

Get a Social Life:

Predictors and Outcomes of Maternal Beliefs about Young Children's Peer Relations

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## MATERNAL SOCIAL BELIEFS IN EARLY CHILDHOOD

### **Abstract**

The goals of this thesis were to: (1) provide additional validation of the *Revised Social Goals Inventory*; (2) examine predictors of maternal social beliefs; (3) test a conceptually-derived model linking maternal social beliefs, maternal behaviours promoting children's peer relations, and indices of children's peer engagement. Participants were  $N = 262$  mothers and children (aged 4-7), recruited from schools in south-eastern Ontario. Mothers reported on their own social beliefs, behaviours, and personality, and their children's temperament and peer activities. Additional measures were obtained from children and teachers. Results indicated the RSGI demonstrated good psychometric properties. Both maternal personality and child temperament predicted social beliefs. Maternal behaviours were found to mediate the link between social beliefs and children's peer engagement. Mediation effects differed as a function of type of maternal behaviour, child gender, and domain of children's peer activity. Results are discussed in terms of the role social beliefs play in children's social development.

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# MATERNAL SOCIAL BELIEFS IN EARLY CHILDHOOD

## Table of Contents

List of Tables .....	vi
List of Figures .....	vii
List of Appendices .....	viii
Introduction.....	1
Overview of Parental Influences on Children’s Peer Relationships .....	3
Parent as designer .....	6
Parent as mediator .....	8
Parental Beliefs about Children’s Peer Relationships.....	11
Conceptualization .....	11
Operationalization and assessment.....	13
Sources of Maternal Beliefs about Children’s Peer Relations .....	17
Parent characteristics .....	18
Child characteristics .....	21
Putting it All Together: Social Beliefs, Maternal Behaviours, and Child Outcomes.....	24
Theoretical models .....	24
Empirical links.....	29
The Current Study .....	31
Method .....	34
Procedures .....	34
Participants .....	35
Measures.....	36
Maternal social beliefs.....	36
Maternal personality .....	36
Child temperament .....	37
Maternal behaviours promoting peer relations .....	38
Child peer relations.....	39
Results.....	42
Preliminary Analyses .....	42
Psychometric Properties of the RSGL.....	45
Creation of Aggregate Variables.....	45
Predictors of Social Beliefs .....	48

## MATERNAL SOCIAL BELIEFS IN EARLY CHILDHOOD

Social Beliefs, Maternal Behaviours, Child Gender, and Child Peer Relations: Testing Moderated-Mediation Models.....	55
Social beliefs, encouragement/involvement, and engagement in sports. ....	58
Social beliefs, encouragement/involvement, and engagement in peer play. ....	59
Social beliefs, initiation and persistence, and engagement in sports. ....	61
Discussion.....	64
Measuring Social Beliefs: The Revised Social Goals Inventory .....	65
Predictors of Maternal Social Beliefs.....	67
Maternal personality.....	67
Child temperament. ....	71
Linking Social Beliefs, Maternal Behaviours, and Child Outcomes .....	75
Maternal beliefs and maternal behaviours.....	76
Maternal behaviors and child outcomes .....	78
Maternal beliefs and child outcomes.....	81
Proposed mediation models.....	83
Limitations and Future Directions.....	87
Conclusion.....	92
References.....	93
Appendix A.....	107
Appendix B.....	109
Appendix C.....	110
Appendix D.....	111
Appendix E.....	112
Appendix F.....	114
Appendix G.....	115
Appendix H.....	117

# MATERNAL SOCIAL BELIEFS IN EARLY CHILDHOOD

## List of Tables

Table 1: Summary of Exploratory Factor Analysis Results for the RSGI.....	47
Table 2: Summary of EFA Results for the Maternal Behaviour Aggregate.....	49
Table 3: Descriptive Statistics for Study Variables.....	50
Table 4: Bivariate Correlations between Study and Demographic Variables.....	51
Table 5: Bivariate Correlations between Maternal Social Beliefs, Parent Personality, and Child Temperament Characteristics.....	52
Table 6: Regressions Predicting Maternal Social Beliefs for Maternal Personality and Child Temperament.....	54
Table 7: Bivariate Correlations between Social Beliefs and Maternal Behaviours and Child Social Behaviours.....	56

# MATERNAL SOCIAL BELIEFS IN EARLY CHILDHOOD

## List of Figures

Figure 1. Proposed model with parent behaviour serving as a mediator of the link between social beliefs and child social outcomes.....	27
Figure 2. Unstandardized regression coefficients for the association between social beliefs, encouragement and involvement, and engagement in sports.....	60
Figure 3. Unstandardized regression coefficients for the association between social beliefs, encouragement/involvement, and engagement in peer play.....	62
Figure 4. Unstandardized regression coefficients for the association between social beliefs, initiation/persistence, and engagement in sports.....	63

# MATERNAL SOCIAL BELIEFS IN EARLY CHILDHOOD

## List of Appendices

Appendix A: <i>Revised Social Goals Inventory</i> (RSGI).....	107
Appendix B: <i>Ten Item Personality Inventory</i> (TIPI).....	109
Appendix C: <i>Child Social Preference Scale</i> (CSPS).....	110
Appendix D: <i>Colorado Child Temperament Inventory</i> (CCTI).....	111
Appendix E: Maternal Behaviours Promoting Peer Relations.....	112
Appendix F: Child's Frequency and Engagement in Peer Interactions.....	114
Appendix G: <i>Child Behavior Scale</i> (CBS).....	115
Appendix H: <i>Preference for Solitary Play Interview</i> (PSPi).....	117

### Get a Social Life:

#### Predictors and Outcomes of Maternal Beliefs about Young Children's Peer Relations

It has been argued that parents are the most powerful socializing force in their children's lives (Grusec & Davidov, 2008). Although social interactions become self-initiated and increasingly directed towards peers as children age (Rubin, Bukowski, & Bowker, 2015), children's early social experiences are largely influenced by parental guidance and structuring of peer interactions (Ladd & Pettit, 2002). This process of socialization begins in infancy and continues throughout childhood, influencing many complex social behaviour trajectories (Ladd & Pettit, 2002). Moreover, although peer interactions are crucial to the social development of young children (Rubin et al., 2015), it is the role of parents as managers and facilitators of their children's day-to-day activities that make many of these early social opportunities possible.

Much of the current literature examining parental influences on young children's social development has focused on parents' management behaviours. These behaviours—particularly those that design and mediate their children's social environments—have been associated with a number of facets of children's social competence (see Ladd & Sechler, 2013 for a review). However, although these direct influences serve to describe *how* parents facilitate and manage their children's peer interactions and consequently influence their social development, there has been little focus on *why* parents come to engage in these behaviours. Researchers have only recently begun to examine factors that may influence parents' management behaviours. One possible motivation that has been proposed in the literature is parental beliefs. Parental beliefs about the importance of children's peer relationships and social skills (henceforth referred to as *social beliefs*) are

thought to have an indirect influence on children's social development (e.g., Mize, Pettit, & Brown, 1995), presumably through their influence on parental behaviour.

The primary goal of this thesis was to examine the "causes and consequences" of maternal social beliefs in early childhood. First, additional *validation* of a measurement tool of social beliefs (the *Revised Social Goals Inventory*) was sought. This included an examination of the factor structure, psychometric properties, and validity of this measure. Second, potential *predictors* of parental social beliefs were examined. To date, no studies have sought to explicitly examine factors influencing parents' beliefs about the importance of peer relationships and social skills. In the present study, both maternal factors (i.e., personality) and child factors (temperament) were considered. Finally, a conceptually-derived moderated-mediation model was tested, which proposed that parental social beliefs are linked with children's peer relations via a mediated pathway through parent behaviours for peer involvement (with some of these pathways differing as a function of child gender).

In the following pages, the various ways that parents *directly* influence their young children's peer relationships are described. Direct management behaviours that serve to create and maintain a child's social environment were of considerable focus. The existing literature is reviewed to provide support for the association between parental management behaviours and children's social outcomes. Next, the ways that parents *indirectly* influence their young children's peer relationships are examined (e.g., beliefs about the importance of social skills and peer relationships). Existing conceptualizations and operationalization and assessment methods for parental social beliefs are then reviewed. Possible sources of parent beliefs about children's peer relations are also

presented, including child temperament and parent personality. Finally, links between parental social beliefs and children's peer relations are examined. Models linking parent beliefs to child outcomes through parental behaviours are presented based on theoretical models in the general belief literature. A review of the literature is provided examining the association between parental social beliefs and their associations with children's social competence, including the role of parent behaviours as a mediator for this link.

It should be noted that this research focused on the associations between *maternal* social beliefs and children's social outcomes. Fathers also have a clear influence on their children's social development (see Allen & Daly, 2007 for a review), although it has been suggested that mothers may play a unique and influential role in this regard. Moreover, the age of interest for this study was early childhood, and results from previous studies suggest that mothers are particularly more likely to initiate and facilitate peer interactions for their young children (Bhavnagri & Parke, 1991; Ladd & Golter, 1988). Additionally, mothers have been suggested to possess a more extensive store of contextual knowledge about their children's behaviours, including strategies used to deal with their young children's socially withdrawn behaviours (Mills & Rubin, 1990).

### **Overview of Parental Influences on Children's Peer Relationships**

Parents can exert their influence on children's peer relationships through direct or indirect pathways, both of which have been associated with children's social development (Ladd & Sechler, 2013). For example, parents can *directly* influence their children's social development through intentional and unintentional management of their children's social environments, interactions, and relationships. This may include facilitating their access to peers and peer-oriented settings, influencing their choice of

peers, and supervising their peer interactions in order to promote the development of appropriate social skills and relationships (Ladd, LeSieur, & Profilet, 1992; Ladd & Pettit, 2002; Lollis, Ross, & Tate, 1992). Ladd and colleagues (1992) have outlined four distinct pathways by which parents may manage their children's peer relationships, which include serving as designers, mediators, supervisors, and consultants of peer interactions.

Parents *design* their children's social environments when they actively seek to provide children with opportunities to meet and interact with peers (Ladd & Pettit, 2002). Parents' decisions regarding the neighbourhoods within which they reside, the daycares or preschools their children attend, and the structured and unstructured community activities in which their children participate all serve to define their child's social ecology (Ladd & Sechler, 2013).

Parents *mediate* their children's peer relationships when they actively initiate, arrange, and regulate their children's peer contacts (Ladd & Pettit, 2002). Parents can influence the types of peers with whom their children engage by arranging peer contacts with familiar peers (e.g., children of family friends) and peers they encounter in informal contexts (e.g., a friendly playmate at the park) (Ladd & Pettit, 2002). They may also help children to identify their own potential playmates (e.g., talking about peers at school) (Ladd & Pettit, 2002). Parents may continue to exert their influence over their child's established peer relationships by controlling the frequency of peer contact (Coplan, DeBow, Schneider, & Graham, 2009). For example, parents may choose to arrange more or less frequent play contacts with playmates depending on their perceptions of their child's social needs and abilities and their perceptions of particular playmates and their abilities (Coplan et al., 2009).

Parents also act as *supervisors* when they attempt to manage and regulate children's ongoing peer interactions (Ladd & Pettit, 2002). Parents may act as observers, only intervening to discourage or redirect bad behaviours, to resolve conflict between peers, or to support or boost children's social interaction skills (Kuczynski, 1984; Lollis et al., 1992). They may also become actively involved in children's peer interactions to influence or shape the direction or flow of play, prompt specific behaviours, prevent conflicts, and maintain children's interest in peers or play (Ladd & Pettit, 2002).

Finally, parents serve as *consultants* when they advise and engage children in conversations about their peer interactions and relationships outside of the context of their peer interactions (Ladd & Pettit, 2002). Parents may use these conversations to discuss and prepare children to deal with an array of social exchanges, both positive and negative, including how to initiate peer contacts, manage conflict with peers, maintain their peer relationships, and deal with peer pressure and bullying (Ladd et al., 1992). Whereas some of these conversations may be hypothetical and/or anticipatory in nature, others may be more reactive. Parents may recognize that their children are experiencing interpersonal difficulties or children themselves may request help with their peer problems. Parents may offer their advice to help children to resolve their problems with peers (Ladd et al., 1992) or they may help to guide children's self-generated assessments and solutions (Kuczynski, 1984).

Though supervisory and consultant roles are important influences on children's social development (Ladd & Pettit, 2002; Ladd & Sechler, 2013), they are not the focus of the current study. As such, the present study focused primarily on parental

management behaviours that serve to create a child's social environment (*designer* role) and to initiate, arrange, and regulate their peer contacts (*mediator* role).

**Parent as designer.** A child's neighbourhood is an important setting for socialization (Garbarino & Gilliam, 1980) and numerous components of its structure and composition have been argued to influence children's social networks and opportunities for social interaction (see Ladd & Sechler, 2013 for a review). However, as this study seeks to examine parents' direct involvement in children's peer interactions, a greater focus will be placed on parent behaviours that influence a child's social environment, such as instigation of child participation in structured and unstructured community activities.

Parents may involve their children in structured (e.g., organized sports) and unstructured community activities (e.g., trips to the park) that provide their children with the opportunity to meet, interact, and form relationships with other children in their community. Structured activities, such as team sports, provide access to a larger peer group, as well as a context in which children are encouraged and instructed to interact with peers. These opportunities may allow for children to develop social skills, foster a sense of belonging, and gain valuable peer support networks (Eccles, Barber, Stone, & Hunt, 2003; Feldman & Matjasko, 2005).

Participation in structured extracurricular community activities (e.g., team sports, clubs) has been associated with higher ratings of psychosocial maturity and social competence, including higher social skills index scores in young school-aged children (Fletcher, Nickerson, & Wright, 2003; Howie, Lukacs, Pastor, Reuben, & Mendola, 2010). Moreover, structured social activities such as organized sports may serve a

protective role for children who are prone to struggle with peer relations (Findlay & Coplan, 2008). Gender differences in the frequency of structured extracurricular activity participation have been reported, with boys participating more than girls (Bowker, 2006; Dimech & Seiler, 2011), but the benefits of participation appear to be consistent across both genders (Bowker, 2006). In addition, some research has suggested that participation in organized sports increases with age (Trussell & McTeer, 2007). However, most studies examining the positive effects of extracurricular activities have focused on adolescence or late-middle childhood (e.g., Fletcher et al., 2003; Howie et al., 2010; Trussell & McTeer, 2007), and, therefore, little is known about possible age differences in the benefits of structured extracurricular participation for children in early childhood.

Unstructured activities may also provide unique opportunities for young children to develop social competence, as they provide children with the opportunity to create their own play activities and interactions (Ladd et al., 1992), which is important to the development of greater autonomy, control, mastery, and perspective-taking (Bryant, 1985). Additionally, children whose parents exposed them to a broad range of community contexts (e.g., parks, libraries) adjusted better to kindergarten and experienced lower levels of anxiety and school avoidance (Ladd & Price, 1987). However, the influence of unstructured activities on young children's social development has not been the focus of more current research.

Though the decisions parents make that influence children's social environments may not be solely for the purpose of promoting their child's social development, the consequences of these decisions serve to define children's social ecologies. They determine the opportunities children have to meet, interact, and form relationships with

peers, which all serve to influence a young child's social development. However, parents may also influence their children's social development through the facilitation and management of existing peer networks and relationships.

**Parent as mediator.** Parents' initiation of peer interactions have been associated with greater peer competence, including more social and prosocial behaviour, more consistent playmates, a wider range of non-school playmates, and closer, more stable, and less difficult friendships (Coplan et al., 2009; Kerns, Cole, & Andrews, 1998; Ladd & Golter, 1988; Ladd & Hart, 1992).

Parents may also mediate their children's peer experiences by involving them in informal playgroups. These settings provide children with the opportunity to become more comfortable in the presence of their peers and to learn and develop the necessary skills for peer interactions (Mize & Pettit, 2010). Moreover, these skills may transfer to other larger, more formal peer environments, such as classrooms. The motivations for parents to involve their children in playgroups is largely social (Statham & Brophy, 1991), and these early experiences have effects on a child's social competence. Experience in playgroup settings has been associated with higher levels of social competence, more sophisticated forms of verbal behaviour, and positive school transition (Fagot, 1997; Lieberman, 1977; Missal & Hojnoski, 2008).

There is some evidence to suggest that parental initiation may be particularly beneficial for young boys. Ladd and colleagues (Ladd & Golter, 1988; Ladd & Hart, 1992) reported that boys of parents who initiated frequent peer contacts were more likely to develop higher levels of classroom peer acceptance. These authors suggested that these gender differences may be due to the fact that extensive social activities are more often

the norm among males. They argue that boys of parents who initiate peer contacts and foster diverse peer networks may, as a result, be better able to negotiate these group activities and multiple peer relationships, and, as a consequence, achieve higher levels of peer acceptance. Despite these findings, neither study reported gender differences in parental initiation or monitoring behaviours. Parents were just as likely to initiate or mediate peer interactions for girls as they were for boys.

