

MATERNAL MENTALIZATION AND CHILD PSYCHOSOCIAL ADAPTATION
FOR CHILDREN WITH LEARNING AND BEHAVIORAL DISORDERS

by

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ABSTRACT

Maternal Mentalization and Child Psychosocial Adaptation for Children with Learning and Behavioral Disorders

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This study examined the relationship between maternal reflective functioning (maternal RF) and psychosocial functioning for children with learning and behavioral disorders (LBD). Because many, but not all, children with LBD experience social and emotional difficulties concurrent with learning, language and behavioral impairments, this project aimed to identify within-group differences to highlight protective factors and inform treatment. The study predicted that mothers' capacity to mentalize about their child, the parent-child relationship, themselves as parents, and their child's learning and behavioral disorders (RF-LBD) would be associated with improved psychosocial functioning in their child.

The study subjects, 18 mother-son dyads, were part of a larger project, investigating attention in children with language impairments. The child participants were diagnosed with or at risk for Attention-Deficit/Hyperactivity Disorder, a Reading Disorder, or a Language Impairment. The Parent Development Interview was modified for use with parents of learning disabled children to determine maternal RF and RF-LBD. Mothers also completed measures assessing children's social skills, internalizing and externalizing symptoms, and problem behaviors.

Results revealed that maternal RF was significantly positively associated with higher social skills in children with LBD. A relationship was not found between maternal RF and measures of children's internalizing and externalizing symptoms and problem behaviors. Moreover, the direction of effects suggested negative, but non-significant correlations between maternal RF and these variables, indicating that mothers with higher RF may actually report higher levels of negative symptoms and behaviors in their LBD children. These results suggest that low RF mothers may not be able to fully attune to and acknowledge their children's more problematic symptoms and behaviors. Significant relationships were not identified between RF-LBD and measures of children's psychosocial functioning implying that a mother's overall mentalizing capacity may have a stronger effect on the developing child, and that RF-LBD is just one aspect of this larger entity. Also, the stress of having a child with an LBD may make it more difficult for the parent to demonstrate stable RF in relation to her child's learning and behavioral problems. These results were discussed in terms of their implications for attachment and mentalization theory and research, and clinical interventions.

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CHAPTER ONE: Introduction

At present, there are a growing number of children experiencing cognitive and behavioral difficulties that affect their learning capacity.¹ These learning and behavioral disorders are often accompanied by depression, anxiety, peer rejection, aggressive behavior, poor social skills, and low self-esteem. The psychological consequences of these additional difficulties are cumulative and potentially traumatic, and have far-reaching repercussions that carry into adulthood.

However, not all children with learning and behavioral disorders experience added social and emotional difficulties. For some, the challenges are relatively limited to the academic world, and their sense of self and interpersonal relationships develop normally. Elucidating why some children with learning and behavioral disorders do better psychosocially than others would advance the research on within-group protective factors and provide a blueprint for treatment. The purpose of this study is to examine whether a parent's capacity to mentalize her child's internal experience affects the child's psychosocial adaptation.

Recent developments in attachment and mentalization theory have linked parents' reflective capacity to children's psychosocial functioning. That is, a parent's capacity to understand the connections between her child's feelings, thoughts, and behaviors fosters the child's ability to mentalize and self-regulate, i.e. understand himself² and others,

¹Sometimes the symptomatology of these children meet criteria to receive a diagnosis of Attention Deficit/Hyperactive Disorder or a Learning Disorder while at other times their symptoms do not necessitate a diagnosis but are nonetheless problematic and disruptive.

²The current investigation will examine mother and son dyads. For this reason masculine pronouns will be used when referring to "a child," similarly feminine pronouns will be used when referring to "a parent." Details regarding subjects' inclusion and exclusion factor are discussed in Chapter 3.

maintain positive relationships, and cope with challenging situations. As children with learning and behavior problems have difficulty self-regulating and often behave in bewildering and frustrating ways, it is invaluable for a child with learning and behavioral disorders to have parents who can mentalize his experience and reflect it back to him.

This study investigates parental reflective functioning in mothers of children with learning and behavioral disorders. It is predicted that children with learning and behavioral disorders whose mothers have higher reflective functioning will have more adaptive psychosocial functioning as compared to children whose mothers are less reflective. It is also predicted that mothers who are better able to reflect on their child's learning and behavioral disorders will tend to see their child's struggles as delimited and treatable, will be less likely to blame their child for their deficits, and will more often find pleasure in the mother-child relationship. In contrast, mothers with less reflective capacity will tend to globalize their child's difficulties, overlook their child's strengths, and have less insight into the links between their child's symptoms, emotional experience, and behavior. These mothers will also be more likely to be more focused on the negative aspects of the mother-child relationship. Mothers' capacity to understand their child's difficulties will impact their child's ability to conceptualize their learning and behavioral disorders and acquire a positive sense of self, which is crucial for healthy development.

CHAPTER TWO: Literature Review

The present study investigates the impact of maternal reflective functioning on the psychosocial functioning of children with learning and behavioral disorders³. The literature review is divided into five broad sections related to this investigation. The first section provides an overview of Attention-Deficit/Hyperactivity Disorder (ADHD), Learning Disorder (LD), and Specific Language Impairment, (SLI) including the prevalence of the disorders, the nature of the diagnoses, and the disorders' etiologies. Psychoanalytic perspectives are also discussed, addressing how learning, language, and behavioral problems influence children's ego development, object relations, and sense of self. Next, the psychosocial functioning of children with learning and behavioral disorders is examined, and the family environment is also considered.

The second section focuses on the mother-child relationship and explores attachment theory and research. It begins with the work of Bowlby and Ainsworth and then explores the paradigm shift initiated by Main's research on representations of adult attachment. The next section discusses the concept of reflective functioning (RF). Born out of attachment research, RF describes the capacity for understanding mental states and their influence on behavior. The capacity to reflect develops within the mother-child relationship; this process and its significance are described in detail.

The fourth section discusses theory and research on maternal representations of the child, of the mother's sense of self as caregiver, and of the mother-child relationship.

³ For the purpose of this project, the terms "children with learning and behavioral disorders" will refer to a mixed group of young people either diagnosed or at risk for Attention-Deficit/Hyperactivity Disorder (ADHD), Learning Disorder (LD), or Specific Language Impairment (SLI), such that their school functioning is impeded. This term reflects the sample of clinically referred subjects used in the current study. When discussing a specific research study, distinctions will be made regarding the subjects involved, e.g., ADHD, hyperactive, language impaired, and LD.

This section concludes by describing maternal reflective functioning, which recognizes the bidirectional relationship between maternal representations and a mother's reflective capacity in relation to her child. The final section details research conducted on mothers and their children with learning, behavioral, and language problems. Particular emphasis is placed on how maternal behaviors and attributions influence a child's social and emotional functioning, and how a mother's understanding of her child's difficulties impacts the child's conceptualizations of his deficits and his overall sense of self.

Overview of ADHD and LD

The diagnoses of Attention-Deficit/Hyperactivity Disorder (ADHD) and Learning Disorders (LD) are notable for both their prevalence and their ambiguity among school age children. ADHD is the most common neurodevelopmental disorder in childhood⁴ and roughly 5 percent of all school-aged children have an LD (DSM IV-TR, American Psychiatric Association, 2000).⁵ The prominence of these disorders has garnered a tremendous amount of attention from the research community. However, despite this consideration, controversy persists around the criteria for diagnosis, and the etiology of these disorders remains unclear.

It is important to point out that significant comorbidity exists for LD and ADHD, and the disorders present with similar academic and behavioral difficulties, often complicating diagnosis and treatment (Tannock & Brown, 2000).⁶ Based on the frequent

⁴The DSM-IV reports prevalence of ADHD in school-aged children between 3 and 5 percent (American Psychiatric Association, 2004). However, epidemiological studies, which applied DSM-IV criteria to schoolchildren, cite prevalence rates from 11 to 16 percent (Cantwell, 1996).

⁵According to the DSM-IV, roughly 5 percent of school-aged children attending public schools have a Learning Disorder, others cite the prevalence as between 5 percent to 10 percent (Tannock & Brown, 2000).

⁶Based on a national survey, prevalence of comorbid ADHD and LD amongst school children is 3.7% (Smith & Adam, 2006). Approximately one in four children with ADHD also has a learning disorder and

clinical presentation of both an LD and ADHD, some researchers have suggested that learning and attention problems are interrelated and tend to coexist (Mayes, Calhoun, & Crowell, 2000), however other researchers suggest that although the disorders “frequently co-occur in the same child, each (ADHD and LD) is a separate problem” (Shaywitz, Fletcher, Shaywitz, 1994, p. 108, as cited in Rothstein & Glenn, 1999).

LD and ADHD also share a common debate over the nature of the diagnosis. In both cases the DSM-IV provides a categorical diagnosis, meaning rigid distinctions are made between those who meet criteria and those who do not. For ADHD, diagnosis is based on a specific number of behavioral symptoms, reflecting developmentally inappropriate levels of impulsivity, hyperactivity and inattention, and consistent with the DSM-IV’s focus on behavioral symptoms, the internal experience of these individuals is not discussed (Gilmore, 2000). Because behavioral symptom-based diagnosis relies heavily on parent and teacher reports, it is contingent on observers’ understanding of indefinite terms like “often,” “difficulty” and “organizing.” This makes for considerable inconsistencies in the ADHD diagnosis (Voeller, 2004). In addition, there is no experimental evidence that demonstrates that a single set of deficits are shared by all individuals with ADHD (Rowland, Lesesne, & Abramowitz, 2002). Notably, boys are four times more likely to have ADHD than girls in community samples, and nine times more likely in clinical samples (Cantwell, 1996). The higher rate of ADHD boys in clinical samples as compared to community samples may be due to a referral bias: boys tend to display more aggressive and hyperactive behaviors. However, the higher

one in three children with an LD also has ADHD (Tannock & Brown, 2000). However, Mayes, Calhoun and Crowell (2000) found that roughly 70% of children with ADHD present with some type of learning problem.

prevalence of ADHD boys in community samples suggests that there may be a “gender-linked” component of the disorder (Barkley, 1998).

A diagnosis of a learning disorder is determined by the discrepancy between IQ and achievement scores (DSM-IV-TR).⁷ In order to receive this diagnosis unexpected underachievement must be identified such that one’s atypical learning pattern cannot be attributed to normal variations in the learning process, a sensory disorder, emotional disturbances, lack of opportunity, inadequate instruction or cultural factors (DSM-IV-TR, American Psychiatric Association, 2000; Fletcher et al., 2007). Of course, unexpected underachievement is a difficult construct to measure, quantify, and treat, often resulting in delayed and conflicting diagnoses as well as belated or misguided interventions (Dyson, 1996; Fletcher, et al., 2007).

Many researchers and clinicians believe that the current categorical criteria used to diagnose ADHD and LD are flawed and that these diagnoses should be seen as dimensional; that is ADHD and LD exist on a continuum of functioning (Barkley, 1996; Barkley, 1998; Fletcher et al., 2007; Lyon, 1996).⁸ The dimensional model is more solidly grounded in theories of developmental psychopathology and better captures the phenomenological experience of the child (Cicchetti & Cohen, 1995; Mash and Dozois, 1996).

By viewing ADHD and LD as a dimensional diagnosis we are able to keep in mind the complexities of these disorders’ etiologies. Neither LD nor ADHD is believed to have a singular cause. Rather, the heterogeneous nature of both disorders points to

⁷It is important to keep in mind that a “learning disorder” (LD) is a general term for a heterogeneous group of disorders and refers to a learning deficit in one or more areas including: mathematics reasoning, mathematics calculation, basic reading skills, reading comprehension or written expression (DSM0

⁸Gilmore (2002) aptly states, “ADHD is highly variable in its presentation and in its manifestations, and these manifestations shade into developmentally appropriate behavioral patterns” (p. 34).

multiple causal pathways in which genetics, biology, and environmental factors⁹ interact and evolve to create the varied symptomatology indicative of both ADHD and LD (Barkley, 1998; Cantwell, 1996; Fletcher et al., 2007, Johnston & Mash, 2001; Lyon, 1996). Further, a more precise understanding of the biological and genetic underpinning of ADHD or LD is still lacking (Fletcher et al, 2007; Voeller, 2004). Fletcher and his colleagues (2007) suggest a model for understanding LDs in which an individual's unique set of academic strengths and weaknesses is based on the interaction of neurobiological factors (i.e., genetics, brain structure, and function), core cognitive processes (e.g. phonemic awareness), behavioral and psychosocial factors (e.g., depression, anxiety, and social skills), and the environment (i.e. socioeconomic factors, familial support, and school interventions).

Similarly, Biederman and Faraone (2005) suggest a multifactoral model for the etiology of ADHD in which no single causal factor is “necessary or sufficient to initiate the disorder.” Rather, it is a combination of risk factors: genetic, biological, environmental and psychosocial, and each play a part in the development of ADHD and have additive and interactive effects (p. 243). This process of reciprocal interaction continues throughout the child's development, and all of the risk factors go on to influence one another and shape the internal and external attributes of the of child. It follows that protective factors for children with learning and behavioral disorders are also interactive and reciprocal, and are relevant throughout development (Al-Yagon, 2003, Morrison & Cosden 1997).

⁹ Prematurity, evidenced by low birth weight is a risk factor for ADHD. Fetal alcohol exposure has been shown to lead to behavioral and learning problems, and maternal smoking during pregnancy is also a proven to be a risk factor for ADHD (Biederman & Faraone, 2005). In addition, lead exposure has also been linked children's ADHD symptomatology (Rowland, Lesesne, & Abramowitz, 2002).

Overview of SLI

Specific Language Impairment (SLI) is a developmental language disorder in which language difficulties cannot be explained by general cognitive delays, neurological problems, or physical handicaps (Bishop, 1997, Tomblin, Records, Buckwalter, Zhang, Smith, & O'Brien, 1997). SLI affects a significant number of children, with prevalence rates estimated at 7 % for preschool to school age children in both clinical and community samples, typically more boys than girls are affected (La Paro, Justice, Skibbe, & Pianta, 2004; Tomblin et al., 1997). Impaired language has a tremendous affect on the child's relationships and emotional functioning, as "one of the most important functions of language is interpersonal, emotional, and behavioral regulation," (Gallagher, 1999, p. 5). In addition, severe language deficits during childhood have lasting affects. In a longitudinal study of a community sample of children, of those diagnosed with SLI at age five, 71% continued to exhibit impaired language, cognitive, and academic functioning at age 18 when compared to their typically developing peers (Johnson et al., 1999).

The diagnosis of SLI, similar to ADHD and LD, lacks clear consensus. On the most stringent end of the spectrum, as developed by Stark and Tallal (1981), diagnosis of an SLI requires a child's language achievement to fall below expectations based on both nonverbal IQ and on chronological age expectations.¹⁰ These overly rigid criteria, particularly the non-verbal IQ cutoff, can over-exclude children (Plante, 1998) and do not take into account the ways in which the impairment interferes with children's "academic or occupational achievement or with social communication" (Bishop, 1997, p.

¹⁰ Interestingly, even in Stark and Tallal's original study where stringent exclusionary and inclusionary factors were applied, those who met criteria were found to be a "heterogeneous" group, with "different patterns of deficit in speech and language" potentially reflecting "different types and degrees of impairment in sensory, perceptual, and motor abilities," (1981, p.122).

26). Moreover, there are significant variations in how nonverbal IQ and age expectations are determined and measured (Tomblin et al., 1997), and which inclusionary and exclusionary criteria are employed in both research and clinical settings (La Paro, Justice, Skibbe, & Pianta, 2004). Understandably, these issues complicate diagnosis and treatment.

Like ADHD and LD, the etiology for SLI, is complex and not fully defined. Current research suggests that the various impaired language and speech processes of SLI are linked to both genetic and environmental factors (Bishop, 2003, Bishop, 2006a,b; Hayiou-Thomas, 2007). Bishop posits that language acquisition is "surprisingly robust" even in the face of developmental risk, indicating that multiple pathways exist for "effective language acquisition" (2006a, p 220). Therefore, clinically notable language impairments are more likely caused by "co-occurring" deficits (Bishop, 2006 a,b). From this perspective, Bishop posits that SLI should be analyzed "in terms of dimensions of impairment instead of looking at discrete subtypes," (2006a, p. 220).¹¹

Given the current investigation will examine a clinically referred sample of children with learning and behavioral disorders, the comorbidity between SLI and ADHD and SLI and LD is noteworthy. For example, an epidemiological sample exploring the overlap between ADHD and SLI, demonstrated rates of comorbidity at 30% (Beitchman, Nair, Clegg, Ferguson, & Patel, 1986). In addition, language impairments often go undetected in clinical populations when children present with externalizing problems

¹¹The DSM-IV-TR recognizes three subtypes of developmental communication disorders that roughly correspond with SLI: Expressive Language Disorder, Mixed Expressive/Receptive Language Disorder, and Phonological Disorder (American Psychiatric Association, 2000). This discrete subtype model does not capture the complexity of the etiology of SLI (Bishop, 2006a), nor the evolving nature of SLI as children get older and receive treatment (Friel-Patti, 1999). Moreover, children with SLI generally show some impairment of comprehension and "the distinction between expressive and receptive subtypes is more a matter of degree than a sharp divide," (Bishop, 1997, p. 35).

associated with ADHD, i.e, aggression, hyperactivity, and oppositional behavior (Cohen, Davine, Horodezky, Lipsett, & Isaacson, 1993).¹² Significant comorbidity has also been noted between SLI and LD. In a study of 600 children with speech and language problems from a community sample, 14% were found comorbid for LD¹³ (Baker & Cantwell, 1987).

Psychodynamic Perspective

Psychodynamic theorists provide an additional perspective on children with learning and behavioral problems by focusing on their internal experience. While keeping in mind the above stated risk factors, these theorists consider how learning, language, and behavioral impairments influence and potentially impede ego development, which has tremendous ramifications for children's self-regulatory capacities, self-representation, and object relations (e.g., Gilmore, 2000; Rothstein, Benjamin, Crosby, & Eisenstadt, 1986). These theorists also pay close attention to the role of the mother-child relationship in the manifestation of the disorder.

Gilmore (2000), approaching ADHD from an ego-oriented analytic perspective, views ADHD as a "disturbance in the synthetic, organizing, and integrative function of the ego." For Gilmore (2000, 2002), ADHD is an admixture of "neuropsychiatric and neurotic components," and the etiology of the syndrome is based on genetic, biological, dynamic, developmental, and environmental factors. Impaired ego functioning bidirectionally interacts with attentional difficulties, leading to disturbances in object

¹²In this study, 99 (34.4%) of the 288 children referred from treatment at an outpatient psychiatric clinic had previously undetected language impairments.

¹³Learning Disorders were described by the authors as: specific reading disorder, mixed specific developmental learning disorder, a typical learning disorder, and specific arithmetic disorder (Baker & Cantwell (1987).

relations, and drive and affect regulation. Importantly, disturbances in object relations take form early on, as negative parent-child patterns of relating typically begin in infancy, seemingly the product of both nature and nurture (Gilmore, 2000, 2002). These patterns become more entrenched and fraught with conflict over the course of the ADHD child's development.

Children with ADHD tend to be high distractible while at the same time have difficulties tolerating change and transitions (Gilmore, 2000). They also struggle with intense affect vacillating between hypo and hypereactivity, and tend to have little capacity to self-monitor or understand causes of feelings and behaviors (i.e., reflective functioning) (Gilmore, 2000). Interpersonal communications take on too little or too much affective charge, which ultimately distorts the underlying message (Yeschin, 2000). Because of these misinterpretations, children with ADHD tend to respond in incongruent, unfocused and confusing ways, leading to further miscommunications and misunderstandings. Close loved ones often react with anger, frustration, and bewilderment to the communicative, relational, and behavior difficulties displayed by ADHD children (Yeschin, 2000). Not surprisingly, children with ADHD tend to experience relationships as highly critical and coercive (Gilmore, 2000, 2002). Because of their difficult relationships with loved ones, inattentive children tend to internalize not only negative views of themselves, but also negative representations of themselves in relationships. These representations shape their expectations of others and perpetuate a dysfunctional pattern of interactions.

Gilmore's theoretical and clinical understanding of ADHD children has been supported by research. Tuber and his colleagues (Tuber, Harris, Meehan, Reynoso, &

Ueng-McHale, 2007; Meehan, Ueng-McHale, Reynoso, Harris, Wolfson, Gomes, & Tuber, 2008) used Rorschach data to better understand ego functioning, object relations, and internal resources in ADHD children.¹⁴ By examining the ways in which children with and without ADHD symptomatology responded to the Rorschach Inkblot Method (RIM), these researchers found that children at risk for ADHD were less able to access internal resources hindering their capacity “to organize, process, and represent their experience” and ultimately self-regulate (Meehan et al., 2008, p. 274). These children’s impaired capacity for self-regulation coupled with their executive functioning deficits in turn challenged “the internalization of co-regulatory experiences with caregivers” (Tuber et al., 2007). These authors conclude, as noted above, that these impairments interfere with ADHD children’s ego development, ability to make sense of interpersonal exchanges, and to effectively engage with others (Tuber et al., 2007, Meehan et al., 2008).

Also consistent with the psychodynamic approach noted above, these authors suggest that ADHD children may have two distinct ways of responding to intense stimuli, because of their deficits in executive functioning and affect regulation. The first response pattern involves the “simplification and constriction,” which leads to the child responding in a deadened, restricted manner. In the second response pattern, the child acknowledges affect and vitality, but then becomes overwhelmed. The way in which the child responds is likely contingent on both the content and the context of the stimuli (Tuber et al., 2007, Meehan et al., 2008). This formulation of the ADHD children’s internal experience is in line with their external behavior, which tends to be variable, inconsistent, and confusing.

¹⁴Tuber and his colleagues’ work is particularly relevant to the current investigation because their sample was comprised of children culled from the larger study “Attention in Children with Language Impairments” (ACLI) (Gomes, Halperin, Tartter, Ritter, Wolfson, & Mody, 2001), and the subjects in the present study were also part of this larger ACLI project.

Rothstein, Benjamin, Crosby, & Eisenstadt (1988) suggest that it is impossible to consider neuropsychological difficulties without also considering psychic conflict. These authors propose two processes of “interdependence” that exist between neuropsychological and psychological development. The first is the hypothesis that pathology increases because different aspects of the personality develop at varying rates (cf. A. Freud, 1965). For example, developmental delays can disturb a child’s self-esteem and sense of competence. The second form of interdependence involves more specific neuropsychological impairments: dysfunction in the processes of motor inhibition, attention, sensory processing, language, and memory. These neuropsychological factors are responsible for receiving, processing, organizing, and transmitting information. They reciprocally interact with the development of ego functions and aspects of object relations. Thus, a child’s neuropsychological impairments, even under good conditions, can interfere with the formation of a stable sense of self and object representations and lead to impoverished psychosocial adaptation. We can infer that under ‘bad’ conditions, (e.g., a dysfunctional family environment,) the potential negative effects of neuropsychological impairments on a child’s emotional, behavioral, and relational experiences are heightened. In the next section we will examine the specific psychosocial difficulties that children with learning and behavioral disorders often experience and focus on factors that might account for within-group differences in outcomes.

Impact on the Child

Children and adolescents with learning and behavioral disorders¹⁵, not surprisingly, tend to perform more poorly in school than their non-impaired peers (Fletcher et al., 2007; Frazier, Youngstrom, Glutting, & Watkins 2007). McNamara and his colleagues (2005) found that not only did young people with LD have significantly lower academic grades than their non-LD counterparts, but those with comorbid LD/ADHD reported having lower grades than their LD only peers. These academic difficulties tend to persist until adulthood and frequently impede educational attainment and occupational status (Frazier et al., 2007; Hechtman, 2000, Johnson et al., 1999).

Children with learning and behavioral disorders are also at greater risk for nonacademic problems. However, the scope and severity of these problems vary (Morrison & Cosden, 1997). Some children with learning and behavioral disorders experience many emotional, behavioral, and social problems in addition to the difficulties in acquiring, processing, and producing information. The consequences of these additional difficulties are cumulative and potentially traumatic, and are at the heart of this investigation. Previous research has found that learning and behavioral disorders are often accompanied by depression (e.g., Huntington & Bender, 1993; Klassen, Miller, & Fine, 2004; Ostrander & Herman, 2006) anxiety (e.g., Wilcutt & Pennington, 2000) and loneliness (e.g. Al-Yagan & Margalit, 2006; Lackaye & Margalit, 2006; Margalit & Efrati, 1996). Reading problems have also been significantly associated with depressed mood in children and adolescents even when controlling for comorbid ADHD and

¹⁵ It is important to note that most studies, particularly those examining the socioemotional functioning of children with learning disabilities do not provide explicit details about the disability. In general children must display poor achievement along with average IQ. However, the specific LD, (e.g., reading, writing, math) is not made clear, nor is the severity or timing of diagnosis. In addition, comorbidity between LD, ADHD, and/or SLI often not assessed, unless that is a specified purpose of the study.

conduct disorder (Maughan, Rowe, Loeber, & Stouthamer-Loeber, 2003). In addition, language impaired children are more prone to emotional disturbance when compared to their typically developing peers (Beitchman, Nair, Clegg, Ferguson, & Patel, 1986). Even within a primary care setting ADHD children are more likely than non-ADHD children to display mood disorders and multiple anxiety disorders (Busch et al., 2002). In a study of children with learning disabilities in urban elementary schools, Wright-Strawderman and Watson (1992) found that 35 percent of their sample scored in the depressed range based on parent reports and children's self-reports.

Children and adolescents with LD are also more likely to have lower self esteem when compared to their non-impaired peers (Huntington & Bender, 1993). During later childhood and adolescence (between the ages of 10 and 13) children with SLI saw themselves as significantly less competent in terms of academics, social acceptance, and behavioral conduct when compared to their typically developing peers (Carlos, Fujiki, Brinton, & James, 2002). Further, young people with both ADHD and LD tend to display higher depressive symptoms and lower self-esteem than students who are LD only (McNamara et al., 2005; Wilcutt & Pennington, 2000).

Significantly, not all children with learning and behavioral disorders look different from their non-impaired peers in terms of emotional functioning. For example, while investigating the emotional and social functioning of a mixed sample of children with learning difficulties Marglit and Efrati (1996) found that, in general, their sample of 94, 7 to 10 year old students, with learning disorders were more lonely than their average-achievement peers. However, 13 of the 94 children with learning problems displayed age-appropriate social competence and were not lonelier than their non-

impaired peers.¹⁶ In addition, not all children with learning difficulties displayed negative global self worth (Rothman and Cosden, 1995). These findings point to the diversity of outcomes for children with learning and behavioral disorders and to the immense importance of considering protective factors, which influence psychosocial adaptation.

