejected children do not differ from average status children in self-reported loneliness. They report at least average levels of self-esteem and are unlikely to refer themselves for help with their peer relationships (Asher et al., 1991; Boivin et al., 1989a; 1989b; Parkhurst & Asher, 1992). Furthermore, aggressive-rejected children rate themselves higher than even average status children on more self-concept dimensions than do non-aggressive-rejected children, who are also defined as high on passive withdrawal and shyness, (Boivin et al., 1989; Hymel et al., 1993; Paterson et al., 1990). This pattern seems to suggest that aggressive-rejected children seem to be either a) unaware of the extent to which they are rated as rejected by their peers (whereas

non aggressive-rejected children seem to be quite aware) or b) in denial about their rejected status by peers. In either case, this lack of negative social awareness may make them less likely to attempt to rectify their behaviour, thus leading to repetition of the same negative patterns of behaviour which in turn become a more rooted repertory of selective actions or faster accessible behaviour. The latter, may also contribute to their poor improvement after social skills training, as they are not motivated towards change. Other studies have also suggested that aggressive-rejected children overestimate their social competence whereas nonaggressive-rejected ones do not (Boivin et al., 1991; 1989; Hymel et al., 1993).

CHAPTER 10

OVERVIEW OF THE STATISTICAL ANALYSIS

AND CORRELATIONS

10.1 Introduction to the analysis

This and chapters 11, 12, 13 and 14 explore the factorial design of the proposed simultaneous variables model for school-based screening and identification of children with SEBDs in Greek primary schools and also explore the phenotypical resonance of particular social processing and behavioural response biases in groups of experimental children. The statistical procedures will specifically attempt to answer research question 5 (Does a multivariate model of the independent variables account for a larger percentage of variance of the dependent "behaviour problem" variables than a univariate model derived from the independent variables alone?), question 6 (Is any preponderant effect linked to a global index of problems i.e. total problem score, or to a particular or cluster of behaviour problem subcategories?), and question 8 (do different social processing and behaviour response pupil group types exist? What's the relationship between group type and problem behaviour profile type in the formation of a distinct social acting repertoire?).

Question 5 is investigated across the different analysis methods used in the study. Exploration of research questions 1, 2, 3 and 4 identified which previously studied independent variables best can account separately for some of the variance of each dependent variable. The simultaneous independent variables model of Question 5 was run at first against the dependent variable Total Problem score on the Achenbach TRF scale for each of the 240 children in the sample. Following, dimensionally different sets of dependent variables were tested, i.e. variables that form Achenbach's broad band classification of problems (i.e. Internalizing, Externalizing, and Mixed -not clearly loading either to Internalizing or Externalizing- problems subscales) and variables that fall under the narrow band classification of problem behaviour profiles (i.e. Withdrawn, Somatic complaints, Anxious/Depressed, Social problems, Thought problems, Attention problems, Delinquent, and Aggressive behaviour).

Discriminant analysis was also used to provide support for the prediction of group membership, exploring separately the independent variables of Dodge's Social Information Causal Processing and Response Biases (SIPRB), the Harter self-esteem dimension and wider Self-Perceived Competence (SPC), the Marsh Interpersonal Problem Solving Competence (IPSC) based on already acquired or lack of social-information skills, and the Achenbach Teachers Report Form (TRF) broad-band and narrow-band groupings of problems.

With this approach to analysis particular techniques were instrumental in

providing a clearer and multileveled picture of the investigated variables and model. Thus, Factor analysis was used to identify which of the independent variables were linked together in separable factors. Factor analysis was used instead of Principal Components Analysis as only the first can estimate the underlying factors (Field, 2005, p.631) *"...and it relies on various assumptions for these estimates to be accurate. Principal components analysis is concerned only with establishing which linear components exist within the data and how a particular variable might contribute to that component."* By using factor analysis I accepted that the analysis was exploratory although ultimately aiming for confirmation of the predictor factors used (i.e. Harter, Dodge, Marsh) and their loading variables. Factor analysis tells us more about the particular nature of the variables, what separates them and what factors seem to draw them together.

Cluster analysis was used to consider what the variables tell us about the way that the children were grouped and what separates them and how. The intention was to use this technique to identify the differences between the two predetermined groups, i.e. experimental/target and control, by classifying the cases into the groups. This analysis can reveal the characteristics of the groups of children in experimental and control groups beyond those used initially to define those groups.

10.2 Correlational Exploratory Analysis

Prior to the analysis discussed above, a Correlational analysis between each of the dependent variables against the independent variables of the 3 factors, i.e. Harter self-perceived competence (SPC) subscales, Dodge (SIPRB) and Marsh interpersonal problem solving competence (IPSC), was in order. The aim was to identify potential correlating variables between independent and dependent variables that may reveal associations that may be of interest in the analyses to be undertaken. This information is presented below in Table 10.1 for the whole sample and then separately for the experimental group and the control group.

Pearson's correlation is a parametric statistic used only if the data are normally distributed. Pearson's coefficient requires that data are at the interval level for to it to be an accurate measure of the linear relationship between two variables (Field, 2005; Kinnear & Gray, 2004). The present study had a fairly normal distribution with some interval data. Pearson's correlation is a robust statistic that can cope with a range of measures. Therefore, it was chosen for the analysis against Kendall's tau and Spearman's rho.

Table 10.1. Pearson's correlations between each Dependent variable and Independent variables for the whole sample, experimental and control groups.

PEARSON'S		TOT	INT	EXT	MIX	WITHD (Int)	SOM (Int)	ANX/DEP (Int)	SOC (Mix)	THT (Mix)	ATT (Mix)	DELNQ (Ext)	AGG (Ext)
H-cognitive	WHOLE	-0.14*			-0.17**						-0.18**		
	E	-	-	-	-	-	-	-	-	-	-	-	-
	C		0.18[a]		-0.19*			0.19*			-0.25**		
H-social	WHOLE	-0.17**			-0.25**		-0.13*		-0.26**		-0.22**		
	E								-0.24**				
	C				-0.20*						-0.23*		
H-physical	WHOLE								-0.15*				
	E								-0.24**				
	C			0.19*									
H-self-esteem	WHOLE	-0.14*		-0.16*	-0.16*				-0.18**		-0.13*	-0.14*	-0.16'
	E								-0.21*				
	C	-	-	-	-	-	-	-	-	-	-	-	-
1-D Cause, Neg Out, Pos Inst	WHOLE	-	-	-	-	-	-	-	-	-	-	-	-
	E	-0.18*			-0.19*				-0.18[a]			-0.19*	
	C	-	-	-	-	-	-	-	-	-	-	-	-
3-D Cause, Neg Out, Neg Inst	WHOLE					-0.13*	-0.13*						
	E					-0.18[a]	-0.21*						
	C	-	-	-	-	-	-	-	-	-	-	-	-
4-D Resp, Neg Out, Neg Inst	WHOLE						-0.13*						0.13*
	E						-0.23*						
	C								0.20*				
5-D Cause, Amb Out, Pos Inst	WHOLE	0.18**		0.18**	0.16*				0.13*		0.16*	0.14*	0.18**
	E	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	-	-	-	-	-	-	-	-	-	-	-
6-D Resp, Amb Out, Pos Inst	WHOLE	0.26**		0.27**	0.25**				0.21**		0.24**	0.21**	0.27**
	E					-0.23*							
	C	0.18[a]			0.18*	0.24**			0.19*			0.20	
8-D Resp, Amb Out, Neg Inst	WHOLE	0.15*		0.19**	0.14*				0.13*		0.13*	0.13[a]	0.21**
	E					-0.20*							
	C								0.18*				
M-Problem Definition	WHOLE	-0.14*			-0.21**	-0.13*			-0.15*		-0.21**	-0.21**	
	E				-0.23*						-0.25**		
	C				-0.21*						-0.20*		
M-Alternative Thinking	WHOLE				-0.13*						-0.14*	-0.14*	
	E	-	-	-	-	-	-	-	-	-	-	-	-
	C	-	-	-	-	-	-	-	-	-	-	-	-
M-Solution Adequacy	WHOLE							-0.15*					
	E							-0.18[a]					
	C	-	-	-	-	-	-	-	-	-	-	-	-

** Correlation is significant at the .01 level (2-tailed).   a = approaching significance

* Correlation is significant at the .05 level (2-tailed).

From the table above we can draw some conclusions. Firstly, all the associations are of a modest magnitude (in the 0.20s) or weak. However, the directionality of the associations is of greater importance as it reveals some important links between some independent and dependent variables and some repeatedly appearing associations with some of the variables. The analyses allowed for a detailed examination of relationships between the variables, particular independent variables and broad-band problem categories.

10.3 The Analysis and Suggested Meaning of Table 10.1.

In the whole sample the **Total Problems** dependent variable correlated positively with 3 out of 4 variables of Dodge's SIPRB with an ambiguous outcome story. This means that a high score of a child in the Total Problems variable showed an association with a high score on Dodge's Causal Attribution to Ambiguous outcome story with a Positive instigator (5-DCAOPI), Response to an Ambiguous outcome story with a Positive instigator (6-DRAOPI), and Response to an Ambiguous outcome story with a Negative instigator (8-DRAONI). These associations suggested hostile bias in causal attributions and proposed responses for the whole sample and not for the experimental group as was proposed in the hypothesis. In addition, the correlation was highest under the condition of a positive instigator in the story.

There was also a negative association with 3 out of 4 of Harter's SPC subscales (with the exception of physical competence) and Marsh's IPSC Problem Definition variable, but only in the whole sample. Lower scores in these four (4) variables suggested less competent children; hence the negative correlation with higher scores on total problems.

No significant correlations were found for the **Internalizing** problems. This will be explored later in the analysis.

Externalizing problem scores were associated positively with Causal attribution and Response bias in an ambiguous story with a positive instigator, and Response with a negative instigator for the Dodge variables. The higher the score of externalizing problems, the higher the bias in responses even in an ambiguous situation, but just in the whole sample.

For the same variable there was a modest negative association with Harter's self-esteem scores for the whole sample; thus, the higher the self-esteem, the lower the externalizing problems and vice versa. In addition, a small positive association existed with Harter's Physical competence for the control group, suggesting that higher externalizing problem scores coincided with more physical competence.

The **Mixed problems** variable correlated positively with Causal attribution and Proposed response with a positive instigator of the Dodge Ambiguous story variables in the whole sample, as well as with Response with a positive instigator in the Control group. High scores on Mixed type of problems were linked with

higher hostile bias in thinking and responding in all the children, but also in responding in the control group.

Mixed problems also correlated negatively with Harter's Cognitive and Social competences (the strongest correlation, -0.25) and Self-esteem measures for the whole sample, as well as with cognitive and social competence in the control group. It appears that when cognitive and social competence were greater, Mixed problems scores dropped in the control group but also for all of the children.

In addition, the Mixed problem variable correlated negatively with the Marsh Problem definition and Alternative thinking in the whole sample, and also with Problem definition in both the experimental and control groups. This suggested that when mixed problems had a high score, all children were not good at defining the social interaction problem they were faced with.

The narrow-band dimension analysis begins with an exploration of the correlations between the 3 syndrome scale variables (i.e., Withdrawn, Somatic complaints, and Anxious/depressed) loading to the internalizing behaviour problem spectrum.

The **Withdrawn** behaviour scores presented a negative correlation with the Dodge Causal attribution and Response variables in an ambiguous story with a positive (-0.23) and a negative instigator (-0.20) in the experimental group. This suggested that fewer problems of withdrawal are associated with more hostile bias,

or higher scores on withdrawal are linked with less hostile bias in the experimental group, irrespective of the status of the instigator. This finding is interesting and will be discussed in the summary at the end of this chapter in comparison with the opposite tendency in children in externalizing spectrum problems.

The **Somatic complaints** syndrome variable showed a modest negative correlation with the Causal attribution (-0.21) and the Response (-0.23) variables of the Dodge measures in a negative outcome story with a negative instigator in the experimental group. This suggested that the more somatic problems the experimental group children had, the less hostile bias they attributed to other peers, even in a clearly negative outcome story with a clearly negative social status instigator. It may be that a number of experimental group children went to great lengths in order not to engage in hostile bias processing or responding.

For the **Anxious/Depressed** problems variable there was a positive association with Harter's Cognitive competence variable in the Control group (0.19) and a negative association with Marsh's Solution Adequacy (-0.15) but only for the whole sample. These findings suggested that Control group children with more Anxious/depressed scores showed less cognitive competence (which is to be logically expected), and whole sample children with more anxious/depressed scores showed less empathy to resolve a social problem with a moral dilemma. The latter may indicated a lack of moral reasoning and a more egotistic perspective under pressure.

The 3 following syndrome scale variables (i.e., Social, Thought, and Attention problems) are problems of mixed nature typology; thus, their items loaded clearly neither to the internalizing nor to the externalizing spectrum of problems:

The **Social Problems** variable correlated negatively in the experimental group of children with Harter's Social (-0.24) and Physical competences (-0.24), and Self-esteem (-0.21). This finding suggests that as social problem scores increased in the experimental group, Social and Physical competences and Self-esteem scores dropped.

In addition, as social problem scores became higher, so did the tendency to respond with a hostile bias in the control group. There was also a negative correlation for all the children with the Marsh Problem Definition (-0.15) variable, suggesting pupils were less able to assess the nature of a social problem they were faced with.

The **Thought problems** variable showed no associations whatsoever.

For the **Attention problems** variable there was a whole sample positive correlation with 3 out of 4 Dodge Ambiguous outcome story variables, i.e. Causal attribution and Response variables with a positive instigator (0.16 and 0.24 respectively) and Response variable with a negative instigator (0.13). This suggests that the higher children's attention problem scores were, the higher their tendency to hostile bias, even in an ambiguous outcome story.

A negative correlation for all the children existed with the Marsh Problem Definition and Alternative Thinking variables (-0.21 and -0.14 respectively), suggesting that more attention problems were related to less skills to define a problem and think of a number of alternative reactions to it. The latter may affect the possibility of running into more problems when the number of possible reactions to a situation is systematically poor.

A negative association was also found with Problem definition (-0.25) in the experimental group, further highlighting the latter point.

Another negative correlation was found for the control group of children with Harter's Cognitive (-0.25) and Social competence (-0.23) variables, suggesting that lower levels of cognitive and social skills are linked with more attention problems even among normal children.

Following are the relationships with Externalizing problem variables, i.e. Delinquent and Aggressive behaviours:

The **Delinquent** behaviour variable was associated positively in all the children with Dodge's Causal attribution (0.14) and Response (0.21) variables in an ambiguous outcome story with a positive instigator only. This suggests that children with high scores on Delinquency tend to process and respond to ambiguous social situations with hostile bias, even under the condition of a positive instigator. The latter finding proposes a difference in the attitude of

children prone to externalizing problems, as is also manifested with the Aggressive problems group, in disregarding conditional cues (i.e. ignoring story differentiation and status of instigator) and responding with hostility and elevated aggression regardless.

In addition, there was a negative correlation with Marsh Problem definition (-0.21) and Alternative thinking (-0.14) for the whole sample, suggesting that high scores on delinquency are linked with less skills in defining a problem and thinking alternatively about it. The association between delinquency and the Harter Self-esteem variable was also negative.

The **Aggressive** behaviour variable correlated positively for all the children with the Dodge Causal attribution (0.18) and Response (0.27) variables in an ambiguous outcome story with a positive instigator in the same manner and the same suggested connotations as mentioned above for the Delinquency problems.

In addition, higher aggressive scores were linked with lower self-esteem scores for all children. Overall this suggests that externalizing spectrum problem children may think about a social situation and act in a hostile/aggressive manner irrespective of the outcome of a situation and the status of the instigator. This may indicate a biased "wired" processing system.

10.4 Overview

The correlations of the Dodge variables with the Psychopathology variables on Achenbach's TRF reveal that heightened Externalizing problems (i.e. the variables Delinquent and Aggressive behaviour) are undifferentiated between the 2 groups. Similarly, scores on Dodge's ambiguous outcome stories variables (positive correlation) suggest that children with higher SEBDs on these 2 syndrome subscales have higher biases towards attributing hostile intent and are more likely to respond aggressively even under the least "threatening" or hostile conditions (ambiguous story, positive instigator) as if they are "unaware" of these conditions.

At the same time, these syndrome variables correlate negatively with Harter's Self-Esteem variables for the whole sample. This may further suggest that the experimental group children do not feel or do not want to self-report lower scores on social competence (as these scores are absent from the intecorrelations) than the control group children, despite their obvious and systematic problems in social interactions with classmates.

Also was shown in Table 10.1 that children with Withdrawn behaviour tend to refrain from attributing negative intent to the instigator and would also avoid retaliating. This means that the higher these types of problems (withdrawal) with some experimental children, the less hostile they tend to think and act. This suggests a qualitative difference to the externalizing problem spectrum children.

For mixed problems the picture is more complex. The 2 groups showed different patterns on the Harter variables of competence with the experimental group having clear negative associations with high problem scores. At the same time, clear positive associations with Dodge ambiguous story variables were shared across in all children. The Marsh variables showed a negative association for the experimental group only in attention problems with a low score in defining the problem.

However, we need to reiterate that all of the above suggestions that were based on the correlational data of Table 10.1 should be interpreted with caution, since they are moderate, apart from the within test variables.

To conclude this chapter a table is presented with all the intercorrelations between the independent variables entered in the study's analysis for the whole sample. This is shown below in Table 10.5:

Table 10.5: Intercorrelations between all independent variables in the study and total problems on TRF

PEARSON CORRELATION	Harter cognitive compete nce	Harter social compete nce	Harter physical compete nce	Harter general self-esteem	Dodge cause, neg. out posit. act.	Dodge Resp. neg. out Posit. Act.	Dodge cause Neg. out. neg. act.	Dodge Resp. neg. out. neg. act.	Dodge cause amb. Out. posit. Act.	Dodge resp. amb. O posit. Act.	Dodge cause amb. Out. neg. actor	Dodge resp. amb. Out. neg. actor	Marsh: Prob. Defin.	Marsh: Altern. thinking	Mar: Con think
Harter cognitive competence															
Harter social competence	.435**														
Harter physical competence	.457**	.429**													
Harter general self-esteem	.438**	.365**	.367**												
Dodge cause, neg. outcome, posit. actor	-.142*	-.024	-.003	-.013											
Dodge Resp. neg. out Posit. Actor	-.093	.019	.007	-.006	.554**										
Dodge cause Neg. out., neg. actor	-.084	-.074	-.034	.000	.397**	.229**									
Dodge Resp. neg. out neg. actor	-.051	.007	.044	-.055	.286**	.579**	.482**								
Dodge cause, amb. Outc., posit. actor	-.031	.049	.029	.077	.305**	.240**	.223**	.223**							
Dodge resp. amb. Out.-posit. actor	.061	.051	.066	.050	.131*	.299**	.123*	.213**	.504**						
Dodge cause amb. Out., neg. actor	-.088	-.042	.020	-.054	.218**	.240**	.288**	.261**	.488**	.264**					
Dodge resp. amb. Out., neg. actor	-.032	-.094	.021	-.054	.278**	.432**	.309**	.479**	.257**	.427**	.461**				
Marsh: Problem definition	.078	.107*	.063	-.041	.044	-.018	.029	-.010	.007	.013	-.045	-.054			
Marsh: Alternative thinking	.043	.071	.050	.022	-.080	-.123*	-.017	-.002	-.078	-.014	-.166**	-.129*	.194**		
Marsh: Consequential Thinking	.007	-.043	.004	.030	-.045	-.100	-.022	-.018	-.013	.078	-.070	-.082	.180**	.798**	
Marsh: Solution adequacy	.086	.026	.024	-.100	-.104*	-.126*	-.082	-.083	-.047	-.067	-.028	-.017	.091	-.069	-.0

* Correlation is significant at the 0.05 level (1-tailed)
** Correlation is significant at the 0.01 level (1-tailed)

From the table above it is evident that the multicollinearity threat is checked and cleared as there are no predictor variables that correlate too highly (r > 0.9) with each other.

CHAPTER 11

MULTIPLE REGRESSION ANALYSIS

11.1 The theory behind multiple regression

Multiple regression is a group of techniques for analyzing and interpreting meaning to identify relationships between specifically related independent variables and dependent variable/s. As a system of techniques it belongs within wider multivariate approaches which also include univariate and multivariate analysis of variance and covariance, discriminant analysis and factor analysis among others (Kerlinger, 1992, p. 524). In multiple regression analysis we fit a predictive model to the data and try to test how much predictive power a number of variables termed as "independent" have on values of a "dependent" variable (Field, 2005) by also assessing their magnitude using principles of correlation and regression in a presumed linear relationship (Kerlinger, 1992). In effect, we presuppose linearity in order to conduct multiple regression. Linearity means that the data set is summarized by a straight line which (based on the data) has a particular slope (or gradient) and crosses (or intercepts) the vertical axis at a particular point. These two parameters define the term regression coefficients.

However, it needs to be pointed out that despite the fact that most people refer to regression variables as independent and dependent variables (a terminology borrowed from laboratory controlled experiments) correlational research seldom (by its nature) controls exactly the independent variables to measure the effect on a dependent variable. Instead, variables are measured simultaneously and without strict control. Therefore a more accurate label to describe the procedure would be the testing of the power of predictors (i.e. independent variables) of an outcome (i.e. dependent variable) (Field, 2005).

Multiple regression analysis is a flexible technique and not only allows the identification of the contributions of each of a number of independent variables on a dependent one, but also allows the identification of different combinations of independent variables (and the contribution of each) that predict a higher percentage of variance of a dependent variable/s should an originally proposed all variable model fail to account for adequate predictive power (Kerlinger, 1979).

There are 3 types of multiple regression: Standard multiple regression, Hierarchical regression and Stepwise (statistical) regression (Field, 2005). These three approaches to regression are distinguished by the way they treat the variables and the associated presuppositions they make of the independent variables and the subsequent possible variance overlap of the predicted outcome.

Standard multiple regression enters all the selected independent variables *simultaneously* into the regression equation with no predetermined criteria for the entering order. This method calculates the individual contribution of each of the

independent variables on the outcome after accounting for the contribution of the other independent variables to the same outcome. Thus, no absolute (r =1.00) or very high (r >.90) intercorrelations between the independent variables are expected. This is the approach most often used to test the power of an all variable model as a whole on the predicted outcome.

Hierarchical (sequential) regression enters the independent variables in an order pre-selected by the researcher based on theory and previous well founded research. The strongest cluster of variables based on previously tested research is entered first followed by the new to be tested variables. Of these the one suspected to be more influential is entered first in a stepwise mode based on importance.

Stepwise (or statistical) regression in general searches to explain the unexplained variation of the outcome variable while the first independent variable effect is accounted for. It does this by looking at the partial correlations between each independent variable and the particular dependent variables. Estimates are based on prefixed statistical criteria and have 3 applications: Forward selection, Backward selection, and Stepwise standard method (Field, 2005).

The *Forward selection* method is where the regression equation is empty and holds only the constant (b_0). The software then computes which is the best predictor variable (from the pool selected) of the outcome variable by calculating which is the predictor with the highest simple correlation with the outcome. If the predictor significantly improves the power of the model, then the variable is retained and the software then looks in the same manner for a second variable

(excluding the effect of the retained one on the other independent only) which strongly accounts for the remainder of the variance (i.e. largest semi-partial correlation with the outcome). The *Stepwise standard* method is the same as the forward method with the exception that each time a strong predictor is identified and entered in the equation, a simultaneous test of any redundant predictor is conducted so that it can be removed. The *Backward method* is the opposite of the forward as it enters all the predictors in the equation to test the model and then calculates the contribution of each one by looking at the significance value of the *t-test* for each one of them. This significance is compared against a removal criterion (an absolute number of the test statistic or a probability value of the test statistic) and if it meets it, then the predictor is removed from the model and the model is re-estimated for the remaining predictors.

The Stepwise regression method removes much of the freedom of the researcher in order to force the analysis to a statistically sound but sometimes rather crude measure (Field, 2005).

Choice of method. In the present study all the above 3 types and the 3 stepwise techniques of the method of multiple regression were explored in the preliminary investigation of the power of prediction of the independent variables (in various combinations and blocks) on each of the dependent variables. However, as mentioned earlier in the Literature review chapters, when the 3 clusters of variables (i.e. social cognitive, self-esteem/worth and psychopathology) were in

various studies investigated individually or in combinations of up to 2 to test their effect on measures of psychopathology in children, the accounted variance was significant, as expected in the design of those studies, but of limited magnitude, as it did not predict or describe very well the very wide array of problems and perplexity of cases. In addition, previous studies' findings were suggestive that the 2 aforementioned independent factors (and their numerous variables) are linked to psychopathological behaviour in children. Nevertheless, the whole (i.e. what all possible independent factors contribute substantially and significantly to SEBDs) seems to be a more complicated picture than the mere sum of its individual parts.

The present study's model proposes the use of a simultaneous multiple regression method of analysis to investigate varied combinations of particular independent variables on particular dependent variables after all model effect is taken into consideration. In addition, each independent variable is checked for effect while the others are held constant and so forth with each one of them. From this perspective forced regression (accounting for the simultaneous effect of the independent variables) is ultimately chosen to test the theory of the present thesis to the exclusion of the other 2 methods of hierarchical and stepwise regression.

11.2 Within Multiple Regression

As fitting the data to a linear equation in order to predict an outcome in all

cases deviates somewhat from the actual raw values, an important parameter for a successful modeling of data prediction is the residual. Residuals represent the difference between the score predicted by the line for participant A and the score that participant A actually got (Field, 2005). This is the distance between a person's score on a scatterplot graph and the vertical line on the regression line prediction. Since scores above the line have a positive sign and the ones below the line have a negative sign, summing them up cancels each out. Hence, they are squared. If the sum of these squared differences (residuals) is large, the line has little prognostic value and is not representative of the data. If the squared differences are small, the line represents the data well.