It has also been suggested that the benefits of parental initiation may be dependent upon the age of the child. For example, when parents involved their children in playgroups, older children (41-55 months) experienced more positive associations with school adjustment than younger children (23 to 40 months) (Ladd, Hart, Wadsworth, & Golter, 1988). However, the authors attribute this to the fact that younger children experience a greater frequency of older playmates, which was found to be negatively related to classroom adjustment. This may suggest that engaging children in play opportunities with same-age peers may provide an opportunity to learn and develop age-appropriate social skills in a way that is inhibited when they engage in play with older children.

Similarly, the degree to which parents initiate social contacts may also depend upon the age of the child. As children age, they begin to initiate more of their own peer interactions and experience more propositions from peers (Rubin et al., 2015). Consequently, parental mediation behaviours may decrease in frequency (or shift to more supervisor or consultant roles) as children develop more mastery and autonomy in their peer relationships. However, these early relationships with peers can set the tone for later

peer interactions, and as such, studying parental mediation behaviours in early childhood may be particularly important for understanding childhood social trajectories.

It should also be noted that although parents who are actively involved and engaged in their children's social lives tend to exert a positive influence over their child's social competence, parental *over-management* may be detrimental. For example, *overprotective* parents may intervene too early or too often, they may remove their children from stressful social interactions, or they may choose not to engage them in social environments altogether (Rubin & Burgess, 2002). Parents' intentions may be to protect their children by removing them from these potentially stressful situations and environments. However, when they become too controlling and intrusive in their children's peer relationships, children may not be afforded the opportunity to autonomously develop and implement their own strategies for peer interaction (Coplan, Arbeau, & Armer, 2008). Kuczynski (1984) suggested that in order to best help children to develop social competence, parents should utilize socialization techniques (e.g., reasoning, explanation) that encourage and help children to understand peer relationships and how to manage their behaviours in specific contexts and situations.

Finally, the degree to which parents' influence their children's peer relationships often differs from family to family (Ladd & Hart, 1992). These differences in quality and quantity of management behaviours may be dependent on a number of personal and family factors. Differences in child characteristics (e.g., temperament) and parental characteristics (e.g., personality, knowledge, skill, beliefs) likely influence both parents' and children's subjective experiences. Direct influences may be contingent upon other

indirect family processes, individual characteristics, and sociodemographic factors, which presumably all contribute to a child's social development.

### **Parental Beliefs about Children's Peer Relationships**

Parents can also influence their children's social development without directly seeking to manage their children's peer relationships. In this regard, researchers explored a number of *indirect* pathways of parental influence. Several mechanisms have been suggested to account for the association between parental behaviours and child social competence, including aspects of the parent-child relationships, parenting styles and behaviours, and the family environment (see Ladd & Sechler, 2013 for a review).

However, although there appears to be a number of contextual variables that indirectly impact *how* parents influence their children's social experiences, little is known about *why* parents choose to manage and involve their children in social activities outside of a childcare or school environment. To address this gap in the research, some initial research has explored the domain of parental *cognitions*, in order to understand what motivates parents to become involved in their children's social lives (e.g., Ladd & Pettit, 2002). Parental beliefs are of particular interest because these cognitions have been proposed as significant determinants of parenting behaviour (e.g., Goodnow, 1988; Sigel & McGillicuddy-DeLisi, 2002).

**Conceptualization.** There is considerable diversity in the terminology of constructs used to identify parental cognitions. Pajares (1992) argued that the extensive study of beliefs in diverse fields has resulted in a variety of conceptual understandings of the word *belief*. When discussing what parents believe about their children and their role

as parents, researchers have used terms such as beliefs, goals, attributions, perceptions, attitudes, views, cognitions, and ideas (Hirsjärvi & Perälä-Littunen, 2001).

For the purposes of this thesis, *parental beliefs* are defined as a set of ideas that a parent may have about childrearing, including opinions about the nature of children, how they develop, what influences their development, and the role a parent plays in their child's development (Wentzel, 1998). These beliefs serve to organize, direct, generate, and shape parenting behaviours, which can have important and direct implications for children's development (Sigel & McGillicuddy-DeLisi, 2002). For example, the beliefs parents have about children likely influence the style of parenting they adopt, the discipline strategies they employ, and their style of communication.

Parental belief systems are conceptualized as distinct from parental *knowledge* for several reasons (Hirsjärvi & Perälä-Littunen, 2001). Beliefs, unlike knowledge, can be held with varying degrees of certitude and awareness. They can also contain assumptions about both existing and non-existing entities. Moreover, beliefs are also influenced by affect and subjective evaluations of personal experiences and cultural/institutional sources of knowledge. As such, they can be disputed and an individual can have varying degrees of attachment to a belief.

Relatedly, the term *parenting goals* refers to what parents want to accomplish during parent-child interactions (Hastings & Grusec, 1998) or specific aspirations parents hold for their children (Wentzel, 1998). Goals may be more concrete than beliefs, as they are communicating a desire for a particular outcome. Parenting goals, much like parental beliefs, are argued to organize and direct parental behaviour, which can have important implications for children's development (Dix, 1992; Hastings & Grusec, 1998).

Notwithstanding, parental beliefs are argued to be a source of parental goals (Wentzel, 1998), and often these two concepts are used interchangeably (as they were herein).

Substantial research indicates that parent beliefs influence parenting behaviours and subsequent child behaviour outcomes in a number of domains, largely within the domains of mathematical and language achievement (see Sigel & McGillicuddy-DeLisi, 2002 for a review). In contrast, there is surprisingly less research examining parental beliefs related to children's peer relations. Parental *social beliefs* refer to the beliefs parents hold regarding the importance of social skills and peer relations for their young children (Mize et al., 1995). Previous studies indicate positive associations between maternal social beliefs and children's social competence, prosocial behaviour, and sociability (Coplan & Weeks, 2010; Holloway & Reichhart-Erickson, 1989; Ladd & Hart, 1992). However, variations in the conceptualization, operationalization, and measurement of maternal social beliefs in the existing literature may pose problems for the interpretation and comparison of findings.

**Operationalization and assessment.** The operationalization and assessment of maternal social beliefs have varied considerably across studies. For example, Holloway and Reichhart-Erickson (1989) interviewed mothers of young children (aged 4) and asked the age at which they expected their children to achieve 15 specific developmental skills. Many, but not all of the 15 skills tapped into skills that facilitate social competence, including initiating peer interactions (e.g., "participate in group activities"), establishing peer relationships (e.g., "become close friends with another child"), and prosocial behaviours (e.g., "give help to others when needed"). Among the results, mothers who had greater social expectations and placed a greater importance on social competence had

children who were more socially competent at preschool (as rated by teachers) and were more likely to engage in prosocial behaviour.

This approach was not viewed as ideal for assessing parental social beliefs in the present study since mothers were asked about age-related expectations about the development of social skills, rather than the *value* placed on children's social skills and peer relationships. Notwithstanding, the argument can be made that parents who value social skills for their children also come to expect their development at an earlier age. For example, in collectivistic cultures, where value is placed on social competence and group harmony (Lewis, 1984), mothers of young children hold earlier expectations for the development of social competence (Hess, Kashiwagi, Azuma, Price, & Dickson, 1980).

Kennedy (1992) also assessed maternal social beliefs via structured interviews. Mothers responded to five questions about the importance they placed on their children's social competence (e.g., importance of social competence in preschool, elementary school, adolescence, and in adulthood) and on their own social competence using an eight-point Likert scale. Mothers also responded to an open-ended question about the social skills they desired their children to have, and answers were coded as either defensive values (e.g., "be able to stand up for [one]self"), mechanics of social skills (e.g., "know how to share and take turns"), or humanistic values ("learn to value all kinds of people"). In this case, the assessment of the value of social competence was somewhat vague (e.g., asking parents to report on social competence generally, rather than asking about specific social abilities and skills). As such, for the present research, the use of open-ended questions was avoided (e.g., to reduce demand on responders).

Using a different approach, Rubin, Mills, and Rose-Krasnor (1989) assessed social beliefs by examining mothers' beliefs about the importance of several social skills. In contrast to Kennedy (1992), mothers were interviewed about the importance they placed on a number of specific social skills for their young children. The questions tapped into three main themes: "making friends", "sharing possessions", and "leading or influencing others". All questions were close-ended and parents reported on a five-point Likert scale.

Drawing upon his approach, Mize and colleagues (1995) created a self-report questionnaire that assessed mothers' beliefs about the importance of social skills and peer relationships for their young children (i.e., *Social Goals Inventory*). Mothers reported on six social skills that their preschool children would be expected to learn. Each skill was rated on a five-point Likert scale and ratings were summed to form a single score. Items assessed the value parents place on children attracting and making friends ("make friends with children their own age" and "get children to like them"), being sensitive to others' feelings, being assertive, being able to properly resolve interpersonal conflict, and being able to lead their peers.

Mohr (1998) created three additional questions that pertained to the importance of playmates for young children, including the value of having a wide variety of playmates and the value of having consistent or familiar playmates that can promote the development of close friendships. This adaptation is the most current version of the *Social Goals Inventory* and is renamed the *Revised Social Goals Inventory* (RSGI). It is important to note that though the designation "Social Goals Inventory" implies the

measurement of goals, the focus of the scale on the value of particular social skills (e.g., the importance) is more appropriate to the measurement of beliefs.

Previous studies using the nine-item revised scale have indicated acceptable internal consistency (Coplan & Weeks, 2010; Coplan, Prakash, O'Neil, & Armer, 2004). The RSGI was also reported to be negatively correlated with parent reports of child unsociability (Coplan & Weeks, 2010; Coplan et al., 2004) (indicating some support for the convergent validity of the measure). However, to date, detailed reports of the psychometric properties, factor structure, and validity of the measure have been lacking. Accordingly, one of the goals of this thesis was to provide additional validation of the RSGI as an accurate tool to measure parents' social beliefs.

In examination of the current literature on social beliefs, previous studies have relied on parental interviews and open-ended questions, which can be time-consuming, costly, and pose difficulties when trying to make statistical inferences. Inconsistency in the operationalization of social beliefs also clouds the interpretation and generalization of existing findings. However, though efforts have been made to establish a more consistent and efficient method for operationalizing and measuring social beliefs, these efforts have not been well supported in the literature. The RSGI remains relatively unstudied and there are few reports of its psychometric properties and validity as a measure of parental social beliefs. For these reasons, there is merit in developing, implementing, and validating a self-report measure, such as the RSGI, that ensures consistency and efficiency in reporting across studies.

### **Sources of Maternal Beliefs about Children's Peer Relations**

Sigel and McGillicuddy-DeLisi (2002) contended that parental belief systems are situated within a nested model. From this perspective, the family environment is conceptualized as serving as the primary socialization agency. Parents are thought to develop a broad range of beliefs about the world through their own socialization and subjective experiences within their culture. The family and their beliefs are further embedded within a broader network of social, cultural, political, educational, and religious institutions, which are in turn nested within a national and international context.

These macro-level influences promote the internalization of role-relevant values, meanings, and action plans (Lightfoot & Valsiner, 1992). Additionally, members outside of the family, such as other parents, teachers, physicians and mental health professionals, religious leaders, and the media can all communicate social suggestions (Lightfoot & Valsiner, 1992). Parents can act on these suggestions in a variety of ways to construct new beliefs and modify existing ones. Parents, however, do not just passively adopt cultural roles. Individuals operate within *personal cultures*, whereby their beliefs about their roles as parents are constructed and developed through their own personal experiences and interpretations of their own culture (Lightfoot & Valsiner, 1992, p. 396).

Though these more macro-level social, political, and cultural institutions are particularly salient influences on parental belief systems, they represent relatively distal influences. Sigel and McGillicuddy-DeLisi (2002) argue that the strength of an influence depends on the proximal relation to the social agent. As such, more immediate proximal influences within the family environment, such as parent characteristics and child characteristics may be worthy of exploration.

**Parent characteristics.** A number of parental characteristics have been suggested to influence the beliefs a parent holds regarding their child and childrearing, including their own personal experiences, their personal interpretations of their culture, their beliefs about the parental role, and their beliefs regarding their effectiveness as parents (Sigel & McGillicuddy-DeLisi, 2002). In contrast, there has been little examination into the possible parental predictors of social beliefs. No research to date has examined parental social beliefs in relation to more individual characteristics, such as personality. As current personality research describes specific personality dimensions as being predisposed towards certain characteristic reactions (John, Naumann, & Soto, 2008), it follows that certain dimensions of an individual's personality should influence their beliefs. Although there is evidence to suggest that parental personality influences parenting styles and behaviours (see Belsky, & Barends, 2002 for a review), the links between maternal personality and social beliefs remains unexplored. Given the dearth of previous research in this area, the following postulations regarding these potential associations are considered tentative in nature.

The five-factor model of personality outlines five dimensions of personality: extraversion, openness to experience, agreeableness, conscientiousness, and emotional stability/neuroticism (John et al., 2008). *Extraversion* has been strongly associated with sociability and social engagement (Asendorpf & Wilpers, 1998; John et al., 2008). Thus, it should follow that parents who score higher on extraversion should be more likely to place a value on activities that are social in nature. Losoya, Callor, Rowe, and Goldsmith (1997) also found that mothers of young children who were extraverted encouraged

independence in their children. It may also be that extraverted parents value goals that promote their children's autonomous engagement in social activities.

*Openness to experience* is positively associated with the motivation to seek out new experiences and a greater tolerance for ambiguity (John et al., 2008). Peer interactions often involve new experiences and uncertainty. It may be that parents who are open to new experiences are more willing to endorse beliefs that require their children to engage with new peers and in novel situations when they see the value of those interactions. Parallels about the association between openness to experience and parental social beliefs can be drawn from the literature on academic beliefs. For example, university students who were more open to new experiences were more likely to believe that intelligence was modifiable (Furnham, Chamorro-Premuzic, & McDougall, 2003). It may be that parents who are more open to new experiences are more willing to believe that their children's social competence is modifiable and that they have a responsibility as a parent to intervene to foster the development of social skills. As such, they may be more likely to value the importance of peer relationships and social skills for their young children.

More *conscientious* individuals tend to have better organization, higher standards, and engage in more goal-directed behaviour (John et al., 2008). Parents who are more goal-oriented may be more likely to explicitly and consciously hold goals for their children, particularly when they value the importance of the goal at hand. Eisenberg, Duckworth, Spinrad, and Valiente (2014) also suggest that conscientiousness contains a facet of responsibility, whereby individuals often feel the desire to fulfill duties and obligations towards other people. They argue that this trait involves compliance and

internalization of cultural/social norms and standards (Eisenberg et al., 2014). Parents may believe that these norms can be reinforced through social interactions with peers, and thus be more likely to value the importance of peer interactions and the development of social skills for their children. Moreover, conscientiousness was also found to be a predictor of beliefs about the modifiability of intelligence in a sample of university students (Furnham et al., 2003). Much like with parents who are open to new experiences, parents who are conscientious may be more willing to believe that their children's social competence is modifiable and may be more willing to believe they are responsible for their children's social successes. As a result, they may place greater importance on the value of peer interactions.

Lower levels of *emotional stability* (i.e., higher ratings of *neuroticism*) are associated with greater levels of emotional reactivity (John et al., 2008). Highly neurotic parents have been suggested to employ overprotective strategies (Coplan et al., 2008; Kendler et al., 1997), intervening too early and too often or removing children from anxiety-provoking situations altogether (Rubin & Burgess, 2002). As a result, parents who score low on emotional stability and who experience their children having difficulties in peer interactions may be less willing to value social beliefs or to act in ways that promote them. Additionally, Asendorpf and Wilpers (1998) found that neuroticism was more closely related to self-reported shyness than sociability. It could follow that parents who experience anxiety in their own social interactions may be less willing to endorse and act on social beliefs for their children.

Finally, higher levels of *agreeableness* are associated with more good-natured, trusting, and cooperative behaviour (John et al., 2008). Agreeableness has been

associated with prosociality (Caprara, Alessandri, Di Giunta, Panerai, & Eisenberg, 2009). Parents may view peer relationships as an important source for fostering the development of cooperative and empathic behaviours in their children. As a result, they may be more willing to place importance on peer interactions and the development of social skills.