Children with learning disorders also exhibit a high prevalence of behavioral problems. Children with limited language skills when faced with challenging and stressful situations are forced to use nonverbal behaviors, and potentially violent acts as a means of expression (Gallagher, 1999). Boys aged 12-18 with LD were found to display a high frequency of symptoms that clustered around conduct problems (e.g., hyperactivity, boisterousness, disruptiveness)¹⁷ and socialized delinquency (e.g., has bad companions, steals) (Epstein, Bursuck & Cullinan, 1985). In the same study, learning disabled girls aged 12 to 18 also displayed significant symptoms related to delinquency, particularly those related to aggression and disruption. Hyperactive and ADHD samples tend to show higher rates of conduct problems, including lying, stealing, defiance and aggression, and studies have suggested that half the children and adolescents diagnosed with ADHD will also meet criteria for Oppositional Defiant Disorder or Conduct Disorder (Newcorn & Halperin, 2000). Students with learning problems tend to be rated as more disruptive and hyperactive than their non-impaired classmates (Margalit & Efariti, 1996). Importantly, these behavioral problems tend to carry into adulthood. Boys diagnosed with language disorders at age five had significantly higher rates of antisocial

¹⁶ Notably, these authors found that younger children (second and third graders), both learning disabled and average achieving, reported more loneliness than older children (fourth and fifth graders). In addition, the loneliness gap between the learning disabled and the non-learning disabled children was larger for the older children. The authors suggest longitudinal studies to clarify these trends. Importantly, these authors do not indicate the ages of the 13 learning disabled children who did not report significant loneliness, so it is not clear if age was a factor in their findings.

¹⁷ Here we see that children with learning disabilities often display the externalizing symptoms, which characterize ADHD.

personality disorder at age 18 compared to their typically developing peers (Beitchman et al., 2001). Hyperactive children are at greater risk for antisocial personality disorder in adulthood, which is mediated by the degree of conduct problems in childhood (Fischer, Barkley, Smallish, & Fletcher, 2002). Hyperactive children are also at greater risk for drug-related antisocial acts (Barkley, Fischer, Smallish, & Fletcher, 2004).

As a group, children with learning and behavioral disorders display a variety of social difficulties. After reviewing 152 studies, Kavale and Forness (1996) found that roughly 75 percent of students with learning disabilities manifested social skills deficits, which distinguished them from their typically developing peers. Similarly, in a meta-analysis of the literature since 1990, Nowicki found that children with LD are at a greater risk for social difficulties than their average and high average performing peers (2003). Nowicki discovered that teachers perceived students with learning problems to be lacking in social skills as compared to their average-achieving peers. Students with learning difficulties were also less popular than their average and high achieving classmates and tended to have lower global self-worth.

In addition, children with difficulties in school have been shown to have a tendency to withdraw and avoid social contact. For example, research has found that boys with ADHD are less socially accepted by classroom peers (Hodgens, Cole & Boldizar, 2000). In another study, preschoolers with language impairments were found to be less task-oriented and assertive, have worse peer social skills and lower social competence when compared to their typically developing peers (McCabe, 2005). It has been suggested that these patterns are behavioral accommodations, e.g., a child withdraws to avoid being called on, or does not fully understand the verbal directions

provided so does not complete a task, rather than deviant behavior or a function of the child's temperament. According to McCabe, these patterns represent "a developmental trajectory in which communication has hindered, rather than helped, in the socialization process (2005, p 385). It should be noted that these patterns are doubly problematic because of the significant interdependence between language development and the social competence that begins in early childhood and extend through early adulthood (Gallagher,1993).

In a study of 200 11-year-olds with SLI, a third of the children were the regular target of bullies, three times more than their typically developing peers (Conti-Ramsden & Botting, 2004, Knox & Conti-Ramsden, 2003). It is possible that children with SLI, may display antisocial behavior towards peers, either unintentionally because of immature socio-cognitive skills or because of "frustration at ineffective sociocognitive skills" which may incite others to bully them (Knox & Conti-Ramsden, 2003, p.10). Similarly, adolescents comorbid for ADHD/LD are more frequently the targets of indirect and direct acts of aggression by their peers (McNamara et al, 2005). These findings suggest that the social challenges experienced by children with learning and behavioral disorders are perpetuated by peer rejection and more direct bullying.

The social difficulties of students with learning and behavioral disorders have several possible explanations. Some theorists believe that these difficulties are primarily the result of neurological dysfunctions, which are also at least partly responsible for their learning, language, and attention difficulties (Barkley, 1998; Tur-Kaspa and Bryan, 1994).¹⁸ Secondly, social skills difficulties are thought of as a side effect of academic

¹⁸This understanding is reflected in the Interagency Committee on Learning Disabilities' inclusion of social skills deficits as a specific learning disability (see ICLD, 1987 for a comprehensive review).

problems, (i.e., doing poorly academically causes them to behave inappropriately) (Gresham & Elliot, 1989). A third hypothesis, as described earlier for language impaired children, is that children's socioemotional behaviors "reflects social adaptations to their language problems" which can lead to "genuine social differences and limitations," (Redmond & Rice, 1998, p. 689-690).

However, these explanations are not completely satisfying because they do not fully account for the fact that not all children with learning and behavioral disorders have low social competence or below average social status (Cosden, Brown & Elliot, 2002; Haager & Vaughn, 1995; Margalit & Efrati 1996; Meadan & Hall, 2004). In addition, "the psychosocial issues facing children with learning problems are not necessarily simple linear correlates of the skill deficit," (Sorensen et al., 2003, p. 10). Tur-Kaspa and Bryan compared average achieving, low achieving, and learning disabled students on measures of social competence and found that poor academic achievement is not a sufficient explanation of the poor social skills of LD students (1993,1994). Similarly, Kavale and Forness found that 25 percent of LD students do not display social skills deficits and suggest "social skills deficits may exist with LD but are not necessarily consequences of LD" (1996, p. 235). Therefore, it is crucial to explore how within-group differences of children with learning and behavioral disorders are related to positive and negative social functioning.

Meadan and Halle (2004) specifically investigated differences between LD fourth and fifth grade boys with high and low peer social status as described by peers, teachers,

and child self-ratings.¹⁹ The authors found that students with higher social status preferred to work with others, and did not view not sharing or accepting help from a friend as negative behaviors. Students with lower social status preferred to work by themselves and perceived blocking or not accepting help as positive behaviors. In addition, students with higher social status were better at using facial cues. They also did not feel that they were different from other children. In contrast, students with lower social status were less sensitive to facial expressions and felt different from other students. Interestingly, students with higher social status reported being better able to control their behavior and regulate their emotions. They tried to behave nicely with other students and actively avoided aggression. Children with lower social status had difficulty with self-control and reported sometimes being aggressive towards other students. They also described not being able to control their behavior when they were mad. The ability to regulate one's emotions and control one's behavior has been linked to social competence and resilience (e.g., Eisenberg et al., 1997), and seems particularly critical for children with learning and behavioral disorders. It may very well be linked to the quality of the parent-child relationship and the parents' capacity to regulate their own emotions and provide a model and guide for appropriate emotional and behavioral responses (Fonagy, 2000). We will now turn to the impact that having a child with school problems has on the family and then describe the effect of the mother-child relationship on the severity and mode of expressions of symptoms of children with learning and behavioral disorders.

¹⁹ These six students had average or above average intelligence and a significant discrepancy between achievement and ability in the areas of reading and/or math/ and/or speech/language skills (Meadan & Halle, 2004).

Impact on the Family

As a group, it is clear that families experience additional stress because of having a child with learning and behavioral disorders. Under the best circumstances, children with school-based problems stress parental resources, and even the most sensitive of parents are challenged by the behavioral symptomatology and emotional difficulties their learning disabled child exhibits and elicits (Maniadaki, Sonuga-Barke, Kakouros & Karaba; 2005; Morrison & Cosden, 1997). Families may share the genetic risk for ADHD, LD, and SLI, and even when this is not the case, familial factors and child characteristics interact in an ongoing and reciprocal way (e.g., DuPaul, McGoey, Eckert, Vanbrakle, 2001; Johnston & Mash, 2001; Lyytinen, Rasku-Puttonen, Poikkeus, Laakso, Ahonen, 1994). Follow-up studies have suggested that maladaptive functioning among children is more likely to persist within a familial environment that is dysfunctional (see Greenberg, Speltz, & DeKlyen, 1993 for a comprehensive review). In a study of 600 children receiving services in a community speech clinic, children with a comorbid psychiatric illness were more likely to live in stressed households marked by family illnesses, family discord, and parental problems (Baker & Cantwell, 1987). In general, families of children with school difficulties have reported that their family environments are more stressful and conflicted as compared to families of typically developing children (e.g. Barkley, Anastopoulos, Guevremont, & Fletcher, 1992; DuPaul, McGoey, Eckert, & VanBrakle, 2001; Harrison & Sofronoff, 2002). Parents of children with learning and behavioral disorders have reported less marital satisfaction and more conflict than parents of non-impaired children, and this has been demonstrated across a range of ages and severity of child's disorder (Johnston & Mash, 2001).

Siblings of children with learning and behavioral disorders are also impacted. Parents of children with learning problems often feel guilty because they devote more time and resources to their impaired children as compared to their typically developing children (Dyson, 1996). Longitudinal research has demonstrated that siblings of children with ADHD displayed significantly higher rates of disruptive behavior, anxiety, and depressive disorders as compared to low-risk controls and their siblings (Faraone, Biederman, Mennin, Gershon, & Tsuang 1996). In addition, hyperactive children and their non-impaired siblings have more reciprocal negative interactions than typically developing sibling dyads (Mash & Johnston, 1983). However, the way in which the family copes with this stress varies, and the overall impact on the particular family and the individual child is unique. It is important to note that not all families of children with learning problems are dysfunctional and in turn, not all children with learning and behavioral disorders experience psychosocial maladjustment (Al-Yagon, 2003).

In a review of the literature Johnston and Mash (2001) suggest that a child may have little predisposition for ADHD but a chaotic or unresponsive family environment may serve to propel inattentive, impulsive, or hyperactive tendencies to the level of pathology. These authors go on to propose that because responsive and sensitive parenting serves as the foundation for the development of self-regulation skills in the child, parents who are unable to adequately respond to the needs of their child, may at least exacerbate the development of disinhibited, poorly regulated behavior in children (p. 185). This stance does not neglect the fact that family and child characteristics are reciprocal, so that an infant who is temperamentally prone to inattention will likely intensify any difficulty the parent has in reading and responding to the child's cues.

Similarly, a family that is extremely responsive and sensitive can serve as a protective factor and promote the development of self-regulation and help to mediate symptoms of ADHD.

Before moving forward to a more in-depth inquiry into the role of the mother-child relationship for children with learning and behavioral disorders, it is worthwhile to consider some of the specific challenges these parents face. Just as children with learning and behavioral disorders represent an at-risk group, their parents are also vulnerable to multiple additional stressors (Al-Yagon, 2007). A parent's capacity to be responsive to the child's needs is severely tested by having a child with learning and behavioral disorders. She must contend with her child's disruptive, frustrating, and confusing behaviors on an on-going basis. Understandably, parents of children with learning problems often feel more out of control and ineffectual (Harrison & Sofronoff, 2002; Maniadaki et al., 2005), and tend to feel less responsible for their child's behavior (Johnston & Freeman, 1997) than do parents of typically developing children. Having to cope with these additional stressors can make it more difficult for mothers of children with school problems to secure social support. They are more likely to take a self-reliant stance, which decreases dependence on others and increases isolation (Al-Yagon, 2007).

The psychic stressors for parents of children with learning and behavioral disorders are no less severe. Parents must deal with the narcissistic injury of having an impaired child (Garber, 1988). Depending on the expectations parents had for their children and their own preexisting psychological vulnerabilities, this can have a devastating impact on the parents and the parent-child relationship (Rothstein & Glenn, 1999). For many parents, their children's learning and behavioral disorders are a painful

reminder of the problems they experienced in school (Stern, 2002). In other cases, parents' own maladaptive representations of themselves and others complicate the mother-child relationship. A mother might associate her son with learning and behavior problems with his father, from whom she is estranged. As a result, she might project the father's faults and adult conflicts onto her son and her relationship with him (Caspi et al., 2004). For other mothers, children's hostile and aggressive behavior might remind them of past traumatic or abusive relationships, causing them to distance themselves from their children or become overwhelmed in the face of children's difficult behaviors. In either case, the mothers would struggle to adequately respond to their children's needs (Greenberg et al., 1993).

Obliviously many factors impact parents' ability to cope with children who have learning, language, and behavioral problems. Chief among them is the parents' capacity to understand their children in terms of the child's experience, not just in an egocentric way that focuses on the affect on the parent. This capacity dictates the texture of relationship from the very beginning, the way a mother and child bond to one another, how a mother perceives and responds to her child's needs, and impacts the child's self-concept and capacity to self-regulate and interact positively with the larger world. Attachment theory and research sheds light on the development of the early mother-child relationship and on its ramifications on the child's view of himself and of the world around him.

Attachment Theory

Although attachment is not directly measured in this current investigation, it lays the theoretical foundation for the central concepts of this study: maternal representation

and reflective functioning. John Bowlby was the first to articulate the importance of the infant-parent attachment system for the development of the child (1969, 1973, 1980).

Mary Ainsworth substantiated his theory with empirical research, creating a classification system for infant's attachment patterns (Ainsworth, Blehar, Waters, & Wall, 1978). Mary Main moved the research to the level of representation by measuring patterns of adult attachment using narrative analysis (Main, Kaplan, & Cassidy, 1985). She demonstrated that the mother's attachment status significantly impacts the attachment status of her child. What remained unclear was how that transmission occurred. Peter Fonagy and his colleagues developed the concept of reflective functioning (RF), which describes the capacity for understanding the mind of another, in particular, that behaviors are motivated by feelings, thoughts, and intentions (Fonagy, Steele, Moran, Steele, & Higgitt, 1991). RF enhances self-understanding, interpersonal relationships, and affect regulation. A child develops the capacity to reflect in the context of his earliest relationships. This development is contingent on his mothers' reflective capacity; he learns to see himself through her. A mother's representations of her child are critical in determining her ability to be reflective with her child, shaping what gets passed on to him, and influencing how he comes to see himself.

Attachment theory began with John Bowlby (1969/1982, 1973, 1980) who formulated the principles of attachment theory by drawing on his background in psychoanalysis, the work of ethnologists like Lorenz (1952) and Harlow (1958), and findings that illustrated the damaging effects of institutionalization and hospitalization on child development (e.g. Spitz, 1946). His thinking influenced how we conceptualize the mother-child relationship and the import we place on disruptions of this critical bond. In

contrast to his contemporaries, Bowlby focused on actual family conflicts as the root of children's emotional disturbances, and he emphasized that the caregiver and the child's mutual pleasure and satisfaction within the relationship is essential to a child's healthy development (Bretherton, 1992).

Bowlby posited that infants are instinctually predisposed to seek and maintain proximity to their caregiver. This provides a sense of safety and security in times of real or imagined stress. "The attachment behavioral system" is thus organized around the goal of maintaining closeness to the caregiver, and although attachment behaviors may vary, the goal does not (George & Solomon, 1996). While the attachment system serves an evolutionary function, namely to provide physical and psychological safety, it is experienced as an emotional and psychological bond. Simply knowing that the attachment figure is available and responsive creates an all-is-well-in-the-world feeling that strengthens a sense of intimacy and closeness for both parties (Bretherton, 1985). As the child moves through development, his unique bids for closeness and autonomy shift, and his emotional demands, desires and conflicts evolve. Optimally, the caregiver molds her responses to meet to the individual and changing needs of her child. And, while attachment behavior is most recognizable in childhood, it continues throughout the life cycle and extends beyond the caregiver-child relationship (Bowlby, 1969/1982).

From very early on, the child begins to recognize and subsequently internalize the patterns of his caregivers' responses to his affective and physical needs. According to Bowlby, as the child continues to interact with his caregivers and the larger world, he begins to construct increasingly complex "internal working models" of the important people in his life and of himself (Bretherton, 1985). These internal representations

provide a “rough and ready sketch of the environment and the self” (Main, 1991, p. 131). Importantly, the internal working models of the self and of loved ones are complementary. If the attachment figure appropriately responds to the child’s need for security and protection, as well as for exploration, the child will internalize a sense of self that is competent and lovable. In contrast, if the caregiver tends to reject the infant’s bids for comfort and/or for independence, he will come to see himself as unworthy or incompetent (Bretherton, 1992). Thus, internal working models have tremendous significance and influence how the child views himself, and what he can expect from close relationships and the larger social environment.

Significantly, the caregiver-child relationship is a reciprocal partnership. Bowlby (1969/1982) made clear that just as children are instinctually motivated to seek and receive care, parents are motivated to offer and provide care, which he termed the “caregiving system.” These caregiving behaviors, like the child’s proximity seeking behaviors, become organized at the level of representation. Thus the parent develops an internal representation of the child that shapes her thoughts, feelings, expectations, and attitudes about the child (Bretherton, 1985; Slade, Belsky, Aber, & Phelps, 1999, Solomon & George, 1996).²⁰ This model is based not only on the parent’s own attachment and interpersonal history, but also on the *real* child embodying his *actual* characteristics that change and evolve throughout his development (Slade et al., 1999). As has been stated earlier, even the “good enough” parent struggles when faced with the challenges of raising a child with a learning and behavioral disorder, which may impact her perceptions and expectations of her child and her sense of self as a parent.

²⁰Theory regarding maternal representations of the child and their impact on the mother-child relationship, maternal behavior, and child’s sense of self are well represented in the psychodynamic literature (e.g. Fraiberg, et al., 1975; Stern, 1985; Winnicott, 1965).

Over the course of the past decade researchers have explicitly explored “parental representations” in order to better understand the mother-child relationship, the transmission of attachment, and child outcomes (e.g. Aber et al., 1999; George & Solomon, 1989, 1996; Schechter et al, 2005; Slade et al., 1999; Solomon & George, 1996; Zeanah et al., 1995). The results of these investigations will be discussed in greater detail below.

While Bowlby formulated attachment theory, Mary Ainsworth (1963, 1978) empirically validated it with her research (Slade, 1999). By observing infants during separations and reunions from their primary caregivers, Ainsworth identified three major patterns of infant attachment: secure, insecure-avoidant, and insecure-resistant.²¹ A fourth category, disorganized/disoriented was also later identified (Main & Hesse, 1990). Ainsworth determined that the particular way in which an infant responded to her mother’s departure and return was determined by the patterns of attachment, (i.e. internal working models), that existed within the mother-child relationship. To this end, she saw that when mothers were sensitive and responsive to their children’s need for comfort and security—in Ainsworth’s terms providing them with “a secure base”—the children were able to express their desire for closeness or exploration freely and openly (Slade, 1999a). They could be angry or upset with their mothers for leaving, but they would be soothed by their return. When mothers ignore, refuse, misrepresent, or become overwhelmed by their children’s needs, children develop maladaptive and defensive ways of communicating and coping with their affective experiences and maintaining the caregiver-child relationship (Slade, 1999a). The avoidant child learns that he must act “as

²¹This structured laboratory assessment developed by Ainsworth came to be known as “the strange situation procedure” (Ainsworth, 1978).

if un-phased by the separation with and similarly unmoved when reunited with the mother. In contrast, the preoccupied child is undone by the separation and is inconsolable when his mother returns.

Since Ainsworth first published her findings nearly 30 years ago, an expansive amount of research has followed linking infant attachment security and adaptive psychosocial development (Slade, 1999). In contrast, insecure attachment²² is associated with negative social, behavioral, and emotional outcomes (see Greenberg, 1999 and Lyons-Ruth, Zeanah, & Benoit, 1996 for reviews). For example, Aber and Allen (1987) in a study of maltreated children found that early environments which compromise attachment security cause the infant to devote an excessive amount of attention and energy to monitoring his primary relationships at the expense of activities that promote learning and exploration, negatively affecting the child's socio-emotional development and his readiness to learn when he reaches school age. More recent research suggests (e.g. Schore, 2001, 2003) that beyond the instinctual goal of safety and security, early attachment relationships are a "major organizer of brain development" (Fonagy & Target, 2005). Other research has also suggested that early attachment relationships affect children's developing attentional processes (e.g., Fearon & Belsky, 2004; Ruff & Rothbart, 1996). These current perspectives further support the notion that the scope of children's learning and behavioral disorders are significantly influenced by children's early attachment relationships.

²²Children with disorganized pattern of attachment are at an increased risk for negative outcomes because they lack a predictable attachment pattern on which they can model their response to stress.

A Shift to the Level of Representation

The shift to exploring attachment at the level of representation originated with Bowlby's conception of the internal working model (Slade et al., 1999). The theoretical constructs and measures set forth by Mary Main and her colleagues (George, Kaplan, & Main, 1985; Main et al., 1985) subsequently broadened the focus of attachment research from solely measuring behavioral responses to measuring the mental representations of attachment (Slade, 1999). Main, building on Bowlby's original understanding of internal working models theorized that these representations not only influence "feelings and behaviors, but also attention, memory and cognition, insofar as they relate directly or indirectly to attachment. Individual differences in these internal working models will therefore be related not only to individual differences in patterns of nonverbal behavior but also patterns of language and structure of the mind" (Main et al., 1985, p 67). This new understanding allowed for the use of narrative and autobiographical memory to measure attachment representations. As a result, researchers could establish relationships between parents' internalized attachment systems and their children's attachment classifications.

Main and her colleagues (George, et al., 1985) created the Adult Attachment Interview (AAI), a semi-structured, 15 question, clinical interview in order to measure the security of adults' overall, general, working model of attachment, rather than in relation to any particular present or past relationship. In this interview adults are asked to describe their early relationships and attachment-related events, and then are asked how these relationships and events have shaped their adult personality (Main et al., 1985, p. 78). Main identified three patterns of adult attachment: the secure/autonomous, the

insecure/dismissing, and the insecure/preoccupied pattern (Main et al., 1985). A fourth pattern was later identified: the unresolved/disorganized pattern, which was based on unresolved loss or trauma (Main & Hesse, 1990). These attachment classifications are determined not by the content of the respondent's reflections about their childhood experiences and their effects on current functioning, but by their quality (van IJzendoorn, 1995).

In Main's research, parents categorized as secure were able produce "fresh" and coherent narratives, integrating positive and negative affects and experiences. They neither idealized nor devalued loved ones, and they tended to "search for accuracy in their descriptions" (Main, 2000).²³ On the other hand, parents who were identified as insecurely attached tended to be incoherent in their narratives. They had difficulty remembering and organizing attachment material and were prone to distortions. Some offered inconsistent depictions of attachment relationships, often devoid of negative affect, while others were overly preoccupied with their early caregivers, oscillated in their descriptions, and were too affectively overwhelmed to provide a clear narrative (Main, 2000). Those who were identified as unresolved or disorganized displayed lapses in discourse and reasoning and did not maintain a consistent pattern of attachment (Main & Hesse, 1990).

Main's research demonstrated a strong relationship between parents' mental representation of attachment and their children's attachment style: secure parents were more likely to have infants who were secure in terms of their response to separations and reunions, and parents who described their attachment representations in an incoherent,

²³Main used Grice's maxims (cf. Grice, 1975) to determine the coherence of a narrative. They are: (1) quality – to be truthful and have evidence for what is said, (2) quantity – be succinct yet complete, (3) relation – be relevant, and (4) manner – be clear and orderly (Main, 1991, p. 142-143).

emotionally vacant, or disorganized way were more likely to have infants who displayed defensive and maladaptive behavior in response to separations and reunions (Main et al., 1985). These findings have been widely supported by subsequent research (see van IJzendoorn, 1995 for a comprehensive review) even when parental attachment was measured prior to the child's birth (e.g., Fonagy, Steele, Steele, Moran & Higgitt, 1991), giving rise to a critical question within attachment research regarding the transmission of parental-mental representations of attachment to the child. Traditionally, a parent's sensitive responsiveness was thought to explain the link (Main et al, 1985). However, van IJzendoorn's meta-analysis examining the relationship between AAI classifications, parental sensitivity, and infant attachment found that parental responsiveness did not sufficiently account for the formidable relationship between parent and child attachment status. Van IJzendoorn thus coined the term "the transmission gap" to describe the uncertainty regarding the intergenerational transmission of attachment.

Of import, Main noticed that parents of secure infants shared a particular attribute, noted above as "the tendency to search more insistently for accuracy," which she termed metacognitive monitoring (Main, 2000). Main describes metacognitive monitoring as "thinking about thought," which embodies both an awareness of as well as the capacity to reflect on the validity, nature, and source of a thought (Main, 1991, p. 128). Implicitly included in this construct is the ability to recognize contradictions and then reorganize thoughts and ideas accordingly (Main, 1991). It is this ability that enables the parents to produce coherent and collaborative narratives (Slade, 1999b). In contrast, parents of insecure infants presented "multiple models" of events and affective experiences without

recognizing their inconsistencies; in other words, they displayed a relative lack of metacognitive monitoring (Main, 1991).

The term ‘multiple models’ was introduced by Bowlby (1973) to signify the child’s experience of having contradictory representations of the *same* reality, which he could not fully assimilate (Main, 1991). For example, a child whose mother is both loving and harshly critical has difficulty reconciling these conflicting experiences, leading to insecure, unintegrated, and contradictory attachment patterns and self-representations that can persist into adulthood. His inner world is confused and fragmented. Intense emotions, such as fear, rage, guilt, and disappointment, are disavowed and split off, making it difficult for him know himself and his emotional experiences. Similarly, insecure, multiple models of attachment impede a mother’s capacity to respond to her child’s needs. Her child’s longings, hostility, and aggression are too strong of a reminder of the emotions she herself is unable to reconcile. The mother is left to respond to her child with frustration, avoidance, or a flooding of emotion, none of which validate or help the child regulate his own emotional experience, thus perpetuating the cycle of multiple models and insecure attachment (Slade, 1999). One can imagine that for a parent with insecure, multiple models of attachment, having a child with learning difficulties would heighten the strain on an already vulnerable parent-child relationship.

Main posited that insecure children, prone to defensive and distorted thinking and “multiple models”, are limited in their metacognitive functioning, making it harder for them to comfortably engage in their emotional and relational world (1991).²⁴ Indeed,

²⁴The capacity for metacognitive monitoring typically develops in children between the ages of three and six (Main, 1991).

Main (et al., 1985; 1991) found that secure six-year-olds had better metacognitive functioning than insecure children. They had more free, unrestricted access to their emotions, autobiographical memory, and cognitive strategies, and were more “thoughtful” and “engaged,” even when presented with stressful, affectively charged tasks. In contrast, insecure children were more avoidant of affect, dysfluent and restricted in their responses, and seemed less interested in the task at hand. Most likely these insecure children were working hard to keep their emotions at bay, which inhibited their responsiveness and prevented them from fully engaging.