In multiple regression (contrary to simple regression) the regression coefficient (or particular line) is not just separate for each predictor (independent variable) and the predicted value but for every additional independent variable a coefficient is added. Thus, the outcome variable is predicted from a combination of all the variables multiplied by their respective coefficients plus a residual term. In this way, in multiple regression we are able to account for intercorrelations between the independent variables or the effect of multicollinearity (high correlation between the variables, discussed later).

Multiple regression equations rely heavily on some very important assumptions: That the sample is of an "adequate" size, that multicollinearity is very small, that there are no extreme scores (outliers), and that residuals are homogeneous in their variance. The mathematical function of forced entry

regression (simultaneous) on SPSS takes all these conditions into account while allowing for all the independent variables to be entered in the procedure in any order. The application of the multiple regression method requiring a well chosen ordering of the predictor variables will not concern us in the main analysis as they are necessary only for stepwise regression which is presented in the appendices.

In multiple regression checking these critical statistical assumptions is an important stage before we begin to interpret the data.

As mentioned above, *Multicollinearity* of independent variables should be low, which means that there should be no perfect linear relationship between two or more predictor variables. In practice this means that none of the correlations between two variables should be 1.00. Furthermore, even correlations within the .90s are considered problematic.

A *Homoscedasticity* check ensures that at each level of the independent variables, the variance of the residual terms is held constant i.e. the residuals at each level should have the same variance.

A *Linearity* check ensures that the mean values of the outcome variable for each increment of the independent variables lie along a straight line.

Outliers, linearity and homoscedasticity are checked automatically by SPSS. In addition, looking at the scatterplot of the residuals, the boxplot and the normal probability plot supports this (Field, 2005). The Mahalanobis formula can also check for outliers' distances and their effects on the model.

Overall, the regression analysis in the present study explored various approaches in its efforts to test the model proposed and help identify a meaningful regression equation that fits the data. All of the designated independent general variables/factors (i.e. Dodge social-information processing causal and response biases, Marsh interpersonal problem solving competency and Harter self-perceived competence) were tested for their simultaneous effect on each of the dependent factors of behaviour maladjustment (as measured by the Achenbach TRF scale).

On theoretical grounds all the variables in the study could be amassed into 3 groupings: Social cognitive (Marsh and Dodge), Self-esteem (Harter) and Behaviour maladjustment (Achenbach). Each of these groupings consists of more than one variable, some of which represent different levels of data (i.e. the 3 variables in Harter's scale, cognitive competence, social competence and physical competence from the 4th general self-worth) and dimensionality (i.e. the Achenbach variables of Total problems score as different from the subdivided Broad band categories scoring –Internalizing, Externalizing and Mixed problems- which are further divided into the Narrow-band syndromes scoring, 8 in total).

After the simultaneous proposed model was explored, the analysis moved from the top down first, i.e. testing the model on two different dimensions of the Achenbach, i.e. the Broad-band scoring and then the narrow-band syndrome scale scoring, to allow for a more targeted effect on particular problems.

11.3 The nature of the Variables for predicting SEBDs

11.3.1 The details of the variables included in the analysis

The predictor variables in the different analyses conducted in the present thesis belong to 3 different groupings: the Dodge Social Information-Processing and Response Biases (SIPRB) consisting of 8 variables, the Marsh Interpersonal Problem Solving Competence consisting of 4 variables, and the Harter Self-Perceived Competence consisting of 4 variables. There is one outcome variable entered each time out of a maximum of 12 (i.e., 8 behaviour profiles, 3 narrow band scales, and a total problems variable) statistically and clinically constructed by Achenbach for the Teacher Report Form (TRF), which is part of Achenbach's System of Empirically Based Assessment (ASEBA) of SEBDs in children and adolescents. The TRF has a three-dimensional application of its variables, i.e. 1 Total Problem variable score, 2 Broad band opposite spectrum problem-grouping variables (named Externalizing and Internalizing) with factorially and psychometrically derived properties and 1 Mixed Problems grouping psychometrically but not factorially supported, and 8 Narrow band behaviour syndrome scale scores.

The variables in the analysis, apart from their differentiation to independent or predictor variables and dependent or outcome variables, are also divided into categorical (or dichotomous) and continuous variables. The names of the variables their scoring range and values are as follows (Tables 11.1 and 11.2):

Table 11.1: Categorical variables

Categorical variables	
	Values
Gender	1= Male 2= Female
Groups	1= Experimental group 2=Control group

Table 11.2: Continuous variables

Continuous Variables			
Generic Variable	**sub-variable**	**Range of scores**	**Values**
Age	in months	94-171	3rd Year – 6th Yr
DODGE	negative outcome stories (2 averaged), positive instigator, Attribution of Causality	0-2	2= Hostile intent 1= Accidental intent 0= Benevolent
	negative outcome stories (2 averaged), positive instigator, proposed response	0-3	3= direct hostile 2= indirect hostile 1= pro-social 0= benevolent
	negative outcome stories (2 averaged), negative instigator, Attribution of Causality	0-2	2= Hostile intent 1= Accidental intent 0= Benevolent
	negative outcome stories (2 averaged), negative instigator, proposed response	0-3	3= direct hostile 2= indirect hostile 1= pro-social 0= benevolent
	ambiguous outcome stories (2 averaged), positive instigator, Attribution of Causality	0-2	2= Hostile intent 1= Accidental intent 0= Benevolent
	ambiguous outcome stories (2 averaged), positive instigator, proposed response	0-3	3= direct hostile 2= indirect hostile 1= pro-social 0= benevolent
	ambiguous outcome stories (2 averaged), negative instigator, Attribution of Causality	0-2	2= Hostile intent 1= Accidental intent 0= Benevolent
	ambiguous outcome stories (2 averaged), negative instigator, proposed response	0-3	3= direct hostile 2= indirect hostile 1= pro-social 0= benevolent
MARSH	Problem Definition	0-2	2= both parts of dilemma 1= one side of dilemma 0= no definition
	Alternative Thinking	Total Number, Averaged	No Upper Limit, Total number of responses, averaged for 2 stories
	Consequential Thinking	Total Number, Averaged	No Upper Limit, Total number of responses, averaged for 2 stories
	Solution Adequacy	0-12	12= high pro-social adequacy 0= low pro-social adequacy
HARTER	Global Self-worth	1-4	4= high self-worth 1= low self-worth

	Cognitive Competence	1-4	4= high competence 1= low competence
	Social Competence	1-4	4= high competence 1= low competence
	Physical Competence	1-4	4= high competence 1= low competence
ACHENBACH	**Total Probs**	Scoring, transformed into T score=64 at 98th Percentile	Boys Age 5-11, clinical cutoff ≥ 60-64 Girls Age 5-11, clinical cutoff ≥ 42-44
	Broad Band Syndromes		
	Internalizing	Scoring, transformed into T score=64 at 98th Percentile	Boys Age 5-11, clinical cutoff ≥ 14 Girls Age 5-11, clinical cutoff ≥ 14-15
	Externalizing	Scoring, transformed into T score=64 at 98th Percentile	Boys Age 5-11, clinical cutoff ≥ 24-25 Girls Age 5-11, clinical cutoff ≥ 42-44
	Narrow Band Syndromes		
	Withdrawn (internalizing)	Scoring, transformed into T score=70 at 98th Percentile	Boys & Girls clinical cutoff ≥ 8-9
	Somatic (internalizing)	Scoring, transformed into T score=70 at 98th Percentile	Boys clinical cutoff ≥ 3-4 Girls clinical cutoff ≥ 5-6
	Anxious/Depressed (internalizing)	Scoring, transformed into T score=70 at 98th Percentile	Boys clinical cutoff ≥ 12-14 Girls clinical cutoff ≥ 13-15
	Social (mixed problems)	Scoring, transformed into T score=70 at 98th Percentile	Boys clinical cutoff ≥ 8-10 Girls clinical cutoff ≥ 9-10
	Thought (mixed problems)	Scoring, transformed into T score=70 at 98th Percentile	Boys & Girls clinical cutoff ≥ 3-4
	Attention (mixed problems)	Scoring, transformed into T score=70 at 98th Percentile	Boys clinical cutoff ≥ 27-29 Girls clinical cutoff ≥ 22-24
	Delinquent (externalizing)	Scoring, transformed into T score=70 at 98th Percentile	Boys clinical cutoff ≥ 6-7 Girls clinical cutoff ≥ 4-5
	Aggressive (externalizing)	Scoring, transformed into T score=70 at 98th Percentile	Boys clinical cutoff ≥ 28-29 Girls clinical cutoff ≥ 21-22

11.3.2 Meeting the Statistical Requirements of the Tests

Before undertaking the analysis, some tests for assessing the suitability of

the data are essential. These include the assumptions and conditions of multiple regression as described above in section 11.1.

The sample size in the present thesis was deemed adequate for the multiple regression method of analysis to yield acceptable results. The sample entered in the regression test was $N = 240$, which amounts to all the cases, having two equal samples of 120 cases in each group, experimental and control. There are no missing values as any such cases would have been removed in the first stage of the data collection where the two groups were chosen. The optimal model for testing the proposed model conceptually included 15 independent variables, whereas an all independent variables model amounts to 16 variables. By "optimal" number of independent variables (15) I mean the 16 variables minus the Physical competence subscale of Harter's Self-Perceived Competence scale, which was found by the present analysis not to contribute to the prediction in any significant way. Both versions were computed and explored and the analysis results in this chapter reflect this.

Data were checked for outliers by means of empirically inspecting the scatterplot produced at the end of the regression analysis and the number of cases above the set cut-off point of standardized residual. When the SPSS default standardized residual of 3 was used there were no more than 1-2 cases falling outside the cut-off point in all analyses, rising to up to 5 cases when the 2.5 cut-off was used as some statisticians suggest (Field, 2005). In these numbers the outlier effect is widely considered as negligible further reinforcing the relative homogeneousness of the scores distribution.

11.3.3 Descriptive Statistics of the Regression Analysis: Means and Standard Deviations for the Experimental group.

Means and standard deviations of the continuous independent variables entered in the model for the experimental group are presented below in table 11.3:

Table 11.3: Means and Standard Deviations of all independent variables for the Experimental group

VARIABLES	Range of scores on each variable		Experimental	
	Min	Max	Mean	SD
Harter cognitive competence	1	4	2.91	0.67
Harter social competence	1	4	2.90	0.68
Harter physical competence	1	4	2.82	0.58
Harter general self-esteem	1	4	2.78	0.64
Dodge causal explanation of negative outcome story, positive instigator	0	2	1.13	0.27
Dodge proposed response to negative outcome story, positive instigator	0	3	1.29	0.52
Dodge causal explanation of negative outcome story, negative instigator	0	2	1.26	0.34
Dodge proposed response to negative outcome story, negative instigator	0	3	1.475	0.59
Dodge causal explanation for ambiguous outcome story, positive instigator	0	2	1.41	0.49
Dodge proposed response to ambiguous outcome story, positive instigator	0	3	1.27	0.51
Dodge causal explanation of ambiguous outcome story, negative instigator	0	2	1.60	0.44
Dodge proposed response to ambiguous outcome story, negative instigator	0	3	1.45	0.69
Marsh: Problem definition	0	2	1.35	0.60
Marsh: Alternative thinking	0	no limit	2.98	0.93
Marsh: Consequential thinking	0	no limit	5.75	3.04
Marsh: Solution adequacy	0	4	6.08	2.70

Looking at the preliminary data of Table 11.3 above it can be seen that with regards to Harter SPC scale the Means for the experimental group in all four subscale variables were higher than the statistical mean of the scale which is 2.5 (range of scores 1-4), as self-reported by the children in the study. Between cognitive, social and physical competence, Cognitive competence had the highest mean and Physical competence the lowest with the most robust standard deviation of .58, suggesting a homogeneous group. The 4th variable, Self-esteem, had the lowest mean (2.78), an indication that the experimental group was reporting less confidence scoring their global self-worth than when they scored the other 3 variables. Thus, they rated their cognitive and social skills as good, but their self-esteem as less adequate, while they were rated by another informant (teacher) as clearly presenting behaviour problems on the TRF. This may suggest some interesting interpretations, for instance, between having certain levels of cognitive and social skills and actual observable behaviour there may be a mediating factor which may be an emotional failing to handle internal and external conflict, very often reverting to aggression both in thinking and acting or withdrawal in acting. These points will be explored later and possible subsequent meanings as well as future directions will be argued in the final chapter.

As for the Dodge variables, it appears from Table 11.3 that the experimental group's causal attributions in stories with a clear negative outcome for the child interviewed were different in Mean scores if presented with a positive instigator (1.13) in mind as opposed to a negative instigator (1.26). A higher mean

suggested more hostile causal attribution (1=accidental, 2=malicious intent). Hence, the negative instigator story appeared to slightly influence the experimental children's answers towards attributing more hostile intentions, something that was logically expected. In addition, the experimental group and the control group had almost exactly the same actual Mean scores.

At the same time, the proposed response to these stories (having a different range i.e. 1=reason/talk to the other/do something to rectify mishap, 2=report to teacher with intention to get other punished, 3=physically attack) reflected the same tendency of elevated hostility actions if a negative instigator was in mind. At the same time the Standard Deviation of the responses children proposed they would have in these social scenarios of negative outcome both with a positive and negative instigator were doubled when compared to the SD of their causal attributions. This wider distribution of the scores suggested that some experimental children, despite their grouping, seemed to still be able to control their reactions to conform to more acceptable responses (reason with the other, try to rectify the wrongdoing).

When the story's outcome changed to ambiguous, the comparisons were very interesting. In children's causal attributions, the SD was the same between the positive instigator story and the negative instigator story. However, the attributions of causality were much higher than what were reported when the story had a clear negative outcome. It seems that the ambiguity in the story "makes" experimental children somewhat "prone" to attribute hostile intent, especially when a negative status child is involved. This may suggest specific interpretations

later in the discussion of the findings. The means of children's proposed responses did not indicate a higher tendency to "punish" the other child (as compared to negative outcome stories) for the experimental group as a whole, but we did find a much higher SD -0.69- (hence distribution), which suggested that some experimental group children were indifferent to the outcome of the story or the status of the instigator, and their reaction was hostile whatever the conditions. Thus, there seem to be two groups of children with different behaviour profiles within the experimental group.

In the Marsh variables a comparison between the experimental and control groups was not directly applicable as with the rest of the variables above. However, we can say that the experimental group appeared to understand an interpersonal problem less well than the control group (more details of this in the discriminant analysis), could find less alternative solutions to it, but on the other hand was equally aware of the consequences of any actions taken and the self was more central in the proposed choice of action.

The Means and standard deviation of all the Achenbach TRF variables controlled for gender and group (experimental and control) which also contributed to the preliminary investigation of the data are presented below in Table 11.4:

Table 11.4: Range of scores, means and standard deviation of all dependent variables by group and gender.

CHENBACH VARIABLES	RANGE	CLINICAL CUTOFF* BOYS 5-11	MEAN (SD)				CLINICAL CUTOFF* GIRLS 5-11	MEAN (SD)			
			EXPERIMENTAL BOYS N=94		CONTROL BOYS N=94			EXPERIMENTAL GIRLS N=26		CONTROL GIRLS N=26	
OTAL PROBS	0-240	57-59	50.18	(18.26)	13.05	(7.27)	39-41	47.46	(16.905)	10.69	(6.13)
TERNALIZING	0-70	13	9.15	(5.57)	5.55	(3.69)	13	14.58	(8.291)	5.73	(4.04)
TERNALIZING	0-68	22-23	19.65	(12.00)	2.71	(2.47)	14	12.12	(9.322)	2.23	(3.06)
VITHDRAWN	0-18	9	2.99	(3.11)	1.29	(1.21)	9	5.46	(4.120)	1.15	(1.38)
SOMATIC OMPLAINTS	0-18	4	0.45	(0.93)	0.26	(0.57)	6	1.23	(1.861)	0.42	(1.39)
ANXIOUS DEPRESSED	0-36	14	6.04	(3.79)	4.07	(3.00)	15	8.50	(5.278)	4.19	(2.98)
OCIAL PROBS	0-26	10	4.84	(3.42)	0.87	(1.25)	10	6.38	(3.971)	0.38	(0.64)
OUGHT PROBS	0-16	4	0.21	(0.53)	0.02	(0.14)	4	0.23	(0.587)	0.04	(0.20)
ATTENTION PROBS	0-40	29	16.54	(6.18)	3.56	(3.92)	24	15.23	(7.464)	1.92	(2.58)
)ELINQUENT	0-18	7	3.31	(2.23)	0.86	(0.93)	5	2.23	(1.583)	0.54	(0.71)
\GGRESSIVE	0-50	29	16.34	(10.53)	1.85	(2.18)	22	9.88	(8.111)	1.69	(2.99)

* Score at cutoff and higher represent problems

11.4 Types of Multiple Regression Analysis Conducted

A number of methods within the array of multiple regression were used to assess predictive validity of the model on the dependent/outcome variables one by one.

11.4.1 Forced-entry Regression

Multiple regression analysis of the model tested, first included all the independent variables entered simultaneously against the dependent variable Total

Problems on Achenbach's Teachers' Report Form (TRF), as a more direct investigation of the model's prediction on a generic score of problems. The score was generic as it was a Total Problem index score of all kinds of problems embedded in its value. However, it was lacking in finer grain analysis that could reveal problems of particular nature as defined by clinical label categories (i.e. aggressive, anxious/depressed, social problems etc.).

In reading for meaning in any Multiple Regression data we need to look firstly at the significance of the F value of ANOVA. This tells us immediately whether the model we are proposing is statistically significant in predicting the outcome. Once this is met, we then examine the Multiple R, which is the correlation between the observed values of Y and the values of Y predicted by the multiple regression model. Thus, large values of the Multiple R represent a large correlation between the predicted and observed values of the outcome, evidently lending support to the predictive power of the model on the outcome variables. From this R^2 is extracted which represents the amount of variance accounted for by the model. Some studies that are aiming to provide generalizable findings or have selected their sample from a random pool of cases from within a class, go beyond R^2 assigning more importance to the adjusted R^2 value by means of model power of prediction testing. The adjusted R^2 gives us some idea of how well our model generalizes if it were to be chosen from the average population. We would ideally expect the adjusted R^2 to be roughly equal to the R^2.

Bearing in mind, though, that the present study's sample was very finely scrutinized, the selection of the 2 groups of cases happened on two levels: one by

their behaviour problem scoring at a cutoff point on Rutter's scale, and two by individual cases' matching up (i.e. same gender, same age, same class, and same parents' education level) between the experimental and the control groups. For this reason I believe that any adjusted R^2 would be bound to be lower than the R^2 due to the not directly generalizable nature of the sample selected here. Hence it is proposed that R^2 be considered as a stronger indicator of the variance accounted for by each variation of the model tried.

The experimental group variance accounted for by the model and the power of the model for change statistics are presented below in Table 11.6:

Table 11.6: Multiple Regression of Independent variables contributing to the explanation of the Variance of each SEBDs label category on TRF for the Experimental group

Model	R	R^2	Adj. R^2	SE	F change	sig F change
all predictors on Mixed** problems	.460	.211	.089	8.067	1.726	.053*
all on Social Problems	.459	.211	.088	3.423	1.718	.054*
4 Harter variables on Somatic Complaints	.269	.072	.040	1.206	2.246	.068*
4 Harter variables on Social problems	.316	.100	.068	3.460	3.183	.016
8 Dodge variables on Withdrawn	.343	.117	.054	3.391	1.844	.076*
4 Dodge Negative outcome story on Delinquent	.276	.076	.044	2.103	2.368	.057*
4 Dodge Ambiguous outcome story on Withdrawn	.269	.072	.040	3.416	2.237	.069*
4 Marsh on Mixed problems	.294	.087	.055	8.216	2.726	.033
4 Marsh on Attention problems	.285	.081	.049	6.312	2.535	.044

* = approaching significance

** = Not Internalizing or Externalizing

The results presented in Table 11.6 show that the F change value (which measures the power of the change the model makes on explaining the variance going from 0 to what the R^2 measures) is higher than 1 in most variables as suggested but approaching significance for the simultaneously entered independent variables model just for Mixed problems broadband category and Social problems (under Mixed) narrow band category.

When the model of the Independent variables was broken into its 3 Factors (i.e. Harter, Dodge, and Marsh) and tested for against each of the Dependent variables of Achenbach's TRF, the Harter variables accounted for a 10% variance in TRF Social problems (Mixed problems broadband category), Dodge Negative outcome stories for nearly 8% of the variance of Delinquent behaviour problems (with an approaching significance of 0.057), and Marsh variables for 9% and 8% of the variance of Mixed and Attention problems respectively.

On a first reading it seems that these Independent variables predict a fair amount of variance for Externalizing and Mixed kind of SEBDs but not for Internalizing problems. In order to see which of the Independent variables are heavily contributing to any given prediction of the Dependent variables listed above we need to look at the standardised **Beta** weights and their significance. These are calculated based on the B regression coefficients. If a variable seems to significantly predict the outcome then it should be significantly different in its *b* from zero. This hypothesis is tested using the **t test**. The t statistic tests the null hypothesis that the value of **b** is zero; hence if the t statistic is significant we accept the hypothesis that the b-value is significantly different from zero and that

the predictor variable contributes significantly to our ability to estimate values of the outcome (Field, 2005, p.151).

The Beta regression coefficients and their significance for the same model of predictors and outcome (Total Problems on TRF) are set out in the following sections.

1) Regression of All independent variables on Non Internalizing or Externalizing Problems (i.e. Mixed problems)

As presented in Table 11.6 above the variance accounted for by the simultaneously entered model of all independent variables on Mixed problems Dependent variable (not standardized as such by Achenbach as its problem behaviour profiles overlap with Internalizing and Externalizing types of problems) is 21.1 %. The F change is also significant at 0.05 and the Durbin-Watson is clearly above 1 (below 1 is a reason for concern; see Field, 2005, p.170).

Table 11.7: Beta Regression coefficients of Independent variables' on Mixed problems of TRF.

Model		Standardized Coefficient Beta	t	Sig.	Zero-order	Partial	Part
					Correlations		
MARSH	Problem Definition	-0.201	-2.180	0.032	-0.233	-0.210	-0.191
	Alternative Thinking	-0.321	-1.984	0.050	-0.126	-0.192	-0.174
	Solution Adequacy	-0.187	-1.965	0.052*	-0.101	-0.190	-0.172

a Dependent Variable: not internalizing or externalizing (i.e. Mixed)

* Approaching significance

From Table 11.7 above we can observe that on the outcome variable of mixed problems the Beta weights of 3 out of 4 Marsh variables are the only significant ones with a considerable weight of negative standardized Betas. The negative value means that less Problem understanding in a social context, a smaller number of alternative thinking strategies to resolve the problem, and less pro-social (i.e. considerate of all parts involved) proposed solutions predicts Mixed types of problem category scoring.

The following figures examine the cases' distribution for the Mixed problems dependent variable. Figure 11.1 is a histogram of the frequency distribution of the regression standardized residual. The curve is bell-shaped with a relatively normal distribution, although the high end scores deviate from normality. Figure 11.2 is a plot of the regression standardized residual for Mixed problems. As can be seen the level of fitness is good apart from the high end where it deviates from expectation. Figure 11.3 is a scatterplot of the same variable in regression studentized residual by regression standardized predicted value. The values are dispersed positively.

Figure 11.1: Frequency Distribution of regression standardized residuals for dependent narrow-band variable Mixed problems (non internalizing or externalizing).

Dependent Variable: non internalizing or externalizing

Mean =1.54E-16
Std. Dev. =0.93
N =120

Regression Standardized Residual
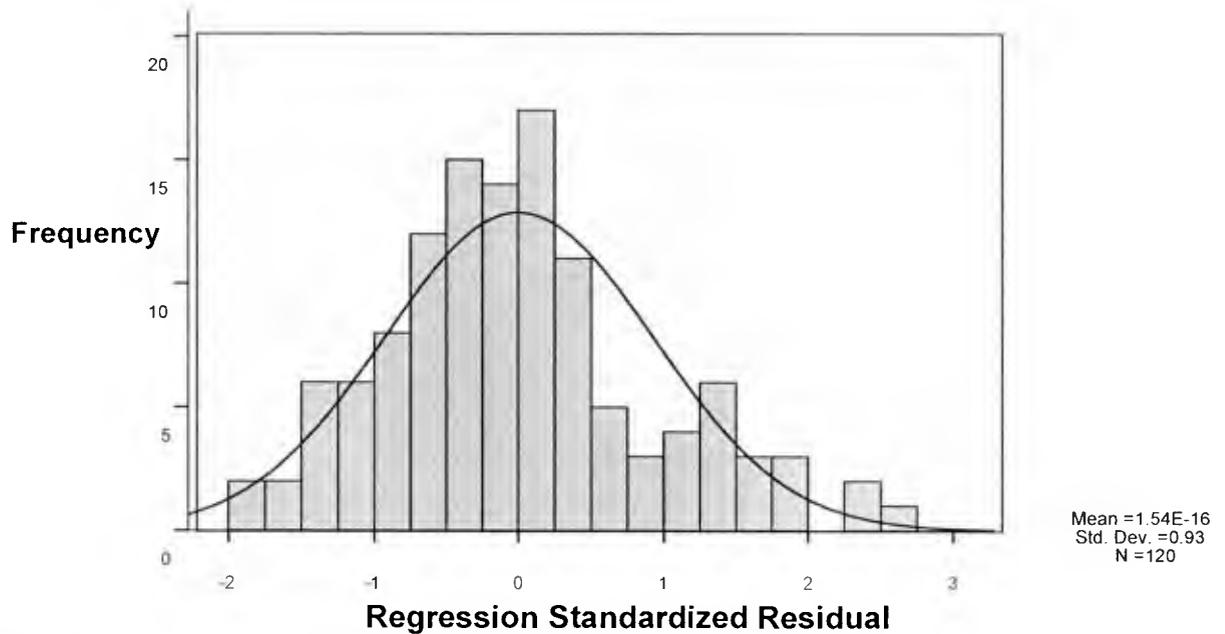
Figure 11.2: Plot of regression standardized residual for Mixed problems. Expected cumulative probability by Observed cumulative probability.