Thus, examining parental characteristics as predictors of social beliefs is a novel research question that could be of considerable merit. However, it may also be important to examine predictors external to the parent. The relation between parents' beliefs and children's social behaviours is not unidirectional, but rather transactional in nature (Sigel & McGillicuddy-DeLisi, 2002). It may be that parents' beliefs are also influenced by the characteristics of their children.

**Child characteristics.** Parental beliefs do not form a closed system; rather they are multiply-determined and may be altered by parents' perceptions of and experiences with their children (Goodnow, 1988; Sigel & McGillicuddy-DeLisi, 2002). Child temperament, particularly aspects pertinent for peer interaction (e.g., shyness, sociability), may also be a salient influence on parental social beliefs. For example, children who are *shy* experience frequent wariness in social situations and are prone to negative peer experiences (Coplan et al., 2004). Although they may desire social interaction, shy children are often too wary of negative evaluation to initiate peer interactions. Previous studies have indicated that parents may be more motivated to become involved in their children's peer relationships when they perceive their children as experiencing difficulties (e.g., Ladd & Golter, 1988). However, shyness also has a heritable component (Saudino, 2005), and it may be that parents who are socially anxious

themselves are also less likely to value the importance of social skills when they perceive their children are experiencing similar anxiety.

There have only been a few studies where researchers have directly examined links between maternal social beliefs and children's shyness – and the findings are somewhat inconsistent. Cohen and Woody (1991) found that when mothers' perceived their children as more socially withdrawn (which may include children who are shy) and as experiencing difficulties interacting with their peers, they were more likely to be involved in their children's peer relationships. Similarly, Rubin and Mills (1990) found that mothers of more socially withdrawn children placed a greater importance on the directive teaching of social skills than mothers of non-socially withdrawn children. It is suggested that parents may come to experience a strengthening of their social beliefs in accordance with their children's behaviour in opposition of those beliefs. However, though parents of shy children are suggested as being more likely to intervene in their children's peer relationships, it is unclear if this is actually due to an increased value placed on social beliefs. Parents may simply be using existing social beliefs as an impetus to act when they witness their children exhibiting socially withdrawn behaviours or experiencing difficulties with peers. Consistent with this notion, results from two recent studies specifically assessing maternal social beliefs using the RSGI have indicated no significant association between shyness and maternal social beliefs (Coplan et al., 2004; Coplan & Weeks, 2010).

Children who are *unsociable* generally show a lack of desire for social interaction (Coplan et al., 2004). Whereas shy children experience an approach-avoidance conflict, unsociable children do not appear to have a strong motivation to engage with peers.

Unsociable children may not appear to be particularly distraught over their social isolation, as it is often a result of internal motivations, rather than peer rejection (Coplan et al., 2004). Moreover, several studies have found that though unsociable children spend less time interacting with peers, they do not appear to differ in terms of their social abilities (Asendorpf & Meier, 1993; Harrist, Zaia, Bates, Dodge, & Pettit, 1997). It may be that parents of unsociable children see their unsociability as less problematic, and thus place less value on the importance of peer interactions. Coplan and colleagues reported a negative association between unsociability and maternal social beliefs (Coplan et al., 2004; Coplan & Weeks, 2010). These authors suggested that unsociable children may be *modelling* the behaviours of their parents, who also may place less value on peer interactions.

It is worth noting that shyness and unsociability have been proposed to pose a greater risk for the social development of young boys as compared to young girls. Although there are typically no reported gender differences in the prevalence/frequency of shyness and unsociability (and related constructs) in early childhood, there is some evidence to suggest that both shy and unsociable boys tend to experience more social difficulties (e.g., peer exclusion, rejection) than their female counterparts (see Doey, Coplan, & Kingsbury, 2014 for a review). These gender differences have been explained as a result of cultural and societal norms regarding social withdrawal in Western societies; shyness and unsociability appear to be less acceptable in boys than in girls (Doey et al., 2014). As a result of these stereotypic gender role expectations, parents may be less likely to accept or reward social withdrawal in their sons (Doey et al., 2014).

Therefore, it may be that mothers of shy or unsociable boys would be more likely to value the importance of peer interaction and social skills for their young sons.

In order to fully understand and examine the association between parental social beliefs and child social outcomes, including predictors of social beliefs, it is important to frame this relationship in the context of the existing scientific literature, as well as theory. However, the literature to date is sparse. Current theoretical models linking parent beliefs to child outcomes through parental behaviours, in particular, are scant. Therefore, models from the general belief literature were adapted for parental social beliefs for the purpose of this thesis.

### **Putting it All Together: Social Beliefs, Maternal Behaviours, and Child Outcomes**

In this final section, the links between maternal social beliefs and children's peer relations are examined. Conceptual models linking parent beliefs to child outcomes through parental behaviours are presented, derived from theory and empirical findings from the general belief literature. A review of the literature is provided examining the association between parental social beliefs and their associations with indices of children's social competence and engagement with peers, including the role of parent behaviours as a possible *mediator* of these links. As well, the moderating role of child gender is also considered.

**Theoretical models.** Many researchers believe that overt parental behaviours are concrete manifestations of their unobservable belief systems (Goodnow & Collins, 1990; Sigel, 1992). It is suggested that it is *through* parental action that parents are able to communicate their beliefs to their children. In line with traditional unidirectional models of the belief-behaviour connection (Sigel & McGillicuddy-DeLisi, 2002), parent

behaviours that promote peer relations have been suggested to *mediate* the link between parental social beliefs and child social behaviours (e.g., Miller, 1988; Mize et al., 1995). In their study, Mize and colleagues (1995) outlined a linear model whereby parental social beliefs were assumed to influence parental management behaviours (e.g., mediation, supervision), which in turn were expected to influence children's interactions with peers.

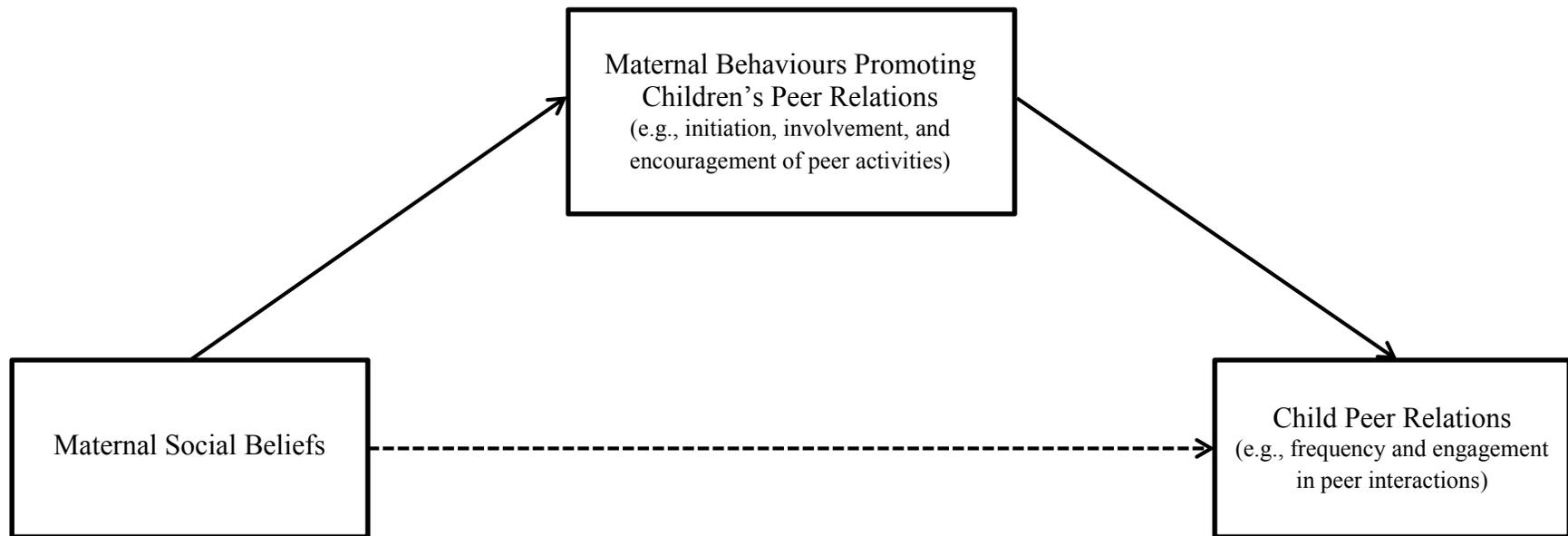
It should be noted that the link between beliefs and behaviours are likely not *static*. For example, the *goal-regulation* model of parenting (Dix, 1992) includes a process of continuous appraisal that serves to influence action. According to this model, when parents select and initiate action sequences to achieve their goals, they continually appraise the situation in order to have a better understanding and control of events. They may infer causes of behaviour and possible motives, appraise outcomes, assess situational characteristics, and anticipate future outcomes. Based on these appraisals, parents experience positive emotions when they feel their goals are being promoted, and negative emotions when they feel their goals are being blocked. These emotions, in turn, encourage maintenance or change in parents' beliefs, goals, plans, and behaviours.

As well, as described earlier, much less is known about the factors that influence individual differences in parental social beliefs. A number of factors may influence parents' choice of action, including context, parental knowledge, and demographic, sociocultural, and personal factors (Sigel, 1992). The *dynamic belief systems* model (Sigel & McGillicuddy-DeLisi, 2002) asserts that specific parental beliefs are hierarchically organized into a larger belief system. For example, beliefs about childrearing include specific beliefs about children's interpersonal skills. In turn, parents'

beliefs about their children's interpersonal skills can include specific beliefs about appropriate social behaviour, the importance of peer interaction, and the value of conflict resolution and other prosocial behaviours. This model also accounts for beliefs about how particular beliefs *should be* expressed (i.e., praxis beliefs). For example, a parent may believe that their child learns best through direct instruction, while others may believe that their children learn best through inquiry strategies. These praxis beliefs may be a product of the developmental age and the particular abilities of the child, or parents' own experiences and characteristics.

These components are hypothesized to be in a dynamic relationship within the system. They interact in differing ways at different levels to influence the mode of expression that a parent chooses when acting to express a belief, as well as to enhance, diminish, or maintain a parent's chosen expression of their beliefs. The dynamic nature of the model also allows for the evolution of beliefs as changes occur within the system. For example, as a child ages, parents' knowledge and beliefs about their capabilities also change. These beliefs, in turn, will change how a parent chooses to express certain beliefs. As new knowledge becomes available in one area of the belief system, adjustments can be made across others.

Such longitudinal and transactional processes were beyond the scope of the present study. Notwithstanding, these theoretical models all share an underlying mediation "causal structure" whereby maternal social beliefs are thought to influence maternal behaviours that promote children's peer relations (e.g., initiation of peer contacts, encouragement of engagement in peer activities), which in turn affects children's peer relationships (see Figure 1).



*Figure 1.* Proposed model with parent behaviour serving as a mediator of the link between social beliefs and child social outcomes.

However, it is important to note that though theoretical models may be helpful in understanding the link between belief and action, they cannot account for the differences in quality of action. Sigel and McGillicuddy-DeLisi (2002) argue that differences in the quality of the expression of the belief are due to individual differences in cognitive competence. Parents who are more skilled or who possess certain personality characteristics that enable greater cognitive competence (e.g., emotional stability, reflectivity, flexibility) may be better at putting those beliefs into action (Sigel & McGillicuddy-DeLisi, 2002). Although parents may be acting on their beliefs, their behaviours may have little impact if their modes of expression are not appropriate or skilled enough.

Though no gender differences were put forward in these conceptual models, it is worth noting that gender differences in socialization exist in the current literature and should be considered when seeking to model the association between parental social beliefs and children's peer relations. For example, research has suggested that mothers may be less accepting of socially-withdrawn behaviours in boys, as compared to girls (Doey et al., 2014). It may be, therefore, that mothers are more likely to act in ways that promote peer interactions for their sons as compared to their daughters. Additionally, it is also noted that boys have been found to participate more in organized sports, whilst girls participate more frequently in individualized activities (Bowker, 2006; Dimech & Seiler, 2011). It may be that mothers of boys are more willing to encourage participation in organized sports. Although there seem to be differences in what constitutes appropriate social behaviour and social activities for girls and boys, the benefits of extracurricular participation appear to be consistent across both genders (Bowker, 2006). Therefore,

although speculative in nature, it may be that gender exerts a moderating influence on the association between social beliefs and maternal behaviours promoting peer relations.

**Empirical links.** Though the literature is sparse, there has been empirical support for the association between maternal social beliefs and children's social outcomes. As mentioned earlier, Holloway and Reichhart-Erickson (1989) reported that mothers who had greater social expectations and who had placed a greater importance on social competence had young children who were more prosocial and socially competent.

Kennedy (1992) reported a similar positive association between importance ratings of social competence and children's popularity among peers. However, child outcomes were also dependent upon the type of social skills endorsed. For example, when mothers emphasized defensive values (e.g., "standing up for [your]self"), their children made fewer positive attempts to initiate interaction with another child as compared to when mothers emphasized the mechanics of social skills (e.g., sharing and taking turns) or humanistic values (e.g., "learn to value all kinds of people").

Interestingly, maternal beliefs and perceptions were not significantly associated with maternal knowledge, lending support to the dynamic systems model that argues that quality of parental involvement is due to individual differences in cognitive competence rather than belief endorsement.

Finally, Rubin, Mills and Rose-Krasnor (1989) interviewed mothers of fifty-eight preschool children (approximate age of 4) about their beliefs concerning their children's social development. Mothers who believed that the attainment of social skills were more important, as well as more modifiable, were more likely to have children who were rated by teachers and observed to be more socially competent (e.g., initiated and directed more

joint peer play, used more appropriate strategies to attain their goals, displayed more prosocial behaviour, and tended to be more successful at gaining peer compliance). In contrast, mothers who placed less value on the attainment of these skills and viewed them as more innate were more likely to have children who experienced difficulties interacting with peers and were rated as hyperactive and distractible by their teachers.

There is at least some empirical support for the notion that parental behaviour is a conduit for the link between parental social beliefs and children's social outcomes. Results from several studies have indicated associations between parental social beliefs and higher levels of parental involvement in children's peer interactions. For example, Cohen and Woody (1991) reported that mothers of school-aged children who valued sociability were more likely to engage in management behaviours than mothers who did not value sociability. Moreover, mothers who valued sociability and believed in their responsibility as parents to influence their children's social development also reported the highest level of involvement in their children's peer interactions. Similarly, Mills and Rubin (1990) found that mothers of preschoolers' beliefs about the importance and modifiability of social skills were associated with more frequent reports of parental involvement in their children's peer interactions.

Notwithstanding, other studies have provided conflicting results. For example, Mize and colleagues (1995) reported the expected positive association between maternal social beliefs (i.e., importance and modifiability of social skills) and preschoolers' peer relations (i.e., maternal perceptions of their child's social competence and peer acceptance). However, contrary to expectations, mothers of more competent children were *less* likely to be observed supervising their children's play. The authors explained

this discrepancy by suggesting that parental involvement may be less apparent when observed in short observation sessions. Another possible explanation may be that mothers of children who were socially competent used more sophisticated and less intrusive strategies that were less observable in the short observational settings. Indeed, previous studies have shown that mothers of children who are less competent tend to use more obvious and less sophisticated (e.g., coercive) strategies (Kennedy, 1992). This is in line with existing findings that suggest that more indirect and less intrusive forms of parental involvement may be more suitable as children age and develop the skills to implement their own strategies for peer interactions (e.g., Ladd & Golter, 1988)

To summarize, although there is some support for the link between parental social beliefs and children's peer relationships, there is need for a greater exploration of this association. In particular, there is need to explore the mediating role of parental behaviours on the relation between parental beliefs and children's social outcomes.

### **The Current Study**

The primary aim of this thesis research was to examine the "causes" and "consequences" of maternal social beliefs. More specifically, the first goal was to provide additional validation for the *Revised Social Goals Inventory* (RSGI), a maternal self-report measure of parental social beliefs. This included establishing the factor structure and psychometric properties of the measure, as well as providing additional evidence of validity. Consistent with expecting conceptualizations of the measure (Mize et al., 1995; Mohr, 1998), a one-factor model of the RSGI was expected.

A second goal of the study was to examine the potential predictors of social beliefs, including both maternal characteristics (i.e., personality) and child characteristics

(i.e., temperament). To date, no research has specifically examined maternal personality dimensions as predictors of maternal social beliefs. Accordingly, the associations between aspects of maternal personality (five-factor model, i.e., extraversion, openness to experience, conscientiousness, agreeableness, and emotional stability/neuroticism) and maternal social beliefs was explored. Additionally, although a handful of previous studies have examined links between aspects of child temperament (shyness, unsociability) and social beliefs, results have been inconsistent (e.g., Cohen & Woody, 1991; Coplan et al., 2004; Coplan & Weeks, 2010). Therefore, a closer examination of the association between a wider range of child temperament characteristics and maternal social beliefs was sought. Child temperament traits examined included those both more conceptually-relevant to maternal social beliefs (i.e., shyness, unsociability) and those with a less direct conceptual connection (i.e., negative emotionality, soothability).