The concept of metacognitive monitoring is particularly interesting when considering the transmission of attachment security from parent to child. Recall that it is not the content of an individual’s childhood experience that denotes security, but the manner in which one is able to think about and make meaning of one’s experiences. Parents of secure children often had traumatic and difficult childhoods. A parent’s capacity to observe and monitor representational processes in herself and in relationship to her child may allow for the intergenerational transmission of attachment security and the fostering of the child’s metacognitive functioning, both of which appear necessary for a child’s healthy social and emotional development. This capacity within the mother may in fact be a protective factor for children with learning and behavioral problems who are at risk for low self-esteem, poor social skills, aggressive and rule breaking behaviors, as well as anxiety and mood disorders.

Reflective Functioning

Fonagy, Steele, Steele, Moran, and Higgitt began to expand and operationalize Main’s notions of metacognitive monitoring while working on the London Parent-Child

Study Project (1991). As Fonagy and his colleagues sought to understand the relationship between parent and child attachment systems, they began to identify patterns in the varying ways that secure and insecure parents were able to reflect on thoughts, feelings, and behaviors when discussing their own early attachment relationships (Slade, 2005).

Drawing from psychodynamic, attachment, and cognitive theory, Fonagy et al.

formulated the concepts of mentalization and reflective functioning.

“The term reflective function (RF) refers to the psychological processes underlying the capacity to mentalize....Reflective functioning or mentalization is the active expression of this psychological capacity intimately related to the representation of the self. RF involves both a self-reflective and an interpersonal component that ideally provides an individual with a well-developed capacity to distinguish inner from outer reality, pretend from ‘real’ modes of functioning, intra-personal mental and emotional processes from interpersonal communications” (Fonagy, Target, Steele, & Steele, 1998, p. 4).

Reflective functioning broadens the concept of metacognitive monitoring in two significant ways. First, it not only refers to the capacity to observe one’s own mental states, but also the capacity to observe the mental states of others. As it is both self-reflective and interpersonal, RF affords a deepening of self-understanding as well as broadening of interpersonal experiences (Fonagy, Gergely, Jurist, & Target, 2002). The capacity to mentalize is also distinct from metacognitive monitoring because it allows one to consider how thoughts, feeling, and intentions underlie behaviors in the self and in others. Through this process, actions and interactions become more predicable and understandable (Fonagy et al., 1998). Broadly speaking, RF is an essential human capacity “intrinsic to affect regulation and productive social relationships” (Slade, 2005, p. 269).

For a mother-child dyad in which the child has learning and behavioral problems, the ability to consider the underlying causes of behavior and to recognize how one's own feelings and behaviors are influenced by another's is particularly critical. Because the child often behaves in confusing, hostile, self-defeating, and age-inappropriate ways it is very easy for the parent to become overly negative, blaming, punitive or worse: disengaged.

As mentioned above, in addition to psychoanalytic and attachment theory, mentalization is grounded in cognitive theory and research (e.g., Dennett, 1987; Baron-Cohen, 1995; Baron-Cohen, Tager-Flusberg, & Cohen, 1993), and specifically, in the developmental acquisition of an "intentional stance" or "theory of mind". This gain allows children to begin to attribute mental states to others, (i.e. "read people's minds"), and to recognize that intentional mental states, such as goals, emotions, desires and beliefs, motivate behavior (Fonagy et al, 1998; Fonagy et al 2002). Fonagy's formulation differs from the cognitive developmental theorists cited above in the sense that he views reflective functioning as a developmental achievement that cannot be reached alone and that is never fully acquired. The capacity to reflect varies both between and within individuals based on intrinsic and environmental factors (Fonagy et al, 1998; Fonagy et al 2002).

The development of reflective capacity emerges within the context of secure infant-caregiver relationships (Fonagy et al, 1991). As the mother strives to understand and respond to her infant's physical and psychological needs, she begins to see her child as a separate, psychological being with feelings, desires, and intentions all his own, and she internalizes this representation of him. When the parent is able to accurately envision

the child's intentional stance, the infant has the chance "to find himself in the other" as a mentalizing individual (Fonagy, Steele, Steele, Leigh, Kennedy, Mattoon, & Target, 1995, p. 257). This "re-presentation" between mother and child takes place in moment-by-moment interactions that occur throughout the child's development as the mother responds to her child's ever changing mental states and evolving needs. It is through this ongoing process that a child develops the capacity to mentalize (Slade, 2005). Ideally, the parent is one step ahead of the child, providing scaffolding (cf. Vygotsky, 1966) so that the child can learn to understand his own mind (Fonagy et al, 2002, p. 287). Because the child is fully known and appreciated by the mother, he can begin to know himself. Within this secure relationship the child also develops the capacity for intimacy and closeness. Emotions—positive and negative—can be shared and understood. The child develops a better understanding of himself, which includes his idiosyncratic strengths and weaknesses, as well as an understanding of how relationships work. These factors are particularly important for children who are 'different' and therefore prone to social rejection, like children with learning and behavioral disorders.

When a parent has difficulty mentalizing, she also has trouble holding the child in mind. The child's mental states remain relatively unknown to her and hence to the child. This lack of understanding within the mother child relationship impedes the development of a child's reflective capacity, and his capacity to understand himself and the larger world is also limited. Within an insecure relationship strong emotions are dangerous because they cause the less reflective caregiver to either distance herself, denying the child's anxieties, disappointments, longings, rages, and need for support, or to become so

overwhelmed by the child's affective experience that she herself loses control (Slade, 2005).²⁵

Clearly, the capacity to reflect and to regulate affect are linked and optimally developed within secure caregiver-child relationships. "Self-regulation is taught (or, more accurately, modeled) by the caregiver's regulatory activities"—as the child grows so should his capacity to self regulate. (Fonagy & Target, 2002, p. 317).²⁶ A mother's ability to mentalize "is necessarily linked to her own capacity to regulate, modulate and ultimately symbolize affective experience, which in turn will allow her to contain and bind her infant's affective expression" (Slade, 1999a, p. 803). Fonagy et al., suggest that in a secure relationship the child is able to look to his caregiver in times of distress and find a representation of his mental state that he can integrate and "use as part of a higher-order strategy of affect regulation. The secure caregiver soothes by combining mirroring with a display that is incompatible with the child's affect (thus implying coping)" (2002, p. 42-43).²⁷ Again, when considering children with learning and behavioral disorders who intrinsically have difficulty self regulating, having a parent who can regulate her own affect in relationship to her child should prove invaluable.

Indeed, Fonagy et al., suggest that biological vulnerabilities such as "hyperactivity, inadequate attention, and deficiencies in impulse control" will likely

²⁵In many ways the development of the reflective capacity mirrors psychoanalytic theorists' understanding that the caregiver's capacity to reflect on the mental states of the child or hold the child in mind is critical for the child's emergent sense of self. (e.g. Winnicott, 1965; Kohut, 1977).

²⁶Recall Bowlby's initial assertion that the attachment system's primary purpose is to alleviate real or perceived stress, i.e. affect regulation (1969).

²⁷Fonagy cites Bion (1962) in this conception of maternal sensitivity, namely Bion's notion that a mother's capacity to "contain" her infants intolerable affective states and care for the child's physical needs in a way that acknowledges the child's mental states, helps to manage his unmanageable feelings (Fonagy et al., 1998; Fonagy et al., 2002).

impede the development of a child's reflective capacities, in particular, the capacity to make sense of interpersonal conflict (2002, p. 63). For such a child, a caregiver's mentalizing capacity seems all the more significant. Drawing from Winnicott's concept of the "good enough" mother Fonagy and Target (2005) posit that when the mother-child relationship is stressed or dysregulated (which tends to be frequent for a child with learning and behavioral problems), the mother can serve a modulating function. The child needs and challenges his mother most when he is dysregulated. It can be said that a mother's RF is truly tested in moments of conflict and reparation.

Measuring RF

As mentioned above, Fonagy and his colleagues began to formulate their understanding of mentalization while working on the London Parent-Child Study. (Fonagy et al., 1991).²⁸ In the course of analyzing their findings, these researchers developed a scale to measure reflective functioning based on responses to the AAI (Fonagy et al., 1998). The RF scale is applied to those questions on the AAI that specifically "demand" the interviewee to reflect on feelings, beliefs, and behaviors in regard to past or current interpersonal experience with primary caregivers (Fonagy et al., 1993; Fonagy et al., 1998). Questions such as "why do you think your parents behaved as they did during your childhood?" and "have there been changes in your relationship with your parents since childhood?" are scored based on the subject's (1) awareness of the nature of mental states, (2) explicit effort to tease out mental states that induce certain behaviors, (3) understanding of the "developmental aspects of mental states", and (4)

²⁸100 mothers, fathers and their first child participated in this study. AAIs were administered before the birth of the child, and the children's attachment status was measured at 12 and 18 months. Measures assessing self-esteem, marital satisfaction, personality, attitudes to the pregnancy and the future infant were also administered (see Fonagy et al., 1991; Fonagy et al., 1993 for a full description of the study).

recognition of mental states in relation to the interviewer (Fonagy et al., 1998).²⁹

Subjects are given an overall RF score determined by their general capacity to reflect on their early experiences, their parents' past and current mental states, and on the way that their early experiences affected their own development (Slade 2005).

Results from Fonagy et al.'s London Parent-Child Project (1991; 1993; 1994; 1995) point to a significant relationship between attachment classification and RF. Parents who demonstrated high reflective capacity were more likely to be secure on the AAI. Even more striking, parents' RF scores were a stronger predictor of infant attachment security above all other measures collected, including parents' adult attachment classification (Fonagy et al., 1993).³⁰ Notably, neither parents' level of education, nor their verbal intelligence significantly correlated to their overall RF score. These findings may bridge the transmission gap. A parent's reflective capacity may explain how attachment security is transmitted to the child.

Maternal Representations

The level of reflective functioning that is derived from a mother's responses on the AAI represents her capacity to mentalize when asked about her own parents and her early childhood experiences. However, because the AAI does not specifically ask about parents' representations of, or their relationship with, their children, it does not explicitly capture parents' capacity to "hold their child in mind," nor does it address parents'

²⁹The RF scale is an 11-point scoring system, ranging from 9 to -1. A score of 9 represents full or exceptional RF and a score of -1 represents an evasive and potentially hostile response.

³⁰ RF has also been shown to be a protective factor for high-risk groups. Parents who had experienced less loving, more neglected and rejecting childhoods were twice as likely to have an insecure attachment with their child. However, parents from these disadvantaged backgrounds with high reflective capacity were found to have securely attached infants (Fonagy et al., 1994).

representations of their children (Slade, 2005). Mothers' representations of the child and their reflective capacity in relation to their children are inextricably intertwined. The way a mother views her child, and the way she views herself as a parent directly affects her ability to hold an accurate and balanced picture of the mother-child relationship in mind. "Presumably it is the parent's internal working model of her child and his mental experience that will help her mentalize and thus regulate her child's internal world" (Slade, 2005, p. 275).

In addition, as described above, the mother's representation of her child affects how the child views himself (Slade, 1999a). It is therefore critical to understand parents' reflective capacity in relation to their children and to elucidate the content of their reflections. Recall that Bowlby (1982) initially suggested that just as children are instinctually motivated to seek and receive care, parents are similarly motivated to offer and provide care, which he termed the "caregiving system." These caregiving behaviors, like the child's proximity-seeking behaviors, become organized at the level of representation. Thus, the mother develops an internal working model of the child that shapes her thoughts, feelings, expectations, and attitudes about the child, herself as a mother, and the mother-child relationship (Benoit, Zeanah, Parker, Nicholson, & Coolbear, 1997a; Bretherton, 1985, Slade et al., 1999, Solomon & George 1996). In real time, the parent's attachment representations and fantasies about the child are interwoven with the child's real attributes. The child's "actual characteristics" have a compelling impact on the way the parent thinks, feels, and ultimately behaves toward the child (Slade et al., 1999).

Several research teams have studied mothers' internal representations of their children (e.g. Benoit et al., 1997a; Slade et al., 1999, Slade, Bernbach, Grienberger, Levy, & Locker, 2005a; Solomon & George, 1996; Zeanah, Benoit, Hirschberg, Barton, & Regan, 1994). These researchers have developed two main interviews and three coding systems. Each of these approaches relies on the verbatim transcripts of interviews in which mothers are asked to describe their relationship with the child, their sense of the child, and their experience of being a parent in great detail.

Zeanah and his colleagues (Benoit et al., 1997a; Benoit, Parker, & Zeanah, 1997b; Zeanah & Benoit, 1995; Zeanah et al., 1994) created the Working Model of the Child Interview (WMCI) designed to elicit and assess parents' thoughts, beliefs, and experience of the child and their relationship. Transcripts were classified based on parents' overall representations into one of three categories: balanced, disengaged, or distorted, modeled respectively after Main's secure, dismissing and preoccupied categories. A concordant relationship was identified between mothers' WMCI classifications and their infants' attachment status (Zeanah et al., 1994), as well as between parental representations and adult attachment classifications (Zeanah et al., 1994). In addition, when mothers were assessed prenatally, their WMCI classifications significantly predicted their infants' attachment status at 12 months (Benoit et al., 1997b). Moreover, Zeanah and his colleagues found that only 9% of mothers of infants with clinical problems (e.g. failure to thrive and sleep disorders) displayed "balanced" representations of their child, significantly less than the 38% of the matched control group (Benoit et al., 1997a).

These findings support the notion that maternal representations of the child are related to mothers' own attachment organization and influence the child's attachment

security. Further, these findings point to the reciprocity that exists between the mother's view of her child and the child's own unique set of strengths and vulnerabilities, which together affects the child's developmental process. For a child with clinical problems, a mother's balanced representation of the child may serve as a protective factor, whereas distorted and disengaged representations may place the child—particularly the more vulnerable child—at greater risk (Benoit et al., 1997a).

Rather than focusing on parents' perceptions of the child, George and Solomon (1989, 1996) assessed parental representations of the self as caregiver. These researchers created a modified version of the Parent Development Interview (Aber, Slade, Berger, Bresgi, & Kaplan, 1985)³¹ to be used with parents of school-aged children. Their work is of particular interest because rather than assessing new or expecting parents, they studied mothers and their six-year-old children. Mothers' narratives were scored based on parental representations and then assigned to caregiving classifications that corresponded to Main's secure, insecure, and disorganized-unresolved classifications respectively. Parents' caregiving classifications were compared to their adult attachment classifications and to their children's attachment status. Significant concordance was found between these three variables (George & Solomon, 1996).

Using the same sample of mothers and their children, George and Solomon also investigated how maternal representations potentially shift to meet the needs of their latency-aged children (George & Solomon, 1989). These researchers found that mothers with secure caregiver representations felt capable as parents and had realistic representations of themselves and their children. "Secure" mothers based their actions on their children's developmental needs and capacities as well as on their own needs, which

³¹This interview is discussed in greater detail below.

supported the children's age-appropriate strivings for autonomy and industry. In contrast, mothers with insecure caregiving models tended to feel less competent, less sure, and less comfortable as parents. They frequently felt unable or unwilling to meet their children's needs, presented devalued representations of themselves and their children. They also tended to distort or deny their own and/or their children's feelings and often rejected their children's upset as an "act" or over dramatized their children's needs. Not surprisingly, mothers with insecure caregiving models had more difficulty accurately gauging their child's level of competency, likely undermining their children's bids for industry and independence (George & Solomon, 1989).

Overall, these findings validate the notion that mothers' internal working models are related to their own attachment security and influence children's patterns of attachment, and that this holds true as the child moves into latency (George & Solomon, 1989; 1996). Moreover, the work of George and Solomon underscores the value of a caregiver who believes in her effectiveness and who is able to hold a balanced, accurate view of her child and of herself. These factors simultaneously provide the child with a "secure base" and encourage his sense of autonomy and competency.

Slade, Aber and their colleagues took this research a step further by using the Parent Development Interview (PDI) to assess mothers' representations of the self as caregiver, of the child, and of the parent-child relationship (Slade et al., 1999; Aber et al., 1999). Verbatim transcripts were coded for three significant aspects of parental representations: (1) parental representations of the affective experience of parenting, (2) parental representations of the child's affective experience, and (3) parental state of mind in relation to the child (Slade et al., 1999).

The PDI is a semi-structured clinical interview with 45 questions and probes, which elicit representations of the current, ongoing, ever-evolving relationship with the child. Subjects are asked to describe their children's thoughts, behaviors and feelings in various situations. The ways a mother responds to and behaves toward her child are also the subjects of inquiry and reflection. Questions regarding her relationship with the child in respect to pleasures and difficulties, and in respect to moments of harmony and conflict are asked in order to understand how mothers make sense of and internalize positive and negative feelings and experiences. In addition, mothers are asked to describe how they handle their own difficult feelings in relation to their children, and then consider what kind of impact these feelings have on their children.

In their first study, Slade and her colleagues used the PDI coding system described above to understand the relationship between maternal representations and adult attachment and maternal behavior using a cohort of 125 mothers and their firstborn sons (Slade et al., 1999). Transcripts were coded for 16 variables and a factor analysis of these variables yielded three clear factors: (1) mothers' representations of joy and pleasure within the relationship and the overall coherence of the narrative; (2) mothers' representations and modulation of anger; and (3) mothers' representations of guilt and separation distress (Aber et al., 1999).

Slade et al., found that mothers who were classified as secure in regard to adult attachment scored higher on the Joy-Pleasure and Coherence dimension than all other mothers. In addition, these mothers were less negative and more positive in their mothering as compared to mothers who received lower scores on the Joy-Pleasure and Coherence dimension. Mothers who scored high on the Anger dimension were less

sensitive and less positive in their mothering than mothers whose Anger scores were low. Interestingly, these researchers found that when PDI scores on the Joy-Pleasure Coherence Dimension were controlled for, AAI attachment status was no longer predictive of positive mothering. These findings not only demonstrate a strong relationship between maternal representations, adult attachment patterns, and maternal behavior, they also suggest that maternal representations may serve a mediating role between adult attachment security and the mother's way of being with her child. Most relevant for the current investigation, the degree to which a mother experiences pleasure and anger within the mother-child relationship has a significant impact on the mother's behavior with her child.

The mothers from the above study were administered the PDI a second time 13 months after the first administration when their sons were 28 months old (Aber et al., 1999). The researchers were interested in the stability of the mothers' representation of this child over time, in particular how mothers' representations were affected by "the terrible twos," which are associated with higher levels of parental stress.³² Maternal representations were found to be stable in terms of joy, pleasure, and coherence; similarly there was no significant change in representations of guilt and separation distress. However, there was a significant increase in mothers' level of anger from 15 to 28 months, in line with the above hypothesis.

Notably, increased anger at 28 months did not decrease levels of joy, pleasure, and coherence of narrative or increase guilt and separation distress in mothers' representations of the child. In addition, mothers who displayed more pleasure and

³²During this period children tend to assert their autonomy and voice their negative reactions more readily (c.f. Aber & Baker, 1990; Lieberman, 1994).

coherence in their representations at 15 months were less angry at 28 months, and this was predictive above their original level of anger at 15 months. This effect was bidirectional. Anger at 15 months predicted decreased joy, pleasure, and coherence of narrative at 28 months over and above the level of joy, pleasure and coherence of narrative at 15 months. Authors suggest that parents with more coherent representations of their children at 15 months have greater reflective capacity regarding their children's "terrible two" behavior, which tends to decrease parents' direct anger toward their children. Reciprocally, parents whose early representations of their children are high in anger will have a harder time reflecting on their experiences with their children as they move into the "terrible twos" (Aber et al., 1999). This same logic can be applied to parents of children with learning, language, and behavior problems: parents who have more coherent representations of their child may be better able to understand their children's difficult and frustrating behaviors as well as regulate their own negative affect.

In sum, these findings make it clear that a mother's representations of herself as caregiver, her view of her child, and her understanding of the mother-child relationship are related to adult attachment status, the child's attachment classification, and the mothers' behavior towards her child (Aber et al., 1999; Slade, et al., 1999). Moreover, maternal representations may actually serve a mediating function between a mother's attachment representations and the way she is with her child. Additionally, these findings suggest that mothers who have coherent representations of the child and find pleasure in the mother-child relationship have an increased capacity to make sense of difficult and stressful times and to modulate their anger.

Maternal Reflective Functioning

Recently Slade and her colleagues (Slade, Bernbach, Grienberger, Levy, & Locker, 2005a), in collaboration with Peter Fonagy, Mary Target and Fulvia Ronchi, adapted the RF scale to be used with the PDI in order to gain a better sense of parents' reflective capacity in relation to their children. This decision was made in part because the original PDI scoring system was complex and cumbersome. The choice was also motivated by the fact that RF assesses the core constructs that had been measured through the scoring system described above, namely the affective experience of parenting, parental representations of the child's affective experience, and parental state of mind in relation to the child, as well as the key dimensions: Joy-Pleasure and coherence, Anger, and Guilt-Separation Distress (Slade, 2005).

In addition, as stated earlier, the PDI is preferable to the AAI as a measure of maternal reflective functioning because it asks the mother directly about her ongoing relationship with her child rather than making inferences based on her RF in response to her early relationship with her parents (Slade, 2005). Increased precision in the measurement of maternal RF allows stronger conclusions to be drawn regarding how maternal representations shape a child's mentalizing capacity, his sense of self, his affect regulation, and his capacity for close relationships.

The RF scale was modified such that each item from the original AAI-RF coding manual (Fonagy et al., 1998) was adapted for use with the PDI. Similar to the AAI scoring system, RF scores are generated from responses to particular questions on the PDI that specifically ask the interviewees to reflect on their own or their child's mental states, as well as for the overall interview (Slade et al., 2005a). By scoring individual questions, strengths and weaknesses in a mother's reflective capacity are identified.

Questions such as, “Tell me about a time when you got angry at your child?” which are followed by probes: “What happened?,” “How did you handle your angry feelings?,” and “What effect did these feelings have on your child?” capture the complexity of RF within the mother-child relationship. Not only is the parent’s capacity to reflect on mental states and behaviors in respect to her child assessed, but also her ability to regulate affect and to understand how her feelings impact her child is measured.

In some cases, mothers may be reflective about mental states, while being unable to use this information to regulate their behavior with their children. In other instances mothers may be reflective about their own feelings and behaviors, but lose this capacity in relation to their children. Still other parents may be quite reflective around certain affects, such as guilt, but are undone by other strong emotions, such as anger. Finally, a mother may also be able to describe positive aspects of the mother-child relationship, but will shut down when asked about its negative aspects, or vice versa. When imbalances in a mother’s RF are extreme, they are evidenced in a lower overall score and most likely have implications for the mother-child relationship and the child’s development. It is important to keep in mind that even the most reflective mothers are not reflective all the time, and of course experience moments of disequilibrium and dysregulation (Slade, et al., 2005a).

Several studies have used the RF scoring system in conjunction with the PDI. Slade, Grienberger, Bernbach, Levy and Locker (2005b) found that maternal RF predicted attachment security in infants and was also significantly correlated with adult attachment classification. In another study, conducted by Grienberger, Kelly, and Slade (2005), the relationship between maternal RF, infant attachment, and the quality of

mother-infant affective communication during the Strange Situation was examined. These researchers found a negative correlation between maternal RF and maternal disruptive affective communication (i.e., breakdowns in affect regulation and sensitive responsiveness during times of infant distress).

Based on their findings, the authors suggest that maternal RF is particularly critical in helping parents manage their children's displays of intense negative affect (Grienenberger et al., 2005). Without the capacity to reflect on their children's distress, parents are more likely to become disorganized and dysregulated in tense situations, have difficulty separating their children's negative feelings from their own, and may engage in "negative enactments during which they take on a hostile and intrusive or fearful and withdrawn role in relation to their child" (Grienenberger et al., 2005, p. 308).

Grienenberger et al.'s study has significant implications for the role of maternal RF for parents of children with learning and behavioral disorders who must cope with children who are prone to hostile and impulsive behaviors. One can imagine a mother with low reflective functioning becoming undone by her child's difficult behaviors. She may become unduly critical, negative, and punitive with her children, and have a hard time controlling her own negative affect. She may also distort, deny, or globalize their learning and behavior problems. Her behaviors and attributions would most likely damage her children's self esteem as well as exacerbate their problems with self-regulation and self-control.

To date, research has not explored maternal RF and child outcomes, and RF research in general has focused on new mothers and their young children. It is not clear how mothers' mentalizing capacity influences children's psychosocial functioning during

childhood, and how it impacts the functioning of an at-risk sample such as children experiencing learning and behavioral problems. Although this type of research has not been conducted, significant research has examined the relationship between mothers and their children with learning and behavioral disorders.

Research on Mothers and their Children with LBD

Research has not specifically explored the relationship between maternal RF and child outcomes for children with learning and behavioral disorders. However, research has substantiated the role of the early mother-child relationship as a significant factor in the developmental course of learning and behavioral disorders in children. The mother-child relationship can either exacerbate existing vulnerabilities or mitigate the enormous influence these disorders can have on the child's life outside of his academic functioning. (e.g. Al-Yagon, 2007; Werner, 1993). The impact of this relationship begins in infancy. For example, in a large-sample longitudinal study Carlson, Jacobvitz, and Sroufe (1995) found that maternal intrusive caregiving during infancy was the most significant factor in predicting a toddlers' distractibility, which was then linked to childhood hyperactivity.

Similarly, Moffitt and her colleagues studied preterm monozygotic twins at risk for developing ADHD based on their low birth weight (Caspi, et al., 2004; Moffitt, 2004; Tully, Arseneault, Caspi, Moffitt, & Morgan 2004). By examining mothers and their monozygotic twins from infancy through early childhood, these researchers were able to control for children's genetic factors and measure non-shared environmental factors, namely mothers' expression of positive and negative emotion towards each of their

children.³³ Maternal warmth during infancy was found to be a protective factor for the development of ADHD symptoms at age five (Tully et al., 2004). In turn, maternal negativity at age five predicted children's externalizing problems at age seven (Caspi et al., 2004). Moreover, mothers' and toddlers' inability to form stable relational interactions, (i.e., settle into a rhythm or attune to one another) was found to be predictive of an ADHD diagnosis when the children reached school age (Cherkes-Julkowski & Mitlina, 1999). In a study of 73 children identified as SLI at age 3, increased maternal depression and decreased maternal sensitivity³⁴ significantly predicted those children whose language impairment persisted at age 4.5 (La Paro, Justice, Skibbe, & Pianta, 2004). These findings demonstrate, as attachment theory and research suggest, that from birth, mother and infant are engaged in a reciprocal relationship which has a significant influence on their future relationship as well as on the child's overall development.

The value of the mother-child relationship persists as the child enters school (Sorenson et al., 2003). For the child with learning and behavioral disorders, school is a particularly challenging and stressful time (Rothstein et al., 1988). It is a time when the child depends on his parent(s) for support, encouragement, and understanding (Morvitz & Motta, 1992). Thus, when positive mother-child interactions do not occur for a child with learning and behavioral disorders, the effects on the child's psychosocial and behavioral functioning are that much more severe.

³³These researchers were able to determine from infancy, which twin in each family received more negative emotional expression and which received more warmth, and then compared children's externalizing behaviors (Caspi et al., 2004).

³⁴ Maternal sensitive was measured by the supportive presence of the mother, mothers' respect for child's autonomy, and non-reflected hostility toward the child (La Paro, Justice, Skibbe, & Pianta, 2004).