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: non internalizing or externalizing

312
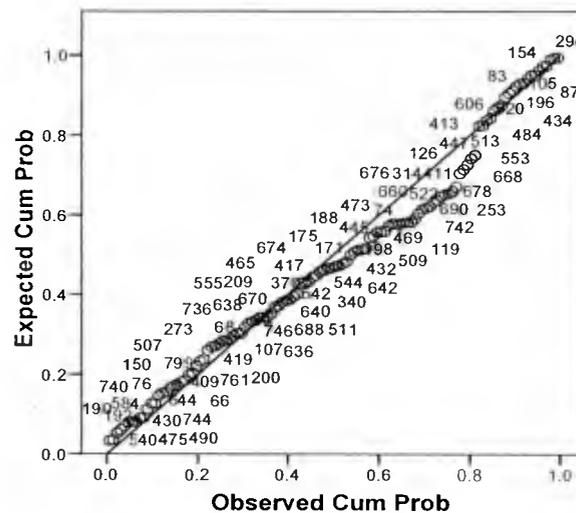
Figure 11.3: Scatterplot for Mixed problems, studentized residual by standardized predicted value.

Dependent Variable: non internalizing or externalizing
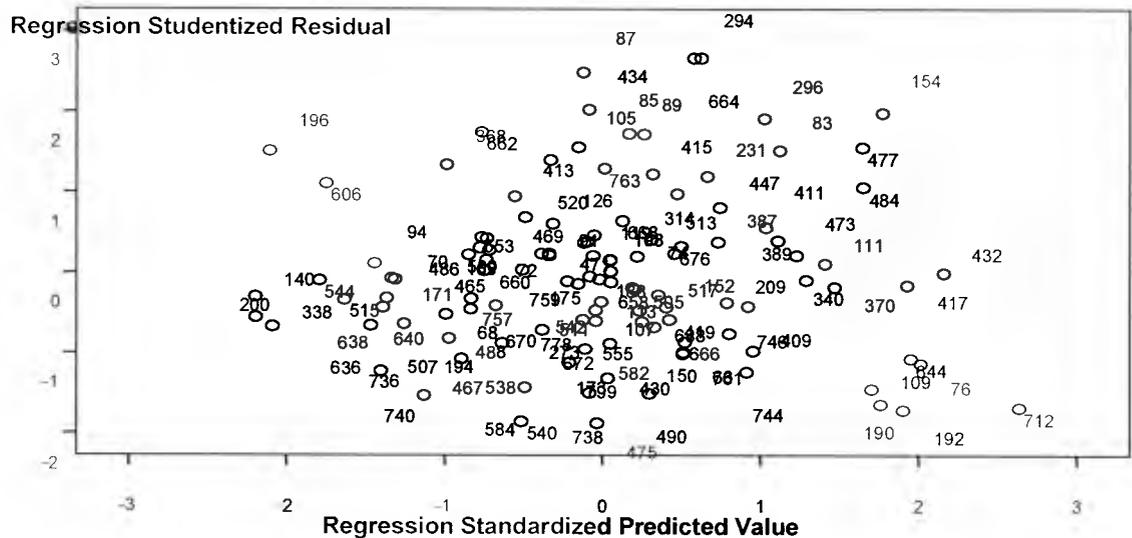
2) Regression of all Independent variables on Social problems behaviour profile subscale of TRF

Interestingly, when we looked at the Beta weights for the dependent variable (which is 1 of the 3 variables of Mixed problems category) in Table 11.6 earlier, another independent variable appeared important in predicting the 21% variance accounted for Social problems with an approaching significance of $p=.054$, Self-esteem. Self-esteem prediction of Social problems is presented in Table 11.8 below:

Table 11.8: Beta Regression coefficients of Independent variables' on Social problems.

Model		Standardized Coefficient			Correlations		
		Beta	t	Sig.	Zero-order	Partial	Part
HARTER	Self-esteem	-0.226	-1.991	0.049	-0.214	-0.192	-0.174
MARSH	Solution Adequacy	-0.226	-2.375	0.019	-0.120	-0.228	-0.208

Table 11.8 shows that the Self-esteem variable adds an important weight in predicting Social problems along Marsh's Solution adequacy. The negative -0.226 coefficient suggests that the lower the self-esteem score the more it predicts Social problems. This variable has the same effect (-0.226) as Solution Adequacy, described in the previous regression analysis.

In fact what this analysis shows is that some experimental group children with Social problems self report less high self-esteem or global worth and are less interested in accommodating others, but are rather self-centered or egotistic in the solutions they tend to choose. Since Social problems is a category of Mixed type problems, we can deduce that the children forming this profile would be more likely to be self aware which has been shown in the present study to be more an attribute of Internalizers and not Externalizers. The interpretation of this for future research direction will be explored in the final chapter.

3) Multiple Regression investigating each of the 3 measures on each of the Dependent variables

When the 4 Harter variables were isolated for a Regression analysis the model explained 10% of the variance of Social problems as measured by TRF and was statistically significant (p=0.016). However, the Self-esteem variable effect was not significant as expected.

When just the Dodge 8 variables were entered against each of the dependent variables the model effect did not reach significance and only one Beta weight (0.27) approached significance (p=0.055); the Response to a Negative outcome with a Positive instigator. This finding suggests that the more aggressive the responses of the experimental group children even when the instigator is positive (i.e. indifferent to a child's social status to inform bias) the better predicted their Withdrawn behaviour.

When the Dodge variables were divided into 4 variables with a Negative outcome story and 4 variables with an Ambiguous outcome story, the Negative story model accounted for 8% of the variance of Delinquent behaviour with an approaching significance of 0.057. However no individual variable weighted significantly. Conversely, the Ambiguous story model did not reach statistical significance at all.

When just the 4 Marsh variables were entered in relation to each of the dependent ones, the model accounted significantly (p=0.03) for 9% of the variance of Mixed problems and 8% (p=0.04) of the variance of Attention problems. In both dependent variables the only variable of the 4 exerting a significant effect was Problem definition on both occasions with a Beta= -0.22, p=0.02, and Beta=-

0.23, p=0.01 respectively, as shown in Table 11.9 below:

Table 11.9: Beta Regression coefficients of Marsh variables on Mixed and Attention problems.

Model		Standardized Coefficient			Correlations			DEPENDENT VARIABLE
		Beta	t	Sig.	Zero-order	Partial	Part	
MARSH	Problem Definition	-0.22	-2.45	0.02	-0.23	-0.22	-0.22	MIXED PROBLEMS
MARSH	Problem Definition	-0.23	-2.54	0.01	-0.24	-0.23	-0.23	ATTENTION PROBLEMS

11.5 Summary

Multiple regression analysis of the data first demonstrated that the Experimental group of children is very different from The Control group in proneness to attribute hostile intent on an instigator even if his/her actions in social incidents are not clearly negative but rather ambiguous. Thus, a "hard-wired" bias in social information processing was successfully portrayed. Furthermore, the bias to respond aggressively irrespective of story outcome or status of instigator was also revealed as significant, but only for some of the experimental group of children. This, in turn, suggests that there are two groups of children with particular behaviour profiles within the experimental group that seem to draw on different resources and signify different processing patterns both in "translating" a social cue but also in selecting a response to it.

In addition, it was demonstrated that these independent variable model/s can predict only Mixed type of behaviour problems with the exception of

Delinquent behaviour (Externalizing spectrum).

What has also been demonstrated in this chapter is that the experimental group understands an interpersonal problem less well than their control counterparts (more details of this in the discriminant analysis), can find fewer alternative solutions to it, but on the other hand is equally aware of the consequences of any actions taken, whereas the self is more central in their proposed choice of action (Marsh variables).

The analysis also demonstrated that significant variance was accounted for by Harter variables on Social problems (TRF Mixed problems broadband category), Dodge Negative outcome stories on Delinquent behaviour problems, and Marsh variables on Mixed and Attention problems respectively. On a first reading it seems that these Independent variables predict a fair amount of variance for Externalizing and Mixed kinds of SEBDs but not for Internalizing kind of problems. This means that some children with Social problems in the experimental group are self reporting less high self-esteem or global worth and seem to be less interested in accommodating others but are rather self-centered or egotistic in the solutions they tend to choose. Since Social problems is a category of Mixed type problems, it is suggested that the children forming this profile would be more self aware. The latter has been shown in the present study to be more an attribute of Internalizers and not Externalizers overall.

This finding suggests that the more aggressive the response of the experimental group children even when the instigator is positive (i.e. indifferent to a child's social status to inform bias) the better predicted their Withdrawn behaviour.

The above points are important and informative in relation to the findings reported later on the emerging profile of the types of SEBDs identified by particular independent variables. These issues will be discussed in the final chapter.

CHAPTER 12

DISCRIMINANT ANALYSIS

12.1 The Theory of Discriminant Analysis

Discriminant function analysis is used to identify and describe the *"discriminant function variates* of a set of variables and is useful as a follow-up test to MANOVA as a means of seeing how these variates allow groups of cases to be discriminated" (Field, 2005, p. 729). Put simply, discriminant analysis identifies any naturally forming groups (based on the raw data scores) that predict group membership based on the pre-selected variables (Kerlinger, 1992, p. 561-2). In practice, if we have two or more independent variables and the members of two groups, the discriminant function provides the "best" prediction, based on the least-squares "best" composite score analysis, of the "correct" group membership of each member of the sample. Thus, the higher the R^2 the better the prediction of group membership. In other words, when dealing with two groups in the sample, as is the case in the present thesis, the discriminant function is nothing more than a multiple regression equation with the dependent variable a nominal variable (coded 0, 1) representing group membership.

Discriminant analysis identifies variates (i.e. combinations of the dependent variables). To see how many variates are significant we need to look at the table of

Wilks's Lambda: if each Lambda value has a significance level of equal or less than .05 then the variate is significantly discriminating the groups.

Once the significant variates have been identified we can then look at the table labeled *Standardized Canonical Discriminant Function Coefficients* to explore how the particular dependent variables contribute to the variates. High scores indicate the dependent variable's importance for variates, and variables with positive and negative coefficients are exerting opposite contribution to the variates. Finally, to see which groups are discriminated by a variate we need to look at table *Functions at Group Centroids*. For a specified variate, groups with values opposite in sign are discriminated by that variate.

12.2 The Discriminant Analysis Results

A discriminant function analysis was conducted to determine the differentiation of specific variables as far as group membership is concerned for the two designated groups of experimental and control cases. Both these groups are of equal size (N=240 i.e. Experimental=120, Control=120). In the first instance only one canonical discriminant function was used in the analysis. The one discriminant function had an eigen value of 2.842 and a canonical correlation of .86. The eta square, obtained by squaring the canonical correlation was .74, indicating that 74% of the variability of the scores for this one discriminant function was accounted for by differences among the two groups. Wilk's Lambda was .26 and significant at .0001. Table 12.1 below summarizes the means of the

variables included in the discriminant analysis for each of the two groups:

Table 12.1: Means of all variables included in discriminant analysis for each group.

| | Possible scores on each variable | | Groups separated by scores on problem behaviour | | | | | |
| | | | Experimental | | Control | | Total | |
	Min	Max	Mean	SD	Mean	SD	Mean	SD
Total Problems on TRF	0	240	49.59	17.94	12.54	7.09	31.07	23.02
Broad band: Internalizing Problems on TRF	0	70	10.32	6.61	5.59	3.76	7.96	5.87
Broad band: Externalizing Problems on TRF	0	68	18.02	11.86	2.61	2.60	10.31	11.53
non internalizing or externalizing (Mixed probs)	No standardized scoring provided		21.65	8.45	4.00	4.32	12.82	11.09
Narrow band: Withdrawn	0	18	3.52	3.49	1.26	1.24	2.39	2.85
Narrow band: Somatic complaints	0	18	0.62	1.23	0.29	0.81	0.45	1.05
Narrow band: Anxious/depressed	0	36	6.57	4.26	4.10	2.99	5.34	3.87
Narrow band: Social problems	0	26	5.17	3.58	0.77	1.16	2.97	3.46
Narrow band: Thought problems	0	16	0.22	0.54	0.02	0.16	0.12	0.41
Narrow band: Attention problems	0	40	16.26	6.47	3.21	3.72	9.73	8.40
Narrow band: Delinquent behaviour	0	18	3.07	2.15	0.79	0.90	1.93	2.00
Narrow band: Aggressive behaviour	0	50	14.94	10.38	1.82	2.37	8.38	9.98
Harter cognitive competence	1	4	2.91	0.67	3.07	0.60	2.99	0.64
Harter social competence	1	4	2.90	0.68	3.15	0.53	3.03	0.62
Harter physical competence subscale	1	4	2.82	0.58	2.87	0.60	2.84	0.59
Harter general self-esteem subscale	1	4	2.78	0.64	2.94	0.53	2.86	0.59
Dodge cause, neg. outcome posit. actor	0	2	1.13	0.27	1.13	0.26	1.13	0.27
Dodge Resp. neg. out. Posit. actor	0	3	1.29	0.52	1.18	0.41	1.24	0.47
Dodge cause Neg. out. neg. actor	0	2	1.26	0.34	1.26	0.34	1.26	0.34
Dodge Resp. neg. out. neg. actor	0	3	1.47	0.59	1.35	0.54	1.41	0.57
Dodge cause, amb. Outc., posit. actor	0	2	1.41	0.49	1.22	0.52	1.32	0.51
Dodge resp. amb. Out.-posit. actor	0	3	1.27	0.51	1.01	0.35	1.14	0.46
Dodge cause amb. Out. neg. actor	0	2	1.60	0.44	1.47	0.44	1.54	0.44
Dodge resp. amb. Out. neg. actor	0	3	1.45	0.69	1.19	0.49	1.32	0.61
Marsh: Problem definition	0	2	1.35	0.60	1.45	0.52	1.40	0.56
Marsh: Alternative thinking	0	No Upper Limit	2.98	0.93	3.11	0.83	3.05	0.88
Marsh: Consequential thinking	0	No Upper Limit	5.75	3.04	5.70	2.67	5.73	2.86
Marsh: Solution adequacy	0	4	6.08	2.70	6.22	2.81	6.15	2.75

12.3 The Prediction of Experimental and Control Group Membership with all Independent AND Achenbach Variables Entered.

The loading matrix of correlations between predictors and the first discriminant function is presented in table 12.2 below:

Table 12.2: Structure loading matrix of correlations of variables contributing most to group separation

	Function
	I
Achenbach: Total Problems	.809
Achenbach: non internalizing or externalizing (Mixed)	.783
Achenbach: Attention problems	.736
Achenbach: Externalizing Problems	.534
Achenbach: Aggressive behaviour	.519
Achenbach: Social Problems	.493
Achenbach: Delinquent behaviour	.413
Achenbach: Internalizing Problems	.262
Achenbach: Withdrawn behaviour	.258
Achenbach: Anxious/Depressed behaviour	.200
Dodge: response to ambiguous outcome -positive instigator	.177
Achenbach: Thought problems	.144
Dodge: response to ambiguous outcome -negative instigator	.132
Harter social competence	-.122
Dodge: cause for ambiguous outcome -positive instigator	.111
Achenbach: Somatic complaints	.093
Dodge: cause of ambigious outcome -negative instigator	.082
Harter general self-esteem subscale	-.082
Harter cognitive competence	-.074
Dodge proposed response to neg. outcome positive instigator	.069
Dodge: response to negative outcome -negative instigator	.063
Marsh: Problem Definition	-.055
Marsh: Alternative thinking	-.044
Marsh: Consequential thinking	-.024
Marsh: Solution adequacy	-.016
Dodge: causal explanation of negative outcome -positive instigator	.005
Dodge causal expln. of negative outcome -negative instigator	.000

What can be seen in Table 12.2 above is that the variables contributing most to group separation are all the dependent variables that form Achenbach's TRF, 10 out of a total 12. The two not loading highly are Thought problems and Somatic Complaints which were both also very weak in affecting the variance of predicted scores at any stage of the analysis. Thus, the 10 variables of TRF significantly separate the two groupings of experimental and control, lending further support to the validity of allocation of pupils to groups (based on previous theory).

In Table 12.3 that follows we tested the group membership as it was predicted based on the discriminant function analysis. The classification proved highly accurate, both for the Control (97%) and the Experimental (95%) groups. Hence, group separation and subsequent drawing of conclusions based on them is validated.

Table 12.3: Predicted group membership based on the discriminant model with the Achenbach dependent variables included.

Classification Results(a)

Identification			Predicted Group Membership		Total
			Experimental	Control	
Original	Count	Experimental	114	6	120
		Control	4	116	120
	%	Experimental	95.0	5.0	100.0
		Control	3.3	96.7	100.0

a 95.8% of original grouped cases correctly classified.

To find out how many variates were significant we explored the Wilks's Lambda table 12.4 below:

Table 12.4: Discriminant Tests of Equality of Group Means.

	Wilks' Lambda	F	df1	df2	Sig.
TOTPROB	.350	442.779	1	238	.000
INTERN	.837	46.480	1	238	.000
EXTERN	.552	193.218	1	238	.000
non internalizing or externalizing (mixed)	.364	415.003	1	238	.000
WITHDRW1	.841	45.041	1	238	.000
SOMATIC2	.976	5.820	1	238	.017
ANXDEP3	.897	27.182	1	238	.000
SOCIAL4	.592	164.324	1	238	.000
THOUGHT5	.944	14.067	1	238	.000
ATTENTN6	.394	366.541	1	238	.000
DELINQ7	.674	115.227	1	238	.000
AGGRESS8	.566	182.482	1	238	.000
Harter cognitive competence	.985	3.661	1	238	.057*
Harter social competence	.959	10.124	1	238	.002
Harter physical competence	.998	.391	1	238	.532
Harter general self-esteem	.981	4.553	1	238	.034
Dodge's causal explanation of negative outcome – positive instigator	1.000	.014	1	238	.904
Dodge's proposed response to neg. outcome positive instigator	.987	3.177	1	238	.076
causal expln. of negative outcome -negative instigator	1.000	.000	1	238	1.000
response to negative outcome -negative instigator	.989	2.703	1	238	.101
cause for ambigious outcm –positive instigator	.966	8.332	1	238	.004
response to ambiguous outcome -positive instigator	.918	21.188	1	238	.000
cause of ambigious outcome -negative instigator	.981	4.575	1	238	.033
response to ambiguous outcome -negative instigator	.952	11.873	1	238	.001
MARSH.PD	.991	2.058	1	238	.153
M.ALT.T	.995	1.286	1	238	.258
M.CONS.T	1.000	.021	1	238	.884
M.SOL.AD	.999	.168	1	238	.682

* = approaching significance

The thesis's model of factors or variates discriminates between the groups as the hypotheses anticipated. Hence, all the Achenbach broad and narrow band subscales are significant, as are the Harter variables with the exception of Physical competence, and the Dodge Ambiguous outcome variables, **BUT NOT** the negative outcome story variables. The latter is a very important point, since it suggests that only ambiguous outcome story scores can discriminate the 2 groups, whereas negative outcome stories fail to reach significance. To further investigate this claim I ran the discriminant analysis with just the Dodge variables and the findings support one of the major hypotheses: that the Ambiguous outcome story scores form a separate variate with a much heavier influence on discriminating between the 2 groups, as can be seen below in Table 12.5:

Table 12.5: Discriminant Analysis Structure Matrix of only the Dodge variables.

	Function
	1
response to **ambiguous** outcome - positive instigator	.875
response to **ambiguous** outcome - negative instigator	.655
cause for **ambiguous** outcm - positive instigator	.548
cause of **ambiguous** outcome - negative instigator	.406
Dodge's proposed response to neg. outcome positive instigator	.339
response to negative outcome - negative instigator	.312
Dodge's causal explanation of negative outcome -positive instigator	.023
causal expln. of negative outcome - negative instigator	.000

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

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The overall significance of the Lambda in the all variable analysis is very high 0.0001, with Lambda= 0.26, Chi-Square = 302.858.

Finally, the Functions at Group Centroids score (Table 12.6, below) shows that the 2 groups are being clearly discriminated by this variate:

Table 12.6: Functions at Group Centroids

Identification	Function 1
Experimental	1.679
Control	-1.679

Unstandardized canonical discriminant functions evaluated at group means

However, the data showing successful discrimination of the two groups is influenced by the Achenbach variables which were simultaneously entered in the analysis. We need to see how much of this discriminant effect is retained if we remove them from the variable list. Hence, below is the discriminant analysis without the Achenbach variables.

12.4 The Prediction of experimental and control group membership without the Achenbach variables.

How particular independent variables load to group separation is explored in Table 12.7 below:

Table 12.7: Structure loading matrix of all the independent variables which contributed most to group separation.

	Function
	1
DODGE- response to ambiguous outcome -positive instigator	-.663
DODGE- response to ambiguous outcome -negative instigator	-.496
Harter social competence	.458
DODGE- cause of ambigious outcm - positive instigator	-.415
DODGE- cause of ambigious outcome -negative instigator	-.308
Harter general self-esteem	.307
Harter cognitive competence	.275
DODGE- response to negative outcome, positive instigator	-.257
DODGE- response to negative outcome -negative instigator	-.237
MARSH: Problem Definition	.206
MARSH: Alternative thinking	.163
Harter physical competence	.090
MARSH: Solution adequacy	.059
MARSH: Consequential thinking	-.021
DODGE- causal explanation of negative outcome -positive instigator	-.017
DODGE- causal expln. of negative outcome -negative instigator	.000

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

From Table 12.7 above we can deduce that the response to a social situation and in particular to the ambiguous outcome stories seems more influential in separating the two groups than the causal attribution bias assessed by the Dodge measure whatever the status of the child actor. These two variables though have a negative loading on the matrix with the highest being the response to a story with

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a positive instigator. This suggests that the furthest the manipulated conditions from any association with possible hostility (i.e. ambiguous story, positive instigator) the wider apart the two groups are, as indicated by the high loading of - 0.63.

The third highest loading is Social Competence, the first of the Harter measures with a positive weighting of 0.46. The other two Ambiguous story variables, that of Causal Attribution with a positive (-0.41) and a negative instigator (-0.31), both with a negative loading follow. Next are Self-esteem (0.31) and the Cognitive Competence measure (0.27) of Harter. Then are the two negative outcome response variables with a positive (-0.26) and a negative instigator (-0.24). Of the Marsh variables only Problem Definition and Alternative Thinking have a modest loading to the model factor with 0.21 and 0.16 respectively.

In summary, Table 12.7 suggests that the Dodge 4 ambiguous outcome variables are the most important and the 2 response variables the most important of all. Hence, the **less clearly hostile** and the **less aggressive** the story is, the greater the difference between the two groups. Thus, the experimental group hypothesis of a hostile and aggressive bias on their social information processing and their subsequent proposed actions is supported.

In addition, it seems that since behaviour responses (in terms of the Dodge response variables) are most influential in separating the two groups and since the Social Competence, Self-esteem and Cognitive competence measures of Harter

each contribute, the character profile of an experimental child is that of: attribution of intent and hostile response biases, being socially poorly skilled to resolve actual or potential conflicts, having lower self-esteem and being less cognitively competent in understanding more than one perspective in a social interaction. Thus, having or lacking social skills is very important as well as how one feels about the self, followed by one's cognitive skills or lack of them.

Considering the Marsh variables only the Problem defining skills and the ability to be able to generate Alternative Thinking about ways to react to a problem made important contributions to distinguishing between the two groups. However, these variables did not reach significance as can be seen in Table 12.8 below. In this Table we can see that regarding the above variables only the 4 Dodge Ambiguous outcomes and the 3 Harter variables reached or almost reached significance.

Table 12.8: Testing the assumption of Equality of Group Means and their Significance.

	Wilks' Lambda	F	df1	df2	Sig.
Harter cognitive competence	.985	3.661	1	238	.057*
Harter social competence	.959	10.124	1	238	**.002**
Harter physical competence	.998	.391	1	238	.532
Harter general self-esteem	.981	4.553	1	238	**.034**
DODGE- causal explanation of negative outcome -positive instigator	1.000	.014	1	238	.904
DODGE- proposed response to neg. outcome positive instigator	.987	3.177	1	238	.076
DODGE- causal expln. of negative outcome - negative instigator	1.000	.000	1	238	1.000
DODGE- response to negative outcome - negative instigator	.989	2.703	1	238	.101
DODGE- cause of ambigious outcm -positive instigator	.966	8.332	1	238	**.004**
DODGE- response to ambiguous outcome – positive instigator	.918	21.188	1	238	**.000**
DODGE- cause of ambigious outcome - negative instigator	.981	4.575	1	238	**.033**
DODGE- response to ambiguous outcome - negative instigator	.952	11.873	1	238	**.001**
MARSH: Problem Definition	.991	2.058	1	238	.153
MARSH: Alternative thinking	.995	1.286	1	238	.258
MARSH: Consequential thinking	1.000	.021	1	238	.884
MARSH: Solution adequacy	.999	.168	1	238	.682

* Approaching significance

The functions at Group Centroids are -0.448 for the experimental group and 0.448 for the control group. The final predicted group membership appears below in Table 12.9. As can be seen the group prediction of the analysis dropped when the Achenbach dependent variables were excluded to 62% for the experimental group and 68% for the control group. Respectively, 46 cases of the the experimental group and 38 cases of the control group were "misplaced".