It was expected that specific dimension of both maternal personality and child temperament would uniquely predict maternal social beliefs. Parents who are extraverted, open to new experiences, conscientious, and agreeable are predicted to be more likely to hold higher social beliefs for their children. In contrast, parents who are neurotic are predicted to be more likely to hold lower social beliefs for their children. Drawing upon the extant literature, extraversion, openness to experience, and emotional stability were postulated to be the strongest maternal personality predictors of social beliefs. In contrast, conscientiousness and agreeableness were conceptualized as less directly relevant for the prediction of social beliefs.

Next, although previous empirical findings have been inconsistent, child unsociability was predicted to be negatively associated with maternal social beliefs

(Coplan et al., 2004; Coplan & Weeks, 2010), whereas children's shyness was expected to be less strongly related to maternal social beliefs (Coplan et al., 2004; Coplan & Weeks, 2010). Children's soothability and emotionality, temperament variables that are not conceptually-relevant to maternal social beliefs, but are associated with other parental beliefs and behaviour (Putnam, Sanson, & Rothbart, 2002), are expected to be unrelated to maternal social beliefs. These temperamental traits were included to assess the discriminant validity of shyness and unsociability as predictors of maternal social beliefs.

A third goal of the study is to explore the nature of the associations between maternal social beliefs, maternal behaviours (i.e., involvement in children's peer interactions), child gender, and aspects of children's peer relations (e.g., frequency of informal peer interactions, social behaviours at school, social motivations). A conceptually-derived model was tested, whereby maternal behaviours promoting peer relations were hypothesized to mediate the link between maternal social beliefs and children's social outcomes.

First, maternal social beliefs were hypothesized to be positively associated with children's frequency of peer interactions. More specifically, maternal social beliefs were expected to be: (1) positively related to teacher-reported social behaviours and child-reported preference for peer interaction at school; (2) negatively related to socially-withdrawn behaviours at school; and (3) positively associated with the frequency of peer interaction outside of school (i.e., peer play, sports participation). Second, maternal management behaviours (e.g., initiating, encouraging, persisting with, and being involved in their children's social activities) were expected to be similarly associated with these same indices children's peer relations inside and outside of school. Third, maternal social

beliefs were expected to be positively associated with maternal management behaviours. Finally, assuming all of these presupposed linear associations were in place, maternal management behaviours were then expected to partially mediate (i.e., account for) the association between maternal social beliefs and indices of children's peer relations.

Some gender differences in these associations were also postulated on a more exploratory basis. For example, there is some evidence to suggest that mothers may be less accepting of socially withdrawn behaviours in boys as compared to girls (Doey et al., 2014). Accordingly, mothers may also be more likely to act in ways that promote peer interactions for their sons as compared to their daughters. Moreover, it is also noted that boys may be more likely to participate in organized sports (Bowker, 2006; Dimech & Seiler, 2011), though benefits appear to be consistent across both genders (Bowker, 2006).

As a final side note, given the lack of demonstrated consistent age differences in the extant literature, no specific hypotheses regarding child age were forwarded. Age effects were examined on an exploratory basis and this variables was controlled for as required.

## **Method**

### **Procedures**

Ethics approval was obtained from the Carleton University Research Ethics Board- B. Following approval from relevant school board-based research committees (as required), consent to participate in this study was received from principals of elementary schools in south-Eastern Ontario. After receiving additional consent from teachers, information packages and consent forms for parents were then sent home with the

children. Consenting mothers completed one parent questionnaire package at the time of consent and were given a choice to complete a second questionnaire package on-line or in paper format. The second questionnaire packet was either sent to the parent via e-mail or sent home with the child during the interview process. The first questionnaire packet contained items assessing demographics, child temperament, and children's frequency, initiation, and positive psychological engagement in peer activities. The second questionnaire packet contained items assessing maternal social beliefs, maternal personality, and maternal behaviours promoting peer relations. Child interviews were administered on-site at the child's preschool or elementary school<sup>1</sup>. Mothers were not offered an incentive for participating in the study, though children were offered stickers for their participation.

### **Participants**

Participants were  $N = 262$  children (123 boys, 139 girls) aged 48 to 87 months ( $M = 68.46$  months,  $SD = 10.62$ ) and their mothers. Children were attending elementary schools (junior kindergarten, senior kindergarten, or grade 1) in south-Eastern Ontario. Schoolboard policy did not allow for the collection of ethnic information for the sample. However, the majority of mothers were married (88.1%), while 3.1% were single and 6.9% were divorced/separated. Schoolboard policy also did not allow for the collection of parental income or employment information. However, the majority of mothers were also university (46.4%) or college-educated (39.5%), whereas 11.1% had completed high school and 1.1% had only completed elementary school.

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<sup>1</sup> The data for this study was collected over a two-year period (2012 – 2014) as part of a larger study on children's social activities. I was involved in the preparation of study materials, administration of child interviews, and data entry for the second year of data collection (2013-2014).

## Measures

It is important to note that data from this current study was part of a broader study assessing the impact of social activities on children's socio-emotional adjustment. The broader study had different goals and hypotheses than the current study. Several additional measures were collected from parents, teachers, and children. However, in the following sections on the assessments relevant for the current study are included.

**Maternal social beliefs.** Maternal social beliefs were measured using the *Revised Social Goals Inventory* (RSGI; Mize et al., 1995; Mohr, 1998; see Appendix A). The RSGI is a 9-item measure assessing the importance of a number of facets of children's social skills and peer relationships (e.g., "It is very important for young children to make friends with children their own age"; "It is important for young children to be able to solve disagreements without fighting"), with each item rated on a five-point Likert scale (1 = "not at all important, 5 = "extremely important"). Scores are summed and averaged to create a composite with higher scores indicating a greater importance placed on children's sociability and peer relationships. The RSGI has previously demonstrated evidence of acceptable internal consistency (with  $\alpha$ 's ranging from .74 to .85) and preliminary evidence of convergent validity (Mize et al., 1995; Coplan, et al., 2004; Coplan & Weeks, 2010). Results regarding the factor structure and internal reliability of this measure in the current sample are presented in the Results section.

**Maternal personality.** Parent personality was measured using the *Ten Item Personality Inventory* (TIPI; Gosling, Rentfrow, & Swann, 2003; see Appendix B). The TIPI is a 10-item self-report measure, consisting of five separate subscales (2 items each) that represent the Big-Five personality traits: extraversion (e.g., "I see myself as

extraverted, enthusiastic”, agreeableness (e.g., “I see myself as sympathetic, warm”), conscientiousness (e.g., “I see myself as dependable, self-disciplined”), emotional stability (2 items; e.g., “I see myself as calm, emotionally stable”), and openness to experience (2 items; e.g., “I see myself as open to new experiences, complex”). Each item is rated on a seven-point Likert scale (1 = “disagree strongly, 7 = “agree strongly”). Each subscale consists of a standard item and a reverse-scored item. Reverse-scored items are recoded and averaged with the standard item score to create an average score for each of the subscales. Higher scores indicate higher endorsement of the particular personality trait. Despite its brief format, the TIPI has previously demonstrated good psychometric properties (Gosling et al., 2003; Muck, Hell, & Gosling, 2007).

**Child temperament.** Child shyness and unsociability were measured by the *Child Social Preference Scale* (CSPS; Coplan et al., 2004; see Appendix C). The CSPS is an 11-item parent-report measure, consisting of two separate subscales: child shyness (7 items; e.g., “My child seems to want to play with other children, but is sometimes nervous to”) and unsociability (4 items; e.g., “My child often seems content to play alone”). Items are rated on a five-point Likert scale (1 = “not at all”, 5 = “a lot”). Responses for each subscale are summed and averaged to create a total score for each subscale, with higher scores indicating greater levels of shyness and unsociability, respectively. The CSPS has previously evidenced good psychometric properties, as well as evidence of validity for use with young children (Coplan et al., 2004).

Additional aspects of child temperament were measured using the *Colorado Child Temperament Inventory* (CCTI; Rowe & Plomin, 1977; see Appendix D). The CCTI is an 18-item parent-report measure, consisting of six subscales assessing multiple facets of a

child's temperament. For this study, only the subscales of emotionality (5 items, e.g., “Child gets upset easily”) and soothability (5 items, e.g., “Child stopped fussing whenever someone to him/her or picked him/her up”) were used. All items are rated on a five-point Likert scale (1 = “not at all like the child”, 5 = “a lot like the child”). Responses for each subscale are summed and averaged to create a total score, with higher scores indicating greater emotionality and soothability, respectively. The CCTI has demonstrated good psychometric properties (Rowe & Plomin, 1977).

**Maternal behaviours promoting peer relations.** Several indices of maternal behaviours promoting children's peer relations were also assessed (see Appendix E). All measures of maternal behaviours were created for use in a larger study from which data for this current study was collected, with the exception of the questions assessing maternal encouragement of social behaviours. The questions assessing maternal encouragement were adapted from a *Parent Support for Sport and Music Scale*, developed by Simpkins, Vest, Dawes, and Neuman (2010).

First, maternal *persistence* at keeping their children engaged in social activities was assessed using a hypothetical situation. Mothers were told to imagine they registered their child for a sport that their child expressed interest in. Their child had agreed to go to all of the practices and games and they had bought all of the equipment and paid the league fees. They were told that after three weeks their child indicated that they hated it and didn't want to go anymore. The mothers were asked, “How would you most likely respond?” Responses were: (1) “let your child quit”; (2) “make your child continue the activity for a longer period of time and then quit if your child still wants to”; and (3) “insist your child finish the season.”

Mothers' *encouragement* of their children's engagement in social activities was assessed by asking them how often they "encouraged [their] child to participate in sports", with responses rated on a five-point Likert scale (0 = "never", 2 = "sometimes", 4 = "almost every day for a long while").

Mothers' *initiation* of children's social activities was measured using the question: "Whose idea was it for your child to start doing this type of activity?" Though the question was open-ended, mothers were prompted with suggestions such as themselves, their child, and their child's friends. Mothers responded on initiation of organized sports activities and informal peer play. Responses were examined and recoded dichotomously as either "Mother" (1) or "Other" (e.g., child, sibling, friend) (0).

Finally, mothers' *involvement* in their children's social activities was assessed by asking mothers "How much of your time was spent on the following (child) activities during the previous week?" (e.g., playing organized sports, playing sports with friends). Responses were rated on a five-point Likert scale (0 = "not at all", 2 = "two or three times a week", 4 = "six or seven times a week"). Mothers were also asked whether they had "coached children's sports teams in the past year" (0 = "no", 1 = "yes"). Analyses pertaining to the aggregation of these variables are presented in the results section.

**Child peer relations.** Finally, several indices of children's peer relations were assessed. First, *children's frequency and engagement in peer interactions* was measured by seven parent-report questions created for this study (see Appendix F). Mothers were asked to report on children's involvement in formal (e.g., organized sports) and informal activities (e.g., playing with friends). During data collection, data was also collected for frequency of participation in formal playgroups and community recreation activities.

However, these categories experienced large amounts of missing data and were omitted from the current study.

*Frequency* of peer interactions was measured using the question: “How often does your child do this type of activity?” (0 = “not at all, 4 = “six or seven times a week”). Although some children participate in multiple organized sports, parents only reported on the sport their child participated in most frequently. Data was recoded to represent a three-point scale (1 = “Never/Rarely”, 2 = “Frequently”, and 3 = “Intensely”). *Positive psychological engagement* in peer interactions was measured using three questions on a five-point Likert scale (0 = “not at all”, 4 = “very much”) that assessed the child’s enjoyment of the activity (e.g., “How much fun is this activity for your child?”, “How important is this activity to your child?”, and “How interesting is this activity for your child?”). Scores were summed and averaged to create a total score, with higher scores indicating greater engagement. This measure of engagement was developed based on previous conceptualizations of psychological engagement (e.g., Busseri, Costain, Campbell, Rose-Krasnor, & Evans, 2011; Rose-Krasnor, 2009) and demonstrates good psychometric properties, including a one factor structure and evidence of validity (Farrell, Rose-Krasnor, Pote, Ooi, & Coplan; 2015).

Next, children’s frequency of *peer interaction at school* was assessed via teacher ratings using the *Child Behavior Scale* (CBS; Ladd & Profilet, 1996; see Appendix G). The CBS is a 35-item teacher-report measure, consisting of six subscales assessing children’s adjustment with peers. Each item is rated on a three-point Likert scale (1 = “doesn’t apply, 3 = “certainly applies”). For this study, only the subscales “asocial with peers” (6 items, e.g., “prefers to play alone”) and “prosocial with peers” (7 items, e.g.,

“offers help or comfort when other children are upset”) were used, though participants completed the entire scale as part of a larger study. Scores for each subscale are summed and averaged to create a composite, with higher scores indicating higher levels of asociality and prosociality with peers. The CBS has demonstrated good psychometric properties, as well as evidence of validity for use with young children (Ladd & Profilet, 1996).

Finally, children’s *preference for peer interaction* was assessed using the *Preference for Solitary Play Interview* (PSPI; Coplan, Ooi, Rose-Krasnor, & Nocita, 2014; Appendix H). Children were interviewed individually by trained female research assistants, and were free to decline participation. Children were shown a drawing of a solitary child and were instructed to “pretend” the child in the picture was them. They were also shown a drawing of two children and instructed to “pretend” the children in the picture were themselves “with another child [their] age, like a friend.” They were then presented with 13 activities and asked “When you [activity], do you want to [activity] by yourself or with another child?” The first two activities were fixed, with the first being “whatever [they] wanted to do” and the second being “having a snack.” The remaining 11 activities (e.g., “play on swings”, “paint a picture”, “play with blocks”) were presented in a randomized fashion. Children were presented with images of the particular activity (with the exception of “whatever [they] wanted to do”) in question to aid them in responding to the questions. Children were provided with the option of responding verbally or non-verbally (pointing). Preference for play for each item was coded on a dichotomous scale (0 = with a friend, 1 = alone). Responses were reverse-scored,

summed, and averaged to create a composite, with higher scores indicating a greater preference for peer interaction.

## Results

### Preliminary Analyses

General data management techniques were undertaken to appropriately clean the data prior to analysis. First, descriptive analyses were computed for all variables in the dataset to obtain means and standard deviations, as well as maximum and minimum values to confirm the plausibility of the variable ranges. Any errors or inconsistencies (e.g., entering an "11" instead of a "1") were verified against the paper reports and corrected in the computer data file.

Next, missing data was analyzed and assessed following the guidelines proposed by Cohen, Cohen, West, and Aiken (2003). Of the 28 original variables, six had missing values in excess of 5%: initiation of sports and of peer activities, engagement in sports and in peer play, and the asocial and prosocial subscales of the CBS. Several individual *t*-tests of mean differences were computed comparing cases that were missing and not missing on several key variables: age, gender, maternal education, and social beliefs. Missing data was not associated with any of these key variables for initiation of peer activities and engagement in peer play. However, data for both subscales of the CBS was more likely to be missing for children of mothers who reported a higher level of education,  $t(255) = 4.780, p < .001$ . These findings, as well as the low report rate for teacher reports, may be explained by a union strike that occurred during the first year of data collection. Participating schools during this time-frame were in higher-income neighbourhoods and tended to have mothers who completed higher levels of education.

Additionally, missing data was associated with age and maternal education for sports participation variables. Data for initiation of and engagement in sports was more likely to be missing for children of mothers who reported lower levels of education,  $t(255) = -5.513, p < .001$  and  $t(255) = -2.474, p = .01$ , respectively. Schoolboard policy did not allow for the collection of data regarding parental income, and, therefore, parental education was used as a proxy. Research has suggested that parental income has a large positive effect on children's participation in organized sports (Xu, Gauthier, & Strohschein, 2009). It may be that mothers with lower education—and potentially, as a result, lower income—are less likely to enroll their children in organized sports, and, therefore, more likely to leave these sections of the questionnaire blank. For this sample, a positive correlation was found between maternal education and children's frequency of participation in sports,  $r = .38, p < .001$ .

Lastly, data for initiation of sports was more likely to be missing for mothers of younger children,  $t(260) = -2.289, p = .02$ . Research has suggested that participation in organized sports increases with age (Trussell & McTeer, 2007). It may be that mothers of young children were less likely to enroll their children in organized sports, and, therefore, were more likely to leave these sections of the questionnaire blank. In this sample, frequency of participation in sports was positively correlated with children's age,  $r = .16, p = .01$ . It is worthy to note that these associations were not present for informal peer play, which does not involve the same financial and time obligations typical of formal organized activities.