As early as kindergarten, mother-child coercion³⁵ and low levels of maternal affection have been linked to high levels of aggression (Mcfadyen-Ketchum, Bates, Dodge & Pettit, 1996). Poor parent coping, disciplinary aggression, and parents' feelings of hostility and anger are significantly associated with childhood hyperactivity. This remains true even after oppositional and defiant behaviors are controlled for (Johnston & Mash, 2001; Woodward, Taylor & Dowdney, 1998). In addition, caregiving factors, (e.g., coercion and maternal negativity), also contribute to the maintenance of hyperactive and aggressive behaviors across childhood regardless of the child's early hyperactivity and aggression levels (Carlson, Jacobvitz & Sroufe, 1995; Mcfadyen-Ketchum et al., 1996). For example, Mcfadyen-Ketchum et al., (1996) found that over time, boys who experienced high levels of maternal coercion, no matter their initial level of aggression, in general, were more aggressive and disruptive towards peers. On the other hand, boys who experienced low levels of maternal coercion decreased their levels of aggression over time. In general, we can see how negative behaviors between a mother and her child feed off one another and form potentially damaging relational patterns. These patterns persist as a way for a parent and child to maintain their relationship, but they obstruct a deeper, more reflective understanding of behavior.

Similar patterns emerge between mothers and their LD children. As a group, mothers of LD boys are more negative towards and at times dominating with their sons (e.g., Lyytinen, et al., 1994; Tollison, Palmer, & Stowe, 1987). In addition, higher levels of maternal avoidance in close relationships (i.e. attachment avoidance) have been linked

³⁵The term "coercion" is used to describe a sequence of behavior (c.f. Patterson, 1982) in which a child's misbehavior is followed by a negative maternal response, the child then persists in misbehavior, which is then ended by a mother's positive response (Mcfayden-Ketchum, et al., 1996).

to increased rates of depression and loneliness as well as lower levels of self-confidence in learning disabled children (Al-Yagon, 2007). Moreover, mothers of LD children who displayed dismissing patterns of attachment in their close relationships had children with increased levels of loneliness and a decreased sense of hope (Al-Yagon, 2007).³⁶ In contrast, Al-Yagon (2003) found that secure maternal attachment predicted adaptive functioning in kindergarteners at risk for developing learning disabilities (Al-Yagon, 2003). Interestingly, maternal attachment status was not found to be a predictive factor of adaptive functioning for the at-risk children's typically developing peers (Al-Yagon, 2003). This finding further suggests that children with learning and behavioral disorders may be more vulnerable than their non-impaired peers (Morrison & Cosden, 1997) and are even more dependent on their parents to provide them with a secure base.

The findings cited above point to a high incidence of negative relational patterns between mothers and their children with learning and behavioral disorders. As suggested earlier, these patterns can cause the child to internalize a negative self-representation, which can be damaging to his self-concept and to his relationships with others. Overall, these findings demonstrate the impact of the mother-child relationship on the child's social, emotional, and behavioral functioning, the reciprocity of their interactions, and the challenge as well as the enormous value of a mothers' capacity to maintain a reflective stance.

Parental Attributions

Studies which investigate parental attributions for children with learning, language, and behavioral problems provide further insight into the ways that maternal

³⁶ Al-Yagon (2007) also found that LD children reported less attachment security than their typically developing peers.

reflective functioning may serve as a protective factor for children with learning and behavioral disorders. From a social-cognitive perspective, parental attributions act as an intermediary between children's behaviors and parents' reactions to those behaviors (Johnston & Ohan, 2005).³⁷ The attribution a parent makes about her child's behavior serves as an interpretive filter, which then guides the parent's behavioral and emotional response towards the child (Johnston & Ohan, 2005).

When a child has ADHD, a parent is more likely to attribute her child's failures or problems (ADHD characteristics) to global, stable, and internal traits; whereas pro-social behaviors are perceived as less internally caused, less controllable by the child, and less stable over time (Johnston & Freeman, 1997; Sacco & Murry, 2003). Similarly, mothers of sons with LD tend to attribute their children's successes either to luck or to ability, whereas failures are understood as resulting from a lack of ability. In contrast, mothers of typically developing boys attribute their son's successes to their ability, but do not interpret their failures as signs of lack of ability (Stone, Bradley, Kleiner, 2002; Tollison, Palmer, & Stowe, 1987). The attributional patterns common to parents of children with learning and behavioral disorders cause the parents to expect the worst from their children, and to respond to them in more negative and blaming ways. Furthermore, they are likely to overlook their children's more positive traits and behaviors. Not surprisingly, these negative attributional patterns can exacerbate children's problematic behaviors and impair their social and emotional functioning (Maniadaki et al., 2005).

Of note, even when parents specifically attribute their child's disruptive behavior to ADHD, as a group, parents' negative reactions are not tempered by this fact (Harrison

³⁷This theory is based on the work of Weiner (1986, 1993), and Dix and Grusec (1985; Dix, Ruble, Grusec, & Nixon, 1986) (as cited in Johnston & Ohan, 2005).

& Sofronoff, 2002; Johnston & Freeman, 1997; Sacco & Murry, 2003). Parents of ADHD children tend to respond more negatively to their child's hyperactive and impulsive behaviors than do parents of typically developing children, and they perceive these behaviors as more intense than do parents of non-impaired children (Johnston & Freeman, 1997).³⁸

We can use the parental attribution model to speculate on the role of maternal mentalization³⁹ for parents and their children with learning and behavioral difficulties. One can argue that increased maternal RF would further parents' understanding of their children's behavior, as well as help parents make sense of their own reactions. It follows that a more nuanced understanding of the child and the mother-child relationship would foster more appropriate parental responses, decrease negativity, and increase the overall satisfaction within the relationship.

Research has demonstrated that when both parent and child have a more nuanced understanding of the child's learning and/or behavioral disorder, that acknowledges the problem without globalizing it, the child's self-esteem is bolstered, and his psychosocial functioning is improved (e.g., Sorenson et al., 2003). In general, parents of children with LD have lower expectations for their children (Bryan, Pearl, Zimmerman, & Matthews, 1982; Stone, Bradley & Kleiner, 2002), which can negatively impact child outcomes (Morrison & Cosden, 1997).⁴⁰ However, lower maternal expectations for LD sons have

³⁸Harrison and Sofronoff (2002) suggest that a more functional knowledge of ADHD, rather than a purely factual understanding of the disorder, is necessary in order for parents' attributions to change. This represents a much higher level of awareness that may allow for some of the negative feelings and behaviors associated with ADHD to be tempered.

³⁹The concept of maternal reflective functioning is a more complex way of understanding that behaviors are influenced by mental states, and that one's own mental states and behaviors can affect the feelings and behaviors of another, and vice versa.

⁴⁰It is important to keep in mind the powerful role parental perceptions play in shaping a child's sense of self; this has been demonstrated in the research regarding parents' perception of their children's academic

been linked to higher performance on achievement tasks (Tollison, Palmer & Stone, 1987). Tollison and her colleagues suggest that higher maternal expectations are associated with more pressure and anxiety, which causes performance to drop. Therefore, lowered expectations may be experienced by the child as a display of sensitivity to his challenges. Nevertheless, expectations that are too low undermine the child's self-esteem and can have negative effects.

In a review of the literature on parental support, Cosden, Brown and Elliot (2002) suggest that,

“parental expectations that are too low will have a negative impact on the child's self perceptions, whereas overly high expectations will lead to frustration and family stress. Parental perceptions that accurately capture their child's strengths and weaknesses signal acceptance of the child and are experienced by the child as an indicator of support” (p. 40).

Parents who reported having an increased understanding of their LD child over a two-year period had children who showed a decrease in adjustment problems, particularly depressive symptoms and conduct issues (Sorenson et al., 2003). Moreover, for the child with learning and behavioral disorders, perceived parental support has been linked to higher self-esteem and the development of positive self-perceptions (Morvitz & Motta, 1992; Rothman & Cosden, 1995). Additionally, in a longitudinal study which followed 22 learning disabled individuals from infancy to adulthood, parental support was found to be a significant protective factor (Werner, 1993).

competence. Parents' beliefs about their children's academic competence was found to be a more accurate predictor of their children's sense of competence than their child's actual achievement (Frome & Eccles, 1998). In addition, children whose mothers held negative views of their child's self competence were more likely to make stable, internal and global attributions for their own academic failures and external, unstable and specific attributions for their academic successes (Pomerantz & Dong, 2006).

Understandably, the meaning a child gives to his learning and behavioral problems influences his self-concept (Cosden, Brown, & Elliot, 2002; Rothman & Cosden, 1995). Young people with a more negative view of their impairment perceive themselves as less cognitively competent, regardless of their actual achievement scores (Rothman & Cosden, 1995). On the other hand, increased understanding and acceptance of their disability has been linked to increased self-esteem for children with learning disabilities. The child's recognition that the disability is not a global deficiency is crucial to this correlation (Heyman, 1991).⁴¹ MacMaster, Donovan, and MacIntyre (2002) found that when school-age children with LDs were provided with their diagnosis, their self-esteem went up. The authors attributed this change to the students' acknowledgement that the disability is "limited in scope" and "manageable" (p.104). The child no longer had to see himself as bad and out of control. Instead, his difficulties became understandable and containable.

Rothman & Cosden (1995) found that students who view their disability as delimited, modifiable, and non-stigmatizing feel more socially accepted, have less severe achievement problems in some areas, have higher perceptions of their ability and academic competence, and experience more support from parents and peers. In general, students with a less negative view of their disability have a higher overall self-concept. However, it is not clear if having a positive outlook on one's self leads to a positive outlook on one's disability or vice versa. What is clear is that children's understanding and appreciation of their strengths and vulnerabilities are linked to positive outcomes for

⁴¹These findings are consistent with the literature on physical disabilities (cf. Dembo, Leviton & Wright, 1956; Wright, 1960).

children and their families. This understanding and appreciation is very much fostered by the mother-child relationship and the mother's representation of the child.

Summary and Hypotheses

As described above, children with learning and behavioral disorders tend to experience a myriad of additional psychosocial difficulties, which can be lasting and pervasive. However, not all children with learning and behavioral disorders also have impaired social and emotional functioning. Identifying within-group differences to explain the disparity will highlight protective factors and further inform treatment. Research suggests that children's environment, including the mother-child relationship, plays a significant role in the severity and scope of children's learning and behavioral problems. The mother-child relationship is reciprocal as well. Children with learning and behavioral disorders present additional challenges for families, straining their parents' internal and external resources.

Attachment theory and research provides a foundation for understanding the import of the mother-child relationship on the child's overall development, demonstrating that secure attachment fosters a sense of safety and autonomy. Moreover, children internalize representations of the mother-child relationship, affecting not only their sense of self, but also their expectations for future relationships. Similarly, mothers internalize representations of their children, which shape their thoughts, feelings, and behaviors towards the child and impact the child's attachment security.

Most recently Fonagy and his colleagues have expanded on the theories of representation and attachment and developed the construct of reflective functioning: the capacity to reflect on feelings, thoughts, and intentions (mental states) in one's self and in

others. This capacity promotes intrapersonal and interpersonal understanding, and fosters positive relationships and affect-regulation. Children develop the capacity to reflect within the mother-child relationship based on their mother's capacity to mentalize the child's internal experience and to self-regulate in relation to the child. Maternal RF has been linked to children's attachment security and maternal behavior, and the PDI affords a detailed measure of maternal representations and maternal reflective functioning.

To date, research has not investigated the relationship between maternal RF and psychosocial functioning in children with learning and behavioral disorders. However, studies on the mother-child relationship for children with learning and behavioral problems demonstrate that maternal behavior and attributions significantly impact children's symptomatology and psychosocial functioning. Furthermore, mothers' understanding of their children's disability influences how children think about their difficulties, and affect their overall self-esteem and sense of self.

The present study will explore how maternal reflective functioning impacts children with learning and behavioral disorders. It is predicted that mothers who can maintain a reflective stance in relation to their children would be better able to cope with their children's confusing and difficult behaviors. It is also predicted that these mothers will be better able to regulate their own reactions towards their children, which will help their children manage their own intense feelings and behaviors.

It is also expected that high maternal RF will allow mothers' of children with learning and behavioral disorders to maintain a more balanced picture of the child that neither globalizes nor denies the child's particular difficulties. This perspective allows mothers to keep the child's strengths in mind, fostering children's sense of competence

and support, as well as their overall self-esteem. Maternal mentalization will also facilitate mothers' experience of the joy and pleasure in their relationships with their children, while acknowledging negative and painful feelings and experiences. These children will likely have a better understanding of themselves and their difficulties, they will likely have more positive relationships with others, and be less prone to symptoms of anxiety, depression and conduct disorder.

In contrast, it is believed that mothers with less reflective capacity will have more difficulty maintaining a reflective stance when faced with their children's frustrating and bewildering behaviors. These mothers will likely be less able to control their own affect in relation to their children; they will tend to be more critical, negative, and punitive. This type of behavior would most likely exacerbate negative patterns of behavior between mother and child, leaving the child with less insight into his own experience and less able to regulate his own feelings and behaviors. Mothers with low maternal RF may also be more prone to distorting, denying, or globalizing their children's learning and behavioral problems. These mothers will tend to have difficulty recognizing their children's more positive attributes. Mother's misrepresentations of their child will potentially cause the child to have a less accurate and potentially more negative view of himself. Overall, children of less reflective mothers will be prone to low self-esteem, and symptoms of depression, anxiety, and conduct disorder.

Hypotheses

1. There will be significant positive linear relationship between maternal Reflective Functioning, as measured by PDI-2R and children's psychosocial functioning, as measured by the Child Behavior Checklist and the Social Skills Rating System – Parent Form.
2. There will be significant positive linear relationship between maternal Reflective Functioning, as measured by questions on the PDI-2R that specifically ask about the child's school based problems, and children's psychosocial functioning as measured by the Child Behavior Checklist and the Social Skills Rating System-Parent Form.

CHAPTER THREE: Methodology

Sample

The participants in this study were 18 mother-son dyads. These subjects were part of a larger, ongoing research project, supported by the National Institute on Deafness and Other Communication Disorders (Grant # 04992-02), entitled “Attention in Children with Language Impairments” (ACLI), which was being conducted under the supervision of Dr. Hilary Gomes in her laboratory at the City College of New York (Gomes, Halperin, Tartter, Ritter, Wolfson, & Mody, 2001). The child participants were between 7 and 10 years old at the time of enrollment and were referred to the larger project because of attentional, learning, or behavioral problems in school, or because the parent was concerned about the child’s development.

Criteria for Inclusion and Exclusion in ACLI Project

Children were excluded from the larger ACLI study, and hence this study if they had chronic medical or neurological illness; if they were taking systemic medication; if they had ever been diagnosed with schizophrenia, major affective disorder, autism, pervasive, developmental disorder, or a chronic tic disorder. Children also had to report normal hearing, normal or corrected to normal vision, and pass a hearing screen in order to be included in the ACLI project. Children with Performance IQ below 80 were not included in data analysis for the ACLI project; this was not used as an exclusion criterion for the current project, see explanation below.

Criteria for Inclusion and Exclusion in Present Study

For the present study, mothers-son dyads were recruited from the larger ACLI study, if mother and son were living together, if the mother was the biological mother of the identified child, and if the mother was proficient in English. Female child subjects and their mothers were not included in the present study because there were significantly fewer girls enrolled in the ACLI project than boys. Therefore, narrowing the child subject pool by gender reduced the variance between subjects. Similarly, only biological mothers were included in present study in order to decrease the variance between subjects. In general the biological mother serves as the child's primary caregiver, and this was the case for the majority of the child participants in the larger project. Thus, it would confound the findings to include primary caregivers other than the child's biological mother.

In contrast to the PIQ criteria in the larger study, children in the current investigation had to obtain a score of 80 or better on the Full Scale Intelligence Quotient on the Wechsler Abbreviated Scale of Intelligence (WASI, Psychological Corporation, 1999) to be included in the current investigation. This criterion was established to ensure cognitively impaired children were not included in the study. However, this more inclusive criterion, takes into consideration the finding the low-average IQ is a "common component of children with SLI" (Plante, 1998, p.952). Two additional children were removed from the present study; one child had a Full Scale IQ below 80 and the second child displayed symptomatology during his evaluation placing him on the Autistic spectrum.

Ultimately, this study included a clinical sample of boys experiencing problems in school. Studying a heterogeneous group of children with learning and behavioral disorders promoted viewing LD, SLI, and ADHD along a continuum of functioning. Moreover, a within-group design allowed for the identification of group commonalities and differences, including protective and risk factors.

Procedures

ACLI Procedures

As part of the ACLI project, children and their mothers were evaluated. Children took part in a two-day neuropsychological test battery examining language, attention, reading and intelligence. They were administered the Clinical Evaluation of Language-4th Edition (CELF-4, Semel, E., Wiig, E. H., & Secord, W. A., 2003); A Hearing Screen; Wechsler Individual Achievement Test – 2nd Edition (WIAT-II): Reading Composite Subtests (Psychological Corporation, 2001); Wechsler Abbreviated Scale of Intelligence (WASI, Psychological Corporation, 1999); The Beery-Buktenica Developmental Test of Visual-Motor Integration, 4th Edition-Revised (Beery, K.E., 1997).

While their child was being tested, mothers completed a history form, the Child Behavior Checklist (CBCL; Achenbach, 2001) the Social Skills Rating System- Parent Form (SSRS-Parent Form; Gresham & Elliot, 1990) and the Attention Deficit/Hyperactivity Disorder Checklist (DSM IV, American Psychiatric Association, 1994). Teachers of the child participants were also asked to complete the Attention Deficit/Hyperactivity Disorder Checklist (DSM IV, American Psychiatric Association, 1994).

This data was compiled and the child's examiner provided the family with a written clinical report on the results of the child's evaluation. The results from the child's evaluation were used in the present study, specific instruments and scoring methods will be discussed in greater detail below. At the end of the two-day battery of tests, mothers were reimbursed \$50 for their family's participation. Informed consent was provided for all mother participants and informed assent was provided for all child participants and Internal Review Board clearance was granted.

In some cases, children were assessed a second time as part of ACLI project. These children were re-recruited because they displayed significant language impairments or symptoms of ADHD. In the current study, 10 children were assessed twice by the ALCI projects, between one and three years elapsed between assessments. When subjects were assessed twice, the PDI was administered during or after the second assessment.

Ekert Rothstein Procedures

A subset of the mother-son dyads included in the present study (N=13 dyads) participated in another ongoing study, also a continuation of the ACLI project, entitled "Reflective Functioning Capacity in Mothers of Children with School Issues." The principal investigator of this study is Anne-Britt Ekert Rothstein, MA and her experiment was conducted under the supervision of Dr. Hilary Gomes. The mothers who participated in this project did so during the course of their children's evaluation. They were first administered the Brief Symptom Inventory (BSI) (Derogatis, 1979). Mothers were then administered the Parent Development Interview-Revised-LD Version (PDI-2R-LD). Mothers were reimbursed \$25.00 for their participation. Informed consent was provided

and Internal Review Board clearance was granted. Mothers who participated in Ekert Rothstein's project and their sons who participated in the larger ALIC project were included in the present investigation.

Procedures for Current Project

The final subset of mothers-son dyads (N=5) was recruited for the present study in the following manner. Mothers whose sons participated in the ACLI study in the past three years were contacted by phone. These mothers were asked if they would like to participate in an additional interview exploring the ways mothers think about themselves, their children, and their relationship with their children. Mothers were given an opportunity to ask any questions they had about the project and their participation. If a mother decided that she wanted to participate, an appointment was scheduled. At the appointment the mother was given the BSI and then the PDI-2R-LD. She also completed the CBCL and the SSRS-Parent Form, providing a more recent measure of her child's psychosocial functioning. Mothers were reimbursed \$25.00 for their participation. Informed consent was provided and Internal Review Board clearance was granted. Mothers' participation assented their children's participation.

Setting

The data collected for this study occurred in Dr. Gomes' laboratory in room 7/237 of the NAC building at the City College of New York. As part of the ACLI project, children were administered a two-day battery of tests in a small, quiet testing room. Participants in Ms. Ekert Rothstein's project were administered the BSI and the PDI-2R-LD in a separate, small, quiet testing room. For the purposes of this project, mothers were

also administered the BSI and the PDI-2R-LD in separate, small, quiet testing or treatment room.

Measures

A. The Parent Development Interview-Revised, LD Version

The Parent Development Interview Revised (PDI-2R, Slade, Aber, Berger, Bresgi, & Kaplan, 2003) is a semi-structured clinical interview with 46 questions that generally takes 90 minutes to administer. It is an adaptation of the Parent Development Interview (PDI) (Aber et al., 1985). For the purposes of this study the PDI-2R was modified for use with parents of learning disabled children by Anne-Britt Ekert Rothstein and Dr. Arietta Slade (PDI-2R-LD). Six questions were added that specifically ask about the child's LBD, two of these questions were demand⁴² questions. In addition, three questions were modified for use with parents of children with learning disabilities, and were used as demand questions. Two questions from the original interview were eliminated because they were deemed not necessary for parents of school-aged children with LBD.

The PDI-2R-LD interview focuses on the current and ongoing relationship between mother and child. Subjects are asked to describe their children's thoughts, behaviors and feelings in various situations. The ways a mother responds to and behaves towards her child are also the subjects of inquiry and reflection. Questions regarding her relationship with the child in respect to pleasures and difficulties, and in respect to moments of harmony and conflict are asked in order to understand how mothers make sense of and internalize positive and negative feelings and experiences. In addition,

⁴² An explanation of demand questions will be described in more detail below.

mothers are asked to describe how they handle their own difficult feelings in relation to their children, and then to consider what kind of impact these feelings have on their children. Mothers are asked to discuss times when their children needs more attention from them and when their children are more comfortable doing things on their own, and how they and their children handle separations.

Many of the questions in the PDI-2R-LD have secondary probes that allow for a more in-depth analysis of the ways in which the mother and the child are impacted by each other's feelings and behaviors. For example, the mother is asked to describe time when her child was really upset. This is followed by several probes: (1) "What happened?," (2) "How did your child handle his upset?," (3) "How did that make you feel?," (4) "How did you handle your child's upset?," and (5) "What effect did these feelings have on your child?." Not only is the parent's capacity to reflect on mental states and behaviors in respect to her child assessed, but also her ability to regulate affect and to understand how her feelings impact her child is measured.

Measuring Reflective Functioning

The PDI-2R-LD version was scored using the Addendum to the Reflective Functioning Scoring Manual developed by Slade, Bernbach, Grienenberger, Levy and Locker (2005). This scoring system is used as an adjunct to the Reflective Functioning Manual Version 5.0 for application to the AAI (Fonagy et al., 1998). Unlike the AAI, which emphasizes the interviewee's childhood relationships with his or her parents, the PDI instead focuses on a mother's current and ongoing relationship with her child (Slade

et al., 2005a). It is important to note that the original RF scale was designed for use with other narrative data sets such as the PDI (Fonagy, et al., 1991).

The RF scale is an ascending 11-point scoring system, ranging from –1 to 9. A score of 9 represents full or exceptional reflective capacity and a score of –1 represents an evasive and potentially hostile response or interview (Fonagy et al., 1998; Slade et al., 2005a). A score of 5 is considered “definite or ordinary RF” and is the most common overall score in a high functioning “normal” sample (Slade et al., 2005a). These scores provide a quantitative measure of maternal RF based on four broad categories: (1) the mother’s awareness of the nature of mental states, (2) her explicit effort to tease out mental states that induce certain behaviors, (3) her understanding of the developmental aspects of mental states, and (4) mental states in relation to the interviewer (Slade et al., 2005a). Lower scores are given for responses in which the subject demonstrates a lack of coherence, shows an inability to discuss feeling states, uses direct quotes in place of reflective observation, recounts events in the second or third person (e.g., uses “you” or “they”), or avoids the question altogether (Slade et al., 2005a).

The interviews were scored after a thorough reading of the verbatim transcript of the audiotaped PDI. The interviews received an overall parental RF score, which was based on the mother’s ability to reflect on her own mental states, her child’s mental states, and the complex interactions that occur between mental states and behaviors that take place within the continually evolving mother-child relationship. In addition, 23 of the 46 questions each received an individual RF score. These 23 questions are labeled “demand” questions because they explicitly ask the interviewee to reflect on her own or her child’s experience (Slade et al., 2005a). Five of the 23 demand questions, ask parents

to reflect on how their children's learning and behavioral disorders affect them as parents, affect the parent child relationship, and affect the child's sense of self. For the present investigation, these five questions were used to create a factor, and provided a RF score related to learning and behavioral disorders (RF-LBD).

Two expert raters coded RF on the PDI-RF-LDs, a primary rater scored all 18 interviews and a secondary rater scored five interviews for reliability purposes. Both raters are advanced doctoral candidates in clinical psychology and were trained by Dr. Arietta Slade, the first author of the RF manual for the PDI. The training took over a year to complete. The raters achieved an acceptable level of reliability (.80 agreement on overall scores). For the present investigation, reliability was checked at regular intervals, and the two coders achieved 100 percent reliability on overall scores and 90.4 percent reliability on demand questions.

In addition, as stated above, interviews and demand questions on the PDI-2R-LD were examined using qualitative methods. After the interviews were scored based on RF, they were sorted and reviewed. Interviews were grouped based on overall scores to discern whether patterns existed for mothers with average RF and mother with low RF. Based on this analysis, a range of themes emerged: degree of disorganization in mothers' responses, level of defensiveness, mothers' feelings of guilt and helplessness, capacity for positive and negative affect within the parent-child relationship, tendency to minimize children's challenges, understanding of the children's learning and behavioral problems, capacity to utilize support and resources, capacity to use mentalization to affect behavior, and the role of the father. This additional analysis allowed for a more comprehensive, in-depth understanding of the mothers' reflective capacity in relation to their LBD children.

This analysis also provided a more nuanced understanding of how mothers with average RF differed from mothers with low RF.

Measures of Children's Psychosocial Functioning

B. The Child Behavior Checklist (CBCL/6-18)

The CBCL was used to obtain a standardized parental report of children's internalizing and externalizing symptoms. The CBCL has 118 items that describe specific behavioral and emotional problems. Mothers rated how true each item was for their child at that time or within the past 6 months using the following scale: 0 (not true, as far as you know); 1 (somewhat or sometimes true); and 2 (very true or often true).

The CBCL scoring profile provides raw scores, T scores and percentiles. Percentiles and T scores are given for eight syndrome scales. The eight syndrome scales are: Anxious/Depressed; Withdrawn/Depressed; Somatic Complaints; Social Problems; Thought Problems; Attention Problems; Rule-Breaking Behavior; and Aggressive Behavior. T scores are also provided for broadband Internalizing (combined scores from the Anxious/Depressed and Withdrawn/Depressed syndrome scales) Externalizing (combined scores from the Rule-Breaking Behavior; and Aggressive Behavior syndrome scales), and Total Problems scores.