Table 12.9: Predicted Group membership without the Achenbach dependent variables.

Identification			Predicted Group Membership		Total
			Experimental	Control	Experimental
Original	Count	Experimental	74	46	120
		Control	38	82	120
	%	Experimental	61.7	38.3	100.0
		Control	31.7	68.3	100.0

a 65.0% of original grouped cases correctly classified.

The eigen value for the same analysis was 0.203^9 with a canonical correlation of 0.41. Wilks' Lambda was 0.83, Chi-Square 42.47 with a high significance p=0.001.

Overall group membership prediction without the Achenbach Psychopathology profile variables was not as sound accounting for only 2/3 of the cases. However, the identification of particular variables that helped the formation of a "personality" profile for some of the experimental group of children was strong.

12.5 Summary

Discriminant analysis was successful in demonstrating the hypotheses of the thesis when psychopathology variables (i.e. dependent) were also entered in the analysis. In this analysis the two groups were clearly discriminated in their

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[9] First 1 canonical discriminant functions were used in the analysis

scores of behaviour descriptors of psychopathology (Achenbach), in 3 out of 4 Harter variables (Physical competence excluded). The Dodge variables, regarding the scores of causal attributions and proposed responses to ambiguous outcome stories, showed qualitative (e.g. difference in valence, irrespective of manipulated condition of peer status, and outcome of the story) and quantitative differences (e.g. difference in scores of absolute means in same answers) in relation to negative outcome stories.

When the Achenbach variables were removed from the analysis group membership prediction was lowered but more fine grained information regarding the behaviour profile of a large group of experimental cases emerged.

This finding alongside the other analyses in the present thesis contributes to our understanding regarding the behaviour phenotype of children with particular psychopathology.

CHAPTER 13

FACTOR ANALYSIS

13.1 The theoretical basis of Factor Analysis

Factor analysis is a technique for identifying groups or clusters of variables that correlate highly with each other while being independent of other subsets of variables with the intention of grouping them into a single factor (Field, 2005). Factor analysis is used for the following three main research reasons: (1) to facilitate the understanding of the underlying structure of a set of variables; (2) to help construct and evaluate questionnaires, tests and scales that measure an underlying variable, and (3) the reduction of a dataset to a more manageable size for further analysis while preserving as much of the original information as possible.

Factor analysis can help prevent multicollinearity (in multiple regression) in the data by combining together variables that are collinear. The grouping of variables together to form a factor is undertaken in such a way that most of the variability in the pattern of correlations is accounted for. The variables correlating highly with a given factor are said to be loading to the consistency of this factor, hence they are called factor loadings. Factor loadings tell us about the relative

contribution that a variable makes to a factor. However, the factor loadings in a given analysis can be both correlation coefficients and regression coefficients. In addition, conducting a Factor analysis most variables have high factor loadings on a principal factor, and small loadings on all other factors. Furthermore, once factors are extracted (and are all independent, non-correlated), each one of them can have associated variables tilted from their axis, and all factors can be placed on different axes. These characteristics make interpretation difficult, and so a technique called "rotation" can be adopted to facilitate factor comparisons and factor stability. In "rotation" we accept that if a factor is a classification axis along which variables can be plotted, then factor rotation effectively rotates these factor axes such that variables are loaded maximally to only one factor.

There are 2 types of *rotation*: orthogonal and oblique rotation. When orthogonal or varimax (i.e. accounting for maximum variance) rotation is used, any underlying factors are assumed to be independent (not correlated), and by orthogonally rotating them we ensure that they remain independent. In oblique rotation the factors are allowed to correlate (the axes do not remain perpendicular while rotating). The choice of rotation depends on theoretical grounds relating to the suppositions of whether the factors should be independent. In the present thesis it is expected that they are independent as the 3 factors have theoretically been established as such i.e. perceived self-competence (Harter), social information-processing bias (Dodge), and interpersonal problem analysis (Marsh).

Factor analysis is divided into Principal Components analysis (PCA, exploratory) and plain Factor Analysis (FA, confirmatory). These techniques differ in the communality estimates that are used. Factor analysis derives a mathematical model from which factors are estimated, whereas PCA merely deconstructs the original data into a set of linear variates (Dunteman, 1989). Some statisticians and psychometricians claim that of the two, PCA is a psychometrically sound procedure, less complex than FA, and bears various similarities to discriminant analysis. However, the question is whether they provide different solutions to the same problems. An extensive overview by Guadagnoli & Velicer (1988) conclusively asserted that the solutions generated from PCA are only slightly different to those derived from FA techniques. Empirically it has been suggested (Stevens, 1992) that with 30+ variables and communalities of 0.7 upwards for all variables, solutions are similar. However, with fewer than 20 variables (as in the present study) and communalities as low as < 0.4 differences are very likely. On the other hand, Cliff (1987) asserts that PCA *"is at best a common factor analysis with some error added and at worst an unrecognizable hodgepodge of things from which nothing can be determined"* (p.349).

The synopsis of their differences as it is perceived in this study is that Principal Components analysis is aimed at expressing the structure of a data matrix in a small number of dimensions or components. By contrast, Factor analysis is a model-based technique, a means of theory testing where a statistical model is assumed with a fixed number of factors.

In this study the number of factors (of the independent variables) is fixed and the main aim is to test the model proposed to predict the dependent variables. Hence, plain Factor analysis was used. However, since the variables in the study are less than 20 Principal Components Analysis results can be equally useful in discovering particular independent variables' effect on specific dependent variables of the Achenbach problematic behaviour category descriptors.

13.2 The Factor Analysis data

In conducting the analysis some theoretical and psychological criteria were taken into consideration. Entered in the analysis were 3 of the 4 Harter variables leaving out Physical competence which had not exerted any influence as determined by the preliminary and correlational analysis, the 4/4 Marsh variables, and 4 of 8 of Dodge variables particularly the ones that had the ambiguous story outcome as a condition. This was initially decided due to the theoretical underpinnings of the study and the preliminary findings that ambiguous outcome stories presented significant differences between the behaviours and explanations offered by the two groups. Table 13.1 below shows the findings for this analysis:

Table 13.1: Factor analysis using 15 independent variables derived from 3 factors in the theory.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.390	22.598	22.598	3.390	22.598	22.598	2.507	16.710	16.710
2	1.943	12.955	35.553	1.943	12.955	35.553	2.084	13.895	30.605
3	1.803	12.020	47.573	1.803	12.020	47.573	1.906	12.708	43.313
4	1.242	8.282	55.855	1.242	8.282	55.855	1.858	12.389	55.702
5	1.117	7.448	63.304	1.117	7.448	63.304	1.140	7.602	63.304
6	.934	6.228	69.532						
7	.873	5.818	75.350						
8	.764	5.093	80.443						
9	.651	4.342	84.785						
10	.613	4.085	88.870						
11	.507	3.383	92.253						
12	.465	3.097	95.350						
13	.320	2.136	97.485						
14	.205	1.366	98.851						
15	.172	1.149	100.000						

Extraction Method: Principal Component Analysis.

From Table 13.1 above we can see that **5 factors** were extracted based on the Kaiser (1960) formula for extracting factors with Eigen values larger than 1. The Kaiser Measure of Sampling Adequacy was 0.6 (Kaiser, 1974, proposes a bare minimum of 0.5, while 0.5-0.7 is rated mediocre) whereas Bartlet's Test of Sphericity was significant at 0.001.

We need to remember that the independent variables used in the present analysis were derived from 3 theory based factors. In Table 13.1 above however, the first 4 factors seem to account for a larger percentage of the variance but factor 5 also has an eigen value above 1.

Kaiser recommended retaining the factors with an eigen value above 1 based on the idea that eigen values represent the amount of variation explained by

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a factor, and an eigen value of 1 represents a substantial amount of variation. However, Joliffe (1972, 1986) asserted that Kaiser's criterion is too strict and suggests the option of retaining all factors with eigen values more than .70. As can be seen in the scree plot (see figure 13.1), the difference between how many factors are retained using either Kaiser's formula or Joliffe's is substantial. Applied research has indicated that Kaiser's criterion is more appropriate when the number of variables is less than 30, and the resulting communalities (after extraction) are all greater than .70, but is also appropriate when the sample size exceeds 250 and the average communality is greater than or equal to .60. Since these criteria are not met in the present study (240 cases, not all communalities greater than 0.70; see Table 13.2 below) a scree plot is a better empirical tool to decide on the number of factors provided the sample size exceeds 200 cases.

Table 13.2: Communalities extracted.

	Initial	Extraction
Harter cognitive competence: mean value	1.000	.660
Harter social competence: means	1.000	.613
Harter general self-esteem	1.000	.649
Dodge's causal explanation of negative outcome -positive inst	1.000	.528
Dodge's proposed response to neg. outcome positive inst	1.000	.640
causal expln. of negative outcome -negative inst	1.000	.453
response to negative outcome - negative inst	1.000	.624
cause for ambigious outcm - positive inst	1.000	.645
response to ambiguous outcome -positive inst	1.000	.633
cause of ambigious outcome – negative inst	1.000	.559
response to ambiguous outcome -negative inst	1.000	.543
marsh.pd	1.000	.531
m.alt.t	1.000	.869
m.cons.t	1.000	.869
m.sol.ad	1.000	.679

Extraction Method: Principal Component Analysis.

The unrotated reading from Table 13.1 above suggests that the 1st factor accounted for considerably more variance (22.6%) than factors 2 and 3. Factor 2 accounted for 13 % and factor 3 for 12%. Factor 4 accounted for just 8.3%. After Varimax rotation was completed the difference between factors 1 and 2 were variances of 16.7% and 13.9% respectively. Factor 4's contribution rose to 12.4% of the variance.

Taking account of the data output of Table 13.1, and the number of cases and independent variables in the present study, consideration of the Scree plot in Figure 13.1 below was essential to assess and double check the meaning of the factor extraction results:

Figure 13.1: Scree Plot of 11 Independent +1 Dependent variable.
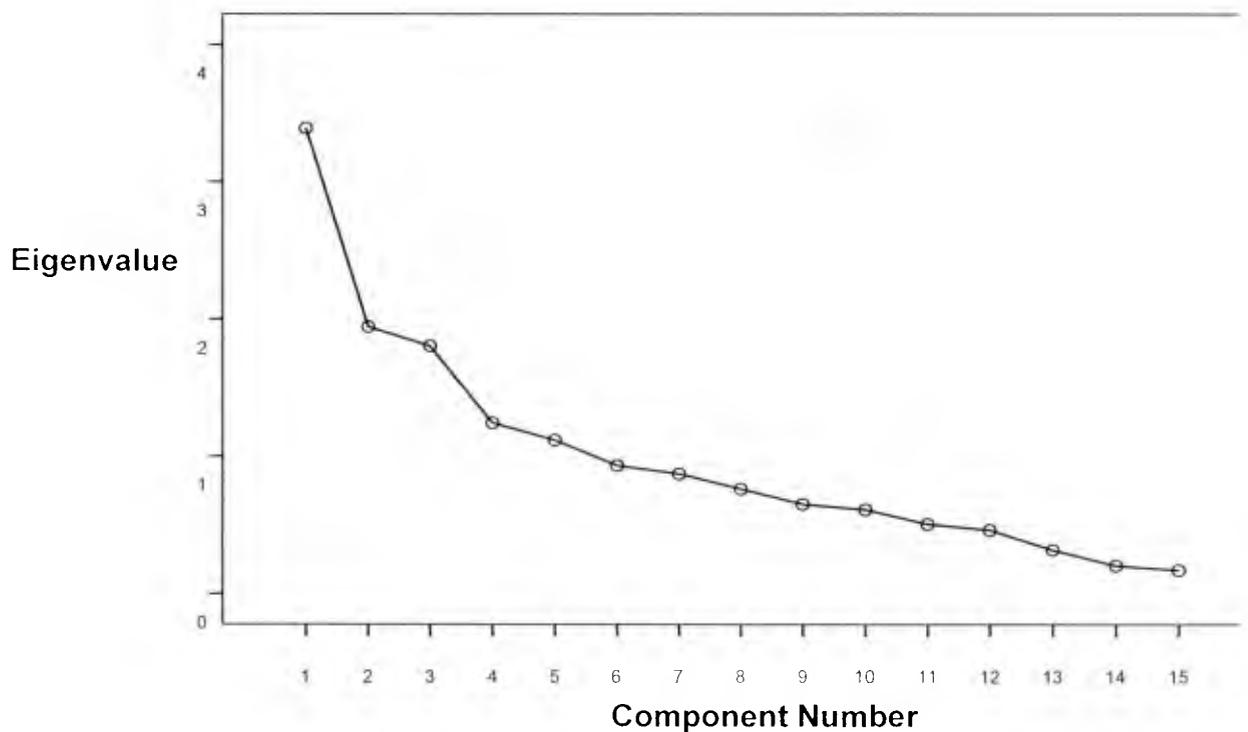
From the scree plot we can see that three factors are clearly separate from the first point of inflexion at factor 4. Another 2 factors could be included before the second inflexion point where the slope of the line starts to even out. Bearing in mind that the independent variables used in the present study belong to three measures based on theory, it is evident that a three factor model may be appropriate. However, more fine grained analysis is needed to explain the 4th and 5th factors. For this we need to look at Table 13.3 below which presents the variable loadings of the identified factors after rotation:

Table 13.3: Rotated component matrix [(a)] of the 5 factor extraction

	Component				
	1	2	3	4	5
DODGE- response to *negative* outcome -negative instigator	.771				
DODGE- proposed response to *negative* outcome, positive instigator	.767				
DODGE- causal explanation of *negative* outcome - positive instigator	.717				
DODGE- causal explanation of *negative* outcome - negative instigator	.658				
DODGE- causal explanation of *ambiguous* outcome - positive instigator		.785			
DODGE- proposed response to *ambiguous* outcome - positive instigator		.773			
DODGE- causal explanation of *ambiguous* outcome - negative instigator		.690			
DODGE- proposed response to *ambiguous* outcome - negative instigator	.481	.538			
MARSH- consequential thinking			.929		
MARSH- alternative thinking			.926		
HARTER- cognitive competence				.791	
HARTER- social competence				.773	
HARTER- general self-esteem				.761	
MARSH- solution adequacy					.784
MARSH- problem definition			.316		.634

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 5 iterations.

The rotated loadings as presented above reveal: that the 8 variables of the Dodge measures load on two factors based on the valence of the outcome of the story, i.e. negative or ambiguous. This suggests that there is a clear difference between the way all children in the sample perceive and respond to the 2 different endings of the stories. However, a response to the ambiguous outcome story with a negative instigator also loads 0.48 on the negative outcome story factor 1. Factor 1 then seems to be about clear hostility and aggression as a result of straightforward interpretation of the interaction whereas Factor 2 seems to be about processing and selection in less clear social situations related to the bias or not of the assessor.

The Marsh variables also load on two factors: Alternative thinking and consequential thinking seem to form a separate factor (3) with high loadings in the 0.90s suggesting intercorrelations. This is not surprising as consequential thinking is based on each of the alternative thinking answers to interpersonal problem stories that each child presented. The other two MARSH variables, Solution adequacy and Problem definition load on factor 5. Problem definition, however, loads on factor 3 with the other two Marsh variables.

Finally, the HARTER variables consistently and highly load on factor 4 (0.79, 0.77, and 0.76 for cognitive competence, social competence and self-esteem respectively).

The scree plot indicated a potentially interesting **6 factor** analysis. Using the data from the whole sample did not facilitate the interpretative power of a 5

factor analysis.

From Table 13.4 we can see that the extraction scores are overall higher for the 6 factor than the 5 factor solution.

Table 13.4: Communalities of a forced 6 factor analysis for the whole sample

	Initial	Extraction
Harter cognitive competence	1.000	.704
Harter social competence	1.000	.620
Harter general self-esteem	1.000	.650
DODGE- causal explanation of **negative outcome** –positive inst	1.000	.700
DODGE- proposed response to **neg. outcome** positive inst	1.000	.640
DODGE- causal expln. of **negative outcome** -negative inst	1.000	.453
DODGE- response to **negative outcome** -negative inst	1.000	.755
DODGE- cause of *ambiguous outcome* -positive inst	1.000	.774
DODGE- response to *ambiguous outcome* -positive inst	1.000	.635
DODGE- cause of *ambiguous outcome* -negative inst	1.000	.561
DODGE- response to *ambiguous outcome* -negative inst	1.000	.699
MARSH: Problem Definition	1.000	.733
MARSH: Alternative thinking	1.000	.883
MARSH: Consequential thinking	1.000	.880
MARSH: Solution adequacy	1.000	.743

Extraction Method: Principal Component Analysis.

From Table 13.5 we can see that the 6 factor extraction adds another 6% of explained variance as compared to the 5 factor extraction. A more consistent storyline regarding whether the 6 factor extraction adds any interpretative weight can be considered by looking at Table 13.6 below:

Table 13.5: Total Variance explained for a 6 factor solution, whole sample

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.390	22.598	22.598	3.390	22.598	22.598	2.520	16.803	16.803
2	1.943	12.955	35.553	1.943	12.955	35.553	2.029	13.525	30.328
3	1.803	12.020	47.573	1.803	12.020	47.573	1.863	12.421	42.749
4	1.242	8.282	55.855	1.242	8.282	55.855	1.857	12.379	55.128
5	1.117	7.448	63.304	1.117	7.448	63.304	1.105	7.368	62.497
6	.934	6.228	69.532	.934	6.228	69.532	1.055	7.035	69.532
7	.873	5.818	75.350						
8	.764	5.093	80.443						
9	.651	4.342	84.785						
10	.613	4.085	88.870						
11	.507	3.383	92.253						
12	.465	3.097	95.350						
13	.320	2.136	97.485						
14	.205	1.366	98.851						
15	.172	1.149	100.000						

Extraction Method: Principal Component Analysis.

Table 13.6: Rotated component matrix [a] of the 6 factor extraction for the whole sample

	Component					
	1	2	3	4	5	6
DODGE- response to negative outcome -negative inst	.840					
DODGE- proposed response to neg. outcome positive inst	.758					
DODGE- causal expln. of negative outcome -negative inst	.648					
DODGE- causal explanation of negative outcome -positive inst	.606				-.346	.404
DODGE- response to ambiguous outcome -negative inst	.588	.461				
DODGE- cause of ambigious outcm -positive inst		.831				
DODGE- response to ambiguous outcome -positive inst		.758				
DODGE- cause of ambigious outcome -negative inst		.683				
MARSH: Consequential thinking			.931			
MARSH: Alternative thinking			.928			
Harter cognitive competence				.806		
Harter social competence				.764		
Harter general self-esteem				.757		
MARSH: Solution adequacy					.832	
MARSH: Problem Definition						.798

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 5 iterations.

Table 13.6 above shows that Factor 1 and Factor 2 still separate the Dodge variables into Negative and Ambiguous outcome stories. However, the 6 factor extraction shows the Response to Ambiguous outcome positive instigator variable loading higher (0.59) on Factor 1 of Negative outcome story than its Ambiguous outcome story Factor 2 (0.46). The latter is the reverse situation to the 5 factor extraction.

Factor 3 is formed of the Marsh Alternative thinking and Consequential thinking variables, which is consistent with the 5 factor extraction. Factor 4 is made up of all the Harter variables as was also the case with the 5 factor extraction. The variable loadings were also of the same magnitude. Factor 5 includes only the Solution Adequacy variable of Marsh and Factor 6 the Problem Definition variable of Marsh. The latter factor also receives a moderate loading from the Dodge causal explanation for a negative outcome story with a positive instigator.

Thus, the only qualitative difference between a forced 6 factor and the previous 5 factor extraction in the factor analysis is the separation of the 2 Marsh variables of Solution adequacy and Problem definition. This suggests that these 2 variables are uncommon factorially. The latter leaves the interpretation of the analyses unaffected as the hypothesis did not predict a strong association between the 2 variables.

13.3 SUMMARY

Factor analysis of the independent variables in the present thesis has supported the model primarily by identifying 3 core factors as extracted from the data and 5 or 6 secondary factors. The 5 factor solution shows that the Dodge variables provide significantly different information in negative outcome and ambiguous outcome stories. In addition, the Marsh variables can also be differentiated in relation to alternative and consequential thinking on one factor, and problem definition and solution adequacy on another for the 5 factor extraction. The 6 factor extraction further has these latter 2 variables factorially unrelated. The Harter variables remained consistently robust in their loading onto one factor only.

All this reinforces the emerging findings of the study, i.e. that the ambiguous outcome stories lead to different outcomes from the negative ones and seem to describe a different type of behavioral profile in the sample, as do the different Marsh variables. The Harter variables are important throughout. Overall the model was well supported in terms of significance levels ($p=0.001$) and the factors received high loadings from their associated variables.

CHAPTER 14

CLUSTER ANALYSIS

14.1 The Theoretical basis of Cluster Analysis

This procedure attempts to identify relatively homogeneous groups of cases based on selected characteristics, using an algorithm that can handle large numbers of cases. However, the algorithm requires specifying the number of clusters. We can also specify a variable whose values are used to label case wise output.

K-means cluster analysis (as used by SPSS) is a tool designed to assign cases to a fixed number of groups (clusters) whose characteristics are not yet known but are based on a set of specified variables. A good cluster analysis needs to be (Field, 2005):

- Efficient. Uses as few clusters as possible.

- Effective. Captures all statistically important clusters.

14.2 Cluster analysis in the present research

14.2.1 The 2-cluster solution model

In the present thesis Cluster analysis was initially visualized using a 2 cluster solution, based on the design of the study since there were 2 groups of children separated by their problem behaviour scoring: the experimental group and the control group. Ideally the 240 cases (i.e. children) would be assigned equally to 2 clusters of 120 cases each. The variables entered in the analysis included all the independent variables (Harter, Dodge, and Marsh) with the addition of Achenbach's narrow-band behaviour subscales (8 in total). Below follow the tables of the findings of this 2-cluster solution with the Achenbach variables.

Table 14.1: Final Cluster Centers of a 2-cluster solution on independent and dependent behaviour subscales variables, whole sample.

VARIABLES	Cluster	
	1	2
Harter cognitive competence	3.04	2.90
Harter social competence	3.08	2.94
Harter physical competence	2.83	2.86
Harter general self-esteem	2.92	2.76
DODGE- causal explanation of negative outcome -positive instigator	1.1	1.1
DODGE- proposed response to neg. outcome positive inst	1.2	1.3
DODGE- causal explanation. of negative outcome -negative instigator	1.2	1.3
DODGE- response to negative outcome -negative instigator	1.4	1.5
DODGE- cause of ambiguous outcome - positive inst	1.2	1.4
DODGE- response to ambiguous outcome -positive instigator	1.0	1.3
DODGE- cause of ambiguous outcome - negative inst	1.5	1.6
DODGE- response to ambiguous outcome -negative instigator inst	1.2	1.5
MARSH: Problem Definition	1.4	1.3
MARSH: Alternative thinking	3.0	3.1
MARSH: Consequential thinking	5.6	6.0
MARSH: Solution adequacy	6.3	5.9
withdrw1	2	3
somatic2	0	1
anxdep3	5	6
social4	1	6
thought5	0	0
attentn6	5	18
delinq7	1	4
aggress8	2	19

The distances between the final cluster centers are 21.783.

The analysis of variance presented in Table 14.2 shows the significance of particular variables exerting a large effect on separating the **whole sample** into 2 clusters.

Table 14.2: ANOVA of ALL independent + 8 behavioural profiles dependent variables for the whole sample

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Harter cognitive competence	1.084	1	.406	238	2.666	.104
Harter social competence	1.162	1	.381	238	3.048	.082
Harter physical competence	.035	1	.348	238	.101	.751
Harter general self-esteem	1.429	1	.346	238	4.129	**.043**
DODGE- causal explanation of negative outcome -positive instigator	.000	1	.072	238	.001	.980
DODGE- proposed response to neg. outcome positive instigator	.563	1	.222	238	2.532	.113
DODGE- causal explanation. of negative outcome -negative instigator	.092	1	.115	238	.801	.372
DODGE- response to negative outcome -negative instigator	1.459	1	.322	238	4.536	**.034**
DODGE- cause of ambiguous outcome -positive instigator	2.151	1	.253	238	8.503	**.004**
DODGE- response to ambiguous outcome -positive instigator	5.014	1	.191	238	26.193	**.000**
DODGE- cause of ambiguous outcome -negative instigator	.520	1	.193	238	2.694	.102
DODGE- response to ambiguous outcome -negative instigator	4.182	1	.360	238	11.625	**.001**
MARSH: Problem Definition	.520	1	.317	238	1.641	.201
MARSH: Alternative thinking	.011	1	.782	238	.014	.906
MARSH: Consequential thinking	10.349	1	8.168	238	1.267	.261
MARSH: Solution adequacy	7.825	1	7.550	238	1.036	.310
withdrw1	25.277	1	8.033	238	3.147	.077
somatic2	.888	1	1.112	238	.798	.372
anxdep3	76.509	1	14.744	238	5.189	**.024**
social4	1047.030	1	7.596	238	137.846	**.000**
thought5	3.206	1	.152	238	21.024	**.000**
attentn6	8529.263	1	34.973	238	243.879	**.000**
delinq7	408.387	1	2.313	238	176.545	**.000**
aggress8	16317.282	1	31.509	238	517.856	**.000**

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

The ANOVA Table 14.2 above shows significant F values for the variables Harter Self-esteem (p=0.04), Dodge response bias to negative outcome story with a negative status actor (p=0.03), Dodge causal attribution of ambiguous outcome story with a positive actor (p=0.004), Dodge response bias to ambiguous outcome

story with a positive actor (p=0.001), Dodge response to ambiguous outcome story with a negative actor (p=0.001), and 6 of the 8 Achenbach behaviour problem variables: anxious depressed (p=0.02), social problems (p=0.001), thought problems (p=0.001), attention problems (p=0.001), delinquent behaviour (p=0.001), and aggressive behaviour (p=0.001). Preliminary descriptive analyses of the Dodge variables also revealed that Ambiguous outcome stories variables showed a significant effect difference between the two cluster groups and especially in the Proposed Response variables. In particular a very large F value was registered for the Ambiguous story Response with a Positive instigator.