The assumption of normality was assessed by examining histograms, Q-Q plots, and skewness and kurtosis statistics. Univariate outliers were identified using scatterplots,

box plots, and  $z$ -scores. Analyses were run to examine the leverage, discrepancy, and influence of outliers before decisions were made regarding whether to remove, transform, or retain the values. Several problematic extreme outliers ( $z > 3.29$ ) were winsorized by creating new scores corresponding to a  $z$ -score of 3.29. Normality was reassessed. As several variables remained skewed and kurtotic, transformations were run on the problematic raw variables. Outliers were readdressed after transformation. Despite these efforts, the results of the primary analyses remained approximately the same pre- and post-transformation, and, therefore, for ease of interpretation, the analyses were run on non-transformed data. Sampling distributions are suggested to be normal in samples greater than 40 (Fields, 2009; Games, 1984), however, analyses with robust methods (e.g., bootstrapping) were used to reduce bias in this study.

The assumptions of linearity and homoscedasticity were assessed by examining bivariate scatterplots for all combinations of variables in the data set, as well as the values of the residuals against the values of the outcomes predicted by our models. The scatterplots demonstrated no systematic relations between the errors in the model and what the model predicts, and, therefore, linearity and homoscedasticity can be assumed.

Though the data was cross-sectional and largely survey-based, several measures were undertaken to ensure the assumption of independence. Items in the child interview (PSPI) were presented in a randomized fashion. Additionally, research assistants were trained to report any notable time or spatial variables that could influence results. No issues were noted by the research assistants. An exploration of the plotted residuals against the order of presented items in the interview did not suggest a lack of independence.

### **Psychometric Properties of the RSGI**

In order to provide additional validation for the RSGI, analyses of its psychometric properties were conducted. To date, no previous reports of the factor structure of this measure have been presented, and, therefore, a conservative approach was deemed appropriate. As such, exploratory factor analysis was used to determine the underlying structure of the RSGI. The 9 items of the scale (6 original items, 3 items that were later added) were subjected to a principal component analysis (PCA). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis,  $KMO = .852$ , which is above the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity,  $\chi^2(36) = 672.298, p < .001$ , indicated that the correlations between items were sufficiently large for PCA. Results indicate that all items loaded on one factor (eigenvalue = 3.85), explaining 42.76% of the variance. Factor loadings for each item are presented in Table 1.

The single factor solution demonstrated good internal consistency ( $\alpha = .83$ ), in line with previous reports (Mize et al., 1995; Coplan, et al., 2004; Coplan & Weeks, 2010). Inter-item correlations were all significant and ranged from .182 to .546. Removing any of the items did not improve the measure's internal consistency. The total score measure was not significantly correlated with maternal education ( $r = -.001, p = .99$ ), child age ( $r = -.02, p = .76$ ), or child gender ( $r = -.04, p = .54$ ).

### **Creation of Aggregate Variables**

After the data was appropriately cleaned, conceptually-derived and empirically-driven aggregate variables were created for maternal behaviours promoting peer relations. A principal component analysis (PCA) was conducted with the following initial

set of 7 items (with varimax rotation): (1) initiation of children's organized sports; (2) initiation of informal peer play; (3) time spent on children's organized sports; (4) time spent on children's informal sport play with friends; (5) encouragement of sports participation; (6) maternal persistence; and (7) having coached a children's sports team. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .584, which is above the acceptable limit of .5 (Field, 2009). Bartlett's test of sphericity,  $\chi^2(15) = 43.058, p < .001$ , indicated that correlations between the items were sufficiently large for PCA.

Initial results that the coaching item was found to have substantive ( $>.40$ ) cross-

Table 1

*Summary of Exploratory Analysis Results for the Revised Social Goals Inventory*

Item	Factor
	Loadings
1. It is very important for young children to make friends with children their own age.	.711
2. It is important for young children to be sensitive to other's feelings.	.636
3. It is important for young children to be able to solve disagreements without fighting.	.578
4. It is important for young children to be assertive.	.685
5. It is important for young children to get other children to like them.	.645
6. It is important for young children to be able to lead their peers.	.627
7. How important is it to you that your child has playmates?	.741
8. How important is it to you that your child has many, or a wide variety of playmates?	.629
9. How important is it to you that your child develops close friendships with one or two more familiar (or consistent) playmates?	.617
Eigenvalue	3.85
Variance Explained %	42.76%

loadings on more than one factor, so this item was removed from the analysis. Final results indicated that two components had eigenvalues over Kaiser's criterion of 1 and in combination explained 46.57% of the variance. Table 2 shows the factor loadings after rotation. Examining the content of the items on the two factors, Component 1 appeared to represent maternal initiation and persistence of peer activities. Component 2 appeared to be more reflective of encouragement and involvement in children's peer activities. Individual summary scores were then created from standardized scores to create two new factors termed *Initiate and Persist* and *Encourage and Involve*.

Descriptive statistics for all study variables, including this aggregate are provided in Table 3. Bivariate correlations for all study variables with demographic variables are provided in Table 4. Among the results, child age was significantly positively associated with conscientiousness and engagement in peer play, and negatively associated with emotional stability, openness to experience, and unsociability. Maternal education was significantly positively associated with conscientiousness, encouragement and involvement, organized sports frequency, and engagement in peer play. Mothers of boys reported more maternal encouragement and involvement ( $M = .17, SD = .70$ ) than mothers of girls ( $M = -.14, SE = .76$ ),  $t(256) = 3.321, p = .001$ . Teachers reported higher rates of prosociality for girls ( $M = 2.50, SD = .47$ ) than for boys ( $M = 2.11, SD = .47$ ). Accordingly, these demographic variables were either controlled for or were included as main variables in subsequent analyses.

### **Predictors of Social Beliefs**

Bivariate correlations among social beliefs, parent personality, and child characteristics are provided in Table 5. Among the results, maternal *extraversion* and

Table 2

*Summary of Exploratory Factor Analysis Results for the Maternal Behaviour Aggregate*

Item	Factor Loadings	
	Component 1	Component 2
Initiator of activity (sports)		.618
Initiator of activity (friends)		.717
Encouragement (sports)	.768	
Time spent on child's activity (organized sports)	.731	
Time spent on child's activity (sports with friends)	.679	
Persistence		.500
Eigenvalues	1.59	1.20
Variance Explained %	26.56	20.00

*Note.* Factor loadings below .30 are not listed in order to ease interpretation.

Table 3

*Descriptive Statistics for Study Variables*

Variable	<i>N</i>	<i>M</i>	Range
Child Age	262	68.52 (10.64)	48-87
Maternal Education	257	3.53 (.96)	1-5
Social Beliefs	262	3.60 (.54)	1-5
Extraversion	257	4.70 (1.67)	1-7
Agreeableness	257	5.40 (1.10)	1-7
Conscientiousness	257	5.90 (1.03)	1-7
Emotional Stability	257	4.87 (1.32)	1-7
Openness to Experience	257	5.13 (1.06)	1-7
Shyness	247	2.04 (.74)	1-5
Unsociability	258	2.62 (.722)	1-5
Emotionality	259	2.58 (.86)	1-5
Soothability	258	3.29 (.71)	1-5
Encouragement and Involvement	248	-.01 (.74)	-1.93-1.95
Initiation and Persistence	164	.82 (.55)	-.45-1.57
Sports – Frequency	255	2.43 (.89)	1-3
Peer Play – Frequency	255	2.69 (.61)	1-3
Sports – Engagement	204	3.09 (.90)	0-4
Peer Play – Engagement	210	3.67 (.53)	0-4
Preference for Peer Interaction	245	.69 (.21)	0-1
Prosocial Behaviour	148	2.31 (.51)	1-3
Asocial Behaviour	148	1.24 (.38)	1-3

Table 4

*Bivariate Correlations between Study Variables and Demographic Variables*

Variable	Child Age	Maternal Education
Social Beliefs	-.02 ( $N = 262$ )	-.001 ( $N = 257$ )
Extraversion	.01 ( $N = 257$ )	.02 ( $N = 252$ )
Agreeableness	.02 ( $N = 257$ )	.05 ( $N = 252$ )
Conscientiousness	.16* ( $N = 257$ )	.20** ( $N = 252$ )
Emotional Stability	-.07* ( $N = 257$ )	.09 ( $N = 252$ )
Openness to Experience	-.08* ( $N = 257$ )	.02 ( $N = 252$ )
Shyness	-.06 ( $N = 247$ )	-.06 ( $N = 244$ )
Unsociability	-.13* ( $N = 258$ )	.02 ( $N = 255$ )
Emotionality	.01 ( $N = 259$ )	-.06 ( $N = 256$ )
Soothability	-.11 ( $N = 258$ )	.05 ( $N = 255$ )
Encouragement and Involvement	.12 ( $N = 248$ )	.20** ( $N = 243$ )
Initiation and Persistence	-.07 ( $N = 164$ )	-.12 ( $N = 162$ )
Sports – Frequency	.16* ( $N = 255$ )	.38** ( $N = 253$ )
Peer Play – Frequency	.01 ( $N = 255$ )	.07 ( $N = 252$ )
Sports – Engagement	.03 ( $N = 204$ )	.07 ( $N = 201$ )
Peer Play – Engagement	.15* ( $N = 210$ )	.15* ( $N = 207$ )
Preference for Peer Interaction	-.07 ( $N = 245$ )	.04 ( $N = 240$ )
Prosocial Behaviour	.07 ( $N = 148$ )	.15 ( $N = 144$ )
Asocial Behaviour	-.08 ( $N = 148$ )	-.15 ( $N = 144$ )

*Note.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 5

*Bivariate Correlations between Maternal Social Beliefs, Parent Personality, and Child Temperament Characteristics*

	1	2	3	4	5	6	7	8	9
1. Social Goals	-								
2. Extraversion	.22*** (N = 257)	-							
3. Agreeableness	.05 (N = 257)	-.02 (N = 257)	-						
4. Conscientiousness	.03 (N = 257)	.17** (N = 257)	.07 (N = 257)	-					
5. Emotional Stability	-.04 (N = 257)	.02 (N = 257)	.30*** (N = 257)	.18** (N = 257)	-				
6. Openness to Experience	.14* (N = 257)	.25*** (N = 257)	.20** (N = 257)	.14* (N = 257)	.15* (N = 257)	-			
7. Shyness	-.15* (N = 247)	-.15* (N = 243)	-.02 (N = 243)	-.07 (N = 243)	-.18** (N = 243)	-.12 (N = 243)	-		
8. Unsociability	-.10 (N = 258)	-.09 (N = 253)	-.04 (N = 253)	.07 (N = 253)	-.03 (N = 253)	.01 (N = 253)	.26*** (N = 247)	-	
9. Emotionality	.04 (N = 259)	.05 (N = 254)	-.07 (N = 254)	-.13* (N = 254)	-.22*** (N = 254)	-.12 (N = 254)	.24*** (N = 247)	-.07 (N = 258)	-
10. Soothability	-.05 (N = 258)	-.01 (N = 253)	.02 (N = 253)	.08 (N = 253)	.18** (N = 253)	-.16* (N = 253)	-.16* (N = 247)	.07 (N = 258)	-.50*** (N = 258)

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

*openness* were both significantly and positively related to maternal social beliefs. As well, child *shyness* was significantly and negatively related to maternal social beliefs. Child gender and age (based on grade) and maternal education differences in these associations were examined using Fisher's  $r$  to  $z$  transformation. No significant gender, grade, or maternal education differences were found among these associations.

In order to examine the unique contributions of maternal personality and child characteristics in the prediction of social beliefs, hierarchical regression analyses were conducted. Variables were entered based on the conceptual model. For example, maternal personality variables were entered before child temperamental characteristics, as personal characteristics are hypothesized to represent more proximal influences on an individual's beliefs (Sigel & McGillicuddy-DeLisi, 2002). Additionally, maternal personality and child characteristic variables that were hypothesized to be conceptually-relevant (e.g., extraversion, openness to experiences, neuroticism, shyness, and unsociability) were entered separately from those that were not or were less so (e.g., agreeableness, conscientiousness, soothability, and emotionality).

A five-stage hierarchical multiple regression was conducted with social beliefs as the dependent variable. At Step 1, sociodemographic factors (maternal education, child age, child gender) were entered as control variables. Step 2 included the agreeableness and conscientiousness subscales of maternal personality. Step 3 included the extraversion, openness, and emotional stability subscales of maternal personality. Step 4 included the soothability and emotionality subscales of child temperament. Finally, Step 5 included the shyness and unsociability measures of child temperament. Results are presented in Table 6.

Table 6

*Regressions Predicting Social Beliefs for Maternal Personality and Child Temperament**(N = 239)*

Variable	$\beta$	$R^2$ Change	$F$ Change
Step 1: Demographic Variables		.004	.285
Age	-.046		
Gender	-.037		
Maternal education	.002		
Step 2: Maternal Personality Block 1		.006	.672
Agreeableness	.061		
Conscientiousness	.043		
Step 3: Maternal Personality Block 2		.054	4.435**
Extraversion	.193**		
Openness to experience	.095		
Emotional stability	-.039		
Step 4: Child Temperament Block 1		.003	.315
Emotionality	.031		
Soothability	-.031		
Step 5: Child Temperament Block 2		.025	3.128*
Shyness	-.146*		
Unsociability	-.050		

*Note: \* $p < .05$ , \*\* $p < .01$*

The results revealed that adding conceptually-relevant maternal personality variables contributed significantly to the regression model,  $F(3, 231) = 4.435, p = .005$ , and accounted for 6.3% of the variation in social beliefs (after controlling for socio-demographic factors and non-conceptually-relevant maternal characteristics). An examination of the individual betas suggested that maternal extraversion was most strongly associated with maternal social beliefs,  $\beta = .193, t(250) = 2.89, p = .004$ . Furthermore, adding conceptually-relevant child characteristic variables also contributed significantly to the regression model,  $F(2, 227) = 2.93, p = .046$ , and accounted for 9.1% of the variation in social beliefs (after controlling for socio-demographic factors, maternal characteristics, and non-conceptually-relevant child characteristics). An examination of the individual betas suggested that shyness was most strongly associated with maternal social beliefs,  $\beta = -.146, t(250) = -2.090, p = .04$ .

### **Social Beliefs, Maternal Behaviours, Child Gender, and Child Peer Relations:**

#### **Testing Moderated-Mediation Models**

First, bivariate correlations between social beliefs, parent behaviours, and indices of children's peer relations are provided in Table 7. Among the results, social beliefs were significantly and positively associated with both maternal *encouragement and involvement* and *initiation and persistence*, as well as with maternal reports of children's engagement in both sports and in peer play. Maternal encouragement and involvement was significantly and positively related to children's frequency of participation in sports, as well as with children's engagement in sports and in peer play. In contradiction of expected results, maternal initiation and persistence was significantly and *negatively* associated with children's engagement in sports. As maternal initiation and persistence

Table 7

*Bivariate Correlations between Social Beliefs and Maternal Behaviours and Child Social Behaviours*

	1	2	3	4	5	6	7	8	9
1. Social Goals	-								
2. Encourage/Involve	.13*	-							
	(N = 248)								
3. Initiate/Persist	.27***	.00	-						
	(N = 164)	(N = 242)							
4. Sports – Frequency	.04	.34***	-.07	-					
	(N = 255)	(N = 242)	(N = 164)						
5. Peer Play – Frequency	.03	.09	-.11	-.01	-				
	(N = 255)	(N = 242)	(N = 164)	(N = 254)					
6. Sports – Engagement	.15*	.29***	-.19*	.20**	-.01	-			
	(N = 204)	(N = 193)	(N = 146)	(N = 201)	(N = 201)				
7. Peer Play – Engagement	.21**	.18*	-.06	.03	.14*	.33***	-		
	(N = 210)	(N = 197)	(N = 141)	(N = 207)	(N = 208)	(N = 189)			
8. Preference for Peer Interaction	.02	.08	.06	-.03	.01	.07	.14	-	
	(N = 245)	(N = 197)	(N = 156)	(N = 238)	(N = 228)	(N = 292)	(N = 196)		
9. Asocial Behaviour	.06	-.03	-.04	-.04	-.12	-.16	-.26**	-.16	-
	(N = 148)	(N = 143)	(N = 94)	(N = 144)	(N = 144)	(N = 109)	(N = 114)	(N = 142)	
10. Prosocial Behaviour	.00	.07	-.06	.12	.21*	.12	.13	.13	-.28**
	(N = 148)	(N = 143)	(N = 94)	(N = 144)	(N = 144)	(N = 109)	(N = 114)	(N = 142)	(N = 148)

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

behaviours increased, maternal reports of children's engagement in sports decreased. No significant grade or maternal education differences were found in the associations. A significant gender difference was found in the association between social beliefs and parent encouragement and involvement. The positive association between maternal social beliefs and mothers' encouragement and involvement in peer activities was significantly stronger for mothers of boys,  $r = .27, p = .004$ , than for mothers of girls,  $r = .01, p = .92, z = 2.04, p = .04$ . The gender differences in the association between social beliefs and children's frequency of participation in sports also approached significance,  $z = 1.93, p = .053$ , suggesting that the association was stronger for mothers of sons,  $r = .17, p = .07$  than for mothers of daughters,  $r = -.08, p = .39$ .