T scores based on broadband Internalizing and Externalizing scales were found to be most related the child's psychosocial adjustment and were distinct from more neurological, learning or attentional issues. For the current investigation these two T

scores were converted to z scores and then averaged to create a single z score capturing children's internalizing and externalizing symptoms.⁴³

C. The Social Skill Rating System, Parent Form, Elementary Level

The SSRS is a standardized rating scale designed to evaluate and classify children's social and behavioral problems. Mothers completed these forms and rated both the frequency and importance of the child's behaviors. The Parent Scale includes two domains: (1) Social Skills, subscales: Cooperation, Self-Control, Responsibility, and Assertion; and (2) Problem Behaviors, subscales: Externalizing, Internalizing, and Hyperactivity.

The Parent Form contains 38 items in the Social Skills Domain and 17 in the Problem Behaviors Domain. Each item was rated for frequency on a 3-point scale, from 0 (never) to 1 (sometimes) to 2 (very often); and for importance on a 3-point scale, for 0 (not important) to 1 (important) to 2 (critical). The results from each domain were reported in terms of standard scores (mean = 100, SD = 15) and percentiles. The results for each subscale were described in terms of the behavioral levels "more than average," "average," and "fewer than average." A child's behavioral level in each of the social skills subscales was established based on grade level and gender norms.

A z score was calculated for the overall Social Skills domain. This z score represented the children's social skills compared to boys in the same grade.

A second z score was calculated based on the standard score from the Problem Behaviors Domain. This z score represented children's problem behaviors when compared to boys in the same grade. Some of the questions on this scale were similar in

⁴³ The Total Problems Score was not used because it contains the Attention Problems syndrome scale, which would place ADHD children at an immediate disadvantage. The Attention Problems syndrome scale contains items that are more related to the children's LBD than their psychosocial adjustment.

content to those used on the CBCL, e.g., Fights with others, Acts sad or depressed. In addition, several of the questions reflect characteristics that are typical rather than distinct from symptoms of ADHD e.g., Acts impulsively, Fidgets or moves excessively. However, the Problem Behaviors Domain also contains novel queries, e.g., shows anxiety about being in a group and talks back, and was therefore used in the present investigation.

F. Findings from Neuropsychological Battery

Recall that as part of the ACLI project children took part in a two-day neuropsychological test battery examining language, reading, intelligence and attention. Aspects of this battery will be used in the present study.

Language. Scores from the Clinical Evaluation of Language-4th Edition (CELF-4, Semel, Wiig, & Secord, 2003) were used to establish the children's language abilities. Standard scores were obtained for the receptive language subtests: Concepts and Directions, Word Classes-Receptive, and Sentence Structure, and for the expressive language subtests: Recalling Sentences, Formulated Sentences, Word Structure, and Word Classes-Expressive⁴⁴. Scores from these subtests were used to identify children with language impairments.

Achievement/Reading. The Wechsler Individual Achievement Test – 2nd Edition (WIAT-II): Reading Composite Subtests (Psychological Corporation, 2001) were used to obtain standard scores on children's phonetic decoding, reading comprehension, and reading skills. Subtests included: Word Reading, Reading Comprehension, and

⁴⁴ Sentence Structure and Word Structure subtests were only administered and normed for children below the age of 9.

Pseudoword Decoding. These scores were used to identify children with low reading achievement.

Intelligence. Overall cognitive ability was based the child's performance on the Wechsler Abbreviated Scale of Intelligence (WASI). This is a brief intelligence test made up of two verbal (Similarities and Vocabulary), and two non-verbal subtests (Block Design and Matrix Reasoning). Standard scores were calculated for verbal, performance, and overall I.Q.

ADHD. Mothers, teachers, and examiners were asked to complete the DSM-IV ADHD-IV rating scale (DuPaul et al., 1998), this measure was used to identify children as having ADHD based on criteria defined by DSM IV (APA, 1994). The ADHD-IV contains eighteen behavioral items associated with ADHD, items alternates between asking about inattention and hyperactive/impulsive behaviors. Behaviors are rated on a four-point scale, from 0 (rarely never) to 1 (sometimes) to 2 (often) and 3 (very often). Behaviors were considered present if they received a rating of 2 or 3.

In addition, the child's examiner generated a written clinical report, discussing the results of the child's evaluation, including a diagnostic formulation, and a behavioral observation. The examiners' observations provided an additional source of information on the children and shed light on discrepancies that occur between mothers' description of the child on PDI-2R-LD and measures of the child's psychosocial functioning.

CHAPTER FOUR: Results

Sample Characteristics

Eighteen mother-son dyads participated in this study. All participants were fluent in English, and all of the children were enrolled in English-only classrooms. Nine of the households were bilingual (50%). The self-reported racial/ethnic identifications of the families were as follows: 8 families were Black or African-American (44.4%), 8 families were Hispanic/Latino (44.4%), and 2 were Caucasian/non-Hispanic (11.2%). The family compositions were as follows: 11 mothers (61.1%) were married to their son's father, 1 mother (5.6%) was divorced from her son's father, 1 mother (5.6%) was separated from her son's father, 1 mother (5.6%) had remarried, and 4 mothers (22.2%) were single parents.

The mothers had a mean education of 14 years (SD 1.57), and all but one mother completed high school. Fourteen of the mothers (77.8%) were employed, 3 were homemakers (16.7%) and 1 was unemployed (5.6%). Three of the children (16.7%) were held back for one year in school and two children (2.5%) were taking stimulant medication to treat their ADHD at the time of testing, however they did not take medication on the days they were evaluated. One additional child began taking a stimulant medication after his evaluation and was on medication when his mother was given the PDI.⁴⁵

The children had a mean age of 103.2 months (8.6 years; SD 17.1 months) when they were first evaluated by the ACLI project. Ten of the 18 children (55.6%) were

⁴⁵ When the three children on stimulant medication are removed from the data there were no significant changes in the findings. In fact, the positive relationship between maternal RF and children's social skills gained power and remained significant.

evaluated a second time.⁴⁶ The mean age of these children at their second evaluation was 121.9 months (10.2 years; SD 12.5 months). Thus, children's mean age at the neuropsychological evaluation, which corresponded with their mother's PDI, was 116.1 months (9.7 years), (SD 17.2 months). A significant portion of the mothers (66.7%) were administered the PDI within one month of their child's most recent ACLI evaluation. The remaining six mothers were administered the PDI on average 20.5 months after their child's most recent evaluation (SD 8.2 months).⁴⁷

Distribution of and Criteria for Language and Behavioral Disorders

Children were categorized as having ADHD if they displayed significant levels of ADHD symptoms in two or more settings (e.g. school, home, test environment) based on the DSM-IV ADHD rating scale (DuPaul et al., 1998) completed by the children's mother, teacher, and examiner from the neuropsychological assessment. This criterion is in accordance with the DSM-IV (APA, 1994). In such cases, one of the child's informants—mother, teacher, or examiner—had to endorse at least 6 of the 9 symptoms of inattention or hyperactivity/impulsivity specified on the DSM-IV checklist and another informant had to endorse at least 5 of the 9 symptoms of inattention or hyperactivity/impulsivity. Recall, that the endorsement process utilized the four-level DSM-IV ADHD rating scale in which 0 signifies never, 1 signifies sometimes, 2 signifies often, 3 signifies always. The endorsement of a symptom required the informant to rate the symptom as occurring either often (2) or always (3). Additionally, at least two of the raters had to identify the same ADHD type (e.g., inattention, hyperactivity/impulsivity, or combined type) for each child. This method requires that more than one rater identify the

⁴⁶ Details regarding the second evaluation were provided in the methods section.

⁴⁷ The timing of the administration of the PDI, and its limitations, will be discussed the next chapter.

child's ADHD symptoms, minimizing single-rater bias. In addition, this criterion acknowledges that children's behaviors are somewhat context-specific, and that children may display differing degrees of symptomatology depending on the setting (e.g., home versus school versus testing) (Wolfson, 2008). Table 1 provides a distribution of ADHD symptoms reported by parents, teachers, and examiners.

Table 1
ADHD Symptoms Reported by Parents, Teachers, and Examiners (n = 18)

<u>ADHD Symptoms</u>	<u>Mean</u>	<u>Range</u>	<u>SD</u>
Parent Inattentive Symptoms	4.3	0-9	2.5
Parent Impulsive/Hyperactive Symptoms	2.3	0-5	1.6
Parent Inattentive + Impulsive/Hyperactive Symptoms	6.6	0-13	3.5
Teacher Inattentive Symptoms ^b	5.3	0-9	3.0
Teacher Impulsive/Hyperactive Symptoms ^b	3.0	0-9	3.1
Teacher Inattentive + Impulsive/Hyperactive Symptoms ^b	8.3	0-18	5.5
Examiner Inattentive Symptoms ^c	2.8	0-8	3.1
Examiner Impulsive/Hyperactive Symptoms ^b	3.4	0-9	4.0
Examiner Inattentive + Impulsive/Hyperactive Symptoms ^b	6.2	0-17	7.1
ADHD Symptoms: Parent, Teacher, Examiner ^c	6.9	2.3-14.3	4.0

ADHD symptoms = total number of symptoms rated 2 or 3 on the DSM-IV ADHD rating scale (DuPaul et al., 1997).

^bn = 15 for teacher and examiner ratings. When ADHD rating scales were missing, the average ADHD symptoms score was calculated based on available data. One subject had no teacher rating, one subject had no examiner ratings, and two subjects had no teacher or examiner ratings.

Based on the above criteria, 8 children (44.4%) met criteria for ADHD. There were four cases of ADHD-Combined type (22.2%), and four cases of ADHD-Inattentive type (22.2%). Three children (16.7%) displayed significant levels of ADHD in one setting, and 4 children (38.9%) did not display significant levels of ADHD symptoms in any setting.

Children were considered language impaired if they scored at least 1 standard deviation below the mean ($\leq 16\%$ ile) on two of the administered expressive language subtests or two receptive language subtests, or if they scored 2 standard deviations below

the mean ($\leq 2\%$ ile) on one expressive or receptive language subtest of the CELF-4 (c.f. Im-Bolter, Johnson, & Pascual-Leone, 2006). Individual subtests were used instead of the Expressive and Receptive Indexes on the CELF-4 because, in this study, individual subtests better captured children who were experiencing severe deficits in an individual area (e.g., formulation or semantics). These deficits can often be missed when using an overall language score.

Based on the above-defined specifications, 4 children (22.2%) met criteria for expressive language impairment and 1 child (5.6%) met criteria for receptive language impairment. An additional 5 children (27.8%) met criteria for both receptive and expressive language impairments. Thus, a total of 10 children (55.6%) were labeled language impaired.

Children were considered to have a reading disorder if their Reading Composite score was at least 1 standard deviation below the mean ($\leq 16\%$ ile) (WIAT-II, (Psychological Corporation, 2001). Using this criterion, 6 children (33.3%) met criterion for having a reading disorder.

Three of the child participants (16.7%) did not meet criteria for any of the three identifiable learning and behavioral disorders. They did however display elevated symptoms of inattention and/or language impairments and/or low reading achievement. Based on the understanding that learning and behavioral disorders exist along a continuum, and because these children's symptoms were significant enough to warrant a referral and an evaluation, they were included in the present investigation and are consider at-risk. See Table 2 for a distribution of child characteristics, and Table 3 for a distribution of learning and behavioral disorders.

Table 2
Child Characteristics (n=18)

Variable and Measure	Mean	Range	SD
<u>IQ: WASI</u> ($\mu = 100, \sigma = 15$)			
Verbal IQ	99.4	79-119	13.6
Performance IQ	97.8	76-124	12.3
Full Scale IQ	99	82-125	13.1
<u>Language: CELF-4</u> Individual Subtests ($\mu = 10, \sigma = 3$)			
Word Structure ^a	7.9	4-11	3.2
Recalling Sentences	7.9	3-12	2.5
Formulated Sentences	7.7	1-12	3.6
Word Classes (Expressive)	9.7	5-15	3.4
Concepts and Directions	7.5	4-12	3.0
Sentence Structure ^a	9.2	5-12	3.0
Word Classes (Receptive)	7.9	1-15	3.6
Index Scores ($\mu = 100, \sigma = 15$)			
Expressive Language Index	89.94	67-114	13.9
Receptive Language Index	93.22	71-125	12.9
Core Language Index	89.67	67-118	15.1
<u>Reading: WIAT-II</u> ($\mu = 100, \sigma = 15$)			
Word Reading	98.5	69-119	12.72
Reading Comprehension	95.9	61-116	14.7
Pseudoword Decoding	94.5	68-118	13.4
Reading Composite Score	94.4	64-121	14.0

Note. IQ based on the Wechsler Abbreviated Scale of Intelligence (WASI). CELF-4= Clinical Evaluation of Language-4th Edition. Expressive Language Index = CELF-4 Expressive Language Scaled Score; Receptive Language Index = CELF-4 Receptive Language Scaled Score. Core Language Index = CELF-4 Core Language Scaled Score. WIAT-II = Wechsler Individual Achievement Test – 2nd Edition. Reading Composite Score = WIAT II Reading Composite Standard Score.

As can be seen in Table 3, nearly half of the sample (44.4%) met criteria for more than one of the above-described learning and behavioral disorders, suggestive of the comorbidity between ADHD and other learning disorders (Tannock & Brown, 2000). This finding also points to the overlap in the behavioral manifestations for children with attention, learning, and language problems, which can often cloud diagnosis and affect children's performance on tasks. For example, children with attention problems may perform more poorly on language or reading tasks because they have difficulty attending to the testing protocol. Similarly, children with language or reading impairments may display behavioral symptoms that parallel those of ADHD because they have difficulty

taking in, processing, or articulating information (Aarron, Joshi, Palmer, Smith, & Kirby, 2002). The significant comorbidity of the sample may also be related to a referral bias, in that children who were experiencing multiple LBDs were more likely to be referred for neuropsychological evaluations.

Table 3
Distribution of Children's Learning and Behavioral Disorders (n=18)

Child ID	ADHD	Language Impairment	Reading Impairment	At-risk	Comorbid LBD
5009	X	X	X		X
5036	X	X			X
5024	X	X			X
5015	X	X			X
2092	X	X			X
5014	X		X		X
5021		X	X		X
5013		X	X		X
5004	X				
2101	X				
5047		X			
2103		X			
2100		X			
5042			X		
5037			X		
5048				X	
5018				X	
5012				X	

Hypothesis One

The study's first hypothesis addressed the relationship between overall maternal RF and the three measures of children's psychosocial functioning. Overall maternal RF was measured by the mothers' reflective capacity on the entire Parent Development Interview-2R (PDI). Table 4 provides a summary of overall maternal RF scores. Notably, the range of overall RF was narrow (3 - 5) given the 11-point scale.

Table 4
Summary of Overall Maternal RF (n=18)

Variable	Mean	Range	SD
Overall RF ^α	4.0	3-5	.767

^αScale = -1 to 9.

Children's psychosocial functioning was measured in three different domains: (1) social skills based on the Social Skills Rating Scale Social Skills Domain z score, (2) internalizing and externalizing symptoms based on the Child Behavior Check List Externalizing and Internalizing Behavior T scores, and (3) problem behaviors based on the Social Skills Rating Scale Problem Behaviors Domain standard score. Each measure of the children's psychosocial functioning was converted to z scores. Thus, positive z scores represent more reported positive social skills, or less internalizing and externalizing symptoms or problem behaviors (e.g., depression, anxiety, aggressive, or rule-breaking behaviors). Negative z scores represent lower levels of positive social skills, or higher levels of internalizing and externalizing symptoms or problem behaviors. Similarly, positive correlations suggest a relationship in which higher maternal RF is associated with increased child psychosocial functioning and negative correlations suggest a relationship in which higher RF is associated with decreased child psychosocial functioning. Table 5 summarizes the children's psychosocial functioning scores.

Table 5
Summary of Children's Psychosocial Functioning (n=18)

Variable	Mean	Range	SD
Social Skills ^α	-.142	-2.06-1.29	.897
Internalizing and Externalizing Symptoms	-.353	-1.75-1.30	.724
Problem Behaviors ^α	.062	-1.67-1	.930

^αn = 17.

The relationship between maternal RF and each of the three above described measures of child psychosocial functioning was assessed. As can be seen in Table 6, a positive significant relationship was found between maternal RF and children's social skills ($r(15) = .475, p = .054$). This finding suggests that increased maternal RF is associated with higher ratings of children's social skills. Given the small sample size this finding must be interpreted cautiously.

While a negative correlation was found between maternal RF and internalizing and externalizing symptoms ($r(16) = -.323, p = .191$), this relationship was not significant. Similarly, a negative correlation was found between maternal RF and problem behaviors ($r(15) = -.258, p = .318$) and this relationship was also not significant. Given the lack of significance, these results cannot be interpreted, but do suggest that there may be a link between high maternal RF and an increased reporting of children's negative psychosocial symptoms and behaviors.

Table 6
Correlation between Maternal RF and Psychosocial Functioning (n=18)

	Overall Maternal RF	
	r	p (two-tailed)
Social Skills ^a	.475	.054*
Internalizing and Externalizing Symptoms	-.323	.191
Problem Behaviors ^a	-.258	.318

^a n = 17.

*significant at the 0.05 level.

Hypothesis One: Controlling for Severity of Learning and Behavioral Disorders

Research has demonstrated that children with ADHD and comorbid ADHD and LD are at greater risk for impaired behavioral and emotional functioning when compared to children with only LD (McNamara et al., 2005; Wilcutt & Pennington, 2000). This is an important consideration given the range of severity of learning and behavioral

disorders for the current sample. Table 7 provides an outline of the sample based on maternal RF and children's learning and behavioral disorders; children are grouped according to maternal RF. Scores from measures of children's psychosocial functioning are also provided.⁴⁸ The children of mothers with low overall maternal RF were less likely to meet criteria for ADHD or comorbid ADHD and LD (20%) when compared to the children of mothers with below average RF (62.5%) and average RF (40%). Thus, it may be possible that the children of mothers with higher RF were experiencing more severe learning and behavioral disorders and thus were at greater risk for impaired psychosocial functioning.

⁴⁸ Recall that measures of psychosocial functioning have been converted to z scores, and a zero represents an average score based on the child's age and gender. The standard deviation for the general population is one. Positive scores represent increased reporting of positive social skills and decreased reporting of negative symptoms and behaviors. Likewise, negative scores represent decreased reporting of positive social skills and increased reporting of negative symptoms and behaviors.

Table 7
Children's Learning and Behavioral Disorders and Overall Maternal RF (n = 18)

(n=5)	Child ID	Overall Maternal RF = 3 Low Reflective Functioning	Social Skills	Internalizing + Externalizing Symptoms	Problem Behaviors
1	2092	ADHD-I + Language-R	-0.82	-0.25	0.13
2	5012	At Risk	-2.06	-0.1	0.73
3	5021	Language-R/E + Reading	0.27	1.3	1
4	5042	Reading	0.19	0.2	0.4
5	5047	Language-E	-1.64	-1.75	-1.47
(n=8)	Child ID	Overall Maternal RF = 4 Below Average Reflective Functioning	Social Skills	Internalizing + Externalizing Symptoms	Problem Behaviors
6	2101	ADHD-I	-0.4	-0.65	0
7	5004	ADHD-C	-0.82	0.65	0.2
8	5014	ADHD-C + Reading	0.93	-0.35	1
9	5015	ADHD-I + Language-E	-0.29	-0.7	0
10	5018	At Risk	1	-0.2	1
11	5036	ADHD-I + Language-R/E	-0.93	-1	-1
12	5037	Reading	-0.01	-0.25	1
13	5048	At Risk	-0.32	0.4	0.2
(n=5)	Child ID	Overall Maternal RF = 5 Average Reflective Functioning	Social Skills	Internalizing + Externalizing Symptoms	Problem Behaviors
14	2100	Language-R/E	-0.41	-0.55	0
15	2103	Language-E	0.41	-0.90	-1.67
16	5009	ADHD-C+ Language-E + Reading	missing	-0.80	missing
17	5013	Language-R/E + Reading	1.29	-0.05	1
18	5024	ADHD-C + Language-R/E	-0.07	-1.35	-1.47

Note. ADHD-I = child met criteria for ADHD Inattentive type. ADHD-C = child met criteria for ADHD-Combined Type. Language-R = child met criteria for Receptive Language Impairment. Language-E = child met criteria for Expressive Language Impairment. Language-R/E = child met criteria for Receptive/Expressive Language Impairment. Reading = child met criteria for Low Reading Achievement. At Risk = child did not meet criteria for ADHD, a Language Impairment, or Low Reading Achievement. Missing = data is missing for the subject because he aged out of the measure, i.e., was in the seventh grade.

Given the sample's range in the severity of learning and behavioral disorders—particularly when grouping the sample by overall maternal RF—a third order partial correlation exploring the relationship between maternal RF and children's psychosocial functioning was conducted, controlling for the severity of the children's learning and behavioral problems. Average number of ADHD symptoms reported by teacher,

examiner, and parent;⁴⁹ the Reading Composite Score from the WIAT-II;⁵⁰ and the Core Language Index from the CELF-4⁵¹ were used as control variables. These items were chosen because they best represented quantifiable values that distinguished subjects in regard to their learning and behavioral disorders. However, the high rates of comorbidity, the heterogeneous nature of the sample, and the small sample size make controlling for severity complicated and necessarily imperfect.

Table 8 displays the relationship between maternal RF and children's psychosocial functioning when controlling for severity of learning and behavioral disorders. The relative strength and directionality of the relationships remained consistent. These findings indicate a trend toward a relationship between maternal RF and children's positive social skills, even when severity of children's learning and behavioral disorders is controlled for.

The correlation between RF and maternal reporting of internalizing and externalizing symptoms was again negative, and the relationship remained non-significant. Similarly, a negative correlation was again found between the maternal RF and a Problem Behaviors, when controlling for the severity of the children's learning and behavioral disorders. This relationship also remained non-significant. The negative direction of these correlations suggest a possible link between higher maternal RF and a

⁴⁹ Using the average number of ADHD symptoms as reported by parent, teacher, and examiner as a control variable demonstrated the increased symptomatology in ADHD-Combined type as compared to ADHD-Inattentive type. It also reflected children who had elevated ADHD symptoms in one setting. This method does have its limitations, namely it does not reflect the differing degree of severity between the rating of a 2 (often) and a 3 (always) rating on the DSM-IV ADHD rating scale (DuPaul et al., 1998). Nor does this method take into account the age of the child, older children require fewer symptoms to meet criteria for ADHD.

⁵⁰ Reading composite score = WIAT II Reading Composite Standard Score.

⁵¹ Core Language Index is computed from scores on Expressive and Receptive language subtests of the CELF-4, specifically Concepts and Directions, Recalling Sentences, Formulated Sentences, and Word Structure subtests (The Word Structure Subtest was only applicable for children below the age of 9). This composite score provides a more general measure of the child's language skills, without significantly limiting the degrees of freedom, which would be the case if each language subtest were used.

greater reporting of children's internalizing and externalizing symptoms and problems behaviors independent of the severity of children's learning and behavioral disorders. However, given the absence of significance, these relationships cannot be confirmed.

Table 8
Third Order Partial Correlation between Maternal RF and Psychosocial Functioning Controlling for Severity of Learning and Behavioral Disorders (n=18)

<u>Control variables</u>				
ADHD symptoms				
Reading Composite Score				
Core Language Index Score				
			<u>Maternal RF</u>	
			<u>r (df)</u>	<u>p (two-tailed)</u>
Social Skills ^α			.516 (12)	.059 ⁺
Internalizing and Externalizing Symptoms			-.303 (13)	.272
Problem Behaviors ^α			-.212 (12)	.463

^αn = 17.

⁺Trend at the 0.10 level.

Hypothesis Two

It was hypothesized that there would be a positive linear relationship between maternal RF regarding their children's learning and behavioral disorders (RF-LBD) and children's psychosocial functioning.

RF-LBD was based on responses to the five demand questions on the PDI-2R that asked mothers to reflect on aspects of their children's learning and behavioral disorders. A reliability analysis was conducted to determine the strength of the relationship between these five questions. Internal consistency was moderately strong (Cronbach's $\alpha = .621$), justifying the creation of this factor. From these five items mean factors scores were calculated to determine RF-LBD for each mother-child dyad. Table 9 provides a summary of RF-LBD. Similar to overall maternal RF, the range of RF-LBD (2.4 - 4.6) was small given the 10-point scale.

Table 9
Summary of RF-LBD (n=18)

Variable	Mean	Range	SD
RF-LBD ^α	3.68	2.4-4.6	.598

^αScale = -1 to 9.

RF-LBD did not predict an increased reporting of children's positive social skills ($r(15) = -.090$, $p = .731$). Moderate negative relationships approaching significance were noted between RF-LBD and internalizing and externalizing symptoms ($r(16) = -.405$, $p = .096$), and between RF-LBD and problem behaviors and ($r(15) = -.429$, $p = .085$). See Table 10.

These findings tentatively suggest that while higher RF-LBD is not associated with an increase in reporting of children's overall social skills, there is a moderate relationship between higher RF-LBD and an increase in reporting of children's negative symptoms and behaviors.

Table 10
Correlation between RF-LBD and Psychosocial Functioning (n=18)

	RF-LBD	
	r	p (two-tailed)
Social Skills ^α	.090	.732
Internalizing and Externalizing Symptoms	-.405	.096 ⁺
Problem Behaviors ^α	-.429	.085 ⁺

^α n = 17.

⁺Correlation is a trend at the 0.10 level.

Hypothesis Two: Controlling for Severity of Children's Learning and Behavior Disorders

In order to control for the range in the severity of the sample's learning and behavioral disorders, a third order partial correlation was conducted. Average number of ADHD symptoms reported by teacher, examiner, and parent; the Reading Composite

Score from the WIAT-II; and the Core Language Index from the CELF-4 were used as control variables. Again, these items were chosen because they best represented quantifiable values that distinguished children in regard to the severity of their learning and behavioral disorders, although the same qualifications as reported above apply.

As can be seen in Table 12, controlling for severity of children's learning and behavioral disorders affected the strength of the relationships between RF-LBD and measures of children's psychosocial functioning. There was no relationship between RF-LBD and reporting of children's positive social skills, although the correlation increased slightly ($r(12) = .301, p = .295$). The negative correlation found between RF-LBD and internalizing and externalizing symptoms decreased and was no longer suggestive of a trend ($r(13) = -.365, p = .181$). The negative relationship between maternal RF-LBD and problems behaviors also decreased significantly and was no longer suggestive of a trend when severity of learning and behavioral disorders was controlled for ($r(11) = -.222, p = .466$).

Table 11
*Third Order Partial Correlation between RF-LBD and Psychosocial Functioning
Controlling for Severity of Learning and Behavioral Disorders (n=18)*

<u>Control variables</u>		
ADHD symptoms		
Reading Composite Score		
Core Language Index Score		
	<u>RF-LBD</u>	
	<u>r (df)</u>	<u>p (two-tailed)</u>
Social Skills ^α	.301 (12)	.295
Internalizing and Externalizing Symptoms	-.365 (13)	.181
Problem Behaviors ^α	-.222 (12)	.466

^α n = 17.