The next step was to look at the numbers of pupils in each cluster. From Table 14.3 below we observe that the 2-cluster solution has 152 cases in cluster 1 and 88 cases in cluster 2. This suggests that more than 2 clusters may be needed to take account of the makeup of the sample as this solution does not fit the original design of the study with experimental and control groups. For this reason a 3-cluster solution was undertaken.

Table 14.3: Number of Cases in each Cluster

Cluster	1	152.000
	2	88.000
Valid		240.000
Missing		.000

14.2.2 The 3-cluster solution analysis

The 3-cluster solution set out in Table 14.4 below presents the Final Clusters **with** the Achenbach behaviour profile variables alongside the other variables. Cluster 1 had 64 children, Cluster 2 had 123 children, and Cluster 3 had 53 children.

Table 14.4: Final 3-Cluster Centers, with Achenbach dependent variables

	Cluster		
	1	2	3
Harter cognitive competence	2.98	3.06	2.82
Harter social competence	2.98	3.12	2.88
Harter general self-esteem	2.89	2.93	2.66
DODGE- causal explanation of negative outcome -positive instigator	1.1	1.1	1.1
DODGE- proposed response to neg. outcome positive instigator	1.3	1.2	1.2
DODGE- causal explanation. of negative outcome -negative instigator	1.2	1.3	1.3
DODGE- response to negative outcome - negative instigator	1.5	1.3	1.5
DODGE- cause of ambiguous outcome – positive instigator	1.4	1.2	1.4
DODGE- response to ambiguous outcome – positive instigator	1.2	1.0	1.3
DODGE- cause of ambiguous outcome - negative instigator	1.6	1.5	1.6
DODGE- response to ambiguous outcome - negative instigator	1.3	1.2	1.5
MARSH: Problem Definition	1.3	1.5	1.4
MARSH: Alternative thinking	3.1	3.1	2.9
MARSH: Consequential thinking	5.9	5.7	5.6
MARSH: Solution adequacy	5.9	6.4	6.0
TRF: Withdrw1	5	1	2
TRF: Somatic2	1	0	1
TRF: Anxdep3	7	4	6
TRF: Social4	4	1	6
TRF: Thought5	0	0	0
TRF: Attentn6	15	3	18
TRF: Delinq7	2	1	4
TRF: Aggress8	8	2	24

If we look at the distances of the mean values between the 3 clusters for each of the variables in Table 14.4, although they are slight, they portray a potential tendency in the thinking and the actions of the children relating to the experimented social conditions of the stories:

In relation to the three (3) **Harter** variables the children of cluster 3 have lower Cognitive competence, Social competence and Self-esteem than the other 2 clusters of children. Cluster 2 children have the highest perceived competence across all the same 3 variables, while Cluster 1 children are in the middle on all 3 variables.

This can be interpreted as follows: cluster 3 children self-report their social, cognitive skills, and self-worth as lacking compared to the other children; cluster 2 children self assess their same skills and self-worth as high and adequate, and cluster 1 as moderately adequate. However, all scorings are above the absolute median of 2.50 as set by Harter (range of scores 1-4), indicating positive self-perception overall (3 or 4 are always positive in each item, whereas 1 or 2 of negative competence).

For the eight (8) **Dodge** variables we need to remember that the range for *causal attribution* is 0-2 with 1 being perceived as "accidental" and 2 being perceived as "hostile intent". Thus, a mean at or above 1.5 gravitates towards hostile attribution bias. This is easily interpreted when the story has a negative outcome, but attributing hostility on the other even in an ambiguous outcome story and even if the instigator has an overall positive status may carry a qualitatively

more significant meaning. For *proposed response* the range is 0-3 with 2 involving indirect aggression towards the peer (would report to a teacher with the intention to have the pupil punished) and 3 involving direct aggression (would retaliate immediately, hit, "kill"). Again, any score with a mean above 1.5 would reveal a higher tendency in a cluster or group of children to show aggressive response bias (be it direct or indirect).

Looking at the actual data it appears that there is a 2-part distinction: the 4 variables conditioned with a negative outcome in their stories and the 4 variables conditioned with an ambiguous outcome.

For the 4 negative outcome story variables the data reveal that **Cluster 1's** mean is slightly higher in Proposed Response with a positive instigator (1.3 compared to 1.2 for clusters 2 and 3) and Proposed Response with a negative instigator (1.5 compared to 1.2 for cluster 2 and 1.5 for cluster 3). At the same time, Causal attribution first with a positive instigator is equal in all clusters (1.1), while with a negative instigator lower than the other clusters (1.2 to 1.3). In **Cluster 3** Causal attribution has a mean of 1.1 with a positive instigator (the same for all clusters) and 1.3 with a negative instigator (1.2 cluster 1; 1.3 cluster 2), whereas these children's Proposed responses have a mean of 1.2 with a positive instigator (1.3 cluster 1; 1.2 cluster 2) and 1.5 with a negative instigator (1.5 cluster 1; 1.2 cluster 2); thus the status of the instigator seems to affect substantially cluster 3 children's proposed responses. For **Cluster 2** the mean for Causal attribution is 1.1 with a positive instigator (as all) and 1.3 with a negative instigator (1.2 for cluster 1; 1.3 for cluster 3), whereas on Proposed response it is 1.2 with a positive instigator (1.3 for cluster 1; 1.2 for cluster 3) and 1.3 with a

negative instigator (clusters 2 and 3 are 1.5); thus, it may be that cluster 2 children interpret differently the causal attribution based on the status of the instigator but are less likely to act aggressively towards them regardless, compared to the other 2 groups. This will be explored further at the end of this section.

In the 4 ambiguous outcome story variables **Cluster 1** scored highest on *causal attribution with a positive instigator* (1.4 whereas cluster 2 is 1.2 and cluster 3 is 1.4) and *causal attribution with a negative instigator* (1.6 whereas cluster 2 is 1.5 and cluster 3 is also 1.6). The *proposed response variable with a positive instigator* rests in the middle between the other two clusters at 1.2 (1.0 for cluster 2 and 1.3 for cluster 3) as also does the *proposed response with a negative instigator* at 1.3 (cluster 2 is 1.2 and cluster 3 1.5). **Cluster 2** has the lowest mean across the 4 variables with the most "prosocial proposed response" to the story with a positive instigator (1.0 which translates into reasoning with and talking to the other child) and a mean of only 1.2 with a negative instigator. In contrast, **Cluster 3** children have consistently the highest mean across the 4 ambiguous story variables with 1.4 for Causal attribution, 1.3 for proposed response with a positive instigator, and 1.6 for Causal attribution and 1.5 for Response with a negative instigator. Thus, this group of children seem to be the more biased to immediately attribute aggressive intent to the other and respond more aggressively (directly or indirectly) despite the ambiguous story ending that does not suggest a clear aggressive or threatening intention by the instigator.

To summarise, for the **Dodge** variables, bearing in mind that all 240 cases were entered in the cluster analysis, the profile of the clusters appears like this:

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Cluster 2 has the consistently lowest mean score on all Ambiguous outcome stories and Negative outcome stories (which suggests prosocial behaviour) except for Causal attribution with a negative instigator which was at the high end. Despite the latter they still proposed to respond within prosocial norms (with a cutoff mean of <1.5). So, this cluster's children portray largely prosocial behaviour. Bearing in mind that this cluster has 123 cases (120 cases are the control group) the data support the design apart from 3 cases. This means that the other 2 clusters include the majority of the experimental group.

Cluster 1 children's (64 cases) profile suggests that when the outcome of the story is negative for them, despite their ability to attribute accidental intent to the other child, they still have the tendency to respond aggressively irrespective of the status of the instigator.

The bias to aggressive response may be explained by these children's difficulty in separating their "suffering" or threat to possession in a social interaction and their subsequent emotional arousal, from a non aggressive tendency to react. When the outcome of the story was ambiguous and despite high mean values for attributing hostile intent to the other child irrespective of status, their proposed responses did not follow the same trait suggesting that these children had control of their behaviour and were able to rationalize their reaction under situations of unclear threat. Thus their self-control was functionally exercised.

Cluster 3 children's (53 cases) profile includes the remainder of the experimental group. This cluster's profile shares some of cluster 1 tendencies but

is also the furthest in distance of means from cluster 2. Its similarities with cluster 1 involve clear negative outcome stories where cluster 3 children score highest only on attributing hostile causality and proposing an aggressive response with a negative instigator whereas their proposed response to a positive instigator is the lowest. When the ambiguous stories are introduced these children have consistently the highest mean on all 4 variables i.e. causal attribution and response to stories both with a positive and with a negative instigator. This suggests that this cluster has the highest hostile/aggressive bias under the least threatening condition. It seems that outcome uncertainty in a social interaction for these children leads to difficulty "reading" the situation and acting upon it, triggering a hostility bias in analysis and in reaction. These children seem to have a handicap in their social information processing skills when the social cues are not easy to read.

In relation to the **Marsh** variables the children in Cluster 2 understand better (1.5) the defining elements of a social problem they are faced with (means of 1.3 and 1.4 for clusters 1 and 3 respectively), have a higher mean in relation to alternative thinking about a problem (3.1, with 3.1 and 2.9 for clusters 1 and 3 respectively), are in the middle in relation to the mean consequences in each of the alternative solutions they gave with 5.7 (compared to 5.9 and 5.6 for clusters 1 and 3), and are more prosocial and/or altruistic with a means of 6.4 (compared to 5.9 and 6.0 for clusters 1 and 3 respectively) in the action they proposed they would take (i.e. solution adequacy) under the circumstances presented to them. Their profile suggests that they are the most socially skilful group of the 3.

Cluster 1 children (N=64) are in the middle in defining the nature of a social problem's challenge, are highest on mean alternative thinking (3.1) and consequential thinking (5.9), and are less prosocial and/or altruistic (5.9) than the other 2 clusters of children. Their profile could be perceived as indicative of children with less perceptive skills relating to the nature of a problem, skilful in alternative thinking and consequential thinking, but lacking in prosocial and/or altruistic choice of a proposed course of action. Perhaps they are more self-centred.

Cluster 3 children (N=53) have relatively good Problem Definition (1.4), but have the poorest alternative thinking scores (2.9) and consequential thinking (5.6) skills of all the clusters while also being quite self-centred in their Solution Adequacy (6.0). Their profile suggests that although they understand the nature of problems quite well, they lack the ability to generate alternative thinking and assess potential consequences. Thinking of the self first is what they tend to do. Cluster 3 children seem to lack the processing resources of cluster 1 children although they understand better than Cluster 1 children what the social problem entails. In short Cluster 1 children's data indicates that they have the ability to think alternatively and assess consequences but probably "choose to ignore it" (i.e. make a conscious decision), whereas Cluster 3 children lack the ability to think alternatively and consequentially. Their tendency to be biased towards hostility in their social processing and responses could be attributed to a response which has become "hard-wired" and, hence, have a behaviourally more accessible negative script.

In relation to Achenbach's eight (8) dependent variables, for Cluster 2 children the mean scores are negligible in terms of problems as expected for the control children. Interestingly the children in Cluster 1 are under the SEBDs cutoff points on all eight variables, all types of problems, i.e. Internalizing, Externalizing, and Mixed. Cluster 3 children are the only ones with aggressive behaviour (externalizing spectrum) in the clinical borderline range but only for girls (Mean of cluster=24, when borderline clinical is in between 17-22 for girls and 25-29 for boys). These data support the conclusion of the analysis of the other variables which suggests that Cluster 3 children are more aggressive. In particular, the girls in this cluster exhibit clinical range problems. Table 14.5 provides the information regarding the statistically significant differences between the clusters in relation to each variable:

Table 14.5: ANOVA of Independent and Dependent variables

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	Df		
Harter cognitive competence	1.084	2	.404	237	2.685	.070
Harter social competence	1.235	2	.377	237	3.273	**.040**
Harter general self-esteem	1.413	2	.342	237	4.137	**.017**
DODGE- causal explanation of negative outcome -positive instigator	.003	2	.072	237	.035	.965
DODGE- proposed response to neg. outcome positive instigator	.364	2	.223	237	1.637	.197
DODGE- causal explanation. of negative outcome -negative instigator	.083	2	.115	237	.721	.487
DODGE- response to negative outcome –negative instigator	.753	2	.323	237	2.333	.099
DODGE- cause of ambiguous outcome -positive instigator	1.065	2	.254	237	4.192	**.016**
DODGE- response to ambiguous outcome -positive instigator	2.047	2	.196	237	10.439	**.000**
DODGE- cause of ambiguous outcome –negative instigator	.353	2	.193	237	1.828	.163
DODGE- response to ambiguous outcome –negative instigator	1.730	2	.364	237	4.748	**.010**
MARSH: Problem Definition	.570	2	.316	237	1.806	.167
MARSH: Alternative thinking	.720	2	.780	237	.924	.398
MARSH: Consequential thinking	1.336	2	8.235	237	.162	.850
MARSH: Solution adequacy	5.716	2	7.567	237	.755	.471
TRF: Withdrawn	209.457	2	6.406	237	32.696	**.000**
TRF: Somatic Complaints	4.697	2	1.081	237	4.346	**.014**
TRF: Anxious/Depressed	133.739	2	14.001	237	9.552	**.000**
TRF: Social Problems	601.543	2	6.969	237	86.314	**.000**
TRF: Thought Problems	1.306	2	.156	237	8.395	**.000**
TRF: Attention Problems	5837.530	2	21.848	237	267.194	**.000**
TRF: Delinquent	227.942	2	2.123	237	107.389	**.000**
TRF: Aggressive	9039.732	2	24.207	237	373.436	**.000**

The F tests should be used only for descriptive purposes because the clusters have been chosen to maximize the differences among cases in different clusters. The observed significance levels are not corrected for this and thus cannot be interpreted as tests of the hypothesis that the cluster means are equal.

Further exploration of the descriptive data is presented below. Table 14.6 shows the relationship between the three clusters in relation to the original experimental **and** control groups. A Chi Square test was carried out to see if the

findings were statistically significant. The Pearson Chi-square Value was 191.644 (with no cells having an expected count of less than 5; the minimum expected count was 26.50) with just 2 degrees of freedom and a 2-way Significance of 0.001. The children in the Control group fell almost completely into Cluster 2 and their behaviour could be described as normal. Of the remaining 2 groups the Experimental group is divided between Cluster 1 children who appeared with some social skills and aggressive by choice. Cluster 3 consists of children who portrayed poor skills in resolving conflicts and also seemed to be aggressive by repetition or lack of prosocial choice; hence, hostile biased.

Table 14.6: SEBDs by Design Identification compared with Cluster Number of Case Crosstabulation, whole sample

| | | Cluster Number of Case | | | Total |
		1 Skilled Aggressive	2 Normal/Controls	3 Poor skilled, Hostile Aggressive	
Experimental	Count	59	8	53	120
	% within Identification	49.2%	6.7%	44.2%	100.0%
	% within Cluster Number of Case	92.2%	6.5%	100.0%	50.0%
	% of Total	24.6%	3.3%	22.1%	50.0%
Control	Count	5	115	0	120
	% within Identification	4.2%	95.8%	.0%	100.0%
	% within Cluster Number of Case	7.8%	93.5%	.0%	50.0%
	% of Total	2.1%	47.9%	.0%	50.0%
Total	Count	64	123	53	240
	% within Identification	26.7%	51.3%	22.1%	100.0%
	% within Cluster Number of Case	100.0%	100.0%	100.0%	100.0%
	% of Total	26.7%	51.3%	22.1%	100.0%

The crosstabulation in Table 14.6 shows that Cluster 2 includes 115 cases or 96% (out of a possible 120 as the control group) of the design-induced labelling of children as the control group with 5 cases or 4.2% loading to cluster 1, but **none** to cluster 3. Cluster 3 cases were 100% drawn from the experimental group accounting for 53 cases or 44.2% of the experimental group. Cluster 1 accounts for 59 cases or 49.2% of the Experimental group. Of those 59 cases 92.2% load to their cluster.

14.3 Conclusion

Analysis of the mean differences for each variable by cluster membership (for more analytical data tables see appendix 3, Tables 14.8 and 14.9) showed that the children in Cluster 2 had no bias towards attributing hostile intent or responding aggressively whatever the outcome of the story, they had more competence overall on the Harter subscales, more understanding in "cold" social processing situations, a good degree of alternative solution generation and outcome anticipation and, in particular, a much more prosocial and/or altruistic stance in actual decision making; hence they logically fit the the control group's' profile. On measures of psychopathology (dependent variables) they had fewer Somatic difficulties, and fewer Anxious/Depressed, Social, Thought and Attention problems, and portrayed lower Delinquent and aggressive behaviour.

The 2 remaining groups represent the experimental group. Cluster 1 children while appearing less clear about what to make of social interactions, had

the most skills for generating a wide number of solutions and considering their outcomes. At the same time, they chose a more self-gratifying solution over others, were more eager to attribute aggression or react aggressively under clear negative criteria (if the story has a negative outcome and/or the instigator has a negative status) while they portrayed more capabilities in exercising self-control when the story was ambiguous. On psychopathology profiles these children had higher scorings (i.e. problems) on Somatic complaints, and Anxious/depressed and withdrawn behaviour (i.e. internalizing band). Thus, it seems that cluster 1 describes Internalizers. However, the magnitude of their scores on Achenbach's TRF profiles was not within the clinical range.

Cluster 3 children had the lowest score on the Harter scales of cognitive competence, social competence and self-esteem, as well as on Marsh's alternative solutions and their consequences. They chose self-gratification over prosocial behaviour on the Marsh variables, and show an elevated and intense tendency to think (i.e. process) and respond aggressively irrespective of the story outcome and the status of the instigator. On Achenbach's TRF they exhibited high Delinquency and Aggressive behaviour (externalizing) and had high levels of Social and Attention problems (mixed).

The data presented above suggests that there appear to be two groups within the experimental group of children: the predominantly Externalizers who are substantially more aggressive and biased in their attributions irrespective of outcome and actor's status, but also less socially skilful, more single-minded and less flexible in their responses. In contrast, the other children were predominantly

internalizers who experienced conflicts within the self, were more likely to present problems relating to their emotions and were only aggressive in their response to a clearly negative outcome story with a clearly negative status child. These children appear to have a more flexible mental attitude in resolving conflicts and responding to them sometimes in an aggressive form while at other times in an acceptable way.

14.4 Summary

Cluster analysis revealed that a 2-cluster solution was inadequate to explain all of the cases. A 3-cluster analysis was more appropriate with 64 children in Cluster 1, 123 in Cluster 2, and 53 in Cluster 3. Cluster 2 accounted for almost all of the control sample. Of the other 2 clusters which formed the experimental sample further analysis and detailed profiling revealed that Cluster 1 children in the negative outcome story were prone to attribute hostile intent on the other child irrespective of instigator status. In the ambiguous outcome story they did not share the same tendency, but rather were able to rationalize their proposed responses. They seemed to process and allow for hostile/aggressive attribution and response to clearly negative social interactions.

Cluster 3 children were prone to attribute hostile intent and react aggressively not only in a story of clear valence, i.e. negative outcome, but similarly and even more in an ambiguous outcome story. This suggests a hostile/aggressive preponderance irrespective of instigator status and story outcome that may be a "hard-wired" behaviour. Little control is exercised and all

situations appear threatening or biased. A social-information processing handicap is proposed which differentiates them from cluster 1 children in that they seem to lack the necessary skills to show prosocial consideration but rather engage in social processing and select behaviour responses of a uniform hostile/aggressive nature.

As profile outlines Cluster 2 children could be described as the 'Normal'/Control group, Experimental group Cluster 1 seem to be skilled and selectively aggressive, and Experimental group Cluster 3 children could be described as poorly skilled hostile/aggressive.

CHAPTER 15

DISCUSSION OF FINDINGS

15.1. Introduction

The present chapter will draw together the evidence from the research linking the statistical analyses, the underlying hypotheses and the emergent theory. This will be achieved by: 1) addressing each of the research questions posed in the study, 2) presenting the outline of the identified model, 3) considering the limitations of the study.

15.2. The Research Questions

This chapter discusses the main findings arising from the present study as they relate to the main research questions and the existing literature. The eight core research questions are each addressed in turn.

15.3. Exploration of the research questions

<u>RESEARCH QUESTION 1</u>

The 1st research question asked if school-enacted emotional and behavioural problems of 8-12 year-old children, as assessed via Achenbach's TRF, could be predicted by the social information processing "independent variables" of Marsh's Interpersonal Problem Solving Competence (IPSC) alone?

Results from the analysis showed that the Marsh IPSC variables made a statistically significant contribution to explaining the variance only on Mixed type broad band SEBDs. IPSC social information processing variables did not show significant differences in means regarding particular profile behaviours.

Multiple Regression revealed that Marsh's IPSC variables were weak predictors of mixed type problems accounting for only 8.7% of the variance. Furthermore, of the 4 IPSC variables only Problem definition had a significant t score and a negative Beta suggesting that the less accurately a child defined the problem in a social interaction, the higher the mixed problems scoring. The scores for social problems, thought problems and attention problems were embedded in the mixed problems broadband score. The Marsh IPSC stories are meant to assess the social problem analytical skills of children with little emotional participation; hence, rudimentary processing can be easier. When possessions and personal emotional involvement are concerned this picture may change dramatically for

some SEBD children as stakes are higher and biases may enter into free recall and choice of response, as Dodge's theory and his script-designed stories within the social information-processing framework have suggested (see Dodge and Coie, 1987; Crick and Dodge, 1996; Dodge, Lochman, Harnish, Bates, and Pettit, 1997; Dodge, 1980; Dodge, 2006; Lochman & Dodge, 1998; Dodge & Somberg, 1987).

RESEARCH QUESTION 2

The second research question focused on whether SEBDs could be predicted by Dodge's social information processing variables Biased Causal Attribution or Biased Response to proposed stories of negative or ambiguous outcome to social interactions alone. Do Negative story outcomes as opposed to Ambiguous outcome stories reveal any differences in the thinking and behaviour patterns of particular clusters of children within the experimental group?

Results from the ANOVA and multiple regression were initially inspected for the whole sample, i.e. experimental and control groups. This revealed statistical significance in predicting Externalizing and Mixed behaviour of the Broad band Achenbach classification of problems, but not in predicting Internalizing problems. One out of the 8 Dodge variables in both instances accounted for about 20% of the variance, *Response to an Ambiguous outcome story with a Positive instigator*. Narrow band level or problem behaviour profile on the Achenbach test were predicted for Social problems and Attention problems of the Mixed problems category, and Delinquent and Aggressive behaviour

profiles of the Externalizing category, out of a total of 8 dependent profiles. The independent variable associated with this prediction in 3 out of the 4 cases was *Response to an Ambiguous outcome story with a Positive instigator*. The other independent predictor variable was *Causal Attribution to a Negative outcome story with a Positive instigator*. In all instances the variance accounted for was around 20%. This initial whole sample finding suggested that Proposed Response to an Ambiguous outcome story variable had a consistently significant association with predicting psychopathology. This finding is in accordance with the original work of Dodge in the 1980s (Dodge, 1980; Dodge et al., 1982; 1984; 1986; 1987) who used the social psychological experiment design of the story vignettes to test the hypothesis that aggressive boys would respond to ambiguous provocations as if the provocateur had acted with hostile intent. In addition, the variable with positive status instigator predicting psychopathological behaviour suggested that the status of the instigator further heightened the difference between the 4 variables of negative outcome stories and the variables of ambiguous outcome stories. Thus, children who received an ambiguous provocation by a positive instigator (2 positive manipulations as compared to negative outcome story and negative status provocateur) and still interpreted the action as hostile and proposed to react with aggression had a clear hostile bias in reading motives and acting upon them.

The main aim of the research was to explore issues relating to the experimental group, a sample not considered by earlier research. Using data from this group multiple regression analysis revealed no statistically significant outcome for the children with Withdrawn and Delinquent problem profiles. This

suggests that predicting psychopathological behaviour using the Dodge variables alone is inadequate to identify cohesive tendencies in large groups of children. However, there clearly was a difference between ambiguous outcome stories and negative outcome stories in the way that some children with SEBDs interpreted social stimuli and chose to respond to them. Answering research question 2 led to the exploration of the use of a simultaneous multiple regression analysis including a wider range of variables.

RESEARCH QUESTION 3

The 3rd research question addressed the extent that problems could be identified in the sample of 8-12 year-old Greek school children through measures of Harter's self-perceived competence alone (consisting of 4 independent variables), and in particular by child-reported self-esteem or global self-worth, i.e. the emotion related variable in the proposed model.