The goal of the final analyses was to test the proposed mediation model linking maternal social beliefs to children's social behaviours via an association with maternal behaviours promoting peer relations (see Figure 1). In order to warrant the testing of the mediation model, direct associations between the causal (i.e., social beliefs), mediation (i.e., maternal behaviours promoting peer relations), and outcome variables (i.e., child peer relations) first need to be established using linear regression analyses. Pending significance, mediation analyses were run using the bootstrapping method with bias-corrected confidence estimates provided by the PROCESS macro for SPSS developed by Hayes (2013). Significant gender differences were noted in the associations between social beliefs and maternal encouragement and involvement. In these cases, tests for *moderated* mediation were conducted in order to examine the moderation of gender on the proposed mediation model. These analyses were also run using the bootstrapping method with bias-corrected confidence estimates provided by the PROCESS macro.

Unstandardized regression coefficients results were presented for all results, in line with recommendations by Hayes (2013).

**Social beliefs, encouragement/involvement, and engagement in sports.** As gender differences were found between social beliefs and encouragement and involvement, moderated mediation analyses were run using the PROCESS macro for SPSS with 5000 bootstrapped samples (Hayes, 2013) ( $N = 193$ ). Results indicated that maternal social beliefs were a significant predictor of mothers' encouragement and involvement,  $b = 1.05$ ,  $SE = .39$ ,  $p = .01$ , which in turn predicted mothers' reports of their children's psychological engagement in organized sports,  $b = .11$ ,  $SE = .03$ ,  $p < .001$ . The indirect pathway from maternal social beliefs to maternal reports of positive psychological engagement in organized sports through mothers' encouragement and involvement was not significant across gender,  $b = .06$ ,  $SE = .04$ , 95% CI  $[-.003, .15]$ .

Results of moderated mediation analyses suggested gender differences in this mediated pathway. Specifically, there was a significant interaction between maternal social beliefs and child gender in the prediction of maternal encouragement,  $b = 1.28$ ,  $SE = .58$ ,  $p = .03$ . The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Hayes, 2013). The indirect pathway from maternal social beliefs to maternal reports of positive psychological engagement in organized sports through mothers' encouragement and involvement was significant for boys,  $b = .12$ ,  $SE = .05$ , 95% CI  $[.03, .25]$ , but not girls,  $b = -.03$ ,  $SE = .05$ , 95% CI  $[-.14, .08]$ . After adjusting for maternal encouragement and the moderation effect, the direct pathway from social beliefs to maternal reports of positive psychological engagement in organized sports was no longer significant,  $b = .17$ ,  $SE = .11$ ,  $p = .15$ , consistent with complete mediation. The

mediation of the association was significantly moderated by gender,  $b = -.14$ ,  $SE = .08$ , 95% CI  $[-.34, -.02]$ . Mothers of sons who endorsed greater social beliefs were more likely to encourage and be involved in their children's peer activities. Through their encouragement and involvement, parents were more likely to report their children as being positively psychologically engaged in organized sports (see Figure 2).

**Social beliefs, encouragement/involvement, and engagement in peer play.** As gender differences were found between social beliefs and encouragement and involvement, moderated mediation analyses were run using the PROCESS macro for SPSS (Hayes, 2013). However, as results indicated that the moderation effect only approached significance,  $b = -1.10$ ,  $SE = .61$ ,  $p = .07$ , the model was not pursued and simple mediation analyses were conducted ( $N = 197$ ).

Results of the simple mediation analysis indicated that maternal social beliefs were a significant predictor of mothers' encouragement and involvement,  $b = .70$ ,  $SE = .31$ ,  $p = .02$ , which in turn predicted mothers' reports of their children's positive psychological engagement in peer play,  $b = .04$ ,  $SE = .02$ ,  $p = .04$ . The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Hayes, 2013). The indirect pathway from maternal social beliefs to maternal reports of positive psychological engagement in peer play through mothers' encouragement and involvement was significant,  $b = .02$ ,  $SE = .02$ , 95% CI  $[.001, .08]$ . After adjusting for maternal encouragement, the direct pathway from social beliefs to maternal reports of positive psychological engagement in peer play remained significant,  $b = .23$ ,  $SE = .07$ ,  $p = .002$ , consistent with partial mediation. Mothers who endorsed greater social beliefs were more likely to encourage and be involved in their children's peer activities, and

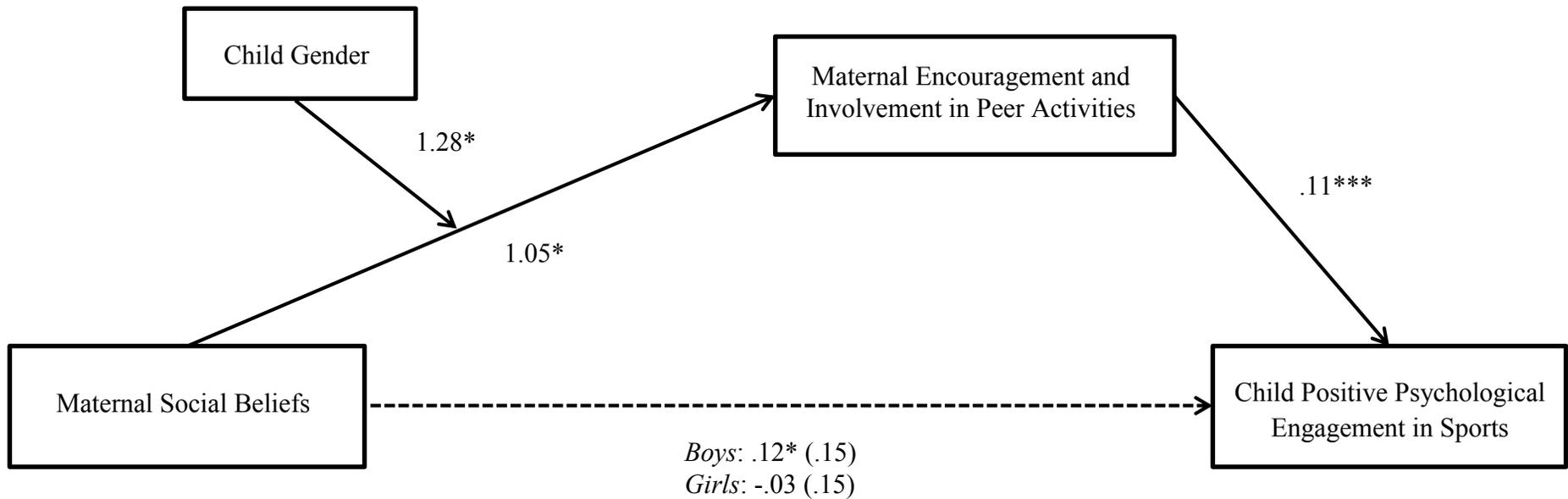
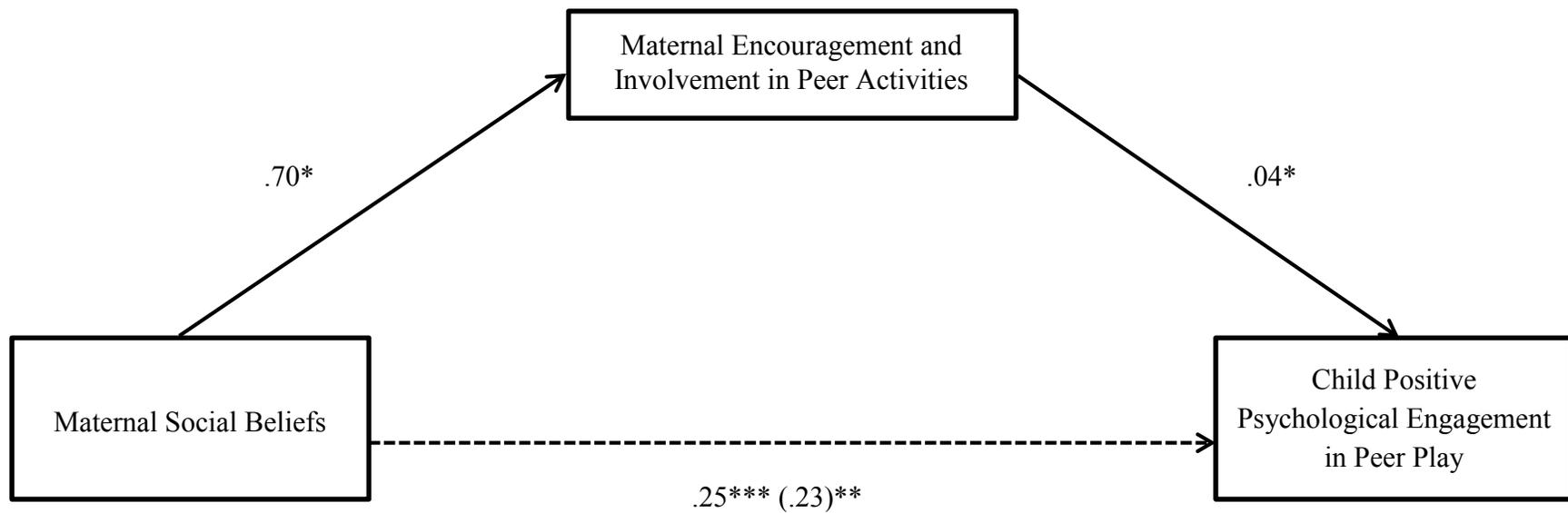


Figure 2. Unstandardized regression coefficients for the moderated mediation of the association between maternal social beliefs and maternal reports of children’s positive psychological engagement in sports. The unstandardized regression coefficient between maternal social beliefs and positive psychological engagement, controlling for mothers’ encouragement and involvement in children’s peer activities, is in parentheses.

\* $p < .05$ , \*\* $p < .01$ , \*\*\*  $p < .001$ .

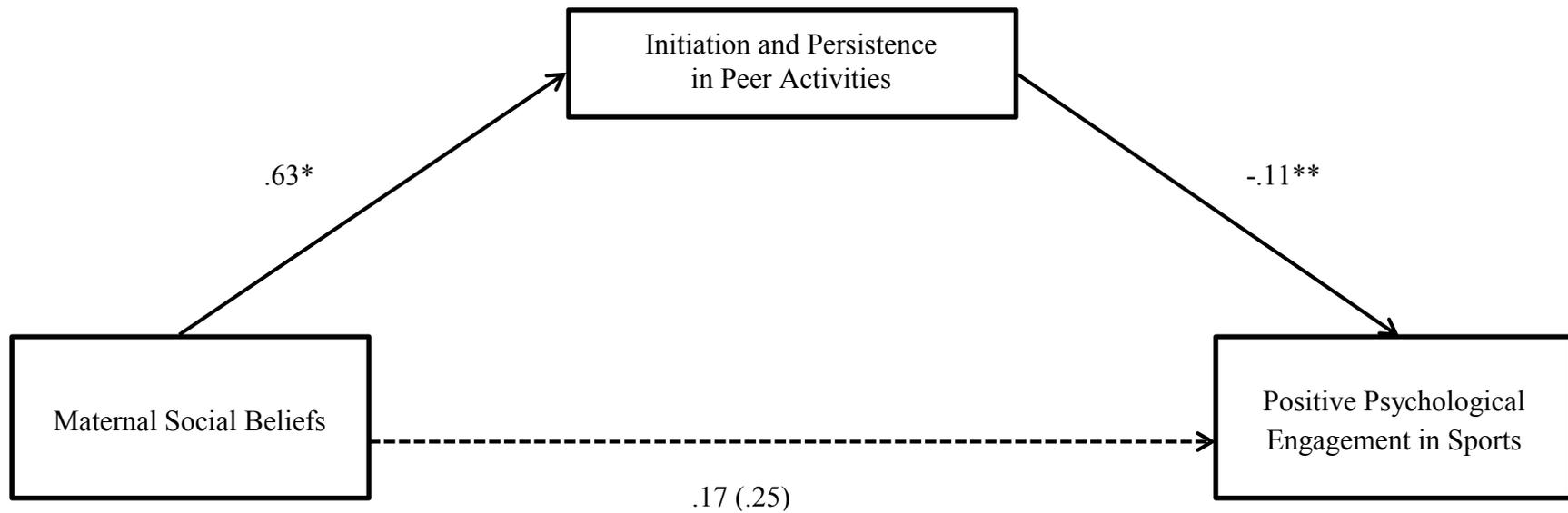
through their encouragement and involvement, more likely to report their children as being positively psychologically engaged in peer activities (see Figure 3).

**Social beliefs, initiation and persistence, and engagement in sports.** As no gender differences were found between social beliefs, initiation and persistence, and engagement in sports, simple mediation analyses were run using the PROCESS macro for SPSS (Hayes, 2013) ( $N = 146$ ). Results of the simple mediation analysis indicated that maternal social beliefs were a significant predictor of mothers' initiation and persistence,  $b = .63$ ,  $SE = .25$ ,  $p = .01$ , which in turn predicted mothers' reports of their children's positive psychological engagement in peer play,  $b = -.11$ ,  $SE = .04$ ,  $p = .009$ . The indirect effect was tested using a bootstrap estimation approach with 5000 samples (Hayes, 2013). The indirect pathway from maternal social beliefs to maternal reports of positive psychological engagement in peer play through mothers' initiation and persistence was significant,  $b = -.07$ ,  $SE = .04$ , 95% CI  $[-.17, -.01]$ . After adjusting for maternal initiation and persistence, the direct pathway from social beliefs to maternal reports of positive psychological engagement in peer play was no longer significant,  $b = .25$ ,  $SE = .13$ ,  $p = .06$ , consistent with complete mediation. However, as the results approached significance, these results should be interpreted cautiously. Mothers who endorsed greater social beliefs were more likely to initiate and persist in their children's peer activities, and through their initiation and persistence, less likely to report their children as being positively psychologically engaged in peer activities (see Figure 4). These findings suggest that social beliefs may have both a positive and negative effect on children's peer relations, depending upon the domain (sports vs. peer play) and the type of parental behaviour (encouragement/involvement vs. persistence).



*Figure 3.* Unstandardized regression coefficients for the association between maternal social beliefs and maternal reports of children's positive psychological engagement in peer play. The unstandardized regression coefficient between maternal social beliefs and positive psychological engagement, controlling for mothers' encouragement and involvement in children's peer activities, is in parentheses.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



*Figure 4.* Unstandardized regression coefficients for the association between maternal social beliefs and maternal reports of children's positive psychological engagement in organized sports. The unstandardized regression coefficient between maternal social beliefs and positive psychological engagement, controlling for mothers' initiation and persistence in children's peer activities, is in parentheses.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

### Discussion

The primary goal of this study was to examine the *causes* and *consequences* of maternal social beliefs in early childhood. More specifically, psychometric properties and the factor structure of a self-report measure of parental social beliefs, the *Revised Social Goals Inventory*, were first examined. Next, predictors of individual differences in social beliefs were explored, including both maternal and child characteristics. Finally, a conceptually-derived moderated-mediation model explicating the associations between maternal social beliefs, maternal behaviours promoting peer interactions, and aspects of children's peer relations was tested.

Among the results, additional validation was provided for the *Revised Social Goals Inventory*. For example, results of an exploratory factor analysis indicated a one-factor model and demonstrated good internal consistency. Both maternal personality and child temperament were also found to uniquely predict parental social beliefs, with maternal extraversion and child shyness evidencing the strongest predictive power. As well, partial support was found for the mediation model linking maternal social beliefs, maternal behaviours promoting peer relations, and children's social outcomes. However, these mediation effects differed as a function of types of maternal behaviours (encouragement and involvement vs. initiation and persistence), child gender (boys vs. girls), and the domain of children's peer experiences (organized sports vs. friends). For example, maternal encouragement and involvement in peer activities was found to *partially* mediate the association between maternal social beliefs and maternal ratings of children's positive psychological engagement in peer play. Similarly, maternal encouragement and involvement in peer activities was found to *completely* mediate the

association between maternal social beliefs and maternal ratings of children's positive psychological engagement in organized sports for mothers of boys, but not girls.