The relationship between RF and RF-LBD

Maternal RF demonstrated a stronger positive relationship to children's social skills than RF-LBD. In addition, while controlling for the severity of children's learning and behavioral disorders significantly affected the relationship between RF-LBD and measures of children's psychosocial functioning, this was not the case for overall maternal RF.

To better understand the relationship between overall maternal RF and RF-LBD, Table 12 provides RF and RF-LBD scores for each dyad. Although maternal RF and RF-LBD are not independent of one another and thus cannot be compared statistically, examining more qualitative and descriptive within subject differences may prove useful. Subjects are grouped by overall maternal RF. Mothers who had an overall RF score of 3 had a mean RF-LBD score of 3.22, suggesting that they were able to reflect about their children's learning and behavioral disorders in a low or questionable manner, similar to the quality of their overall level of reflective functioning. Interestingly, none of these mothers received an RF-LBD score below a 3. Mothers with an overall RF score of 4 had a mean RF-LBD score of 3.65. These mothers' RF-LBD hovered around 4. Notably, one mother's RF-LBD score was more than a full point below her overall maternal RF score. As a group, and as expected, mothers with the highest overall RF scores also had the highest mean RF-LBD score, 4.2. However, none of the mothers with an overall RF of 5 obtained a 5 RF-LBD score, and one mother had an RF-LBD score that was more than a full point below her overall maternal RF score. It appears that these mothers were unable to maintain stable, average RF, when asked to mentalize about their children's learning and behavioral disorders. Although as a group, they were more reflective about their

children's LBD than mothers with maternal RF scores of 3 and 4. The implications of these findings will be explored in the discussion.

Table 12
*Children's Learning and Behavioral Disorders, Maternal RF, RF-LBD,
 and Psychosocial Functioning (n = 18)*

Overall Maternal RF = 3 Low Reflective Functioning Mean RF-LBD = 3.22				
(n=5)	Child ID		RF-LBD	Discrepancy
1	2092	ADHD-I + Language-R	3.4	.4
2	5012	At Risk	3.5	.5
3	5021	Language-R/E + Reading	3.0	0
4	5042	Reading	3.2	.2
5	5047	Language-E	3.0	0
Overall Maternal RF = 4 Below Average Reflective Functioning Mean RF-LBD = 3.65				
(n=5)	Child ID		RF-LBD	Discrepancy
6	2101	ADHD-I	3.8	-.2
7	5004	ADHD-C	3.6	-.4
8	5014	ADHD-C + Reading	3.8	-.2
9	5015	ADHD-I + Language-E	3.6	-.4
10	5018	At Risk	4.2	.2
11	5036	ADHD-I + Language-R/E	4.4	.4
12	5037	Reading	2.4	-1.6
13	5048	At Risk	3.4	-.6
Overall Maternal RF = 5 Average Reflective Functioning Mean RF-LBD = 4.2				
(n=5)	Child ID		RF-LBD	Discrepancy
14	2100	Language-R/E	4.4	-.6
15	2103	Language-E	4.2	-.8
16	5009	ADHD-C + Language-E + Reading	4.6	-.4
17	5013	Language-R/E + Reading	3.4	-1.6
18	5024	ADHD-C + Language-R/E	4.4	-.6

Note. ADHD-I = child met criteria for ADHD Inattentive type. ADHD-C = child met criteria for ADHD-Combined Type. Language-R = child met criteria for Receptive Language Impairment. Language-E = child met criteria for Expressive Language Impairment. Language-R/E = child met criteria for Receptive/Expressive Language Impairment. Reading = child met criteria for Low Reading Achievement. At Risk = child did not meet criteria for ADHD, a Language Impairment, or Low Reading Achievement. Discrepancy = RF-LRD minus overall maternal RF score. Missing = data is missing for the subject because he aged out of the measure, i.e., was in the seventh grade.

CHAPTER FIVE: Discussion

Study Purpose

This study was designed to examine the relationship between maternal reflective functioning (maternal RF) and psychosocial functioning for children with learning and behavioral disorders (LBD). Because many, but not all, children with LBD experience social and emotional difficulties concurrent with their learning, language and behavioral impairments, this project aimed to identify within-group differences in order to highlight protective factors and potentially inform treatment. The study predicted that mothers' capacity to mentalize about their child, about the parent-child relationship, and about themselves as parents would be associated with improved psychosocial functioning in their children. The study also predicted that mothers' capacity to reflect upon their children's learning and behavioral disorders (RF-LBD) would be associated with increased psychosocial functioning in their children. It was hypothesized that maternal RF would foster mothers' understanding of their complex and at times difficult relationships with their children, help them manage their own intense affect, and develop a more complete and full picture of their children. RF-LBD, it was predicted, would enable mothers to acknowledge their children's challenges without globalizing them. In turn, higher maternal RF and RF-LBD would enhance the child's sense of self, improve his relationships with others, and lower his propensity toward symptoms of depression, anxiety, and rule-breaking or aggressive behaviors. To date, this is the first study designed to explore the relationship between maternal RF and the psychosocial functioning in children with LBD.

Two major findings of this Study

1) Maternal RF was significantly positively associated with higher social skills in children with LBD. This finding remained consistent when controlling for the severity of the children's LBD symptoms. 2) A trend was identified linking higher RF-LBD and increased reporting of internalizing and externalizing symptoms and problem behaviors in children with LBD. When the study controlled for the severity of children's LBD, the relationship between RF-LBD and reporting of children's internalizing and externalizing symptoms and problem behaviors decreased in power, and was no longer suggestive of a trend. These findings will first be explored separately. Then, the common factors affecting the relationships between maternal RF and RF-LBD and children's psychosocial functioning will be discussed.

Hypothesis One

A positive significant relationship was found between maternal RF and increased reporting of children's social skills, suggesting that mothers with higher RF had children with better social skills when compared to children of mothers with lower RF. It should also be noted that the range of maternal RF scores was narrow (3 to 5) given RF's eleven-point scale (-1 to 9).⁵² The limited range in RF scores and the small sample size makes the significant relationship between maternal RF and children's social skills all the more meaningful.

Secondly, negative relationships were found between maternal RF and reporting of internalizing and externalizing symptoms and problem behaviors in children with LBD, however these relationships were non-significant. Given the lack of significance,

⁵² The implications of the narrow range will be discussed below.

these relationships cannot be confirmed, but do suggest that there may be a link between higher maternal RF and an increased reporting of children's internalizing and externalizing symptoms and problem behaviors.

The study sample was comprised of clinically referred children, which resulted in a wide range of LBD severities. Nearly half of the children met criteria for more than one learning and behavioral disorder and mothers with below average and average RF were more likely to have children with ADHD than mothers with low RF. However, when the severity of children's LBD was controlled for, the relationships between parental RF and children's social skills and negative symptoms and behaviors were not significantly influenced. This is notable because research has suggested that children with ADHD or comorbid ADHD and LD are at greater risk for impaired psychosocial functioning when compared to children with only LD (e.g., McNamara et al., 2005; Wilcutt & Pennington, 2000). Thus, the severity of the children's LBD did not drive the relationship between maternal RF and measures of children's psychosocial functioning.

The next section will explore the implications of the significant relationship between maternal RF and children with LBD's social skills. This will be followed by a discussion of the relationship between maternal RF and the reporting of children internalizing and externalizing symptoms and problem behaviors. Possible explanations for the non-significant findings will be explored.

The Relationship between Maternal RF and Children's Social Skills

The most significant finding from the current investigation was the positive relationship between maternal RF and social skills in children with learning and

behavioral disorders. Importantly, embedded in the social skills domain is the capacity for self-control.⁵³ This finding is meaningful for several reasons: (1) children with LBD are at risk for impaired social skills and poor peer relationships, and (2) the research studying maternal RF and child outcomes has primarily focused on infant and toddler aged children (e.g., Grienberger et al., 2005, Fonagy et al., 1993; Schechter et al., 2005; Slade et al., 2005b). It was not clear from prior research whether maternal RF could serve as a protective factor for this at-risk population, in which the children face an inherent difficulty with affect regulation and the capacity to make links between feelings and behaviors. Moreover, the theoretical constructs and supporting research highlight the role of maternal RF in children's developing capacity to mentalize as being most critical during infancy and early childhood (Fonagy et al., 2002). Further, research has not specifically examined the relationship between maternal RF and children's psychosocial functioning outside of children's attachment status (Grienberger et al., 2005, Slade et al., 2005b; Toth, Rogosch, & Cicchetti, 2008).

Substantial research has demonstrated that children with learning and behavioral disorders experience more social difficulties than their average-achieving peers (see Kavale & Forness 1996 and Nowicki, 2003 for reviews). Similarly, psychodynamic theorists have explored the ways in which learning, language, and behavioral impairments in children hinder their ego development, which reciprocally interacts with children's self regulatory capacities, self-representation, and object relations (e.g., Gilmore, 2000; Rothstein et al., 1988; Yeschin, 2000). In addition, as described previously, raising a child with LBD places tremendous strain on the parent, and the

⁵³ Recall that the measure of the children's social skills asked their about capacity for self-control, a measure of how the child responds in conflict situations, e.g., when being teased by peers, and, in non-conflict situations, e.g., how he or she cooperates with family members (Gresham & Elliot, 1990).

entire family system. The parent of a child with LBD has to make sense of their child's confusing and troubling behaviors, as well as manage her own emotional reactions to having a child with impairments.

Reflective functioning or the capacity to mentalize⁵⁴ is thought to be a crucial element of both affect regulation and productive social relationships (Fonagy et al., 2002; Slade, 2005). In particular, the capacity to mentalize allows one to consider how thoughts, feelings, and intentions underlie behaviors in the self and in others, thus making one's own behaviors, other's behaviors, and relational interactions more predictable and understandable. Fonagy and his colleagues stress that the mother's capacity to recognize and reflect her child's experience while not becoming overwhelmed, undone, or consumed by the child's affect is a critical component in allowing the child to develop mentalizing capacity, affect regulation, and ultimately positive relationships (Fonagy, et al., 2004).

Further, as the child develops, exposure to discussions containing "psychological themes," in which mental states and behaviors are linked and explored foster the development of reflective functioning (Fonagy, Gergely, Target, 2007). "Conversation that was non-reflective, that did not use language to link accurately internal states to actions of the self, the other, or explicit reactions to others' actions, would be of little value in facilitating the development of metacognition, at least for young children," (Fonagy, Gergely, Target, 2007, p. 304). This may help explain the differences between how mothers with higher RF talk to their children as well as the other important people in

⁵⁴Recall that "reflective function (RF) refers to the psychological processes underlying the capacity to mentalize" (Fonagy, Target, Steele, & Steele, 1998) and the measure of RF operationalizes an individual's mentalizing capacity (Fonagy et al., 1998). Maternal RF measures a mother's reflective functioning or mentalizing capacity in the context of the parent-child relationship (Slade, 2005).

their life, when compared mothers with lower RF. Although Fonagy and his colleagues cite exposure to mentalizing conversations as being most critical for young children, its value may hold true throughout childhood, particularly for this at-risk sample.

Indeed, in the current investigation, mothers with higher RF had the capacity to describe the struggles they had with their children without becoming disorganized and overwhelmed. They were curious about their children's experiences and worked hard to make sense of their children's internal world but also recognized the limitations of their insights. They found satisfaction and pleasure in their relationship with their children, without having to minimize their children's challenges. Mothers with higher RF were more likely to describe conversations with their children in which feelings and behaviors were discussed. In turn, children of mothers with higher RF were reported to be more cooperative, assertive, responsible and better able to exert more self-control in both conflict and non-conflict situations with family members and peers.

In contrast, mothers with lower RF presented disorganized, and confusing representations of their children. They would become dysregulated by the questions, often losing sight of the original query or losing their train of thought. In other cases mothers with lower RF minimized of the severity of the children's experiences. They downplayed their own affect or that of their children's, and provided superficial and behavioral responses. Mothers with lower RF had children who struggled in relationships with family members and peers, and were less cooperative, assertive, responsible, and exhibited less self control. The following two clinical examples illustrate the typical dichotomy between mothers with low RF—who struggled to understand their own and

their children's underlying mental states—and mothers with higher RF who were more aware of these states.

Anne⁵⁵ obtained a overall maternal RF score of 3 (low reflective functioning), and had great difficulty containing her son Michael's feelings as well as her own.

Contemplating her son's needs was overwhelming for Anne, as evidenced by the lack of coherence in her responses and by her descriptions of her reactions to his affective states. Michael met criteria for a language impairment and on the social skills measure he scored more than one standard deviation below the typical score for boys his age. He scored lowest on measures of assertion and self-control. In response to a question in which Anne was asked to reflect on how her relationship with her son affected his development and personality, she replied,

“I think it's affecting him positively. My husband and I, we argue a lot. On occasion, I might give my son a whack if I think he did something that was just above. And my husband does not believe in hitting at all, at all. And like I said, my husband is the cuddlier. And, I, you know I, we, Michael and I we cuddle too but sometimes you know when he gets upset I just let him cry. You know I don't hold him or whatever. And my husband does that a lot. And I told Michael, I tell him, 'listen you're gonna have to take the good with the bad. You know people say bad things all the time, or you don't get picked for things all the time.' You know he'll come home and he'll tell my husband and I, you know he wants to go on some trip and he wasn't picked to go on the trip. And then my husband [will say], 'well why, why do you think the teacher did that?' Then I just intervene and I say, 'Listen, if you couldn't make it to that trip, you go on the next.' And I let him know that you, you are not always going to be the winner. You are not always going to have things go your way.”

Anne went on to give two examples to illustrate how difficult it has been for Michael to internalize his achievements or to share them with her, noting that he tended to focus on the negative aspects of his experiences. In general, Anne's descriptions were

⁵⁵ All names and identifying information have been changed to protect confidentiality.

superficial and did not consider her son's underlying mental states. Her response to this question was overly verbose and often off-topic. Anne ended the passage by saying, "he's a lovable kid. You know, he'll give you a hug after he's met you a couple of times. He'll just go and hug you. He's a good kid." Ending the response on an artificially upbeat note had a self-soothing quality. It was as if Anne was trying to convince herself that Michael was in fact "a good kid," or undo all of the negativity she had just unloaded. However, her statements came off as more inconsistent than reassuring. Anne used this strategy throughout her interview, ending responses on a superficially positive note. Observing these tendencies in Anne makes it easy to understand why Michael struggled to manage his upset and tended to feel incapable and incompetent in interpersonal relationships. His painful and insecure feelings were intolerable to Anne. Moreover, she did not allow for a more reflective contemplation of mental states, which her husband attempted to elicit when he asked Michael to consider his teacher's motivations. Anne did not allow Michael's father to be a source of support for her or for Michael. The kind of discussion Michael's father was attempting would provide Michael with a better understanding of social norms. The discussion would also help Michael contextualize his feelings, allowing him to self-regulate and be less self-blaming and negative. Ultimately, this kind of understanding would improve Michael's social functioning.

In contrast, Wendy, a mother who received an overall maternal RF score of 5 (average reflective functioning), worked hard to make sense of her son Jackson's internal world. She described a more complicated and nuanced interplay between behavior and mental states. Wendy actively considered how Jackson's LBD affected their relationship and his understanding of social situations. Jackson met criteria for ADHD as well as a

language impairment. He scored just below average on the social skills measure when compared to boys his own age. In response to the same question, how the mother-child relationship is affecting Jackson's development and personality, Wendy replied,

I think he feels that when, I think he feels that I am critical of him. When I get disappointed, or when I'm upset. And I tell him that I'm not being critical of you, I'm just upset because it's nine o'clock, and it's time for you to go to bed and now here's this other plan.⁵⁶ And as it is because of his medication and stuff you know he sometimes gets very sleepy and sometimes he doesn't sleep at all. I'm tired. I'm not feeling well. I've been on my back typing for him. So I help, I try to help him understand the difference between I'm not disappointed with you, I'm disappointed that you didn't disclose everything, but he sees it as me being critical of him. So we're trying to work this out in therapy where he understands that it's not about me being disappointed with him or disappointed about him and him personally. Because every disappointment that happens he thinks it's about him. Which I think is a developmental situation for a child who has ADHD. They are just not mature enough to understand that if someone is disappointed or upset, it's not with them, or related to them. I don't think he reads the landscape appropriately. So he just assumes that it's always about him. And I try to make sure he understands but I know he doesn't. And so in a way I try to mitigate how I react and but then that's also consuming me. Because, you know, kind of swallowing that entire thing and sometimes I don't want to.

For Wendy and Jackson there was room within relationship to discuss feelings, and negative affect and reactions were acknowledged and explored. Wendy did not have to deny her own painful feelings, yet she understood that they could be hurtful to Jackson. Wendy was engaged in the process of teaching Jackson about mental states but also recognized his limitations, as well as her own. Thus, she was meeting Jackson at his level but also working to provide scaffolding and support so that he could move forward. Importantly, Wendy had sought support, (i.e., therapy), for herself and for Jackson. This took her out of the role of being all knowing and created an opening for her try and make

⁵⁶ Wendy had just described a scenario in which Jackson did not tell her about an additional homework assignment until right before bed, after they had spent a significant amount of time completing his other assignments.

sense of who Jackson really was, not just who she would like him to be. This more open, flexible stance is typical of those with higher RF (Levy et al., 2006), and stands in contrast to that of individuals with lower RF, who discuss mental states in others with a level of certainty, revealing that they are not fully aware of the opacity of mental states and thus are not making an effort to tease out the underlying aspects of the others' thoughts and feelings.

The current investigation's correlational analysis as well as the clinical examples support the theoretical stance that maternal reflective functioning is significantly related to both self-regulation and social skills in children. For children with LBD, having parents who can tolerate intense affect, and make sense of their confusing behaviors helps them to understand and ultimately manage their own feelings. This greater awareness of feelings and behaviors allows children with LBD to have more appropriate and satisfying relationships with others. Thus maternal RF can serve as a protective factor for impaired social skills in children with LBD. This has tremendous implications for the children's ongoing development.

Maternal RF and Children's Negative Symptoms and Behaviors

Surprisingly, a relationship was not identified between maternal RF and children's internalizing and externalizing symptoms and problem behaviors. Contrary to the hypotheses of this study, the direction of effects suggested negative, but non-significant correlations between maternal RF and these variables, indicating that mothers with higher RF may actually report higher levels of negative symptoms and behaviors in their LBD children. Exploring the data qualitatively and returning to attachment and mentalization theory, and specifically the construct of parental representations, provides

two related explanation for the unexpected direction of effects. First, it is possible that mothers with low RF were unable to recognize their children's more painful internal experiences, and second, it is also conceivable that mothers defensively denied the more distressing aspects of their children's internal experience because seeing them would be too overwhelming. Thus, it might be that mothers with low RF lacked integrated representations of their children and of themselves as parents, which made it difficult for them to recognize and/or acknowledge their children's more troubling symptoms and behaviors. This, in turn, might have caused them to underreport on the CBCL and on the Problem Behaviors Domain of the SSRS.

Although parental representations were not formally measured in the present study, parents' representations of their children and their reflective capacity in relation to their children are inextricably intertwined. Recall Bowlby's initial assertion that caregiving behaviors become organized at the level of representation (1982). These internal representations or "working models" outline a parent's thoughts, feelings, expectations, and attitudes about her child, herself a mother and the mother-child relationship. Therefore, a mother's capacity to mentalize about herself as a parent, about her child, and about the mother-child relationship shapes the representations she has of her child and vice versa (Slade, 2005). It follows that mothers with higher RF have more balanced and coherent parental representations, whereas mothers with lower RF are more prone to disorganized, contradictory or unintegrated parental representations.

A significant, positive relationship has been found between maternal RF and balanced parental representations (Schechter et al, 2005). The more integrated and coherent the mother's representation of the child, the better equipped she will be when

reflecting on the more complicated aspects of the parent-child relationship. This type of integration also requires the mother to hold both positive and negative aspects of the child. As such, integrated parental representations allow parents to find satisfaction in the parent-child relationship and make meaning out of developmental challenges (Aber et al, 1999). Recall that parental representations evolve over the course of a child's development, and the child's *real* attributes—his strengths and his vulnerabilities—are fused with the parent's attachment representations and fantasies (Slade et al., 1999, italics in the original). It is important to note that having a child with an LBD, with *real* weaknesses, makes it more difficult for a parent to maintain a balanced representation of the child and of the self as a parent.

Mothers in the current investigation with higher overall RF maintained more coherent and realistic views of their children, which embodied both their children's strengths and their vulnerabilities. These mothers also had more realistic views of themselves as parents. As discussed earlier, they were also better able to tolerate and metabolize intense affect. It may be that for these mothers, maintaining a more integrated perspective on their children, allowed them to identify and acknowledge their children's more troubling and problematic behaviors, at the same time they recognized their children's positive social skills.

On the other hand, mothers with lower RF were prone to both disorganization and incoherence on the PDI. They presented conflicting, superficial, or narrow representations of themselves and their children, which made it more difficult for them to know their children's ever-changing needs (George & Solomon, 1989, 1996). In addition, mothers with lower RF tended to deny, distort or globalize their children's vulnerabilities.

Thus, it may have been that because these mothers had difficulty attuning to or fully recognizing their children's underlying mental states and they were not able to make inferences about how their children's LBD was affecting their children on a more emotional level,⁵⁷ it is possible that they underreported their children's negative symptoms and behaviors.

Furthermore, mothers with low RF and unintegrated internal representations moved between being overwhelmed and undone by strong affect to withdrawing or creating distance in order to protect themselves. Thus, important feelings and experiences in the mothers and in their children were split off or disowned (Slade, 1999a). For these mothers, acknowledging their children's internalizing and externalizing symptoms and problem behaviors on the parent-report measures may have been too threatening, overwhelming, or shame-inducing. Mothers with low RF may have defensively denied (i.e., underreported) the full extent of their children's impaired psychosocial functioning as a way of protecting themselves from becoming emotionally overwhelmed. Importantly, these two consequences of low RF and unintegrated representations are interconnected: in order to make sense of painful feelings and link emotions to upsetting behaviors one must be able to tolerate intense affect in the self and in others.

Before presenting the clinical example, it is important to consider the difference between being asked to report whether or not one's child is engaging positive behaviors (Social Skills Domain on the SSRS) and being asked to endorse negative behaviors and symptoms. An endorsement of negative symptoms and behaviors, particularly internalizing symptoms, as noted above, requires attunement to the child's emotional states and an awareness of how the child's learning and behaviors disorder may be

⁵⁷ Linking feelings and behaviors is of course, also a central component of RF.

affecting a child's internal world. For example, the CBCL asks a parent to report whether her child "fears he might do something bad" or "feels worthless or inferior." Whereas the Social Skills Domain on the SSRS asks a parent whether her child "invites others to your home," or "cooperates with family members without being asked to do so." These questions are more behavioral and easier to answer either positively or negatively. In addition, endorsing negative symptoms and rule breaking, aggressive behaviors of the CBCL and Problem Behaviors Domain of the SSRS (e.g., "hangs out with others who get into trouble," and "threatens or bullies others") requires mothers' to contemplate and/or acknowledge the more painful, overwhelming, dangerous aspects of their children. For mothers with low RF, who do not have integrated internal representations, there may be little room to incorporate negative feelings and experiences. These unsafe parts of their sons' internal or external world may have been too threatening.

Many mothers in the current investigation both struggled to recognize their children's internal experience and seemed to defensively (and protectively) minimize the extent to which LBD was affecting their sons. This was true for Diane and her son Carlos. Diane received an overall maternal RF score of 3 (low reflective functioning) and tended to present a more narrow representation of her son, Carlos. Carlos was experiencing significant social rejection, which Diane described in behavioral terms, struggling to appreciate the extent to which this mistreatment affected Carlos's sense of self. Carlos met criteria for ADHD as well as a language impairment. Carlos was also extremely overweight and food seemed to provide a tremendous comfort to him. Carlos tended to take a passive stance in the face of bullying and from Diane's sparse and behavioral descriptions, it seemed that Carlos's intense desire to be liked prevented him

from taking a stand. This disposition caused him great internal anguish, insecurity, and self-loathing. On the social skills measure he scored nearly one standard deviation below the typical score for boys his age. However, on the CBCL, although Diane reported some of Carlos's internalizing symptoms, she tended to minimize them.

When asked to describe a time when she and Carlos were not clicking, Diane described an incident in which Carlos was hit by a boy in the neighborhood. Diane was asked how Carlos felt about the incident and she replied,

"I know he felt, I don't know how to explain it, but he didn't feel good. He felt 'cause like all everybody, 'cause like all the little kids were out there when it happened and they don't understand why. Well, he always just walks away, you know, he never tries to stick up for himself or like if they snap on him or say something bad about him he doesn't say anything back, he don't. He'd rather just go to the side and just play his game or just sit down or come upstairs and I'll be like, 'What happened, why you upstairs so fast?' [He responds,] 'Nothing, I'm hungry' and then like 10 minutes later he'll go back downstairs."

Diane was not sure how Carlos felt, but at the same time she was not really able to contemplate or reflect on how he might have been feeling. It is important to note that Diane reported having serious health issues of her own, which may have affected her capacity to consider how bad things were for Carlos. Diane needed Carlos to be strong for her, and perhaps could not freely acknowledge the extent to which he was suffering. Here, we see the blurring of the two processes. Specifically, the capacity to attune to the child's internal experience is dependent on the capacity to manage strong affect.⁵⁸

The example of Diane and Carlos illustrates that for mothers with lower RF, underreporting their children's internalizing and externalizing symptoms and behaviors may allow them to at least superficially manage, by way of denial, the intense feelings

⁵⁸ As discussed earlier, these two processes are also central to the development of affect regulation and RF in the young child. The parent's capacity to stay with the child's affective experience without becoming overwhelmed by it helps the child come to know and tolerate his own internal states.

(e.g., guilt, regret, emotional pain) elicited by the mother-child relationship. By not acknowledging the symptoms and behaviors, the feelings attached to them also remain out of awareness. In a study of traumatized mothers of young children aged 8 to 50 months, Schechter and his colleagues found that mothers with more disengaged⁵⁹ representations of their children and of the mother-child relationship actually had less severe PTSD symptoms when compared to mothers with more balanced⁶⁰ representations (2005). These researchers suggest that given that the majority of the study's participants cited their children as a significant source of stress, the "disengaged" parental stance may have served a self-regulatory function. However, this distancing stance undeniably takes a toll on the mother-child relationship and the child's development. The mother is not able to contain her child's intense affect and serve as model for affect regulation.

This type of denial has also been empirically investigated. Research has suggested that for a subset of individuals, self-report measures are not actually a measure of mental health, but are a measure of defensive denial. Shedler, Mayman and Manis (1993) conducted three separate studies to test this hypothesis. In each experiment participants completed three types of measures: (1) self-report measures (e.g., Eysenck Neuroticism scale or Beck Depression Inventory), (2) physiological measures (i.e., subjects' blood pressure was monitored while at rest and while performing stressful laboratory tasks), and (3) a clinical interview involving the Early Memories Test.