Whole sample ANOVA and multiple regression results initially indicated that the Social competence variable of the Harter four variables could predict Mixed type problems (i.e., not internalizing nor externalizing) while Self-esteem could predict Externalizing problems. Using the behaviour profile basis, Social competence accounted for 6% of the somatic problems (internalizing) variance, 8% of the social problems (mixed) variance, 6% of the attention problems (mixed) variance, while self-esteem predicted only 4% of the aggressive behaviour (externalizing) variance. Standardized Beta values were all negative indicating a

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negative association, i.e. the higher the problem score in each profile, the less the competence. The largest effect was social competence on social problems.

Findings from the Experimental group showed a statistically significant effect of the four Harter variables only on Social problems, accounting for 10% of the variance. However, none of the variables exerted a significant effect on its own. Thus, the social problems of SEBDs children were predicted by the Harter variables, although the effects were relatively small.

RESEARCH QUESTION 4

The 4th research question focused on the extent to which the independent variables in different combinations accounted for the variance in children with problems? Do similar measures, for instance, those assessing Social Cognitive factors (i.e. Dodge and Marsh variables) combined predict SEBDs?

Consideration of the previous research questions suggested that: the Marsh IPSC social information processing variables did not predict particular profile behaviours for the experimental children. They were weak predictors only of the Mixed problems broad-band category. For the whole sample the Dodge variables predicted Extrernalizing and Mixed behaviour from the Broad band Achenbach classification of problems, but not Internalizing problems. At Narrow band level Social problems and Attention problems of the Mixed problems category, and Delinquent and Aggressive behaviour profiles of the Externalizing category were

predicted.

Statistical significance was approached for the Experimental group but not reached for the Withdrawn behaviour profile with all 8 Dodge independent variables entered, the Delinquent behaviour profile with the 4 negative outcome variables entered, and the Withdrawn behaviour profile with the 4 ambiguous outcome variables entered.

The Harter four variables predicted only Social problems for the experimental group.

Individually, the 3 measures from the Dodge, Marsh, and Harter contributed about 10% of the variance. A combined Social Cognitive measure accounted for 17% of the variance.

The next logical step was to explore the theoretical and methodological contribution of the research using all 3 measures to identify their effect on particular problem behaviour profiles, and groups of children that seemed to display a pattern of maladjusted processing and responding behaviour.

RESEACH QUESTION 5

The fifth research question focused on answering whether a simultaneously entered multivariate model accounted for a larger percentage of variance of the dependent "behaviour problem" variables than a univariate model derived from the independent variables separately selected.

Analysis of the means from the experimental group suggested that of all the

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4 Harter subscale measures cognitive competence had the highest mean with self-esteem being the lowest. This suggested that the experimental group had a relatively high level of confidence in their cognitive abilities followed by their social competence but less confidence in relation to their global self-worth/self-esteem which was significantly lower than that of their control group counterparts. A comparatively low self-esteem self-reported score may have affected some SEBDs children feel less trust in their individual skills in tackling social rejection, in handling conflict (for example, hostile bias in causal attribution and response to clear negative outcome situation on Dodge), and in employing appropriate prosocial behaviour to resolve confrontation amicably (for example, hostile bias in causal processing and proposed response irrespective of the outcome of the story and the status of the instigator).

Analysis of the means of the Dodge variables revealed what was expected based on the theoretical underpinnings of the model, i.e. that the status of the instigator exerts an effect as well as the outcome valence of the stories. In addition, causal attribution and proposed response were very different between the experimental and the control groups, **especially in ambiguous outcome stories,** suggesting that experimental group children were "unaffected" by a less clearly threatening social context treating it as equally "hostile" as a negative outcome. This is an important finding that is also in accordance with the Dodge studies of the late 1980s and early 1990s.

A forced entry multivariate regression analysis based on all variables of the measures employed in the study, i.e. Dodge, Marsh, and Harter, was utilised. The

independent variables entered in the multiple regression analysis were 4 from the Marsh Interpersonal Problem Solving Competence (IPSC), 4 from Harter's Self-perceived Competence, and 8 from Dodge's Attribution and Response Biases. Analysis of all these predictors using data only from the experimental group on each dependent variable accounted for 21% of Mixed problems variance. This was explained by the variable social problems. In relation to the Mixed problems the predictor variables were 3 of the 4 Marsh variables, i.e. Problem Definition, Alternative Thinking, and Solution Adequacy, with Alternative Thinking having the largest effect. This suggests that Mixed problems can be predicted primarily by the number of alternatives, the understanding of the nature of the problem, and the prosocial solution to a moral dilemma a child produces when faced with adverse or challenging social interactions where social information-processing and action are called for. The regression coefficient indicated a negative predictive power. It suggested that children with a higher average of alternatives were better "skilled" to engage appropriate prosocial mental processing and response selection whereas children with 1 or 2 alternatives were at a systematic cognitive disadvantage leading to expressing a hostile and/or aggressive behaviour reaction suggesting a systematic negative bias attitude.

When simultaneous multiple regression was used to predict Social problems the strongest predictor variables were the *Solution Adequacy of Marsh* and *Harter's Self-esteem* measures. This suggests that the way a child feels about his/her self-worth based on previous social interactions and the way he/she processes metacognitively his/her value significantly affect the social problems

they experience. The higher their scored social problems, the less competent they reported they felt about themselves. This was demonstrated for both extremes of the behaviour problems spectrum, i.e. internalizing and externalizing. In theory, this finding was expected to be evident for children with mainly Internalizing problems, the smaller group in the sample. To also be demonstrated for children with Externalizing problems is interesting as frequently children with aggressive and antisocial behaviour do not self-report low self-esteem. The latter is usually explained as these children "favourably" resolve conflicts by force through intimidating others, because their instrumental aggression succeeds in attaining their goal or because they are in denial. Thus, their previous experiences may affect their self-reporting ability which can become clouded with denial of problems. The findings reported here challenge these assumptions and previous findings. Perhaps the approach of the interviewer (warm, clear, non-judgmental, confident and specifically reassuring them of NOT informing their teachers about their answers) made externalizing children feel less threatened and more honest in attempting to access a less biased assessment of their global self-worth.

The presence of Solution Adequacy in predicting Social problems suggested that a tendency to include others in decisions and being sensitive to other people's emotions in ambiguous or puzzling social situations seems to lower the exhibition of social problems, whereas provocative disregard for other classmates' feelings seems to be associated with more social problems in the school context.

However, differences in individual cases suggested a need for discriminant, factor and cluster analyses.

RESEARCH QUESTION 6

The 6th research question asked whether there was any preponderant effect linked to a global index of problems i.e. total problem score (dependent variables), as opposed to a particular or cluster of behaviour problem subcategories?

Multiple Regression analysis showed that a simultaneously entered independent variables model exerted a substantial effect in relation to particular dependent variables. For the whole sample the variance of Externalizing broad-band problems was predicted; the variables predicting narrow band (i.e., behaviour profile) problems included Somatic complaints (Internalizing), Social (Mixed) and Attention (Mixed) problems, Delinquent (Externalizing), and Aggressive (Externalizing) behaviour. For the experimental group reaching significance were Mixed problems (i.e. neither internalizing nor externalizing) of the broad-band and Social problems (Mixed) of the narrow band. The prediction of only the Social problems (a Mixed variable) variance by these independent variables instead of the more salient externalizing spectrum of problems was a surprise. However, the Factor analysis and Cluster analysis revealed particular subgroups of children were associated with different independent variables. In cluster analysis group separation reached its largest point with Dodge's Ambiguous outcome stories with a positive instigator suggesting a non rational attribution of causality and proposed response, but rather a projected hostility bias on both accounts.

RESEARCH QUESTION 7

The 7th research question asked whether personal characteristics such as gender, age, and parental education level influenced the predictability of SEBDs?

Of the 3 conditions, none but gender influenced the predictability of SEBDs. There was a strong association between experimental group boys and Externalizing problems, whereas girls were associated with Mixed and Internalizing behaviour problems. However, this finding may misrepresent the actual picture due to gender "test bias". More is said later in this chapter.

RESEARCH QUESTION 8

The 8th research question asked whether different pupil group types could be identified. If so, what was the relationship between each group type and a problem behaviour profile type and did the latter reveal fixed behaviour attitudes in a group's social information and/or emotion processing and distinct social acting repertoire?

The research identified 2 groups of pupils within the experimental group that were processing and behaving with bias very differently. One group portrayed a behaviour repertoire defined by selective negative bias while at the same time ignoring prosocial behaviour. The second group's data analysis suggested a "hard-

wired" attitude with negative hostile bias due to poor or lack of social skills and/or an acquired repertoire of "successfully resolving" social challenges and confrontations using aggression. These children's responses suggested that they behaved almost instinctively (with speed and stability) especially in ambiguous situations. This suggests a minimum if not the absence of a search for alternative mental causal processing and alternative response generation. Deductive analysis suggests that in contrast the first group appeared to process the information but selected to ignore it.

Analysis of Means revealed some interesting patterns in the data:

In Harter's scale the Means for the experimental group in all four variables were higher than the statistical mean of the scale which is 2.5 (range of scores 1-4), as self-reported by the children in the study. Between cognitive, social and physical competence, Cognitive competence had the highest mean and Physical competence the lowest with the most robust standard deviation of .58. The 4th variable, Self-esteem, had the lowest mean.

Comparing the 2 groups of children, the experimental and the control, on the Harter variables revealed that the first group consistently reported less confidence across all variables with the biggest group difference being in social competence. This suggests that experimental group children seem to be aware of their greater social difficulties as compared to the control group. Bearing in mind that at the same time the same children rated their self-esteem lower than

cognitive, social and physical competence, this may suggest some interesting interpretations; for example, an emotional difficulty to handle conflict, rejection, aggression, assertiveness and inner drives on their part. This may also suggest repercussions on the way others (be it teachers, classmates, parents) perceive, contextualize and judge their behavioural and emotional reactions. Awareness of this indicates that adults should avoid judgmental biases and develop alternative understandings and reactions to these behaviours.

For the Dodge variables the between groups means analysis revealed no difference in children's answers in attributing causality when the stories had a negative outcome irrespective of the social status of the other peer. The groups differed, however, in their proposed responses with the experimental group manifesting a proneness to an aggressive reaction especially if the instigator was of negative social status.

When the ambiguous outcome stories were introduced, despite the common logic that would project the difference between the groups to even out, the pattern was the complete opposite with the groups being different not only on their proposed responses, where the difference between their answers was the maximum of all irrespective of the positive or negative status of the instigator, but also on their attribution of causality, i.e. in both instances the experimental group "read" and behaved to these social conditions with clear hostile/aggressive bias. In addition, the Standard Deviation of their causal attributions was the same between the groups irrespective of status of instigator, but almost doubled in the experimental group's responses.

All the above, firstly, suggest a clearly manifested systematic hostility and aggressive bias on the part of the experimental group. Further evidence of this experimental group tendency is presented below in the discussion of the discriminant analysis. Secondly, the wider distribution of the scores among experimental group children suggests that some of them still seem to be able to control their reactions to conform to more acceptable responses (reason with the other, try to rectify the wrongdoing) despite their grouping, and some of them are hostile/aggressive biased whatever the outcome of the story or the status of the instigator. This suggests two groups of children with different behaviour profiles within the experimental group.

It could be argued that ambiguity in social exchanges in part "makes" some experimental children more prone to attribute hostile intent and react aggressively, especially when a negative status child is involved and even if the instigator has a positive social status.

For the Marsh "unemotional" social cognitive processing variables the difference between the groups was manifested in Problem Definition and Alternative Thinking variables, with the control group showing a higher mean, but not in Consequential Thinking (equally able). In the fourth variable of the Adequacy of the Solution which assesses indirectly "the moral" approach of the children, the control group was also more eager to try and please all parties involved instead of just "the self".

Multiple regression analysis of the data first demonstrated that the experimental group was very different from the control group in proneness to attribute hostile intent on an instigator (Dodge measures) even if his/her actions in social incidents were not clearly negative but rather ambiguous. Thus, a causal attribution bias in social information processing was identified. Furthermore, the bias to respond aggressively irrespective of story outcome or status of instigator was also revealed as significant, but only for some of the experimental group of children. This, in turn, suggested that there were two groups of children with particular behaviour profiles within the experimental group: One group was made up of children that despite belonging to a maladjusted group seemed still to be able to control their reactions to conform to more acceptable responses (to reason with the other, to try to rectify the wrongdoing) although their narrative of causal attribution was biased to malicious intent. The second group was made up of children that apparently "explained and dealt with" social cues in a context of generalized hostility. A formulated hypothesis for a "hard-wired" bias in the latter group of experimental children's thinking and behaviour response to social interactions was suggested by the cluster analysis. This is an important finding.

In addition, the simultaneous independent variables model was only able to predict Mixed type of behaviour problems (as non-internalizing or externalizing) of which the Social problems profile was the sole contributor in variance prediction. What was also demonstrated was that the experimental group children understood an interpersonal problem less well than their control counterparts (more details of this in the discriminant analysis), found less alternative solutions

to it, but on the other hand were equally aware of the consequences of any actions taken (a group of those children), although taking care of the self first is their most frequent proposed choice of action (Marsh variables).

When the 3 clusters of independent variables were separately analyzed for their possible influence on particular dependent variables, it was demonstrated that significant variance was accounted for by the Harter in relation to social problems (TRF Mixed problems broadband category); the Dodge Negative outcome variables on Delinquent behaviour problems; and the Marsh variables on the Mixed and the Attention problems profiles. These Independent variables predicted a fair amount of the variance for Externalizing and Mixed kind of SEBDs but not for Internalizing problems. This suggests that some children with social problems from the experimental group had self-reported less high self-esteem or global worth and were less interested in accommodating others but were rather self-centered or egotistic in the solutions they tended to choose. Since Social Problems is a behaviour profile category of Mixed type problems, it is suggested that the children presenting this profile would be more self aware. This has been shown in the present study to be more an attribute of Internalizers and not Externalizers.

This finding suggests that the more hostile/aggressive the response of the experimental group children to the Dodge measures even when the instigator is positive (i.e. indifferent to a child's social status to inform bias) the better predicted their Withdrawn behaviour category.

Discriminant analysis showed that the two groups, i.e. experimental and

control, were clearly discriminated by the scores of behaviour descriptors of psychopathology as measured with Achenbach's TRF scale (10 out of 12 variables), and in 3 out of 4 Harter variables (Physical competence excluded). Strong discrimination between the 2 groups was shown by the Dodge measures of *causal attributions* and *proposed response* variables in ambiguous outcome stories, but **not** in negative outcome stories. In addition, the *proposed response* variable to the ambiguous outcome stories seemed more influential in separating the two groups than the *causal attribution* bias measure whatever the status of the child actor. Overall, the Dodge 4 ambiguous outcome variables were the most important predictor variables of the Dodge measures and the 2 response variables the most important of all. Hence, the **less clearly negative the outcome** of the story and the **less negative the status of the instigator** classmate, the greater the difference between the two groups. Thus, the hypothesis that the experimental group would have a hostile and aggressive bias in their social information processing and their subsequent proposed actions is supported.

In addition, it seems that since behaviour response variables (in terms of the Dodge measures) are most influential in separating the two groups and since social competence, self-esteem and cognitive competence of the Harter measure each contribute, the character profile of an experimental child as opposed to a control child is defined by attribution of intent and hostile response biases, being poorly socially skilled to resolve actual or potential conflicts, and being lower in self-esteem and less cognitively competent in understanding more than one perspective in a social interaction. Thus, having or lacking social skills is very important as

well as how one feels about the self, followed by cognitive skills or a lack of them.

When the Achenbach variables were removed from the analysis group membership prediction was lowered but more fine grained information regarding the behaviour profile of a large group of experimental cases emerged. This was discussed in the multiple regression analysis earlier.

This finding alongside the other analyses in the present thesis contributes to our understanding regarding the behaviour phenotype of children with particular psychopathology.

Factor analysis supported the model primarily by identifying 3 core factors and 5 or 6 secondary factors. The core factors were the 3 measures used as independent variables, i.e. The Dodge, The Marsh, and the Harter. The 5 factor solution is selected as the most appropriate based on its statistical and theoretical meaning in line with the conceptual framework of the measures used. Factor 1 and Factor 2 were the Dodge variables clearly differentiated by the outcome of the stories, i.e. Negative outcome versus ambiguous outcome. Factor 3 was made up of the Marsh two variables of *consequential thinking* and *alternative thinking.* Factor 4 was robustly made up of all the Harter variables, and Factor 5 included the other 2 Marsh variables of *solution adequacy* and *problem definition.* A 6 factor extraction showed these latter 2 variables factorially unrelated which did not contribute to a better understanding.

These analyses reinforced the emerging findings of the study, i.e. that the

ambiguous outcome stories variables are significantly different to the negative outcome ones and seem to describe a different type of behavioral profile in the sample, as do the different Marsh variables. The Harter variables are also important. Overall the model was well supported in terms of significance levels (p=0.001).

Cluster analysis revealed that a 2-cluster solution was inadequate to explain all of the cases. A 3-cluster analysis was, therefore, adopted with 64 children in cluster 1, 123 in cluster 2, and 53 in cluster 3. Cluster 2 accounted for the entire control sample but 3 cases. Analysis of the mean differences for each variable by cluster membership showed the following:

Cluster 2 children had no bias towards attributing hostile intent or responding aggressively whatever the outcome of the story, they had more competence overall on the Harter tests, more understanding in "cold" social processing situations, a good degree of alternative solution generation and outcome anticipation and in particular a much more prosocial and/or altruistic stance in actual decision making (Marsh). They perfectly fit the control profile. On measures of psychopathology (dependent variables) they had fewer Somatic difficulties, and fewer Anxious/Depressed, Social, Thought and Attention problems, and portrayed lower Delinquent and Aggressive behaviour.

The 2 remaining groups represented the experimental group.

Cluster 1 children while appearing less clear about their understanding of

social interactions, had the most skills for generating a wide number of solutions and considering their outcomes. At the same time, they chose a more self-gratifying solution over others, were more eager to attribute aggression or react aggressively under clear negative criteria (if the story had a negative outcome irrespective of the instigator status –something that separated them from the control group) while they portrayed more capabilities in exercising self-control when the story was ambiguous; hence, they seemed to process and allow for hostile/aggressive attribution and response to *particular (i.e. clearly negative) social interactions*. On the psychopathological profiles these children had higher scores (i.e. problems) on somatic complaints, and anxious/depressed and withdrawn behaviour (i.e. internalizing band). Thus, it seems that cluster 1 describes Internalizers. However, the magnitude of their scores on Achenbach's TRF profiles was not within the clinical range.

Cluster 3 children had the lowest scores on the Harter tests of cognitive competence, social competence and self-esteem, as well as in alternative solutions and their consequences. They chose self-gratification over prosocial behaviour on the Marsh variables. They showed an elevated and intense tendency to attribute hostile intent (i.e. thinking process) and respond aggressively irrespective of the story outcome and the status of the instigator. The latter suggests a hostile/aggressive preponderance irrespective of instigator status and story outcome. This may constitute a "hard-wired" behaviour. Little control was exercised and all situations appeared threatening or biased. A social-information processing handicap is proposed which differentiates them from cluster 1 children in that they seem to lack the necessary skills to show prosocial consideration and

adopt social cue processing and response selection of an indiscriminate hostile/aggressive nature. On Achenbach's TRF they exhibited high Delinquency and Aggressive behaviour (externalizing) and had high levels of Social and Attention problems (mixed).

15.4. SUMMARY

Summarising the data presented above there appear to be two groups within the experimental group of children: the predominantly Externalizers who were substantially more aggressive and biased in their attributions irrespective of outcome and actor's status, but also less socially skilful, more single-minded and less flexible in their responses. In contrast, the other children were predominantly Internalizers who experienced conflicts within the self and were more likely to present problems relating to their emotions. They were only aggressive in their response to a clearly negative outcome story with a clearly negative status child. These children appeared to have a more flexible mental attitude in resolving conflicts and responding to them sometimes in an aggressive form while at other times in a socially acceptable way.

15.5. The Limitations of the Study

The present research aimed to explore, in-depth, the theoretical underpinnings and characteristics of groups of children exhibiting Emotional and Behavioural Difficulties in the Greek primary school between the ages of 8-12. The intention was to be able to identify particular quantitative and qualitative

differences in the behavioural characteristics or repertoires of specific groups. Although this study set out to collect the data using a well designed methodology based on the latest thinking in the field and using scales well adapted to the Greek population, as with all studies, a number of limitations need to be taken into account.

The age of the participants in the present study was between 8-12, the primary school years with the exception of Years 1 and 2. Being concerned with a better and richer understanding of pupils' behaviour throughout their schooling entails a variety of ages being studied, from kindergarten to high school. This could have been achieved by a longitudinal or a cross-sectional design. For reasons of time, and the scales' standardization limitations it was decided to research the youngest ages of formal schooling with the exclusion of the 2 first school years, as it has been well established that inclusion of these very young children affects the validity and reliability of any behaviour screening.

The use of self-reported questionnaires presents several limitations. Firstly, the Harter self-perceived competence measure aims to gather data via expressed self-reality that may be different from actual reality. Participants' perspectives, however honest and truthful, might be biased or gravitate towards particular types of responses to present an "ideal self" and not an "actual self". Nevertheless, the analyses of children's answers as compared with the pilot data showed that this effect was minimised. Nonetheless, it is always a potential risk especially where there is an evaluation of the self in various ability functions. In addition, there may be a difference between responses to the Dodge vignette stories and the children's

responses relating causal intent and reaction to them, and what they would actually do in real life. The ensured confidentiality of their responses, especially within the school context, was adopted as a means of reducing this tendency, as was a comparison of tendencies informed by the pilot work.

While care was taken to ensure that the sample was representative in terms of gender there was a higher percentage of boys in the sample reported by their teachers as exhibiting maladjusted behaviour. This suggests a misrepresentation of the actual picture possibly due to gender "test bias". Teachers tend to observe and single out maladjusted behaviour in terms of how difficult it is to handle and the most challenging because it calls for their immediate attention. This behaviour is typical of boys, especially in the primary school. However, it has come to the attention of the researcher, through unsystematic empirical playground observations of social behaviour interactions, that girls can be equally challenging and/or aggressive but in a qualitatively different manner using name-calling, friendship group exclusion, and the spreading of malicious rumours affecting someone's personal reputation. These issues need to be considered in the selection of appropriate behaviour screening instruments and the adaptation of them to include more sensitive and diversely informed items loading to such a behaviour pathology classification. Furthermore, teachers could be made equally aware of the less noticeable, withdrawn but potentially equally maladjusted Internalized emotional behaviour of some children.

Although the sample size of 240 was selected to be of this magnitude in

order to fall comfortably above 200 cases suggested by the statistical requirements for the type of the statistical analyses planned, having a larger sample to strengthen the validity and reliability of the conclusions drawn from the analysis would have been beneficial.

The study attempted to draw information on a multi-informant basis, with the highest proportion of data coming from self-reports by each child in an interview, but also from teacher data on behaviour screening, class sociometric data on children's likeability, as well as school record information regarding parents' level of education. A direct observation method could have enriched the strength of the conclusions by making the important link between self-reports and actual behaviour. It would also have provided a strong qualitative measure. The inclusion of such a measure would have made the data collection unfeasible because of the lengthy process required to get permission, and the time needed to record, transcribe and analyse behaviour in schools. Such a design would have required the work of a team of researchers. However, one of the lessons I learned as a researcher in the present thesis is that there is a limit to how much information one can infer from an interview with a child regarding their mental processing biases and causal attributions in social interactions as assessed through "vignette" stories. If the same research were to be repeated, the design of the observation method would include a child's social interactions in multiple contexts, such as structured work in the classroom, out-of-task behaviour, and most importantly, in the playground. A study of "within" and "between" schools ethos, policies on SEBDs and teaching staff's awareness of the basic principles of SEBDs and how

to be sensitised to their manifestations would be also included in a prospective re-design of the study. The latter methodological approach would explore the social context's expectations of particular behaviours labelled as adjusted compared to maladjusted according to particular socially constructed norms with which a child is expected to comply.

Finally, and despite the fact that the present study had a mixed type design with quantitative and qualitative data, in essence the majority of the data collected were quantitative supported by some semi-structured interview data. A more in-depth research perspective regarding the identification of particular behaviour typologies in some groups of children could have been reached by a qualitative design once the initial screening of the cases was made. However, a decision was made to use a large sample to enable generalization across the Greek school population of primary children. Further research may adopt a qualitative in depth interviewing approach.

15.6. The Implications of the Study

The implications of the study are multi-fold for pupils, teachers, policy makers, and researchers alike.

With respect to children, the present study has shown that the way that they comprehend a social challenge, provocation or ambiguous social interaction and the way that they respond to it mostly depends on the type of mental social processing skills they are able to employ, the presence or absence of biases in

doing so, and their ability to regulate negative emotions for example, by using prosocial coping strategies for the resolution of confronting social situations. It follows from this that children may be able to be taught how to "listen" to their thinking, to identify their biases, and to recognize hostility and aggression especially in ambiguous situations as a non-constructive, socially unacceptable, and antisocial way of social responding.

With respect to Greek teachers, the implications are multifold. First, it brings to their attention the suggestion that some children are not "inherently bad" (a stereotypical explanation provided by some), but rather that their behaviour is most likely the consequence of their inability to regulate their negative emotions, the biased social information-processing tendency they may have, and/or the particular intricate details of social interactions with a particular pupil, social context, or group of people that form a microenvironment within which social behaviour occurs.