Maternal initiation and persistence in peer activities was found to completely mediate the association between maternal social beliefs and maternal ratings of children's positive psychological engagement in organized sports. In the following sections, each of these findings are discussed in more detail.

### **Measuring Social Beliefs: The Revised Social Goals Inventory**

The *Revised Social Goals Inventory* (RSGI; Mize et al., 1995; Mohr, 1998) is a 9-item measure assessing parental beliefs about the importance of social skills and peer relations for their young children. The original measure, the *Social Goals Inventory*, consisted of six items assessing the value parents place on a number of social skills (e.g., attracting and making friends, being sensitive to others' feelings). Mohr (1998) created three additional questions that pertained to the importance of playmates for young children and renamed the measure the *Revised Social Goals Inventory*. Studies that have used the original version (Mize et al., 1995) and the revised version (Coplan et al., 2004; Coplan & Weeks, 2010; Mohr, 1998) have provided evidence of acceptable internal consistency (with  $\alpha$ 's ranging from .74 to .85) and preliminary evidence of convergent validity. The revised version appeared in an unpublished dissertation and no reports of its factor structure were provided, despite conceptualizations consistent with a one-factor model.

In this study, the factor structure was examined and its psychometric properties were tested. Consistent with expected conceptualizations of the measure (Mize et al., 1995; Mohr, 1998), results of an exploratory factor analysis indicated a one-factor model.

This indicates that all questions seem to assess a common construct: parental beliefs about the importance of social skills and peer relationships for their young children. The scale also demonstrated good internal consistency, consistent with previous research (Coplan et al., 2004; Coplan & Weeks, 2010). Furthermore, significant positive correlations between the RSGI and maternal behaviours promoting peer relations provide additional evidence of convergent validity for this measure. Mothers who value the importance of peer relationships and social skills for their children should, theoretically, also report themselves as more likely to act in ways that would promote the possibility of peer interactions for their children (e.g., encouraging, initiating, and persisting, and being involved in peer activities).

Taken together, these findings provide support for the future use of this measure as a tool to assess parental social beliefs. The existing literature on social beliefs is plagued with variations in the conceptualization, operationalization, and measurement of maternal social beliefs, which poses problems for the interpretation and comparison of finding across studies. Efforts by Rubin and colleagues (1989), Mize and colleagues (1995), and Mohr (1998) have allowed for the development of the RSGI as a more consistent and efficient self-report method for operationalizing and measuring parental social beliefs. However, the validity of the use of this new measure was relatively unknown in the literature. Although previous studies using this measure have indicated acceptable internal consistency and some support for convergent validity (Coplan et al., 2004; Coplan & Weeks, 2010), this study was the first to provide detailed accounts of the psychometric properties and factor structure of the RSGI. Validation of this measure will

hopefully allow for future research in the realm of social beliefs to be more efficient, as well as more cohesive.

### **Predictors of Maternal Social Beliefs**

Little is known about what factors may influence the development of parental social beliefs. Child characteristics were hypothesized to influence maternal beliefs via transactional processes, and in conjunction with maternal characteristics (Hastings & Rubin, 1999). However, no research to date has examined how parents' own characteristics may be related to the social beliefs they endorse for their children. As such, one of the goals for this study was to examine the predictors of individual differences in maternal social beliefs.

Consistent with hypotheses, results indicated that both maternal personality and child temperament uniquely predict social beliefs. Maternal characteristics appeared to be somewhat better predictors of social beliefs than child characteristics, in line with current belief models that suggest personal characteristics represent more proximal influences (Sigel & McGillicuddy-DeLisi, 2002). Although caution must be used when interpreting individual beta values among blocs of predictors in multiple regression analyses, maternal extraversion and child shyness were both found to be significant unique individual predictors of maternal social beliefs (i.e., while controlling for all other variables in the model).

**Maternal personality.** More dynamic theories of the belief-behaviour association have suggested that characteristics of the individual influence their belief systems (Sigel & McGillicuddy-DeLisi, 2002). Though potential parental characteristics (e.g., socialization values, current and past peer experiences) have been preliminarily suggested

as determinants of parental management behaviours (Cohen & Woody, 1991), there has been relatively little examination into how parental characteristics influence the belief systems that are proposed to serve as an impetus for these behaviours. No research to date has examined how parental social beliefs in relation to more individual characteristics, such as personality, influence the social beliefs a parent endorses for their child. As Sigel and McGillicuddy-DeLisi (2002) suggest that the strength of an influence is dependent on its proximal relation to the social agent, parental characteristics may be particularly important when seeking to understand the causes and consequences of maternal social beliefs.

This study was the first to suggest that maternal extraversion influences maternal endorsement of social beliefs. Extraversion has been strongly associated with sociability and social engagement (Asendorpf & Wilpers, 1998; John et al., 2008). In this regard, it seems feasible that parents who are extraverted themselves would also value the importance of social skills and peer relationships for their children. Moreover, research in the parent behaviour and personality literature has suggested that extraverted mothers were more likely to encourage independence in their children (Losoya et al., 1997). Extraverted parents may be more likely to value social beliefs that promote their children's autonomous engagement in social activities and peer relationships, especially when they serve to develop, refine, and master social skills necessary for later interpersonal interactions. These findings have implications for understanding how parental characteristics come to influence children's social development. Though parental extraversion has been suggested to influence children's peer relations through direct pathways (e.g., genetics, modelling of behaviour) (Carver, 2004; Pincombe, Luciano,

Martin, & Wright, 2007), findings from this study support the idea that maternal extraversion may also exert an influence through *indirect* pathways. Specifically, heightened social beliefs, as a result of parental extraversion, may affect parental behaviours promoting peer relations, which can have implications for children's peer interactions and subsequent social development.

Openness to experience was also positively and significantly associated with maternal social beliefs. Openness has been associated with a greater tolerance for ambiguity and the motivation to seek out new experiences (John et al., 2008), both of which may be important characteristics necessary for peer interactions. It was hypothesized that parents who were open to new experiences would be more willing to endorse beliefs that require their children to engage with new peers and in novel situations when they saw the value of those interactions. Furthermore, literature on academic beliefs has suggested that openness to experience is also associated with an increased belief in the modifiability of behaviour (Furnham et al., 2003). Parents who are more open may be more willing to believe that their children's social competence and sociability is modifiable and that they have a responsibility as a parent to intervene to foster the development of social skills. As a result, they may be more likely to value the importance of peer relationships and social skills for their young children. However, it should be noted that openness to experience did not significantly uniquely predict social beliefs when other personality traits were also accounted for. Given that openness is typically moderately associated with extraversion (e.g.,  $r = .26, p < .001$  in the present sample), it may be that the original correlation between openness and social goals was heightened by this shared variance.

Contrary to expectations, emotional stability was not associated with maternal social beliefs. This finding is somewhat surprising, given that neuroticism has been associated with overprotective parenting strategies (Coplan et al., 2008; Kendler et al., 1997; Rubin & Burgess, 2002) and with self-reported shyness (Asendorpf & Wilpers, 1998). Increased levels of anxiety in social situations, either on the part of the child or the parent themselves, were hypothesized to mitigate the value parents place on peer interactions and social skill development for their young children. However, neuroticism has been suggested to be associated with general anxiety and is not specific to social anxiety (Bienvenu et al., 2004). Though social anxiety and social withdrawal may show considerable overlap with neuroticism, they have been suggested to possess unique characteristics that are not necessary for neuroticism (e.g., core fears of negative evaluation by others, social avoidance behaviours) (Kashdan, 2002). Although parents who score high in neuroticism may experience a wariness that serves to drive overprotective parenting behaviours and avoidance coping, this wariness may not necessarily extend into the social realm. Parent characteristics such as extraversion, which focus more specifically on aspects of sociability, may be better suited when seeking to understand determinants of parental social beliefs. Moreover, future studies should also seek to examine parents own shyness and unsociability in relation to the social beliefs they hold for their children.

Maternal social beliefs were also not associated with parental conscientiousness and agreeableness. Though certain aspects of these personality dimensions may be relevant to aspects of sociability, peer interactions, and goal-directed behaviour, they may

not be sufficient to predict mothers' specific beliefs about the importance of social skills and peer relations for their young children.

**Child temperament.** Though traditional belief-behaviour models were unidirectional, more recent models acknowledge that the relation between parents' beliefs and children's social behaviours are transactional in nature and do not form a closed system (Sigel & McGillicuddy-DeLisi, 2002). Indeed, it is now increasingly accepted that parental belief systems can be altered by parental perceptions of and experiences with their children (Goodnow, 1988). Children's temperament, especially facets germane to peer interaction, may be particularly salient influences of parental social beliefs. For example, children's shyness and unsociability may be particularly important influences on parental social beliefs and their ensuing parental management behaviours, which can have important implications for children's social development (Coplan et al., 2008).

As discussed earlier, the limited existing literature on the association between child shyness and maternal social beliefs has produced some inconsistent results. For example, some studies have suggested that parents of shy children are more likely to be involved in their children's peer relationships and place greater importance on the directive teaching of social skills (Cohen & Woody, 1991; Rubin & Mills, 1990). It may extend that parents come to experience a strengthening of their social beliefs. However, these studies do not explicitly take maternal social beliefs into account, and, therefore, potential associations are tenuous at best. Other studies have assessed social beliefs more directly using the RSGI—and have reported no significant association (Coplan et al., 2004; Coplan & Weeks, 2010). Parents' perceptions about the difficulties their shy children face may not influence their social beliefs, but may influence their perceptions

about their roles as parents to facilitate their children's social development, which may then serve as an impetus to act.

In the present study, child shyness, contrary to expectations, was negatively associated with maternal social beliefs. It may be that parents of shy children perceive these experienced difficulties as particularly anxiety-provoking for their children, and as such, strive to lessen those negative feelings by downplaying the importance of peer activities or by removing them from the activities altogether. Moreover, current literature also suggests that shy children are more likely to have shy parents (Saudino, 2005). It may be that mothers avoid social situations not only for themselves, but for their children. Shy mothers, recognizing their own children's anxiety and vulnerabilities, may intervene too early or too often, and may seek to remove their children from anxiety-provoking and socially challenging situations altogether (Rubin & Burgess, 2002). This may have important implications for shy children. When parents provide positive and supportive structuring and management of social environments and interactions for their shy children, they are providing opportunities that not only allow them to develop appropriate coping strategies for their anxiety, but to develop, master, and refine social competence (Rubin & Burgess, 2002). However, although shyness may evoke changes in maternal beliefs, there are also other plausible interpretations for this association. In this sample, extraverted parents were found to hold higher social beliefs. Since extraverted parents are more likely to have extraverted children (Pincombe et al., 2007), these associations may be representing this genetic influence, rather than evidence of changes in the parental social belief system as a result of child characteristics.

Also contrary to expected results, unsociability was not associated with social beliefs, though it showed a trend towards a negative association. Previous research has supported a negative association between unsociability and maternal social beliefs, suggesting that unsociable children may be modelling the behaviours of their unsociable parents, who also may place less value on peer interactions (e.g., Coplan et al., 2004; Coplan & Weeks, 2010). However, it may simply be that parents view unsociability as less problematic than other aspects of child temperament, such as shyness. Unlike shy children, unsociable children may not appear distraught over peer interaction (Coplan et al., 2004), and as a result parents may perceive less need to remove their children from social situations. Moreover, unsociable children do not appear to differ in terms of their social abilities (Asendorpf & Meier, 1993; Harrist, Zaia, Bates, Dodge, & Pettit, 1997), and as a result, parents may perceive less of a need to encourage their children to engage in peer activities.

These findings are somewhat contrary to expectations given that the only other two previous studies using similar measures reported no association with shyness and a negative association with unsociability (Coplan et al., 2004; Coplan & Weeks, 2010). The reason for these differences in findings remains unclear. One difference between the present study and the previous two is the age of the children in the sample. Coplan and colleagues (2004) included a sample of preschool-aged children (i.e., somewhat younger than the present study), whereas Coplan and Weeks (2010) included a sample of grade 2 children (i.e., somewhat older than the present sample). However, why this slight difference in ages might impact upon this association is not immediately clear. Future research should seek to re-examine this association.

Although there are typically no gender differences in the prevalence of shyness and unsociability in early childhood, both of these forms of social-withdrawal appear to be less socially acceptable in boys than in girls (Doey et al., 2014). As a result of these gendered expectations, parents have been suggested to be less likely to accept or reward social withdrawal in their sons (Doey et al., 2014). Therefore, it was suggested that mothers of shy or unsociable boys would be more likely to endorse social beliefs for their young sons than mothers of shy or unsociable girls. Despite these expectations, no gender differences were found in the association between maternal social beliefs and children's shyness or unsociability. Parental experiences of children's anxiety in social situations may be viewed as equally upsetting or unmodifiable to parents, regardless of their children's gender. As the few existing studies examining the association between maternal social beliefs and children's shyness and unsociability did not report on gender, future studies should seek to further examine these associations. Furthermore, future studies should examine whether gendered expectations about shyness influence parental behaviours promoting peer interactions independent of their influence on parental social beliefs. As will be discussed in a later section, child gender appears to play a more critical role in the links between maternal social beliefs and their behaviours designed to promote peer interaction among their children.

It is important to note that in this study, shyness and unsociability were treated as continuous variables. Shyness and unsociability are each suggested to exist on a continuum, with children's characteristic behaviours in social situations varying depending on where they fall along the continuum (Buss & Plomin, 1984; Coplan et al., 2004). Though treating shyness and unsociability as categorical variables allows for

comparisons to be made between children who have very different characteristic reactions in social situations, making comparisons between extreme groups on child temperament may not be appropriate or valid (Manke, Saudino, & Grant, 2001). By creating extreme groups, which only capture a small portion of the population, results become less generalizable. As the purpose of this study was to examine social beliefs in young children, shyness and unsociability may be better treated as a continuous variable in order to fully capture their associations with maternal social beliefs for children who fall all along the continuum.

This study also examined the association between maternal social beliefs and non-conceptually-relevant child characteristics. Children's emotionality and soothability are both aspects of a children's temperament that have been suggested to influence parental behaviour and beliefs, such as parenting style, attachment, and parental efficacy beliefs (Putnam, Sanson, & Rothbart, 2002), but are not temperamental characteristics pertinent to sociability. In line with expectations, maternal social beliefs were not associated with emotionality or soothability. Although these aspects of temperament have been suggested to predict aspects of parenting, they do not uniquely predict social beliefs.

### **Linking Social Beliefs, Maternal Behaviours, and Child Outcomes**

Overt parental behaviours are suggested to be concrete manifestations of unobservable parental belief systems; parents are suggested to be able to communicate their beliefs to their children *through* parental action (Goodnow & Collins, 1990; Sigel, 1992). In line with traditional unidirectional models of the belief-behaviour connection (Sigel & McGillicuddy-DeLisi, 2002), it has been suggested, both conceptually and somewhat empirically, that parental behaviour may serve as a conduit for the link

between parental social beliefs and children's social outcomes (e.g., Cohen & Woody, 1991; Mills & Rubin, 1990).

As such, the third and final goal of this study was to explore the associations between maternal social beliefs, maternal behaviours promoting peer relations, and children's social outcomes. First, maternal social beliefs were expected to be positively associated with maternal behaviours promoting peer relations, as well as with indices of children's peer relations. Second, maternal behaviours promoting peer relations were hypothesized to be positively associated with children's peer relations. Lastly, maternal behaviours promoting peer relations were hypothesized to mediate the association between maternal social beliefs and indices of children's peer relations. Results indicate a number of positive associations between maternal social beliefs, maternal behaviours, and indices of children's peer relations. Moreover, maternal behaviours promoting peer relations were also found to mediate the association between social beliefs and maternal ratings of children's peer relations in some circumstances. However, the nature of these mediated associations varied substantially as a function of several mitigating factors.

**Maternal beliefs and maternal behaviours.** Parental beliefs are argued to organize, direct, generate, and shape parenting behaviours (Sigel & McGillicuddy-DeLisi, 2002). Research from the more general parent belief literature has suggested that the beliefs a parent has about childrearing, including aspects of the child and their development and their own role as a parent, influence a wide array of parenting behaviours, including the style of parenting they adopt, the discipline strategies they employ, and their style of communication (see Sigel & McGillicuddy-DeLisi, 2002 for a review). Though research examining social beliefs has been much scarcer, research has

suggested that mothers who value sociability in their young children were more likely to be involved and manage their children's peer interactions than mothers who did not value sociability (Cohen & Woody, 1991; Mills & Rubin, 1990).