⁵⁹ Disengaged representations were marked by "pervasive emotional distance from the child," (Schechter et al 2005, pg 319).

⁶⁰ Balanced representations contained positive and negative characteristics of the child and the parent-child relationship, but the overall valence was positive. These narratives also conveyed that the parent was deeply invested in her relationship with her child and appreciated the child's individuality (Schechter et al., 2005, p. 319).

Findings from these studies identified three groups of people. The subjects in the first group were found to be healthy across all three measures. The subjects in the second group were identified as distressed across all three measures. For those in the third group, self-report measures indicated that these individuals were healthy, but clinical interviews and measures of physiological functioning identified these subjects as distressed.

Shedler, Mayman and Manis titled this third group as having the “illusion of mental health.” Significantly, subjects with the “illusion of mental health” showed the highest levels of physiological reactivity to stress, even more so than that of the distressed group.⁶¹

These findings suggest that for at least some of the mothers with lower RF, defensive denial may have contributed to their underreporting as a way of superficially managing their intense and potentially overwhelming affect. It is important to keep in mind that the parents in the study acknowledged their children’s LBD enough to follow through with the extensive assessment process, so a more complex process may have taken place. Namely, parents were able to acknowledge their children’s difficulties to some extent, but it is possible they were unable to recognize the effect these difficulties had on their children’s psychosocial functioning. This is by no means to suggest that mothers with lower RF were purposefully denying their children’s internalizing and externalizing symptoms and problem behaviors. Rather it is to raise the possibility that more complex psychological processes, such as shame, denial, guilt, may have been at play.

⁶¹ Interestingly, the “illusion of mental health group” has similar characteristics of insecurely attached children. Avoidant infants who behave as if un-phased by separations from their parents display higher cortisol levels when compared to securely attached infants (Nachmias, Gunnar, Mangelsdorf, Hornik Parritz, & Buss, 1996).

Hypothesis Two

Correlational analyses were performed to understand the relationship between mothers' capacity to mentalize about their children's learning and behavioral disorders (RF-LBD) and their children's psychosocial functioning. The range of RF-LBD was narrow (2.4 to 4.6), similar to the range of overall maternal RF scores. Likewise, none of the parents had "marked" reflective functioning (a score of 7 or above) in regard to their children's learning and behavioral problems.

No relationship was found between RF-LBD and children's social skills. Moderate negative relationships approaching significance were found between RF-LBD and measures of children's internalizing and externalizing symptoms and children's problems behaviors. These findings suggest that mothers with higher RF-LBD reported that their children had more internalizing and externalizing symptoms and problem behaviors.

Interestingly, controlling for the severity of children's LBD substantially affected the relationship between RF-LBD and measures of children's psychosocial functioning. Recall that this was not the case for overall parental reflective functioning. Namely, when severity of children's LBD were controlled for, the relationships between RF-LBD and children's internalizing and externalizing symptoms and problem behaviors decreased and were no longer suggestive of a trend, although the directionality of the correlations remained negative.

There are two possible explanations for these findings. 1) Counter to expectations, a linear positive relationship does not exist between parents' capacity to reflect on their children's learning and behavioral problems (RF-LBD) and children's psychosocial functioning. Instead, overall maternal RF subsumes RF-LBD. RF-LBD is one part of the

larger whole and it is mothers' overall capacity to reflect on their children (maternal RF) that is more strongly related to children's psychosocial functioning. 2) A relationship does exist between RF-LBD and children's psychosocial functioning, but due to the imprecise measurement of RF-LBD, this relationship was not detected. These two explanations will be explored in detail below.

RF-LBD in Relation to Overall Maternal RF

The lack of support for a significant positive relationship between RF-LBD and measures of children's psychosocial functioning does not necessarily negate the value in mothers' capacity to mentalize about their children's LBD. Rather, it appears that RF-LBD is one aspect of parents' overall reflective capacity which, in its entirety, affects parents' perceptions and interactions with their children. It may be the mother's *overall* capacity to reflect on the child, on the mother-child relationship, and on herself as a parent that more strongly relates to her child's psychosocial functioning --particularly her child's social skills. This explanation has been supported by research examining parental attributions⁶² of ADHD children's hyperactive and rule-breaking behaviors. Sacco and Murray (2003) found that although parental attributions and parents' emotional response to their children's ADHD symptomatology each affected parents' relationship satisfaction, it was the parents' *overall* perception of their children that most strongly predicted their level of satisfaction in the parent-child relationship.

⁶² Recall that parental attributions act as an intermediary between children's behaviors and parents' reactions to those behaviors. The attribution a parent makes about her child's behavior serves as an interpretive filter, which then guides the parent's behavioral and emotional response towards the child (Johnston & Ohan, 2005).

Also recall that the overall RF score included questions that asked mothers to specifically reflect on their children's learning and behavioral disorders. This means that overall RF scores captured mothers' capacity to make sense of their children's learning and behavioral disorders as well as their general ability to understand mental states and link feelings and behaviors in relation to their children. This may help to explain why overall maternal RF and children's social skills had a significant positive relationship, whereas RF-LBD and children's social skills did not.

Additionally, mothers discussed their children's LBD throughout the Parent Development Interview, not just in reference to the specific RF-LBD questions. For example, one mother, Maria, received an overall RF score of 5 and an RF-LBD score of 3.6. When asked how her relationship with her son Daniel is affecting his development and personality, her response was colored by feelings guilt and doubt regarding his reading and language impairment.

"That's the question that I ask myself... am really helping him or not? I mean, I wish I could do more, in his development. I mean, he's developing good, I mean, I take good care of him...Like everything is kind of OK, but um like this kind of situation that he can't read, sometimes I think I'm not doing enough, or, I don't know, and as far as I try, I try, it has a good impact in his life, I try to be a good mother for him. Um, sometimes I know, that I do not, because you [I] fail in things."

It appears that Maria's intense negative feelings affected the coherence and fluency of her response. In addition, her overwhelming feelings of guilt and inadequacy in relation to her son's reading problems help explain her substantially lower RF-LBD score. She struggled to maintain a mentalizing stance when asked to answer more direct questions about Daniel's LBD. Thus, an analysis of the entire interview would provide a more complete picture of Maria's RF-LBD. Moving forward, scoring the entire PDI-2R-

LD for parent's RF-LBD may provide a more comprehensive measure of parents' capacity to reflect on their children's LBD.

Discrepancies between Maternal RF and RF-LBD

Qualitatively speaking, mothers' RF-LBD scores were by and large similar to their overall RF score.⁶³ Mothers with low overall RF scores (3) had RF-LBD scores that hovered around 3. Similarly, mothers with average overall RF scores (5) had RF-LBD scores that also hovered around 5, but did not quite reach the level of average reflective functioning. This observation suggests that when compared to mothers with low overall RF, mothers with average parental RF were more reflective on questions that asked about their children's LBD. However, on these RF-LBD questions, the gap between the two groups narrowed. In other words, while high-RF mothers performed better than low RF mothers on RF-LBD questions, their performance was not proportionally better on these questions.

The fact that the two groups were less different in regard to RF-LBD helps to explain the non-significant relationship between RF-LBD and children's social skills. In addition, there were two mothers whose RF-LBD scores were more than one point below their overall maternal RF scores. The first mother had a parental RF of 4, and the second, Maria, had a overall maternal RF of 5. Their significantly lower RF-LBD scores may have also affected the relationship between RF-LBD and measures of children's psychosocial functioning, particularly measures of the children's social skills.

⁶³ Recall that the RF-LBD score is a mean score, based on an average of the scores from five questions that asked parents to reflect on their children's LBD, whereas, the parental RF score was based on the coder's overall impression of parents' capacity to mentalize about their children. The scoring of RF-LBD will be discussed in detail below.

Before discussing the implications for the above findings, it is important to note some of the ways that mothers with higher overall RF and RF-LBD differed from mothers with lower overall RF and RF-LBD. Mothers with higher overall RF and RF-LBD more actively struggled to make sense of their children's learning and behavioral disorder. Mothers with low overall RF and RF-LBD, on the other hand, tended to globalize their children's disorder, generate unrealistically high expectations for their children, minimize their children's impairments, and become consumed with their role as teacher or tutor for their sons. This is not to say that the more reflective mothers did not also experience these challenges. Rather, the difference between the two groups was that mothers with higher overall RF and RF-LBD used their awareness to affect their own behavior. The more reflective mothers were better able to "take a step back" and seek support. "Genuine mentalizing will always direct action" (Fearon, Target, Sargent, Williams, McGregor et al., 2006, p. 213).

One mother in the study, Carol, offered a clear example of how mentalization affected her behavior specifically in regard her child's LBD. Carol's son Marcus met criteria for ADHD, an expressive-language impairment, and a reading disorder. He also repeated a grade in school. Carol spent considerable time and energy on accepting her son's impairments, and understanding her feelings toward him and in regard to his LBD⁶⁴. She had the highest RF-LBD score in the sample, 4.6, (overall maternal RF score 5). When asked about how her relationship with Marcus affects his development and personality, Carol described Marcus as having a "strong personality" that will keep him "straight" and "grounded." She also described herself as a "hard parent" in regard to

⁶⁴ Notably, Marcus was evaluated twice by the ACLI project. Carol's PDI was conducted almost 4 years after Marcus first evaluation, allowing her ample time to process her feelings.

Marcus' learning because she pushed her son and wanted him to succeed in ways that she had not. Carol went on to say,

“Sometimes I have to take a step back, ‘cause sometimes I know I am hard on him. And I let the teachers handle it in a sense. I’ll let them know what his weakness is. I try to let them see... and then in the school, they will work on those things with him.”

In contrast, mothers with lower overall RF and RF-LBD scores often blamed educators and had more difficulty utilizing outside support. A parent who can take in support serves as a model for her child with LBD. The ability to utilize services and support is no small thing, particularly for a child with LBD. This capacity can be thought of as a valuable component of higher RF and improved social functioning.

Understanding these differences, we return to the findings. The difficulty that mothers with higher overall RF had maintaining that level of mentalization on the RF-LBD questions brings to mind the inherent challenge of asking a parent to reflect on her child's LBD, which even under the best circumstances is likely to be source of considerable conflict and stress. Thus, the parent's capacity to mentalize about the child's impairments requires a process of working through an amalgam of complex feelings and reactions. Because of this, there may be a lag or “unevenness” in the parents' reflective capacity, in the relation to their children's LBD. Not surprisingly, this lag was more apparent for mothers with higher, more stable overall RF, who struggled to sustain a stable mentalizing stance in relation to their sons' LBD, whereas mothers with lower overall RF were inherently less stable across the board in their reflective capacities.

Fonagy and his colleagues note that one's reflective capacity varies based on intrinsic and environmental factors (Fonagy et al., 2002). “Reflective function as a skill may be more or less present in situations as a function of contextual support and

emotional states that push an individual up or down a developmental strand” (p. 61).

Parental RF can be conceptualized along the similar lines. Namely, if the child’s LBD represents a source of significant and overwhelming conflict, it is not likely that the parent will be able to maintain a stable, mentalizing stance in relations to her child’s LBD.

Measurement Issues

Severity of Children’s Learning and Behavior Disorders and RF-LBD

As described above, controlling for the severity of the children’s LBD markedly affected the relationship between RF-LBD and children’s psychosocial functioning. Most noteworthy, the trends detected between higher RF-LBD and increased reporting of children’s internalizing and externalizing symptoms and problem behaviors diminished.

This shift suggests that mothers with higher RF-LBD had children who were experiencing more severe and comorbid learning and behavioral disorders and thus were at greater risk for compromised psychosocial functioning. These children were experiencing more negative psychosocial symptoms when compared to children of mothers with lower RF-LBD. Once the severity of the children’s LBD was controlled for, the near significant difference children’s negative psychosocial symptoms was no longer detected.

The fact that the strong relationship between RF-LBD and children’s internalizing and externalizing symptoms and behaviors was significantly affected by controlling for severity of children’s LBD, suggests that RF-LBD score may be more a measure of the severity of children’s impairments than of parents’ reflective capacity in relation to their

children's learning and behavioral problems. By this reasoning, the mothers of children with more severe LBD would inherently score higher on questions that asked them about their children's LBD.

Scoring of RF-LBD

The failure to identify a significant positive relationship between RF-LBD and children's social skills, as was found between overall maternal RF and children's social skills, may be related to the measurement of RF-LBD. The RF-LBD score was created based on the five demand questions that asked the parent to reflect on aspects of their children's learning and behavioral problems. A reliability analysis was conducted, and internal consistency for these questions was moderately strong (Cronbach's $\alpha = .621$) justifying the creation of the factor. Thus, for each mother, scores from these five RF-LBD questions were tallied and averaged.

Using a factor, or an average, to measure RF-LBD may have interfered with the assessment of mothers' capacity to mentalize about their children's learning and behavioral problems. Recall that overall RF is not calculated by a mathematical equation, but rather is determined by a more qualitative assessment of the entire interview. Individual demand questions⁶⁵ are scored and serve to inform the overall RF score. Thus, the overall RF score is meant to capture the interviewee's "typical" mentalizing capacity and "should be that which best fits the balance among the range of scores" (Slade et al., 2005a, p. 27). Further, although variations in a parent's reflective capacity are expected, the import given to these fluctuations should be determined on a case-by-case basis,

⁶⁵ "Demand" questions require the interviewee to reflect on his or her feelings, beliefs, and behaviors (Fonagy et al., 1993). The version of the PDI used in the present study had 23 demand questions, 5 of which were used to create the RF-LBD factor.

informed by the context and content of what is said. (Fonagy et al., 1998; Slade et al., 2005a). Calculating a mean RF-LBD score infers that the fluctuations in mothers' capacity to reflect of their child's impairments each carry the same weight. Mothers may have done poorly on one RF-LBD question, which significantly affected their RF-LBD score. In other words, a mother's "typical" RF-LBD was not established which may have affected the correlational analysis of RF-LBD and children's psychosocial functioning. In addition, as noted earlier, mothers discussed their children's LBD throughout the interview not just in reference to the RF-LBD questions. Further, mothers were not directly asked to consider how their children's LBD is affecting their children's development and personality. This demand question should be added to the PDI-2R-LD to better understand how the parent conceptualizes her child's LBD and its effect on his functioning.

The usefulness of the RF-LBD factor was also limited because statistical comparisons of overall RF and RF-LBD were not possible given that questions that asked parents to reflect on their children's disability were included in both the overall maternal RF and RF-LBD scores. In one respect, this enhanced the meaning of the overall maternal RF score which captured not only the mothers' capacity to make sense of their children's learning and behavioral disorders but also their overall mentalizing stance toward their child. In fact, this reasoning informed the decision to create the RF-LBD factor, rather than scoring those five items separately. However, this methodology made it difficult to clearly identify the differences between mothers' overall reflective functioning and their capacity to reflect on their children's LBD.

As suggested above, in the future, research should consider a mother's entire PDI-2R-LD in determining her RF-LBD score, similar to the overall RF score. Although this score would not be able to be statistically compared to the overall RF score, it would offer the most valid, comprehensive measure of mothers' reflective capacity in relation to their children's LBD.

Clinical Implications

Various clinical implications emerged from the findings of the current investigation; the two most relevant will be discussed at length below. The first to be explored is the importance of enhancing mentalization within the parent-child relationship. The second major clinical implication that emerged from this study is the usefulness of the Parent Development Interview as a therapeutic tool.

Mentalization-Based Interventions

A major goal of this study was to explore whether maternal RF has an effect on children with LBD's social and emotional functioning. The significant relationship identified between maternal RF and LBD children's social skills suggests that treatment focused on enhancing parents' mentalizing capacity will have a positive effect on children's social skills. Further, given that mentalizing is a relationship-driven skill, and that the LBD child can place a strain on the entire family system, an intervention designed to increase RF within the entire family seems the most valuable.

In the current investigation, Wendy, one of the most reflective mothers in the sample, reported using family therapy to work through conflicts with her son, Jackson, and to gain a better sense of his underlying feelings. Because Wendy's PDI took place

after she and Jackson had been in treatment for some time, it is difficult to say whether she would have been as reflective without the therapy, or whether her initial mentalizing capacity allowed her to be open and make use of treatment. In either case, family therapy certainly provided a valuable emotional support for Wendy and her son. Therapy most likely fostered Wendy and Jackson's capacity to reflect on their own and on each other's feelings and behaviors, and enhanced Jackson's social skills and relationships outside the home.

The term mentalization-based therapies "refers to treatments that directly address and target the development of reflective functioning of mentalizing capacities" (Slade, Sadler et al., 2005, p. 77). Bateman and Fonagy (2004) first introduced "mentalization-based treatment" in their development of a manualized intervention for patients with borderline personality disorder (BPD). Patients with BPD typically fail to adequately develop mentalizing capacities during infancy and childhood, leading to significantly impaired functioning. Enhanced reflective capacities would therefore improve their ability to tolerate intense affect and intimacy (for a review see Bateman & Fonagy, 2008a). Indeed, this treatment has demonstrated significant long-term social and interpersonal improvement for BPD patients when compared to patients who received "treatment as usual for BPD" (Bateman & Fonagy 2008b). Slade and colleagues have developed a mentalization-based intervention focused on improving maternal RF for at-risk mothers and their young children (Slade, Sadler, Mayes, 2005; Slade, Sadler et al., 2005). Preliminary findings from this "relationship based home visiting program" demonstrated improved maternal RF, which in turn supported children's healthy development (Miller, 2008).

Recently, a mentalization-based intervention was developed specifically for clinical work with children and adolescents and their families (Fearon, et al., 2006). Short-term mentalizing and relational therapy (SMART) was created to treat families struggling with a wide range of presenting problems in a variety of contexts (Fearon et al., 2006). Although SMART has not yet been used to treat LBD families, its guiding principles appear particularly germane for this population.

This 6-12 session treatment is grounded in the belief that the identified problem within the family is at least partly the product of a poorly functioning family system, which the authors attribute to failures in mentalization. Thus, the therapist both explicitly and implicitly engages the family in the process of mentalizing. Explicitly, the therapist clearly and plainly explains mentalizing theory to the family and uses examples from their work together to highlight important points. Implicitly, the therapist demonstrates mentalization to the family by modeling curiosity and excitement about discovering family members' underlying thoughts and feelings. Thus, family members are encouraged to become more curious about their own and other family members' mental states and the ways that mental states influence behaviors.

Outlining the three "key components" of the SMART model illustrates the applicability of this intervention for LBD families. The first key component is the recognition that "effective mentalizing is not so much a skill as it is a way of approaching relationships that reflects an expectation that one's own thinking has limits and may be enlightened, enriched, and changed by learning about the mental states of other people" (Fearon et al., 2006, p. 207). As discussed earlier, it is important for parents of LBD children to recognize the limits of their own insight and the opacity of mental

states. This perspective moves parents away from taking an all-knowing stance, particularly in the face of their children's confusing and troubling behaviors. In addition, this perspective stimulates parents' curiosity. Parents demonstrate interest in their children's underlying mental states, which ultimately fosters connection and understanding. In turn, children's growing awareness of their own and others' mental states enhances self-regulation and social skills. Helping children become more aware of their own and other's mental states is particularly important for LBD children, because their experience of mental states can be confused and confusing.

The next key component of the SMART model is the idea that stress and intense emotional arousal obstructs RF. Understanding this concept is critical because it acknowledges that the family's difficulty mentalizing is related to their current stressors (Fearon et al., 2006). For the LBD family this means recognizing that the myriad of challenges that come along with raising a child with LBD affects the family's reflective functioning. This component also underscores how difficult it is for the LBD child to mentalize when over-stimulated. This multi-layered appreciation can help lift underlying feelings of guilt and inadequacy for both parents and children. In addition, by recognizing that it is difficult to mentalize in the heat of the moment, family members and the therapist can set realistic expectations (in sessions and at home) about what can be effectively communicated and accomplished when feelings are running high (Fearon et al., 2006).

The final key component in the SMART model involves an understanding that the "interplay" of mentalization, stress, and behavior can at times lead to negative patterns of interaction between family members (Fearon et al., 2006). These "vicious cycles" entail

often controlling and hostile feelings and behaviors that get passed back and forth between family members. These patterns can quickly become highly repetitive, over-learned, and automatic (Fearon et al., 2006). Data from the current investigation suggests that for LBD families, interactions around homework often fall into this category. Helping LBD families begin to recognize their “vicious cycles” and create a shift in the way they approach homework could affect both children’s and parents’ feelings about the learning process.

The SMART intervention is relatively new and has not been specifically used as an intervention for LBD families. That said, the SMART model seems inherently mindful of the complex and pervasive effects that learning and behavioral disorders can have on a child’s social and emotional development as well as on the family’s overall functioning. In addition, it takes the long-view when considering the role of the intervention and what would be most beneficial to the family. In the authors’ words,

“to promote long-term resilience in the family—particularly in the context of multiple psychological and social problems—directly relieving symptoms may be a less critical therapeutic goal than promoting means of coping, particularly in relation to the quality and supportiveness of family attachment relationship” (Fearon et al, 2006, p. 202).

For the child with LBD, LBD symptoms will likely persist. Therefore it is critical for these children and parents is to develop ways of coping that foster resilience, enhancing their social and emotional functioning as individuals and as a family. Of course, learning-based interventions geared toward treating the child’s LBD symptoms should also be employed.

The PDI as a Clinical Tool

In the current investigation, qualitative analysis of the data revealed the enormous clinical value in the Parent Development Interview. In addition to insight about the parents' capacity to mentalize about her child, the PDI provided a wealth of information regarding the dynamics of the mother-child relationship, parental representations, the family system, and parents' early attachment relationships⁶⁶. This information is revealed not just by what the patient says, but also by how she says it (Slade, 1999b). Thus, the PDI provides the clinician with valuable information that would otherwise be difficult and time-consuming to attain, particularly at the start of a treatment.

The Adult Attachment Interview (AAI) has been widely used as a clinical tool to inform treatment (see Steele & Steele, 2008 for a review). Many of the clinical uses of the AAI cited by Steele and Steele (2008) can be applied to the PDI. For example, the PDI can be used to set treatment goals and identify areas of conflict, and it can assist in identifying the extent to which the parent utilizes defensive processes such as denial, idealization, or devaluation. The PDI can also help to identify patterns and dynamics in parents' early attachment relationships, which repeat themselves in parents' current relationships with their children. It is important to also keep in mind that in contrast to AAI, the PDI asks about the current ongoing relationship between parent and child, which may be more advantageous for family treatment (Slade, 2005).

The findings from the current investigation suggest that the PDI could also be used more actively within a family treatment.⁶⁷ This type of intervention would be similar

⁶⁶ Although not highlighted for the purposes of this investigation, the PDI contains a section that asks parents to reflect on their early attachment relationships.

⁶⁷ It should be noted that Ammaniti, Dazzi, & Muscetta (2008) describe administering the AAI at during the second session of a treatment. The third session is then devoted to exploring the patient's experience

to Beatrice Beebe's use of video feedback in her psychoanalytically oriented treatment of mothers and infants (see Beebe 2003, for a review). Beebe videotapes face-to-face interactions between parent(s) and infant which she then reviews alone and with the parents. In addition to providing dynamically driven interpretations, she also offers parents positive reinforcement, and provides modeling and information regarding the parent-child interactions. When reviewing a taped parent-child interaction together, Beebe and the parent(s) work together to identify the dyad's relational rhythm and pacing. They explore how the parents' behaviors affect the baby and vice versa. According to Beebe, "one central goal is to increase an awareness of nonverbal behavior" (2003, p. 35). Importantly, Beebe asks parents to describe what they felt during particular moments of the interaction and how they think their baby felt. In other words, Beebe asks the parents to mentalize about themselves and about their child, and she herself serves as a mentalizing model. Undoubtedly this process aids in parents' capacity to make sense of children's nonverbal behavior, thereby fostering parental RF.

Recent research has also used video feedback to reduce negative maternal attributions for mothers exposed to interpersonal violence (Schechter et al., 2006). In this intervention, mothers and their young children (age 8 to 50 months) were videotaped engaging in various activities, including a separation and reunion. During a subsequent visit, mothers were shown four chosen excerpts from the videotaped interactions: (1) an optional moment, (2) a moment of separation when the mother is not in the playroom, (3)

with the interview. These authors have found that exploring the interview process with patients can promote insight, because, for patients, the interview stimulates "a process of reflection and reinterpretation about the past" (Ammaniti, Dazzi, & Muscetta, 2008, p. 238). I am suggesting a similar, but more ongoing and explicit use of the PDI with parents and children.

a moment of reunion when the mother returns, and (4) a moment of suboptimal play.⁶⁸

After each of the excerpts, the clinician asked the mother to mentalize on a number of levels. The mother was asked to reflect on what she saw, to consider what she and her child were feeling in the moment, to describe how she felt watching the video, and to reflect on why she imagined those particular moments were chosen for her to view. The clinician also highlighted any moments in which the mother displayed mentalizing capacities. Notably, this intervention successfully reduced negative maternal attributions. The mothers reported that by viewing the excerpts and then reflecting on them, they were able to recognize ways in which they had misread their children's cues. The authors suggest that by having the reflective clinician there to help recognize and contain the children's intense needs, mothers were better able to tolerate their own strong and at times negative affect. In turn, the mothers were able to more accurately and empathically read their children's needs.

Similar to the use of video feedback in clinical work with parents and children, the PDI could be used in LBD family sessions. Excerpts from the parents' PDI could be discussed,⁶⁹ highlighting negative relational patterns and positive moments of connection and joy. The clinician can serve as a mentalizing support, both explicitly and implicitly⁷⁰ helping parents attune to their children's internal states, and tolerate their own intense affect. This process could help reduce parents' defensive denial, described in the early section. Also, by drawing attention to positive exchanges, more favorable representations

⁶⁸ Schechter et al. suggest that an optimal moment is one that contains "the most joy, spontaneity, joint attention, and mutuality or transaction" (2006, p. 435). In contrast, a sub-optimal moment of play is "when the clinician feels that 'things are not working so well' relative to the rest of the interaction paradigm" (Schechter et al., 2006, p. 235).

⁶⁹ The clinician would choose appropriate moments from the interview that would not be too overwhelming for the parents or the children. It may also be that excerpts from the interview would be shared during individual sessions with the parent.

⁷⁰ Borrowed from the SMART model (Fearon et al., 2006).

of the parent-child relationship can be integrated. Importantly, the reflective clinician would give also voice to the child's mental states. For the child with LBD, mental states are often only expressed behaviorally. Thus, the child's mental states would become more known to himself and to his parents and siblings, which would ultimately improve his relationships in and outside the home.