Second, it highlights that teachers tend to over-observe difficult to manage, authority threatening behaviour, hence of externalising problem attributes (where boys are predominantly over-represented) at the expense of internalising, introspective, "silent" emotional problems (predominantly attributed to girls). In addition, teachers seem to be unaware that hostility and aggression have different manifestations between genders with major qualitative differences instead of problem behaviour being uniformly assessed across gender as either present or not present. Stereotypical perceptions portray boys as being largely aggressive and hostile because of their "gender nature". However, new evidence on girls suggests that their equally aggressive behaviour has been overlooked due to differences in

its manifestation, i.e. the patterns of behaviour applied. It seems logical that these differing patterns need be addressed when teachers undertake SEBD screening. A further implication for teachers is that their level of understanding of what SEBDs "look like" in the actual classroom and what behaviouraly descriptive items tell them apart in typology is not up-to-date with current developments in the field.

In presentations of workshops to teachers on screening for SEBDs, many of them were very eager to be trained on how to develop their awareness skills for detecting a possible SEBD in a child, and how to cater primarily and effectively for it in the classroom. There is a lot of room for improvement in those areas. An implication related to the latter is that teacher training needs to provide teachers with the knowledge of how to screen for, discern, and manage SEBDs, as weel as provide hands-on basic experience of some of the most usable and typical screening instruments worldwide. Another implication is that teachers should be sensitised to a multi-informant basis of collecting information about a child's problem behaviour rather than only relying just on their view. Care not to allow labelling to take place amongst pupils, parents or even fellow teachers is deemed essential.

An additional implication of the study included answering the general study's aim of whether the tools used in the present study proved to be quick and easy to apply, usable, credible and a valid model for screening for SEBDs. The experience of conducting the study and collecting the data in such a manner proved to be relatively quick (approximately 30 to 40 minutes for two SEBD instruments) once teachers received an introductory description of how to examine behaviour in the context of a classroom, as the pilot work revealed. Thus, once

questions and doubts about what behaviour is "not average" and how to screen for behaviour that is not merely "annoying" or "defying", but rather worrisome for the child and not the teacher, a perception of how to internalise an assessment of each pupil's behaviour was formed. This allowed for faster completion of the questionnaires. In addition, it proved to lend scoring validity, as the prevalence rates identified coincided with the ones reported in the international literature. The credibility of the instruments was confirmed by their sensitivity to select children's behaviour that was reported as worrisome. Furthermore, standardised assessments had already been conducted nationally to establish cultural resonance.

With regard to policy makers, and in accordance with the latest scientific evidence in the field, the present thesis has shown that periodic screening assessment is essential in the primary school in general and in particular in the Greek primary school (where SEBDs standardized screening is very rare) and can contribute towards better and more detailed information about particular Social-Emotional-Behavioural Difficulties. This in turn can pave the way towards a more successful needs assessment leading to a potentially more successful intervention. In addition, policy makers need to bridge differences between professional bodies to enable them to communicate in applied intervention programs offered to schools. Policy makers can lay out a plan for discussions between researchers, teachers, school psychologists, and parents that can inhibit prejudices and misunderstandings, and foster work towards a clear aim, i.e. meeting the emotional and behavioural needs of maladjusted children, to help restore their right to unproblematic education and a fruitful chance in life. Although, for

example, it is well documented cross-culturally that at any given time of assessment there approximately 10-15% of young people under the age of 16 in the UK and the US crossing diagnostic thresholds for mental health disorders according to the ICD-10 and the DSM-IV-R, many of these young people are unknown to specialist Child and Adolescent Mental Health Services (CAMHS) (Meltzer, Gatward, Goodman & Ford, 2000).

As was reported in Chapter 2, SEBDs Definitions, Measurement, and Incidence levels, in US research suggest that only 20% of young people with mental health disorders are in fact seen by specialist mental health services (Costello et al., 1993). Farmer's et al.'s (2003) study of mental health problems and use of specialist services over a 3 year period in 1420 children aged 9, 11 and 13 at study entry, found that the education context was the most common point (60.1%) of entry to mental health services and the preponderant provider of services to troubled young people across all ages studied. Several other studies in the US (Burns et al., 1995; Leaf et al., 1996) have also found that children with mental health problems and their families are more likely to contact school-based services in relation to their problems than other agencies and it has been shown that school-provided services are perceived as more accessible, non-threatening and friendly by pupils than services located off-site (Catron & Weiss, 1994; Kaplan et al., 1998). All the aforementioned research evidence highlights the central role that the school can play in setting up and running services to accommodate the particular needs of children with maladjusted or SEBDs behaviour. Thus, additional resources such as funding, specialised personnel and

designated space should be allowed for schools to support the running of these services. At present, in Greece these services can only be provided in Psychoeducational centers in some boroughs of Athens. These are already overstretched in terms of caseload and parents tend to approach them largely if their children experience intermediate to severe problems.

There are also implications for researchers who select the sets of variables used to screen for the effects on behaviour psychopathology. Screening assessment for SEBDs has in this instance identified specific groups of children with particular behaviour profiles associated with a suggested underlying social processing pattern of thinking. This deeper understanding can in turn inform the development of well designed intervention programs. Important variables to be included in this screening should be bias identifying variables such as the Dodge measures used in the present research. However, a multi-informant, 3-way multi-factorial (i.e. emotion, cognition, social information processing bias) approach has been modestly supported as making an important contribution towards understanding and prediction of a maladjusted typology.

A well designed, multi-factorial and in-depth screening assessment for SEBDs apart from providing practical guidance for dealing with specific maladjusted behaviour by particular groups or individual children in a school population, is also a step towards prevention as it informs researchers, school psychologists, and teachers of behaviour tendencies by identifying particular social processing biases in a school population and by raising awareness of behaviour that potentially could escape recording by teachers.

Differential mental processing of social cues was shown to be significant and important towards visualizing an underlying temperamental and/or behavioural style that can be conceptualized into a profile. This differentiation calls for a method of intervention that would focus separately on the unlearning of negative pattern behaviours and the learning of acceptable, prosocial and unbiased communication skills towards negative outcome situations, but also in particular towards ambiguous ones.

The findings from this study show that psychopathology in children should be treated as a multidimensional construct operating over time and potentially different in different contexts. The conceptual framework developed here could be used as a framework for further research.

15.7. Conclusion

Depending on the theoretical paradigm, the findings of the present study can be associated with different suggested causal factors of children's SEBDs. These differences can lead to separate strategies or focused actions when dealing with the problem, depending on the underlying assumptions or explanatory analyses.

In summation, the present study, in its selective choice of theory concepts, the conclusions drawn in the analyses, the discussion of findings, and the future research suggestions have used particular terms to offer a theory model of children's SEBDs. These terms are based on the present findings and are meant to serve only as an indicative of the present study. More careful consideration needs to be shown in order to use the same terminology in a much larger sample, if a

more generalisable explanation of problems is to be offered.

For example, in identifying, the third group of children from the total or the second portraying SEBDs through the analysis, the term "hard-wired" social interaction processing and behaviour attributed to them was only suggestive of an identifiable pattern in these children's behaviour; it seemed to remain constant even when other social interaction outcome variables were controlled. The use of such terminology did not, in any way, represent a literary scientific concept. Professionals may associate the term "hard-wired" in the present study with a suggestion of some neuropsychological underlying factor impinging on the selection of social behaviour responses of each child. However, the present study was not designed to argue this hypothesis, nor does it presentl a clear locus of causality in the social information-processing and behaviour of children. Thus, the term is offered merely as a descriptive reference to some children with SEBDs. The latter was one of the unique contributions of the present study based on the data and analyses. Exploring the further causality of SEBDs means that studies involving a balance of both a neuropsychological design and a context attributed or socially influenced perspective of SEBDs would need to be carefully examined.

At the same time, the interviews with children with SEBDs and some of their "average"/control group classmates revealed that some of these patterns of problem behaviours may be systemic to particular *organised mental schemas* (not within child, but rather culture-specific), which require further investigation in studies with a "relational" and/or recording of social interactive, "live" behaviour design.

Furthermore, the main aim of the thesis may appear to be premised on a

"within" child paradigm to understanding the causes of social, emotional and behavioural difficulties. However, the author does not hold such a position, as evidence from the study shows that such a paradigm is too limited to explain a substantial percentage of variance of children's difficulties. Rather, this paper suggests that a much more complex picture needs to be mapped out to explain the variability of SEBD behaviour, one that draws on wider social, economic, class, education, family interaction pattern, and family role ascription, as well as an individual's emotional literacy level factors.

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Appendix 1

SCALES AND QUESTIONNAIRES USED IN THE STUDY

1) The Teachers Greek version of the Rutter scale

ΕΡΩΤΗΜΑΤΟΛΟΓΙΟ ΓΙΑ ΔΑΣΚΑΛΟΥΣ

Ονομ/νυμο παιδιού: _____ Αγόρι/Κορίτσι Σχολείο: _____

Διεύθυνση παιδιού: _____

Ημερ/νία γέννησης: _____

Παρακάτω απαριθμούνται ορισμένοι τρόποι συμπεριφοράς που συχνά παρουσιάζουν οι μαθητές. Μετά από κάθε περιγραφή ακολουθούν τρείς στήλες: -Καθόλου (0), Λίγο (1), και Πολύ (2). Παρακαλώ συμπληρώστε ένα Χ για κάθε περιγραφή, στη στήλη που ταιριάζει περισσότερο στον/στην ___.

Παρακαλώ συμπληρώστε τις ερωτήσεις με βάση τη συμπεριφορά του παιδιού κατά τους τελευταίους 12 Μήνες.

Ευχαριστώ

ΠΕΡΙΓΡΑΦΕΣ	Του/της ταιριάζει			Για χρήση ερευνητή
	Καθόλου(0)	Λίγο(1)	Πολύ(2)	
1. Πολύ ανήσυχο, σπάνια μένει ακίνητο. Συνήθως τριγυρίζει πέρα δόθε	☐	☐	☐	☐
2. Το σκάει από το σχολείο	☐	☐	☐	☐
3. Κουνιέται και συστρέφεται συνεχώς στη θέση του/της	☐	☐	☐	☐
4. Συνηθίζει να καταστρέφει αντικείμενα δικά του ή των άλλων παιδιών	☐	☐	☐	☐
5. Συχνά τσακώνεται με άλλα παιδιά	☐	☐	☐	☐
6. Δεν είναι αγαπητό στα άλλα παιδιά	☐	☐	☐	☐
7. Συχνά είναι προβληματισμένο, το μυαλό του είναι απασχολημένο, ανησυχεί για πολλά πράγματα	☐	☐	☐	☐
8. Έχει την τάση να ασχολείται μόνο του, είναι μάλλον απομονωμένο	☐	☐	☐	☐
9. Είναι ευερέθιστο, ευέξαπτο	☐	☐	☐	☐
10. Συχνά εμφανίζεται δυστυχισμένο, κλαμένο ή απελπισμένο, μελαγχολικό	☐	☐	☐	☐
11. Παρουσιάζει τικ και μορφασμούς στο πρόσωπο ή στα άκρα του	☐	☐	☐	☐
12. Συνηθίζει να τρώει τα νύχια του ή τα δάχτυλά του	☐	☐	☐	☐
13. Συνηθίζει να απουσιάζει από το σχολείο του χωρίς σοβαρό λόγο	☐	☐	☐	☐
14. Συνηθίζει να πιπιλάει το δάχτυλό του	☐	☐	☐	☐
15. Είναι συχνά ανυπάκουο	☐	☐	☐	☐
16. Δεν μπορεί να συγκεντρωθεί σε κάτι περισσότερο από λίγα λεπτά	☐	☐	☐	☐

ΠΕΡΙΓΡΑΦΕΣ	Του/της ταιριάζει			Για χρήση ερευνητι
	Καθόλου (0)	Λίγο (1)	Πολύ (2)	
17. Δείχνει διστακτικό και φοβισμένο σε νέα πράγματα ή νέες καταστάσεις	☐	☐	☐	☐
18. Είναι "ψείρας"	☐	☐	☐	☐
19. Λέει συχνά ψέμματα	☐	☐	☐	☐
20. Εχει κλέψει τουλάχιστον μια φορά	☐	☐	☐	☐
21. Είναι παιδί αδιάφορο, αδρανές, ή απαθές	☐	☐	☐	☐
22. Συχνά παραπονιέται ότι πονάει	☐	☐	☐	☐
23. Αρνήθηκε να έρθει στο σχολείο φέτος ή ήρθε κλαμένο	☐	☐	☐	☐
24. Τραυλίζει ή είναι βραδύγλωσσο	☐	☐	☐	☐
25. Αγανακτεί ή γίνεται επιθετικός όταν τον διορθώνουν	☐	☐	☐	☐
26. Φοβερίζει τα άλλα παιδιά	☐	☐	☐	☐

Υπάρχει κάτι άλλο ασυνήθιστο στη συμπεριφορά αυτού του παιδιού; -ή, έχετε άλλα γενικά σχόλια να κάνετε; ☐☐

--   ☐

--   ☐

Υπογραφή: Κος/Κα ---------------------------------

Ημερομηνία: -------------------------------

ΕΥΧΑΡΙΣΤΩ ΠΟΛΥ ΓΙΑ ΤΗΝ ΠΟΛΥΤΙΜΗ ΒΟΗΘΕΙΑ ΣΑΣ

2) The original English version of the Rutter scale for Teachers

Rutter

SCALE B (2)

TO BE COMPLETED BY TEACHERS

Name of Child: _____ Boy Girl   School: _____
Address of Child: _____

Date of Birth: _____   Form: _____

Below are a series of descriptions of behaviour often shown by children. After each statement are three columns:— "Doesn't Apply", "Applies Somewhat" and "Certainly Applies". If the child definitely shows the behaviour described by the statement place a cross in the box under Column 2 "Certainly Applies". If the child shows the behaviour described by the statement but to a lesser degree or less often place a cross in the box under Column 1 "Applies Somewhat". If, as far as you are aware, the child does not show the behaviour, place a cross in the box under Column 0 "Doesn't Apply".

Please complete on basis of child's behaviour IN THE PAST 12 MONTHS.

Put ONE cross against EACH statement.   Thank you.

STATEMENT	0 Doesn't Apply	1 Applies Somewhat	2 Certainly Applies	FOR OFFICE USE ONLY
1. Very restless, has difficulty staying seated for long		✓		
2. Truants from school	✓			
3. Squirmy, fidgety child	✓			
4. Often destroys or damages own or others' property	✓			
5. Frequently fights *or* is extremely quarrelsome with other children	✓			
6. Not much liked by other children	✓			
7. Often worried, worries about many things	✓			
8. Tends to be on own—rather solitary	✓			
9. Irritable. Touchy. Is quick to 'fly off the handle'	✓			
10. Often appears miserable, unhappy, tearful or distressed	✓			
11. Has twitches, mannerisms, or tics of the face or body	✓			
12. Frequently sucks thumb or finger	✓			

	Doesn't Apply	Applies Somewhat	Certainly Applies	USE ONLY
14. Tends to be absent from school for trivial reasons	✓	☐	☐	☐
15. Is often disobedient	✓	☐	☐	☐
16. Cannot settle to anything for more than a few moments	✓	☐	☐	☐
17. Tends to be fearful or afraid of new things or new situations	✓	☐	☐	☐
18. Fussy or over-particular child	✓	☐	☐	☐
19. Often tells lies	✓	☐	☐	☐
20. Has stolen things on one or more occasions in the past 12 months	✓	☐	☐	☐
21. Unresponsive, inert or apathetic *Always responds in class*	✓	☐	☐	☐
22. Often complains of aches or pains	✓	☐	☐	☐
23. Has had tears on arrival at school *or* has refused to come into the building in the past 12 months	✓	☐	☐	☐
24. Has a stutter or stammer	✓	☐	☐	☐
25. Resentful *or* aggressive when corrected *Always takes criticism constructively*	✓	☐	☐	☐
26. Bullies other children	✓	☐	☐	☐

Is there anything else unusual about this child's behaviour?—or are there any other comments you would like to make?

Very positive, co-operative pupil involved in many
sporting teams, basketball, rugby, x-country, athletics

Takes his academic work seriously although not

3) The Harter Self-Perceived Competence scale- Standardised Greek Translation

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ΜΕ ΠΟΙΟΥΣ ΜΟΙΑΖΩ

ΟΝΟΜ/ΝΥΜΟ _____ ΑΓ. Ή ΚΟΡ. _____ ΗΛΙΚΙΑ____ ΕΤΟΣ ΓΕΝΝ. _____ ΤΑΞΗ ___
(κυκλώσε)

ΜΟΥ ΤΑΙΡΙΑΖΕΙ				*ΜΟΥ ΤΑΙΡΙΑΖΕΙ*	
ΠΟΛΥ	ΜΕΡΙΚΕΣ ΦΟΡΕΣ			ΜΕΡΙΚΕΣ ΦΟΡΕΣ	ΠΟΛΥ

ΔΕΙΓΜΑ

α. ☐ ☐ Κάποια παιδιά θα προτιμούσαν στον ελεύθερο χρόνο τους να παίζουν στην αυλή **ΕΝΩ** Άλλα παιδιά θα προτιμούσαν να δουν τηλεόραση ☐ ☐

β. ☐ ☐ Κάποια παιδιά δεν ανησυχούν ποτέ για τίποτα Άλλα παιδιά μερικές φορές ανησυχούν για κάποια πράγματα ☐ ☐

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1. ☐ ☐ Κάποια παιδιά πιστεύουν ότι τα καταφέρνουν πολύ καλά με τις δουλειές του σχολείου **ΕΝΩ** Άλλα παιδιά ανησυχούν αν μπορούν να κάνουν τις δουλειές που τους βάζει η δασκάλα τους ☐ ☐

2. ☐ ☐ Κάποια παιδιά δυσκολεύονται να κάνουν φίλους **ΕΝΩ** Σε άλλα παιδιά αυτό τους είναι σχετικά εύκολο ☐ ☐

3. ☐ ☐ Κάποια παιδιά τα πηγαίνουν πολύ καλά σε όλα τα αθλήματα Άλλα παιδιά πιστεύουν ότι δεν είναι και τόσο καλοί στα αθλήματα ☐ ☐

4. ☐ ☐ Κάποια παιδιά αισθάνονται ότι αν μπορούσαν, θα άλλαζαν πολλά πράγματα στον εαυτό τους **ΕΝΩ** Άλλα παιδιά θα ήθελαν να μείνουν πάνω κάτω οι ίδιοι ☐ ☐

5. ☐ ☐ Κάποια παιδιά πιστεύουν ότι είναι το ίδιο έξυπνα με άλλα παιδιά της ηλικίας τους **ΕΝΩ** Άλλα παιδιά δεν είναι τόσο σίγουρα και αναρωτιώνται αν είναι το ίδιο έξυπνα ☐ ☐

6. ☐ ☐ Κάποια παιδιά έχουν πολλούς φίλους **ΕΝΩ** Άλλα παιδιά δεν έχουν πολλούς φίλους ☐ ☐

7. ☐ ☐ Κάποια παιδιά θα ήθελαν να τα πηγαίνουν πολύ καλύτερα στα αθλήματα Άλλα παιδιά πιστεύουν ότι τα πηγαίνουν αρκετά καλά ☐ ☐

8. ☐ ☐ Κάποια παιδιά είναι αρκετά σίγουρα για τον εαυτό τους **ΕΝΩ** Άλλα παιδιά δεν είναι και πολύ σίγουρα για τον εαυτό τους ☐ ☐

9. ☐ ☐ Κάποια παιδιά αργούν πολύ να τελειώσουν τις δουλειές του σχολείου Άλλα παιδιά τελειώνουν γρήγορα τις δουλειές του σχολείου ☐ ☐

10. ☐ ☐ Κάποια παιδιά δεν _____ **ΕΝΩ** Άλλα παιδιά πιστεύουν ότι είναι αρκετά σημαντικοί για τους ___ ☐ ☐

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ΜΟΥ ΤΑΙΡΙΑΖΕΙ

ΠΟΛΥ	ΜΕΡΙΚΕΣ ΦΟΡΕΣ			ΜΕΡΙΚΕΣ ΦΟΡΕΣ	ΠΟΛΥ
☐	☐	11. Κάποια παιδιά πιστεύουν ότι θα τα κατάφερναν καλά σε κάθε νέο παιχνίδι που παίζουν για πρώτη φορά στην αυλή του σχολείου	ΕΝΩ Άλλα παιδιά πιστεύουν ότι ίσως δεν τα καταφέρουν καλά σε παιχνίδια έξω από την τάξη που δεν έχουν ξαναπαίξει	☐	☐
☐	☐	12. Κάποια παιδιά είναι ευχαριστημένα με τον τρόπο που φέρονται	ΕΝΩ Άλλα παιδιά θα ήθελαν να φέρονται διαφορετικά	☐	☐
☐	☐	13. Κάποια παιδιά συχνά ξεχνάνε οτιδήποτε μαθαίνουν	ΕΝΩ Άλλα παιδιά θυμούνται εύκολα οτιδήποτε μαθαίνουν	☐	☐
☐	☐	14. Κάποια παιδιά κάνουν διάφορα πράγματα πάντα μαζί με άλλους	ΕΝΩ Άλλα παιδιά συνήθως τα κάνουν όλα μόνοι τους	☐	☐
☐	☐	15. Κάποια παιδιά πιστεύουν ότι είναι καλύτεροι στα διάφορα αθλήματα από άλλα παιδιά της ηλικίας τους	ΕΝΩ Άλλα παιδιά δεν πιστεύουν ότι μπορούν να παίξουν διάφορα αθλήματα το ίδιο καλά	☐	☐
☐	☐	16. Κάποια παιδιά πιστεύουν ότι ίσως δεν είναι πολύ καλοί άνθρωποι	ΕΝΩ Άλλα παιδιά είναι αρκετά σίγουρα ότι είναι καλοί άνθρωποι	☐	☐
☐	☐	17. Σε κάποια παιδιά αρέσει το σχολείο γιατί τα καταφέρνουν καλά στην τάξη	ΕΝΩ Σε άλλα παιδιά δεν αρέσει το σχολείο γιατί δεν τα καταφέρνουν πολύ καλά σε αυτό	☐	☐
☐	☐	18. Κάποια παιδιά θα ήθελαν να τα συμπαθούν πιο πολλά παιδιά	Άλλα παιδιά πιστεύουν ότι τα πιο πολλά παιδιά στην τάξη τους τα συμπαθούν	☐	☐
☐	☐	19. Στα παιχνίδια και στα αθλήματα κάποια παιδιά συνήθως κοιτούν αντί να παίζουν και αυτά	ΕΝΩ Άλλα παιδιά συνήθως παίζουν αντί να κάθονται και να κοιτάζουν	☐	☐
☐	☐	20. Κάποια παιδιά είναι πολύ ευχαριστημένα με τον εαυτό τους	ΕΝΩ Άλλα παιδιά εύχονται να ήταν κάπως διαφορετικά	☐	☐
☐	☐	21. Κάποια παιδιά θα ήθελαν να καταλαβαίνουν πιο εύκολα αυτά που διαβάζουν	ΕΝΩ Για άλλα παιδιά δεν είναι καθόλου δύσκολο να καταλάβουν αυτά που διαβάζουν	☐	☐
☐	☐	22. Σε κάποια παιδιά δείχνουν αγάπη τα άλλα παιδιά της ηλικίας τους	ΕΝΩ Άλλα παιδιά δεν δείχνουν να τα αγαπάνε και πολύ	☐	☐

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			ΜΕΡΙΚΕΣ	
ΠΟΛΥ	ΜΕΡΙΚΕΣ ΦΟΡΕΣ		ΦΟΡΕΣ	ΠΟΛΥ

23. ☐ ☐   Κάποια παιδιά δεν τα **ΕΝΩ** Αλλα παιδιά τα καταφέρνουν καλά ☐ ☐
καταφέρνουν καλά σε σε καινούργια παιχνίδια πολύ
καινούργια παιχνίδια που γρήγορα
παίζονται στην αυλή

24. ☐ ☐   Κάποια παιδιά δεν είναι πολύ **ΕΝΩ** Αλλα παιδιά πιστεύουν ότι ο τρόπος ☐ ☐
ευχαριστημένα με τον τρόπο που κάνουν διάφορα πράγματα είναι
που κάνουν διάφορα ο σωστός
πράγματα

25. ☐ ☐   Κάποια παιδιά δυσκολεύονται **ΕΝΩ** Αλλα παιδιά σχεδόν πάντα μπορούν ☐ ☐
να βρούν τις σωστές να βρούν τις σωστές απαντήσεις
απαντήσεις στο σχολείο

26. ☐ ☐   Κάποια παιδιά τα συμπαθούν **ΕΝΩ** Αλλα παιδιά είναι κάπως δύσκολο ☐ ☐
εύκολα οι άλλοι να τα συμπαθήσουν οι άλλοι

27. ☐ ☐   Κάποια παιδιά είναι από τα **ΕΝΩ** Αλλα παιδιά τα διαλέγουν οι άλλοι ☐ ☐
τελευταία που διαλέγουν οι συνήθως αμέσως
άλλοι για να παίξουν τα
παιχνίδια

28. ☐ ☐   Κάποια παιδιά είναι συνήθως **ΕΝΩ** Αλλα παιδιά δεν είναι τόσο σίγουρα ☐ ☐
σίγουρα πως ότι κάνουν είναι αν αυτό που κάνουν είναι το σωστό
το σωστό πράγμα ή όχι

4) The Dodge stories – Greek translated and adapted version

DODGE – ΙΣΤΟΡΙΕΣ

1. Περπατάς ή στέκεσαι στην αυλή και δέχεσαι ένα πολύ δυνατό κτύπημα από μια μπάλα που πέταξε ή κλώτσησε ο/η _____ _____

Πώς νομίζεις ότι έγινε η πράξη αυτή:

( ) 2 - Αν αποδόσει κακία ή εχθρική πρόθεση στο άλλο παιδί,

( ) 1 - Αν δηλώσει ατύχημα ή καλή γενικά πρόθεση του παιδιού που έκανε την πράξη

( ) 0 - Αν δηλώσει πώς το γεγονός συνέβη ενώ το άλλο παιδί προσπαθούσε να κάνει κάτι για να τον ωφελήσει

Πώς θα αντιδρούσες αν σου συνέβαινε, τί θα έκανες:

( ) 3 - Αν δηλώσει πώς θα ανταποδώσει την επιθετικότητα (θα χτυπήσει ή 'σκοτώσει' το άλλο παιδί)

( ) 2 - Αν πει ότι θα παραπονεθεί σε μια μορφή εξουσίας (δασκάλα), με σκοπό να τιμωρηθεί το άλλο παιδί

( ) 1 - Αν δεν κάνει τίποτα αρνητικό στο άλλο παιδί (π.χ. αν ζητήσει εξηγήσεις, αν ζητήσει το μολύβι του πίσω, ή πει στους γονείς του να του πάρουν καινούργια ρούχα),

( ) 0 - Αν αντιδράσει θετικά, δηλ. πει ευχαριστώ που μου βρήκες το μολύβι μου κ.λ.π.