Study Limitations and Directions for Future Research

The limitations of the study, which inform the direction for future research fall into two broad categories. The first category is related to the sample, which was limited in terms of size but also in regard to the heterogeneity of the boys' LBD and the homogeneity of the mothers' reflective functioning capacities. The second category can be roughly defined as measurement issues. The study's findings were limited by the fact that measures of children's psychosocial functioning were only based on maternal reports. Additionally, other factors may have influenced the boys' psychosocial functioning and were not taken into consideration, and the PDI was administered at different points in time in relation to parents and children's awareness of the children's LBD. This section will close by exploring the role of fathers in understanding children with LBD's psychosocial functioning and the concept of rupture and repair in measuring reflective functioning in parents of children with LBD.

Sample

The small number of subjects reduced the power of the correlations, and limited the types of statistical analyses that could be performed. In addition, the clinically referred group of boys in current investigation was heterogeneous in many ways, and

their diversity may limit the ability to generalize the findings. First, the type and severity of children's learning and behavioral disorders varied. The small sample size made it impossible to identify differences in psychosocial functioning based on type and comorbidity of LBD. Thus, it is not clear whether the significant relationship found between maternal RF and children's social skills would hold true for more homogeneous samples (e.g., all ADHD boys, all reading disordered boys, or all language impaired boys). In addition, the diversity of the children's LBD diagnoses may have clouded the relationship between maternal RF and children's internalizing and externalizing symptoms and behaviors. For example, children with ADHD plus a reading disability are more prone to externalizing behaviors than children with only a reading disability (Willcutt & Pennington, 2000). Future research should examine children's internalizing and externalizing symptoms separately; this was not possible in the current investigation due to the small sample size. Moreover, because the sample was only boys it is not clear if a significant relationship would be found between maternal RF and social skills in girls with LBD.

In contrast to the children in the sample, the mothers in the current investigation represented a more homogeneous group. Each mother in the study acknowledged that her child was experiencing school challenges significant enough to have her child participate in a lengthy evaluation. Moreover, these mothers agreed to take part in the current investigation requiring them to answer more open-ended questions about themselves and their children. Many of the mothers reported wanting to participate in the current investigation to promote understanding of children with LBD, as well as to share their experiences, which they (rightly) believed was often overlooked. Therefore, the mothers

in the current sample were a relatively high functioning and responsible group, who were at least moderately aware and proactive regarding their children's challenges in school.

The homogeneity of the mothers in the sample may explain the narrow range of parental RF (3 to 5).⁷¹ Mothers' relative high level of functioning and acknowledgement of their children's impairment may have prevented parental RF scores from dipping below a 3 (low reflective functioning). However, the mothers in the sample were also grappling with the stress of having children with LBD. This additional strain may have hindered their reflective capacities, making it more difficult for them to reach the level of "marked" reflective functioning (a parental RF score of 7 or above). Other studies involving at-risk samples have also found a lack of "marked" maternal RF (Miller, 2008; Schechter et al., 2005).

The limited range of parental RF made it more difficult to determine the relationship between parental RF and measures children's psychosocial functioning. However, it is important to note there is a significant difference between a maternal RF score of 3 (low RF) and a maternal RF score of 5 (average RF). A "3" interview contained evidence of mental states but for the most part, mental states and behaviors were not explicitly linked. The descriptions provided in the interviews with "3" mothers tended to be more superficial, behavioral, or clichéd. Moreover, parents often used direct discourse rather than making relational interactions explicit (Slade et al, 2005a).

In contrast, an interview receiving a maternal RF score of 5 contained numerous instances of reflective functioning. Recall that an overall RF score of 5 is the most common rating in a high-functioning, non-clinical sample. In order to obtain a "5" rating, the mother must have demonstrated that she has a model of her own mind as well as a

⁷¹ Recall that RF has an ascending eleven-point scale (-1 to 9).

model of child's mind. Importantly, these parents still had difficulty mentalizing the more complex aspect of their relationships with their children, which were marked by conflict or ambivalence. This prevented them from achieving a higher parental RF score (Slade et al., 2005a).

The majority of the mothers in the sample (44%) received a overall RF score of 4. Fonagy and his colleague developed the RF scoring system anchoring mentalizing classification in odd numbers, so that even numbered scores represent a transcript that falls between two classes (Fonagy, Target, Steele, & Steele, 1998). The "4" mothers in the sample thus demonstrated more than a basic understanding of mental states but were not able to represent an integrated model of their own minds or the minds of her children. These mothers can be thought of as on the way to mentalizing. Perhaps, for these mothers, children's LBD presented a stumbling block inhibiting them from graduating to a "5" score.

The current investigation's narrow range of maternal RF scores and generally lower overall RF scores raise two important questions that should be addressed in future research. First, does maternal RF need to reach a "marked" level (an overall score of 7 or above), in order to serve as a protective factor? This would help to explain why a significant relationship was not found between children's internalizing and externalizing symptoms and problem behaviors and overall maternal RF. On the other hand, given the strain that having a child with a LBD places on the mother and the entire family system, is average RF good enough? Perhaps for this at-risk sample, an overall RF score of 5 is an achievement and sufficiently helps the child develop affect-regulation and the capacity to engage in positive relationships.

It is likely that some of the mothers in the current study were also experiencing language, reading or behavioral impairments, given the genetic component of SLI, LD, and ADHD (e.g., Biederman & Faraone, 2005; Bishop, 2003; Fletcher et al., 2007). Indeed, several of the mothers in the sample described struggling in school, though their neuropsychological functioning was not formally assessed. Recall that RF is not correlated with an individual's IQ or education (Fonagy et al., 1993). However, the affect of an LBD, specifically a language impairment, on parental RF has not been investigated.⁷² It is possible that mothers with impaired language skills had compromised RF and/or performance on the PDI given that scores are based on a narrative analysis.⁷³ In addition, mothers' language impairment may have also affected their capacity to communicate mental states to their children, hindering their children developing RF, impairing their social skills and affect regulation. Future research involving parental RF and children with LBD should consider the role of parents' language impairment on their mentalizing capacities and the effects parental language impairments may have on children's budding RF and social and emotional development.

⁷² Recent research has identified several factors, including maternal speech patterns, that along with the mother's mentalizing stance toward her infant, have significant affects on children's developing reflective capacities (Hughes et al., 2005). The authors define maternal speech patterns as familial conversations differentiated by their frequency, content and form (Hughes, et al., 2005). In this study 1,116 monozygotic and dizygotic twin pairs and their mothers were assessed to determine the degree to which genetic, shared and non-shared environmental factors affect the development of theory of mind (Hughes et al., 2005; p. 357). Theory of mind, or the recognition that beliefs are made up of representations of reality and can be mistaken, is an important precursor to reflective functioning and allows the child to develop a mentalizing stance (Fonagy et al 2002, p. 52). Importantly, Hughes et al.'s study found a strong correlation between children's theory of mind and their verbal ability (i.e., verbal IQ). However mothers' verbal ability in contrast to maternal speech patterns were not measured.

⁷³ However, it is notable that in the current investigation no relationship was found between parental RF and measures of children's language abilities or verbal IQ.

Measurement Limitations

Maternal Reporting

The most significant measurement limitation of the current investigation involved the measures of children's psychosocial functioning, as this data was derived solely from maternal reports. As discussed earlier, maternal reports may be biased due to the mothers' defensive processes. Low RF mothers may have underreported negative symptoms and behavior. In addition, it is possible that mothers with higher RF had more positive representations of their children and thus over-reported their children social skills. Although this is not likely because mothers with higher RF tended to describe their children in more balanced terms, recognizing their children's strengths and their vulnerabilities which tended to match the behavioral observations from the children's neuropsychological assessments. However without other reporters of children's psychosocial functioning these claims cannot be validated.

This limitation highlights the need to measure children's psychosocial functioning from numerous vantage points: mothers, fathers, teachers, peers, as well as self-reports from the children and direct observation of the children. Children's functioning may differ across settings and their behaviors may vary depending on whether they are at home or at school. Moreover the biases of teachers, much like the biases of parents, may influence how they perceive and rate children's behaviors (Sorensen et al., 2003). Because of reporter bias, clinical interviews, should also be obtained whenever possible (see Meadan & Halle, 2004 for examples of clinical interviews of both children with LBD and their teachers).

In addition, other factors that affect children's social status and overall self-esteem, e.g., physical attractiveness, athletic ability, artistic ability, and temperament were not measured in the current investigation – although many of these factors emerged as important themes on the PDI.⁷⁴ These factors may have influenced children's psychosocial functioning as well as parental representations of their children, clouding the relationship between maternal RF and measures of children's psychosocial functioning. Future research should consider how these factors affect children with LBD's psychosocial functioning, particularly their social status and self-esteem, as well as parental representations.

Administration of the PDI

The administration of the PDI occurred at different points in time in relation to parents' awareness and understanding of their children's LBD. This variability could not be controlled for due to the small sample size. For some mothers, the PDI was administered during the course of their children's evaluation, before they had received any concrete feedback regarding their sons' LBD. For other mothers, the PDI was administered several years after their children had been diagnosed with an LBD. Having more time to process and make sense of their children's learning and behavioral disorder may have influenced, either positively or negatively, parents' mentalizing capacity. In addition, children who had been diagnosed several years prior to the administration of the PDI may have been receiving more services, potentially generating a wide range of

⁷⁴ Indeed, temperament as well as vocational skills emerged as protective factors in a longitudinal study that tracked LD children from infancy to 32 years of age. Parent caregiving styles and characteristics, supportive adults, and opportunities at major life transitions were also protective factors (Werner, 1993).

feelings about their LBD. These factors may have affected children's psychosocial functioning.

Additional Directions

Two other important themes emerged from the current investigation as important directions for future research for parents and children with LBD. The first is the role that other caregivers, particularly fathers, have in children's developing mentalizing capacities and overall psychosocial functioning. The second is value of "repair" or the parent's capacity to make up with the child after moments of discord.

Other Caregivers

The role of the father was a significant theme in many of this study's PDIs. For several mothers' with lower RF who struggled to self regulate in the face of their sons' challenges, fathers provided an important reflective and regulatory counterbalance. This was the case for Wilma, her son Devon, and Devon's father Burt.⁷⁵ Wilma received an overall maternal RF score of 3; her descriptions were disorganized, overly verbose and often off-topic. She described herself as "90 percent" of her son Devon's problem because she pushed him too hard, set unattainable expectations, and became emotionally overwhelmed by his reading impairment.⁷⁶ Devon scored in the average range on the both the social skills measure and the measure of his internalizing and externalizing symptoms and problem behaviors. These scores matched Devon's behavioral observation during his

⁷⁵ Recall the earlier example of Anne and her son Michael as well.

⁷⁶ Wilma had taken a year off from work to tutor Devon in reading, which placed tremendous pressure on their relationship and added to Wilma's sense of guilt and responsibility for her son's LBD. This decision was motivated by Devon's teacher suggesting that Devon repeat a grade in school, which Wilma was firmly against.

neuropsychological evaluation. According to Wilma, Burt took a “lackadaisical” approach to their son’s problems in school. “Burt wants what best for Devon but he thinks I’m too uptight with it.”

When asked to talk about a time she got angry as a parent, Wilma described the morning of a spelling test when she was quizzing Devon in preparation. She and Devon had spent the night before studying. Devon was unable to correctly spell a word and Wilma became frustrated, “had a temper tantrum” and hit him, she recalled. Burt stepped in, defused the situation, and brought Devon to school. Wilma described regretting hitting Devon and apologized to him after school. According to Wilma, that afternoon, Devon was relatively un-phased by their fight. When she pressed Devon about how he was feeling about the incident he replied, “Well, daddy took me to school and he and I had a good conversation.” We can only speculate that Burt talked to Devon about what happened between Devon and Wilma. Perhaps Burt helped Devon make sense of Wilma’s feelings and behaviors as well as helped Devon identify and understand his own feelings. What is clear, however, is that for both Devon and Wilma, Burt was source of support.

Juxtaposed to the above example, other mothers in the study described the challenges of being a single parent, and depicted traumatic experiences involving their sons’ fathers. These were believed to have caused significant emotional stress, and to have negatively affected the children’s psychosocial functioning. One such example was Renee and her son, Tyrone. Renee received a parental RF score of 5 (average reflective functioning). She was well versed in the language of mental states and worked hard to understand her own and Tyrone’s underlying feelings. Renee and Tyrone’s father

divorced several years ago and Tyrone had little to no contact with his father since then. Tyrone met criteria for a language impairment, which according to Renee, manifested after his father left. “It actually started when my ex-husband left the house. [Tyrone] used to be very verbal...until his father left the house.” Here we see the intersection of a pre-existing vulnerability and an environmental stressor. Later in the PDI, Renee stated,

“I think deep down he misses his dad...because [his dad] used to send him to school every morning and I would pick him up. And then all of the sudden abruptly I’m taking him to school. I’m picking him up. [His dad is] not staying in the house anymore with him. So when other kids are talking about their father, Tyrone can’t because he doesn’t see him and he doesn’t call.”

Tyrone scored in the average range on the social skills measure but was nearly one standard deviation below the mean on the measure of internalizing and externalizing symptoms and was more than one and a half standard deviations below the mean on the measure of problems behavior due to elevated symptoms and behaviors related to depression and anxiety. Renee’s depiction of Tyrone mirrored the behavioral observation from his neuropsychological assessment. Renee aptly described Tyrone’s increased dependence on her, “he wants me to be there to fill that void, to be with him” as well as her own frustration as a single parent, “I get frustrated...I’m all alone, its me, doing all of that, I have her [daughter], I have him [Tyrone], I have my work, I have my school, I’m doing it all, I’m doing everything.” For both Renee and Tyrone, the father’s absence was a major stressor and undoubtedly contributed to Tyrone’s feelings of sadness and worry.

The father as well as other family members and caregivers are likely critical in the development of children’s mentalizing capacities, affect regulation, and social functioning. Fonagy and Target suggest that from an evolutionary perspective it is expected that children will have more than one adult “with sufficient interest in the

emergence of [their] mental capacities to treat [them] as potential minds and through a process of attuned and sensitive scaffolding promote in [them] the emergence of affect regulation, selective attention and mentalizing,” (2005 p. 335).

Because paternal RF was not measured it is difficult to quantify the role of that the fathers’ reflective capacity had on children’s psychosocial functioning. It may be that the role of the father contributed to the non-significant relationship found between mothers’ RF and children’s internalizing and externalizing symptoms and behaviors. It appears that fathers’ supportive mentalizing presence may have served as a protective factor for some children, like Devon, whereas a father’s absence, as in the case of Tyrone, may have exacerbated existing cognitive and emotional vulnerabilities. This point may seem obvious; however it is easy to overlook the father in parent-child research. Moreover, the father’s position may figure even more prominent for the latency aged boy.

In addition, many of the mothers in the study, like Wilma, described taking on the role of tutor with their children, seemingly more than the boys’ fathers. This is likely due to the fact that the mother was the primary caregiver, and as such was more involved with the son’s schooling. However, from the mothers’ descriptions, the father-son relationship may have been shielded, for better or for worse, from some of the stress and negative effects of the children’s LBD.

Going forward understanding how fathers’ mentalizing capacities contributes to the psychosocial functioning of children’s with LBD is an important area of investigation. Additionally the role that each parent plays in regard to their children’s

academic functioning, and whether this is affected by gender, is a vital area of future research.

Rupture and Repair

Conflict is a part of all intimate relationships, and this is certainly the case for parents and children with LBD. Throughout this investigation, ruptures within the mother–child relationship, and mothers’ capacity to manage their own as well as their children’s painful, angry, and hostile feelings have been addressed. Not surprisingly, homework was a fierce battleground for many the mother-child dyads in the study. Given the ubiquity of conflict and dysregulation for parents and children with LBD, it follows that the parents’ capacity to repair with their children after moments of discord is central. However parents’ capacity to “make-up” with their children or the manner in which they repaired conflict with their children was not directly assessed by the PDI, even with the added LBD questions.

Previous research has found maternal RF to be particularly valuable in helping mothers manage their infants’ distress without becoming “hostile and intrusive” or “fearful and withdrawn” (Grienenberger et al 2005, p. 308). Moreover, it has been suggested that parental RF “may serve a modulating function once the mother-child relationship has been dysregulated,” (Fonagy & Target, 2005, p. 339). In fact, the regulatory function of RF in moments of relational discord has been linked to Safran and Moran’s work (e.g., 2000) on ruptures and repair in the therapeutic alliance (Fonagy & Target, 2005).

The value of rupture and repairs also brings to mind the infant research of Edward Tronick (Tronick, 1989; Tronick & Weinberg, 1997). Tronick found that “typical”

parent-infant interactions are characterized by miscoordinated states and their successful repair. For the developing child, successful reparations help to establish positive self-representations and a sense that misattunements are normal and can be mended (Tronick & Weinberg, 1997). This work suggests that what happens during conflict is not the whole story. Rather, what happens after the fight is just as, if not more, consequential. Going forward, the PDI used to assess RF in parents' of children with LBD should include demand questions that specifically assess rupture and repair within the parent-child relationship.

Future Research

As a preliminary investigation, the study provided valuable data. First it identified a significant relationship between children's social skills and maternal RF, suggesting that maternal RF may serve as a protective factor for children with LBD. Second, this study provided meaningful information about how parents mentalize about their children's LBD.

Future research involving a large community sample of children with LBD would reduce some of the noise of the current investigation. A large community sample would allow for analyses of group differences (e.g., severity of LBD, type of LBD, comorbidity, services being received) in order to better understand the relationship between parental RF and psychosocial functioning in children with LBD. A large community sample, rather than a small clinical sample might also reduce the homogeneity of the parents. Furthermore, ratings of children's psychosocial functioning from multiple perspectives would identify and thus diminish reporting biases, allowing us to measure whether

mothers with lower RF do in fact underreport their children's internalizing and externalizing symptoms and problem behaviors. In regard to future research related to RF-LBD, questions should be added to the PDI-2R-LD that address rupture and repair within the parent-child relationship, and that ask the parent to explicitly consider how her child's LBD is affecting his development and personality. In addition, all of the demand questions on the PDI-2R-LD should be scored for parental RF in relation to children's LBD, and then an overall RF-LBD should be established based on the raters overall impression of the interview, in order to create a more comprehensive overall RF-LBD score.

It is important to note that the current investigation reported correlations, but did not identify causality. Thus, the direction of influence between higher maternal RF and social skills in children with LBD is not completely clear. Therefore, we cannot definitively say that maternal RF serves as a protective factor for impaired social skills in children with LBD. There is the possibility of the "child-to-parent effect," meaning children's social skills affect parents' reflective capacity (Fonagy et al., 2007).⁷⁷ Longitudinal interventions focused on improving parental RF would further clarify the relationship between parental RF and psychosocial functioning in children with LBD as within-individual changes in children's psychosocial functioning are tracked over time (Rutter, 2000).

Conclusion

This study explored whether maternal reflective functioning serves as a protective factor for the psychosocial challenges associated with learning and behavioral disorders

⁷⁷ Recall the earlier point that children's real attributes affect parental representations.

in children. Indeed, a significant positive relationship was found between maternal RF and children's social skills. However, a significant relationship was not found between maternal RF and children's internalizing and externalizing symptoms and problem behaviors. These results question whether low RF mothers were able to fully attune to and acknowledge the ways that LBD affects their children's social and emotional functioning.

The study also considered the relationship between RF-LBD and children's psychosocial development. The findings indicate that the mother's overall mentalizing capacity may have a stronger effect on the developing child, and that RF-LBD is just one aspect of this larger entity. In addition, the inherent stress of having a child with an LBD may make it more difficult for the parent to demonstrate stable RF in relation to her child's learning and behavioral problems.

As a preliminary investigation, this study informs future research by outlining ways to more accurately measure RF-LBD, and ways to better understand and explore the relationship between parental RF and LBD children's psychosocial functioning. Moreover, this study suggests that the import of maternal RF on the development of affect regulation and social relationships may extend beyond early childhood, particularly for this at-risk population. Thus, treatment that fosters mentalizing capacities within the parent-relationship, and potentially utilizes the PDI, may serve to mitigate the negative effects that LBDs can have on children's psychosocial functioning and on the larger family system. These tentative conclusions are speculative until future studies, employing a larger sample, investigate them further.

APPENDIX

Parent Development Interview Revised – LD Version

PARENT DEVELOPMENT INTERVIEW REVISED

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This interview is an adaptation of the Parent Development Interview (Aber, Slade, Berger, Bresgi, & Kaplan, 1985). This protocol may not be used or adapted without written permission from Arietta Slade, Yale Child Study Center, 230 South Frontage Road, New Haven, CT 06520, asladephd@earthlink.net

The Parent Development Interview - Revised is copyrighted, and is not to be adapted, shortened, renamed, or incorporated into other interviews. If this interview is to be used in contexts where changes must be made to accommodate a given population, permission for such modifications must be obtained in writing from the authors of the instrument. In whatever context it is used, it must always be identified by its full name, and full credit be given to its authors. This interview should not be given without training. While the sections below provide guidelines for interview administration, interviews may well be uncodable if not properly administered.

PARENT DEVELOPMENT INTERVIEW REVISED- LD VERSION

Adapted for the use with the parents of learning disabled children by Anne-Britt Ekert Rothstein.

Demand questions are in bold.

RF-LBD questions are in bold underlined.

A. View of the Child

Today we're going to be talking about you and your child. We'll begin by talking about your child and your relationship, and then a little about your own experience as a child. Let's just start off by your telling me a little bit about your family who lives in your family? How many children do you have? What are their ages? (Here you want to know how many children, ages, including those living outside the home, parents, other adults living in home. If atypical rearing situation (foster care) history of foster placements, who have been primary care givers, etc.; likewise, if there appears to be a history of divorce, or multiple moves, get some of the detail of that just to create a context for understanding the interview.)

1. I'd like to begin by getting a sense of the kind of person your child is so, could you get us started by choosing 3 adjectives that describe your child. (Pause while they list adjectives.) Now let's go back over each adjective. Does an incident or memory come to mind with respect to ____? (Go through and get a specific memory for each adjective.)
2. And, what about you, what kind of person are you? Can you choose 3 adjectives that describe you. (Pause while they list adjectives.) Now let's go back over each adjective. Does an incident or memory come to mind with respect to ____? (Go through and get a specific memory for each adjective.)
3. Did you ever struggle in school like your child does?
4. OK, now let's return to your child In an average week the last couple of weeks, what would you describe as his/her favorite things to do, his/her favorite times?
5. And the times or things he has most trouble with?
6. What do you like most about your child?
7. What do you like least about your child?

B. View of the Relationship

1. I'd like you to choose 3 adjectives that you feel reflect the relationship between you and (your child). (Pause while they list adjectives.) Now let's go back over each adjective. Does an incident or memory come to mind with respect to ____? (Go through and get a specific memory for each adjective.)
2. **Describe a time in the last week when you and (your child) really "clicked". (Probe if necessary: Can you tell me more about the incident? How did you feel? How do you think (your child) felt?)**
3. **Now, describe a time in the last week when you and (your child) really weren't "clicking". (Probe if necessary: Can you tell me more about the incident? How did you feel? How do you think (your child) felt?)**
4. **How do you think your relationship with your child is affecting his/her development or personality?**
5. **How do you think your child's learning and behavior difficulties are affecting the relationship between the two of you?**
6. In what ways did you end up being very different as a mother than the way you imagined you'd be?

C. Affective Experience of Parenting

1. Now, we're going to talk about your feelings about being a parent. Can you start out by choosing 3 adjectives that describe you as a parent. (Pause while they list adjectives.) Now let's go back over each adjective. Does an incident or memory come to mind with respect to _____. (Go through and get a specific memory for each adjective.)

2. What gives you the most joy in being a parent? What kind of effect do these feelings have on your child?

3. What gives you the most pain or difficulty in being a parent? What kind of effect do these feelings have on your child?

4. When you worry about (your child), what do you find yourself worrying most about? What kind of effect do these feelings have on your child?

5. How has having your child changed you?

8. Tell me about a time when you got angry at your child? What happened? How did you handle your angry feelings? What effect did these feelings have on your child?

9. Tell me about a time when you felt guilty as a parent. What happened? What did you do? What did your child do? What effect did these feelings have on your child?

10. Tell me about a time when your child was really upset. What happened? How did your child handle his/her upset? How did that make you feel? How did you handle your child's upset? What effect did these feelings have on your child?

11. Does (your child) ever feel rejected?

Eliminated questions from the original measure:

Do you ever really feel you need somebody to take care of you?

What kinds of situations make you feel this way? How do you handle your needy feelings?

D. Parent's Family History

Now I'd like to ask you a few questions about your own parents, and about how your childhood experiences might have affected your feelings about parenting..

1. I'd like you to choose 3 adjectives that describe your childhood relationship with your mother, from as early as you can remember. (Pause here while they list adjectives.)

Now let's go back over each adjective. Does an incident or memory come to mind with respect to ____?

2. Now can you choose 3 adjectives that describe your childhood relationship with your father, from as early as you can remember. (Pause here while they list adjectives.) Now let's go back over each adjective. Does an incident or memory come to mind with respect to ____?

3. Did you ever feel rejected or hurt (physically or emotionally) by your parents as a young child?

4. How do you think your experiences being parented affect your experience of being a parent now?

5. Why do you think your parents behaved as they did during your childhood?

6. How do you want to be like and unlike your mother as a parent?

7. How about your father?

8. How are you like and unlike your mother as a parent?

9. How about your father?

10. Do you know of any problems with learning or behavior in your family? How about your mother? How about your father?

E. Dependence/Independence

1. When does your child need attention from you? (Probe, if not spontaneously volunteered: How do you feel when this happens?) Does this usually have to do with school? If not with school, what areas?

2. Why do you think those are the things he/she needs help with? (This question is scored along with above question.)

3. When does he feel comfortable doing things on his own? (Probe if not spontaneously volunteered: How do you feel when this happens?) Does this usually have to do with school? If not with school, what areas?

4. What happens when he/she can't do things on his/her own? (Probe if not spontaneously volunteered: How do you feel when this happens?)

F. Separation and Loss

- 1. Now, I'd like you to think of a time you and your child weren't together, when you were separated. Can you describe it to me? (Probe: What kind of effect did it have on the child? What kind of effect did it have on you?) Note: If the parent describes something other than a recent (i.e. within one year) separation, repeat the question asking for a more recent.**
2. What was it like when your child first went to school?
- 3. Has there ever been a time in your child's life when you felt as if you were losing him/her just a little bit? What did that feel like for you?**
4. Is there anyone very important to you who (your child) doesn't know but who you wish he/she was close to?
- 5. Do you think there are experiences in your child's life that you feel have been a setback for him?**

G. Looking Behind, Looking Ahead

1. Your child is _____ already, and you're an experienced parent (modify as appropriate). If you had the experience to do all over again, what would you change? What wouldn't you change?

2. How do you think being the mother of a child with learning and/or behavioral problems has changed you as a mother?

3. How do you think about the relationship you and your child will have when your child is an adult?

Eliminated questions from the original measure:

Can you imagine yourself as a grandparent? What do you imagine? What would you hope for?

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