- :(Γιατί θα αντιδρούσες έτσι)::-

2. Καθώς κάθεσαι στην αυλή, πέφτει πάνω σου ένα χάρτινο κουτί με σοκολατούχο γάλα που κρατούσε ο/η _____ που πέρναγε από κοντά σου και σου λερώνει τα ρούχα.

Πώς νομίζεις ότι έγινε η πράξη αυτή:

( ) 2 - Αν αποδόσει κακία ή εχθρική πρόθεση στο άλλο παιδί.

( ) 1 - Αν δηλώσει ατύχημα ή καλή γενικά πρόθεση του παιδιού που έκανε την πράξη

( ) 0 - Αν δηλώσει πώς το γεγονός συνέβη ενώ το άλλο παιδί προσπαθούσε να κάνει κάτι για να τον ωφελήσει

Πώς θα αντιδρούσες αν σου συνέβαινε, τί θα έκανες:

( ) 3 - Αν δηλώσει πώς θα ανταποδώσει την επιθετικότητα (θα χτυπήσει ή 'σκοτώσει' το άλλο παιδί)

( ) 2 - Αν πει ότι θα παραπονεθεί σε μια μορφή εξουσίας (δασκάλα), με σκοπό να τιμωρηθεί το άλλο παιδί

( ) 1 - Αν δεν κάνει τίποτα αρνητικό στο άλλο παιδί (π.χ. αν ζητήσει εξηγήσεις, αν ζητήσει το μολύβι του πίσω, ή πει στους γονείς του να του πάρουν καινούργια ρούχα),

( ) 0 - Αν αντιδράσει θετικά, δηλ. πει ευχαριστώ που μου βρήκες το μολύβι μου κ.λ.π.

3 Χάνεις το αγαπημένο σου μολύβι και ύστερα από λίγο βλέπεις τον/την .... να το κρατάει στο χέρι του.

Πώς νομίζεις ότι έγινε η πράξη αυτή;

(   ) 2 - Αν αποδόσει κακία ή εχθρική πρόθεση στο άλλο παιδί.

(   ) 1 - Αν δηλώσει ατύχημα η καλή γενικά πρόθεση του παιδιού που έκανε την πράξη

(   ) 0 - Αν δηλώσει πώς το γεγονός συνέβη ενώ το άλλο παιδί προσπαθούσε να κάνει κάτι για να τον ωφελήσει

Πώς θα αντιδρούσες αν σου συνέβαινε, τί θα έκανες;

(   ) 3 - Αν δηλώσει πώς θα ανταποδώσει την επιθετικότητα (θα χτυπήσει ή 'σκοτώσει' το άλλο παιδί)

(   ) 2 - Αν πει ότι θα παραπονεθεί σε μια μορφή εξουσίας (δασκάλα), με σκοπό να τιμωρηθεί το άλλο παιδί

(   ) 1 - Αν δεν κάνει τίποτα αρνητικό στο άλλο παιδί (π.χ. αν ζητήσει εξηγήσεις, αν ζητήσει το μολύβι του πίσω, ή πει στους γονείς του να του πάρουν καινούργια ρούχα).

(   ) 0 - Αν αντιδράσει θετικά, δηλ. πει ευχαριστώ που μου βρήκες το μολύβι μου κ.λ.π.

....(Γιατί θα αντιδρούσες έτσι;)....

4. Βάζεις το φαγητό σου για λίγο στο θρανίο σου, φεύγεις για λίγα λεπτά, και όταν γυρίζεις βλέπεις τον/την .... να το κρατάει στα χέρια του/της.

Πώς νομίζεις ότι έγινε η πράξη αυτή;

(   ) 2 - Αν αποδόσει κακία ή εχθρική πρόθεση στο άλλο παιδί.

(   ) 1 - Αν δηλώσει ατύχημα ή καλή γενικά πρόθεση του παιδιού που έκανε την πράξη

(   ) 0 - Αν δηλώσει πώς το γεγονός συνέβη ενώ το άλλο παιδί προσπαθούσε να κάνει κάτι για να τον/την ωφελήσει

Πώς θα αντιδρούσες αν σου συνέβαινε, τί θα έκανες;

(   ) 3 - Αν δηλώσει πώς θα ανταποδώσει την επιθετικότητα (θα χτυπήσει ή 'σκοτώσει' το άλλο παιδί)

(   ) 2 - Αν πει ότι θα παραπονεθεί σε μια μορφή εξουσίας (δασκάλα), με σκοπό να τιμωρηθεί το άλλο παιδί

(   ) 1 - Αν δεν κάνει τίποτα αρνητικό στο άλλο παιδί (π.χ. αν ζητήσει εξηγήσεις, αν ζητήσει το μολύβι του πίσω, ή πει στους γονείς του να του πάρουν καινούργια ρούχα).

(   ) 0 - Αν αντιδράσει θετικά, δηλ. πει ευχαριστώ που μου βρήκες το μολύβι μου κ.λ.π.

....(Γιατί θα αντιδρούσες έτσι;)....

5) The Marsh stories – Greek adapted version

IPA   (Interpersonal Problem Analysis)

Ιστορία 1

Ένα παιδί πρέπει να διαλέξει ή να βοηθήσει ένα συμμαθητή του σε ένα διαγώνισμα όταν καμία βοήθεια δεν επιτρέπεται ή να μην μιλήσει σε κανέναν όπως είναι το σωστό.

(α) PD: Ποιό είναι το πρόβλημα σε αυτή την ιστορία; Ποιά είναι όλα τα πράγματα που πρέπει να σκεφτείς-να ζυγίσεις πριν κάνεις οτιδήποτε;

(β) AT: Ποιές είναι όλες οι πιθανές λύσεις που μπορείς να χρησιμοποιήσεις για να λύσεις το πρόβλημα αυτό;

(γ) CT: Τώρα τί μπορεί να συμβεί με κάθε λύση που προτείνεις, ποιό μπορεί να είναι το αποτέλεσμα;

(δ) SA: Αφού σκεφτείς όλες τις διαφορετικές λύσεις που πρότεινες και τα αποτελέσματα που μπορεί να έχει η καθεμία στο πρόβλημα, ποιά λύση νομίζεις ότι είναι η καλύτερη από όλες;

ΙΣΤΟΡΙΑ 2

Ένα παιδί έχει υποσχεθεί σε 3 φίλους του ότι θα τους βρεί εισιτήρια για να πάνε όλοι σε έναν σπουδαίο αγώνα μπάσκετ αλλά μπόρεσε να βρεί μόνο 3 εισιτήρια και κάποιος θα πρέπει να μείνει χωρίς εισιτήριο.

(α) PD: Ποιό είναι το πρόβλημα σε αυτή την ιστορία; Ποιά είναι όλα τα πράγματα που πρέπει να σκεφτείς-να ζυγίσεις καλά πριν κάνεις οτιδήποτε;

(β) AT: Ποιοί είναι όλοι οι πιθανοί διαφορετικοί τρόποι για να λύσεις το πρόβλημα αυτό;

(γ) CT: Τώρα, τί μπορεί να συμβεί σε κάθε τρόπο που ανέφερες για να λύσεις το πρόβλημα, ποιό θα είναι το αποτέλεσμα;

(δ) SA: Αφού σκεφτείς όλους τους πιθανούς τρόπους που πρότεινες για να λύσεις το πρόβλημα και τα αποτελέσματα που μπορεί να έχει ο κάθε τρόπος χωριστά, ποιός νομίζεις ότι είναι ο καλύτερος;

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6) Achenbach's Teacher Report Form for Ages 4-16 – Greek Standardised Translation (Papakyriakopoulos, 1992)

ΟΝΟΜΑ ΠΑΙΔΙΟΥ			ΣΥΝΗΘΗΣ ΕΡΓΑΣΙΑ ΓΟΝΕΩΝ, ακόμη και αν άεργοι τώρα.

(Επακριβώς π.χ. καθηγητής Αγγλικών, πωλητής παπουτσιών κ.λ.π.)

ΦΥΛΟ	ΗΛΙΚΙΑ	ΕΘΝΙΚΟΤΗΤΑ Ή ΕΘΝΙΚΗ ΜΕΙΟΝΟΤΗΤΑ
Αγ. Κορ.		

ΕΡΓΑΣΙΑ ΠΑΤΕΡΑ: _____

ΕΡΓΑΣΙΑ ΜΗΤΕΡΑΣ: _____

ΣΗΜ. ΗΜΕΡ/ΝΙΑ	ΗΜ/ΝΙΑ ΓΕΝΝΗΣΗΣ
Η----- Μ------ Ε—	Η----- Μ------ Ε---------

ΕΡΩΤΗΜ/ΛΟΓΙΟ ΣΥΜΠΛΗΡΩΘΗΚΕ ΑΠΟ:

Δάσκαλο/α (όνομα): _____

Σύμβουλο (όνομα): _____

ΤΑΞΗ	ΣΧΟΛΕΙΟ
ΤΜΗΜΑ	

Άλλο (καθορίστε όνομα: _____

I. Πόσο καιρό γνωρίζετε το παραπάνω παιδί: σε μήνες

II. Πόσο καλά τον/την γνωρίζετε;   1. Όχι καλά   2. Σχετικά καλά   3. Πολύ καλά

III. Πόσο χρόνο τον/την έχετε στην τάξη σας κάθε βδομάδα;

IV. Τι είδος τάξης είναι; (Παρακαλώ να είστε συγκεκριμένοι, π.χ. 4^η κανονική, 3^η Ειδική τάξη κ.λ.π.)

V. Έχει ποτέ εισηγηθεί παιδαγωγός την τοποθέτησή του/της σε ειδική τάξη, ή την ανάγκη ειδικών υπηρεσιών, ή ειδικής εξατομικευμένης διδασκαλίας;

      Δε γνωρίζω   0. Όχι   1. Ναι – Τι είδος και πότε;

VI. Έχει επαναλάβει ποτέ την ίδια τάξη;

      Δε γνωρίζω   0. Όχι   1. Ναι – Τάξη και λόγο

VII. Τρέχουσα σχολική επίδοση – αναφέρετε τα ακαδημαϊκά μαθήματα (π.χ. Μαθηματικά – όχι Αριθμητική και Γεωμετρία) και επιλέξτε την κατηγορία στην οποία πιστεύετε ότι ανήκει:

Μάθημα	1. Πολύ κατώτερη επιπέδου τάξης	2. Κάπως κατώτερη επιπέδου τάξης	3. Στο κανονικό επίπεδο	4. Κάπως ανώτερη επιπέδου τάξης	5. Αρκετά ανώτερη επιπέδου τάξης
1.					
2.					
3.					
4.					
5.					
6.					

VIII. Συγκρινόμενος/-η με αντιπροσωπευτικά παιδιά της ηλικίας του:	1. Πολύ λιγότερο	2. Αρκετά λιγότερο	3. Ελαφρά λιγότερο	4. Περίπου κανονικά	5. Ελαφρά περισσότερο	6. Αρκετά περισσότερο	7. Πολύ περισσότερο
1. Πόσο σκληρά εργάζεται;	☐						
2. Πόσο κατάλληλα συμπεριφέρεται;	☐						
3. Πόσο μαθαίνει;	☐						
4. Πόσο χαρούμενος/-η είναι;	☐						

IX. Η βαθμολογία του στα πιο πρόσφατα τεστ επίδοσης (αν υπάρχει):

Ονομασία Τεστ	Θέμα	Ημερομηνία	Ποσόστωση ή βαθμολογία που επιτεύχθηκε

X. Τεστ IQ (δηλ. βαθμός πνευματικής ικανότητας), τεστ ετοιμότητας, ή επιδεξιότητας και ικανοτήτων (αν υπάρχουν):

Ονομασία Τεστ	Ημερομηνία	IQ ή αντίστοιχα σκορ

Έχει αυτό το παιδί παρουσιάσει καμία ασθένεια, σωματική μειονεξία ή πνευματική καθυστέρηση;

☐ Όχι   ☐ Ναι –Παρακαλώ περιγράψτε

Τι σας ανησυχεί περισσότερο στο παιδί αυτό ;

Περιγράψτε τα καλύτερα στοιχεία (προτερήματα) αυτού του παιδιού:

Παρακαλώ γράψτε ελεύθερα οποιαδήποτε σχόλια σχετικά με τις εργασίες, τη συμπεριφορά, ή τις δυνατότητες αυτού του παιδιού, χρησιμοποιώντας και συμπληρωματική σελίδα αν χρειαστεί.

Ακολουθεί μια λίστα με περιγραφές της συμπεριφοράς παιδιών. Για κάθε μια περιγραφή που χαρακτηρίζει τη συμπεριφορά του μαθητή τώρα **ή κατά τους τελευταίους 2 μήνες**, κυκλώστε το 2 αν η περιγραφή είναι **πολύ συχνή ή συνήθως αληθής** για το μαθητή. Κυκλώστε το **1** αν η περιγραφή είναι **περίπου αληθής ή μερικές φορές** για το μαθητή. Αν η περιγραφή **δεν είναι αληθής** για το μαθητή, κυκλώστε το **0**. Παρακαλώ απαντήστε όσο καλύτερα μπορείτε, ακόμα και αν ορισμένες περιγραφές δεν δείχνουν να ταιριάζουν καθόλου με τη συμπεριφορά του μαθητή αυτού.

0 = Δε Συμβαίνει (όσο γνωρίζετε)   1 = Μερικές Φορές συμβαίνει   2 = Πολύ Συχνά ή Συχνά συμβαίνει

0 1 2   1. Φέρεται σαν παιδί μικρότερης ηλικίας
0 1 2   2. Μουγκρίζει ή βγάζει άλλους περίεργους ήχους στην τάξη

0 1 2   3. Διαπληκτίζεται πολύ με τους άλλους (λεκτικά)
0 1 2   4. Αποτυγχάνει να τελειώσει ασχολίες που αρχίζει

0 1 2   5. Συμπεριφέρεται όπως το αντίθετο φύλο
0 1 2   6. Είναι προκλητικός προς τους δασκάλους, τους αντιμιλάει

0 1 2   7. Κομπάζει, καυχιέται
0 1 2   8. Αδυνατεί να συγκεντρωθεί, να προσέξει για πολλή ώρα

0 1 2   9. Αδυνατεί να διώξει από το μυαλό του ορισμένες σκέψεις. Έχει έμμονες ιδέες (περιγράψτε): _____

0 1 2   10. Αδυνατεί να καθίσει ακίνητος, αεικίνητος ή υπερκινητικός
0 1 2   11. Προσκολλάται στους ενήλικους ή είναι πολύ εξαρτημένος

0 1 2   12. Παραπονιέται ότι αισθάνεται μοναξιά
0 1 2   13. Δείχνει σαστισμένος ή σα χαμένος

0 1 2   14. Κλαίει πολύ συχνά
0 1 2   15. Κουνιέται διαρκώς, στριφογυρίζει νευρικά στη θέση του

0 1 2   16. Δείχνει σκληρότητα, κάνει το νταή, είναι μοχθηρός προς τους άλλους
0 1 2   17. Ονειροπολεί ή χάνεται στις σκέψεις του

0 1 2   18. Αυτοτραυματίζεται εκούσια ή επιχειρεί να αυτοκτονήσει
0 1 2   19. Απαιτεί πολύ την προσοχή των άλλων

0 1 2   20. Καταστρέφει τα πράγματά του
0 1 2   21. Καταστρέφει πράγματα που ανήκουν σε άλλους

0 1 2   22. Δυσκολεύεται να ακολουθήσει οδηγίες (γενικά)
0 1 2   23. Είναι ανυπάκουος στο σχολείο

0 1 2   24. Παρενοχλεί τα άλλα παιδιά στο σχολείο
0 1 2   25. Δεν τα πηγαίνει καλά με τα άλλα παιδιά

0 1 2   26. Δε δείχνει σημάδια ενοχής έπειτα από άπρεπη συμπεριφορά
0 1 2   27. Ζηλεύει εύκολα

0 1 2   28. Τρώει ή πίνει πράγματα που δεν είναι φαγώσιμα-πόσιμα. Μη συμπεριλάβετε καραμέλες (περιγράψτε): _____

0 1 2   29. Φοβάται ορισμένα ζώα, καταστάσεις ή μέρη εκτός σχολείου (περιγράψτε): _____

0 1 2   30. Φοβάται να πάει στο σχολείο

0 1 2   31. Φοβάται ότι μπορεί να σκεφτεί ή να κάνει κάτι άσχημο
0 1 2   32. Αισθάνεται ότι οφείλει να είναι τέλειος

0 1 2   33. Αισθάνεται ή παραπονιέται ότι κανένας δεν τον αγαπά
0 1 2   34. Αισθάνεται ότι οι άλλοι επιδιώκουν να του κάνουν κακό

0 1 2   35. Αισθάνεται άχρηστος ή κατώτερος των άλλων
0 1 2   36. Τραυματίζεται πολύ συχνά, επιρρεπής στα ατυχήματα

0 1 2   37. Μπλέκει πολύ συχνά σε καβγάδες (παλεύει)
0 1 2   38. Τον κοροϊδεύουν πολύ οι άλλοι

0 1 2   39. Κάνει παρέα με παιδιά που μπλέκουν σε φασαρίες
0 1 2   40. Ακούει ήχους ή φωνές που δεν υπάρχουν (περιγράψτε): _____

0 1 2   41. Είναι παρορμητικός ή ενεργεί χωρίς να σκεφτεί
0 1 2   42. Του αρέσει να είναι μόνος

0 1 2   43. Λέει ψέματα ή κάνει ζαβολιές
0 1 2   44. Τρώει τα νύχια του

0 1 2   45. Είναι νευρικός, με τεντωμένα νεύρα ή σε υπερένταση
0 1 2   46. Κάνει νευρικές κινήσεις , έχει τικ (περιγράψτε): _____

0 1 2   47. Δείχνει υπερβολική σχολαστικότητα στην τήρηση των κανόνων
0 1 2   48. Δεν τον συμπαθούν τα άλλα παιδιά

0 1 2   49. Δυσκολεύεται να μάθει
0 1 2   50. Είναι υπερβολικά φοβισμένος ή αγχώδης

0 1 2   51. Αισθάνεται ζαλάδες
0 1 2   52. Αισθάνεται υπερβολικές ενοχές

0 1 2   53. Μιλάει χωρίς να περιμένει τη σειρά του
0 1 2   54. Δείχνει υπερβολικά κουρασμένος

0 1 2   55. Είναι υπέρβαρος
          56. Έχει προβλήματα υγείας χωρίς γνωστά ιατρικά αίτια:
0 1 2   Α. Πόνους
0 1 2   Β. Πονοκεφάλους
0 1 2   Γ. Ναυτία, τάση προς εμετό
0 1 2   Δ. Προβλήματα όρασης (περιγράψτε): _____

0 1 2   Ε. Εξανθήματα ή άλλα δερματολογικά προβλήματα
0 1 2   Στ. Στομαχόπονους ή κράμπες
0 1 2   Ζ. Κάνει εμετό
0 1 2   Η. Άλλα προβλήματα (περιγράψτε): _____

0 1 2 57. Διαπράττει σωματικές επιθέσεις προς άλλους ανθρώπους

0 1 2 58. Σκαλίζει τη μύτη του συνέχεια ή περιφέρεται έχοντας συνέχεια τα χέρια του σε ένα συγκεκριμένο σημείο του σώματός του (περιγράψτε): _____

0 1 2 59. Αποκοιμάται στην τάξη
0 1 2 60. Είναι απαθής-αδιάφορος, χωρίς κίνητρα

0 1 2 61. Παρουσιάζει φτωχή επίδοση στις σχολικές εργασίες
0 1 2 62. Παρουσιάζει ελλειμματικό κινητικό συντονισμό, είναι αδέξιος, άγαρμπος

0 1 2 63. Προτιμά να παίζει με μεγαλύτερα παιδιά
0 1 2 64. Προτιμά να παίζει με μικρότερα παιδιά

0 1 2 65. Αρνείται να μιλήσει
0 1 2 66. Επαναλαμβάνει συγκεκριμένες πράξεις ξανά και ξανά. Παρουσιάζει ψυχαναγκαστική παρόρμηση (περιγράψτε): _____

0 1 2 67. Διασπά την πειθαρχία της τάξης
0 1 2 68. Στριγκλίζει πολύ

0 1 2 69. Είναι μυστικοπαθής, κρατάει πράγματα για τον εαυτό του
0 1 2 70. Βλέπει πράγματα που δεν υπάρχουν (περιγράψτε): _____

0 1 2 71. Είναι υπερβολικά αμήχανος ή έρχεται εύκολα σε δύσκολη θέση
0 1 2 72. Παρουσιάζει ακατάστατες εργασίες

0 1 2 73. Συμπεριφέρεται ανεύθυνα (περιγράψτε): _____

0 1 2 74. Επιδεικνύεται ή κάνει τον καραγκιόζη
0 1 2 75. Είναι ντροπαλός ή συνεσταλμένος

0 1 2 76. Παρουσιάζει εκρηκτική και απρόβλεπτη συμπεριφορά
0 1 2 77. Οι απαιτήσεις του πρέπει να ικανοποιηθούν αμέσως, απογοητεύεται εύκολα

0 1 2 78. Δε συγκεντρώνεται, αποσπάται η προσοχή του εύκολα
0 1 2 79. Παρουσιάζει προβλήματα ομιλίας (περιγράψτε): _____

0 1 2 80. Κοιτάζει στο κενό

0 1 2 81. Πληγώνεται όταν τον επικρίνουν

0 1 2 82. Κλέβει πράγματα
0 1 2 83. Μαζεύει πράγματα που δεν του χρειάζονται (περιγράψτε): _____

0 1 2 84. Συμπεριφέρεται παράξενα (περιγράψτε): _____

0 1 2 85. Έχει παράξενες ιδέες (περιγράψτε): _____

0 1 2 86. Είναι ξεροκέφαλος, σκυθρωπός ή ευέξαπτος

0 1 2 87. Παρουσιάζει ξαφνικές αλλαγές διάθεσης ή συναισθημάτων
0 1 2 88. Μουτρώνει πολύ

0 1 2 89. Είναι καχύποπτος
0 1 2 90. Βλαστημάει ή χρησιμοποιεί άσεμνη γλώσσα

0 1 2 91. Μιλάει περί αυτοκτονίας του
0 1 2 92. Παρουσιάζει υποεπίδοση, δεν εργάζεται σύμφωνα με τις δυνατότητές του

0 1 2 93. Μιλάει υπερβολικά
0 1 2 94. Κοροϊδεύει πολύ τους άλλους

0 1 2 95. Παρουσιάζει ξεσπάσματα θυμού ή είναι οξύθυμος
0 1 2 96. Σκέφτεται το σεξ υπερβολικά

0 1 2 97. Φοβερίζει τους άλλους
0 1 2 98. Έρχεται αργοπορημένος στο σχολείο ή στην τάξη

0 1 2 99. Ενδιαφέρεται υπερβολικά για την τάξη ή την καθαριότητα
0 1 2 100. Αποτυγχάνει να εκτελέσει τις εργασίες που του αναθέτουν

0 1 2 101. Κάνει σκασιαρχείο από το σχολείο
0 1 2 102. Είναι υποτονικός, αργοκίνητος ή χωρίς ενέργεια

0 1 2 103. Είναι δυστυχισμένος, λυπημένος ή σε κατάθλιψη
0 1 2 104. Μιλάει με ασυνήθιστα δυνατή φωνή

0 1 2 105. Καταναλώνει οινοπνευματώδη ή κάνει χρήση ναρκωτικών για μη ιατρικούς σκοπούς (περιγράψτε): _____

0 1 2 106. Ανησυχεί υπερβολικά για το αν θα ικανοποιήσει τον άλλο

0 1 2 107. Αντιπαθεί το σχολείο
0 1 2 108. Φοβάται μην τυχόν κάνει λάθος

0 1 2 109. Κλαψουρίζει παραπονιάρικα
0 1 2 110. Παρουσιάζεται με ατημέλητη εμφάνιση

0 1 2 111. Είναι απομονωμένος, δεν έρχεται σε επαφή με τους άλλους
0 1 2 112. Δείχνει να ανησυχεί για τα πάντα

113. Συμπληρώστε οποιαδήποτε προβλήματα παρουσιάζει το παιδί σας που δεν αναφέρθηκαν παραπάνω:

0 1 2 _____

0 1 2 _____

0 1 2 _____

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