Results from this study indicate that maternal social beliefs were associated with maternal behaviours promoting peer relations. Maternal social beliefs were positively associated with *encouragement and involvement* and *initiation and persistence* in peer activities. As mentioned previously, these findings also provided some additional evidence of the construct validity of the RSGI. Though beliefs have been linked to behaviours in the general belief literature, there has been considerably less research examining these associations specifically in the realm of parental social beliefs and their ensuing parental management behaviours. Given that the findings of this study suggest a direct link of social beliefs with maternal behaviours promoting peer relations, this demonstrates that there is considerable merit in continuing to study models linking social beliefs to maternal behaviours promoting peer relations. Further elucidating these associations may have important implications for future research seeking to understand pathways through which parental social beliefs exert their influence on children's social development.

Although maternal social beliefs predicted maternal behaviours, consistent with the literature (Cohen & Woody, 1991; Mills & Rubin, 1990), gender differences existed in these associations. The association between maternal social beliefs and encouragement and involvement was stronger for mothers of boys than for mothers of girls. Moreover, mothers of boys, in general, were more likely to report higher rates of encouragement and involvement. Research suggests that boys participate more frequently in extracurricular

activities (Bowker, 2006; Dimech & Seiler, 2011). Boys are also more likely to participate in organized sports and team activities, whilst girls participate more in music or individualized sports (Bowker, 2006; Dimech & Seiler, 2011), likely as a result of social or cultural norms regarding typical social activities for boys and girls. As such, and since the encouragement and involvement aggregate contained items focusing on sports, it may be that mothers of daughters are less likely to encourage and be involved in organized sports activities than mothers of boys. Further studies should seek to examine parental encouragement and involvement across multiple domains of peer activities (e.g., clubs, formal playgroups, community activities) to see if these gender differences persist.

These findings have important implications for understanding individual differences in social development trajectories as a result of differences in parental management behaviours. Moreover, given the positive associations found between encouragement and involvement and indices of children's peer relations in this study, these findings have important implications for the social development of young girls. No gender differences were found in the associations between maternal management behaviours and indices of children's peer relations. Although parents may be less likely to encourage and involve themselves in their young daughters' social activities, girls may still benefit from parental behaviours that promote peer relations. Consequently, parental intervention strategies that seek to promote the encouragement and involvement of parents in their young daughters' social activities may be particularly helpful for the social development of young girls.

**Maternal behaviors and child outcomes.** It has been suggested that parents exert a direct influence on their children's social development through the intentional

management of their children's social environments, interactions, and relationships (Ladd & Pettit, 2002). In an effort to promote the development of their children's appropriate social skills and relationships, parents may facilitate access to peers and peer-oriented settings, influence their children's choice of peers, and supervise their children's peer interactions (Ladd, LeSieur, & Profilet, 1992; Ladd & Pettit, 2002; Lollis, Ross, & Tate, 1992). These behaviours have been associated with a number of facets of children's social competence (see Ladd & Sechler, 2013 for a review). In particular, parental initiation of peer interactions, both in organized sports and in peer play, have been associated with greater social competence, including more social and prosocial behaviour, more developed social skills, more consistent playmates, a wider range of non-school playmates, and closer, more stable, and less difficult friendships (Coplan et al., 2009; Fletcher et al., 2003; Kerns et al., 1998; Ladd & Hart, 1992; Howie et al., 2010; Missal & Hojnoski, 2008).

Consistent with these findings, results from the present study indicated that maternal behaviours promoting peer relations were also directly associated with children's social outcomes. However, critical differences were found between the two components of maternal behaviours promoting peer relations. Encouragement and involvement was *positively* associated with children's frequency of participation and engagement in organized sports, as well as and their engagement in peer play. It may be that providing encouragement and being present and involved in children's peer activities creates a more positive social environment than simply initiating and persisting in peer activities, which can allow for the child's value of and enjoyment in the activity to flourish.

In contrast, contrary to expectations, initiation and persistence was *negatively* associated with children's engagement in organized sports. When parents initiate activities, they may not take into consideration their child's desires or need to autonomously pursue their own goals, factors which could serve to ensure positive psychological engagement. Furthermore, choosing to have a child persist in an activity after they've expressed displeasure may also cause the child to further dislike or devalue the activity at hand, increasing their level of stress and diminishing their positive psychological engagement. Children who have been pressured into participating in multiple extracurricular activities (often in opposition of their own desires) have been shown to experience higher levels of stress (Luthar & Becker, 2002). This increased stress may lead to decreased positive psychological engagement (Farrell et al., 2015). Parental initiation of social opportunities may be advantageous for young children who lack the independence to manage these opportunities for themselves or for children who experience social difficulties. However, when initiation and persistence behaviours become overly intrusive for children and remove the opportunity for autonomous decision-making, they may have negative implications for children's peer relations and subsequent social development.

These findings have important implications for future research, as they suggest that when seeking to understand the influence of parental social beliefs on children's social development, it is important to distinguish between different types of maternal behaviours. Parental management behaviours, though undertaken in an effort to promote social skills and peer interactions, may have beneficial or detrimental effects on children's peer relations. Examining these differences, as well as the sources of these

differential responses, may allow for a better understanding of how parental social beliefs and subsequent maternal behaviours promoting peer relations come to influence children's social development. Additionally, researchers should also seek to distinguish between different domains of peer activities. This study found differing patterns of associations for indices of peer relations in organized sport activities and in informal peer play. Examining how parental social beliefs and behaviours differentially influence children's participation and engagement in peer activities across different contexts may further allow for a better understanding of the association between parental social beliefs and children's social development.

**Maternal beliefs and child outcomes.** Previous studies have reported that mothers who placed a greater importance on social competence and the development of social skills were more likely to have children who were more prosocial, socially competent, and popular amongst their peers (Holloway & Reichhart-Erickson, 1989; Kennedy, 1992; Rubin et al., 1989). In contrast, mothers who placed less value on the attainment of social skills for their children were more likely to have children who experienced difficulties interacting with peers (Rubin et al., 1989).

Consistent with these findings, maternal social beliefs were associated with at least some indices of children's peer relations. For example, maternal social beliefs were positively associated with children's psychological engagement (but not frequency of participation) in both organized sports and peer play. The lack of a significant relation between maternal social beliefs and children's frequency of peer play may be due to the lack of variability in the frequency of participation in peer activities for this sample. More than 70% of the sample participated in organized sports once a week or more, whilst

more than 90% participated in peer play once a week or more. These findings are consistent with current literature suggesting that approximately 75% of children participate in extracurricular activities (Howie et al., 2010). There may be factors outside of a parent's social beliefs that are contributing to this high frequency of engagement in peer activities, such as beliefs about the importance of a child's physical health, parents' desire for their child's enjoyment, and socio-economic status and access to resources (the sample was largely middle-class). Additionally, this study only took into consideration the frequency of participation in one organized sport. Children may participate in several structured peer activities, and, therefore, these reports of frequency of participation may not be reflective of their total formal peer activity participation. Future studies should examine whether parents who endorse social beliefs for their children encourage, initiate, and involve themselves in a greater number of structured peer activities, allowing for a greater frequency of structured peer interaction.

However, despite these findings, the association with the quality, but not quantity, of children's peer relations may have important implications for a child's social development. Mothers who endorse social beliefs for their children may behave in ways that foster positive psychological engagement. Mothers who encourage their children to participate in peer activities and involve themselves in those activities may create an environment within which a child can enjoy and value their peer activity. Though being behaviourally engaged (e.g., attending practice/games regularly over time) will ensure that children have habitual exposure to peers, if they do not experience an affective engagement, these interactions and experiences may be relatively meaningless, and, therefore, have little impact on their social development (Rose-Krasnor, 2009). This

positive psychological engagement may provide additional benefits above and beyond physical participation, as when children enjoy and value their activity, they may feel more inclined to engage with teammates, allowing for the development of numerous social skills and peer relationships (Rose-Krasnor, 2009). In contrast, mothers who endorse social beliefs for their children may also behave in ways that hinder children's positive psychological engagement. Children may find it more difficult to enjoy an activity and view it as important and interesting if their parents initiate activities without taking their desires into consideration and/or when they are overly persistent.

**Proposed mediation models.** It has been suggested that parental behaviour serves as a conduit for the link between parental social beliefs and children's social outcomes (e.g., Cohen & Woody, 1991; Mills & Rubin, 1990; Mize et al., 1995), in line with traditional unidirectional models of the belief-behaviour connection (Sigel & McGillicuddy-DeLisi, 2002). However, despite preliminary support for this mediation model, there have been variations in the conceptualization, operationalization, and measurement of maternal social beliefs, which may pose problems for the interpretation and comparison of findings across studies. As such, a goal of this study was to examine this proposed model using a validated self-report measure of parental social beliefs. Somewhat surprisingly, the proposed mediation models were found to vary substantially as a function of the types of maternal behaviours, child gender, and the domains of children's peer relations.

To begin with, maternal encouragement and involvement was found to completely mediate the association between maternal social beliefs and children's positive psychological engagement in organized sports, only for boys. Mothers of boys

who endorsed greater social beliefs were more likely to encourage and be involved in their children's peer activities. Through their encouragement and involvement, mothers were more likely to report their children as being positively psychologically engaged in organized sports. As discussed previously, these gender differences may be due to gendered expectations about typical structured social activities; boys are more likely to participate in organized sports and team activities, whilst girls are more likely to participate in music or individualized sports (Bowker, 2006; Dimech & Seiler, 2011). Therefore, future research should also seek to incorporate other forms of structured social activities beyond organized sports when seeking to examine the influence of maternal social beliefs on children's peer relations.

In contrast, encouragement and involvement partially mediated the association between maternal social beliefs and children's positive psychological engagement in peer play for both genders. Mothers who endorsed greater social beliefs for their children were more likely to encourage and be involved in their children's peer activities, and through their encouragement and involvement, more likely to report their children as being positively psychologically engaged in peer activities. Maternal beliefs and behaviours regarding peer play displayed no gender effects. These findings provide promising support for the applicability of this model, however, partial mediation was found, suggesting the plausibility of additional mechanisms influencing the association between maternal social beliefs, encouragement and involvement, and positive psychological engagement in peer play. Future research should seek to further examine these associations across multiple formal and informal peer play settings (e.g., formal playgroups, community groups, informal peer play).

It is important to note that differing results were found for the moderation of the link between maternal social beliefs and maternal reports of encouragement and involvement, though it approached significance ( $p = .07$ ) in the second model. There were different patterns of participation in organized sports and informal peer play. Parents of some children reported that their child did not participate in organized sports, and, therefore, they did not have scores of engagement in sports. Additionally, some parents did not report their children as participating in informal peer play, and, therefore, did not have scores of engagement in peer play. These differences in child participation allowed for differing subsamples of participants in each analysis. Upon examining each of these subsamples, 15 and 19 unique cases were identified for the sport and peer play models, respectively. Of the 15 participants who had ratings for engagement in sports, but not peer play, 10 were male. Of the 19 participants who had ratings for engagement in peer play, but not organized sports, 14 were female. This is consistent with findings suggesting that girls are less likely to participate in organized sports than boys (Bowker, 2006; Dimech & Seiler, 2011), and as such, these cases were retained in the model. However, despite this increase, the samples for each model were roughly even in terms of gender.

Maternal behaviours related to *initiation and persistence* were found to completely mediate the association between maternal social beliefs and children's positive psychological engagement in organized sports. However, this type of maternal behaviour attempting to promote children's peer relations appeared to be detrimental for children's engagement. Mothers who more strongly endorsed social beliefs were more likely to initiate and persist in their children's peer activities. Through their initiation and

persistence, however, mothers were also *less* likely to report their children as being positively psychologically engaged in organized sports.

These results have potentially important implications for children's social development, as they may highlight the negative impact of parental over-management, which has been associated with greater deficits in social competence (Kennedy, 1992). When parents initiate activities for their children without taking the desires of their children or their need to autonomously pursue their own goals into consideration, or when they persist in an activity after a child has expressed their displeasure, they may be creating a social environment that is unenjoyable and stressful for the child. If the activity is unenjoyable, unimportant, and not interesting for the child, they may be less likely to engage in that situation and therefore less likely to benefit from the peer aspects of the activity. Kuczynski (1984) suggested that in order to best help children to develop social competence, parents should utilize socialization techniques (e.g., reasoning, explanation) that encourage and help children to understand peer relationships and how to manage their behaviours in specific contexts and situations. As a result, behaviours, such as encouragement and involvement that allow parents to more indirectly manage their children's social opportunities may be more beneficial to children, particularly as they age and develop the skills to implement their own strategies for peer interactions (Ladd & Golter, 1988)

Understanding the association between parental social beliefs, parental behaviours, and children's subsequent peer relations may be particularly important in understanding how parental variables can lead to differential social trajectories among children. Elucidating the relations between these variables and the mechanisms through

which parents exert their influence on their children's social environments may be particularly important for shy children. Participation in structured social activities, such as organized sports, has been suggested to serve a protective role for children who are prone to struggle with peer relations (Findlay & Coplan, 2008). This may be particularly problematic, as results of this study suggest that parents of shy children were less likely to endorse social beliefs for their children. Moreover, social beliefs predicted positive psychological engagement in peer activities, through an increase in maternal encouragement and involvement. It is suggested that when children experience greater psychological engagement, they may feel more inclined to engage with teammates, allowing for the development of numerous social skills and peer relationships (Rose-Krasnor, 2009). Understanding not only *how* parents manage their children's social opportunities and peer relationships, but *what* factors or mechanisms may influence their impetus to act and allow for them to persist in these behaviours, may have important implications for the development of appropriate parent intervention strategies.

### **Limitations and Future Directions**

Overall, the present study provided novel insights into the complex links between maternal social beliefs, maternal behaviours, and children's peer relations.

Notwithstanding, some limitations should be considered with an eye towards future research.

To begin with, a limitation of this study was that it had considerable missing data. Six of the 28 variables used in this study had missing data in excess of 5%. Listwise deletion was used in many of the analyses, leading to low sample sizes and an increased probability of Type II errors. Though there are existing strategies to deal with these issues

(e.g., multiple imputation), they were considered beyond the scope of this thesis.

Additional issues surrounding the representativeness of the sample (85.9% of mothers had completed university or college degree) and small effect sizes for the findings pose additional problems for the generalization and interpretation of findings. For these reasons, the results and interpretations of these analyses should be taken with caution.

A primary limitation of the present study was that it relied almost exclusively on maternal reports. Although other methods (e.g., teacher reports, child reports) were included in order to reduce shared method variance, the choice of assessment methods were somewhat restricted by the personal nature of the variables (e.g., personality and beliefs), which are better assessed through self-reports. The choice of assessments was also restricted by the age of the children in the sample. Self-report measures are not typically employed in early childhood, as young children often have difficulty reporting on abstract concepts, such as internal states, motivations, and emotions (e.g., Harris, 2008; Thompson, Goodvin, & Meyers, 2006). Although children have been shown to be able to accurately self-report on a number of topics when assessments are developed with developmental considerations in mind (e.g., Coplan et al., 2014; Harter & Pike, 1984), in the absence of well-developed measures, information can be obtained from parents more thoroughly and efficiently.

However, despite these restrictions, it is still important to acknowledge that the heavy reliance on maternal reports may create a false internal consistency, inflating inter-correlations between measures. This may have been the case in the present study, as most of the significant associations were between pairs of variables that were both rated by mothers. Moreover, all of the mediation models included only maternal-rated variables.

Shared method variance not only tends to inflate inter-associations among variables from the same source, but also makes it even more difficult to attempt to infer the causal nature of such associations. For example, mothers who rated themselves as more encouraging and more involved in their children's peer activities may also, as a result, view their child as more positively psychologically engaged in these activities. Future studies should seek to include measures that do not rely heavily on one informant.

Relatedly, the data in the current study was cross-sectional in nature. Therefore, although theory guided the interpretation of results, further caution must be undertaken when making inferences about the importance of the findings, including not to discount other plausible explanations. For example, it may be that behaviours influence beliefs, even those behaviours unrelated to sociability. Parents who do not involve their children in social activities—for financial reasons, lack of time or access, or other reasons—may come to view them as unimportant. Similarly, parental behaviours promoting peer interaction may be a result of parental perceptions of children's anxiety in social situations, and not a result of parental social beliefs. Future research should examine the association between maternal social beliefs and children's social development longitudinally, not only to establish causality, but to examine how parental social beliefs change across a child's development. Research suggests that as children age and develop more mastery and autonomy in their peer relationships, parental management behaviours shift in accommodation from more structuring and mediatory roles to more supervisory or consultant roles (Ladd & Pettit, 2002). However, little is known about how social beliefs change as a result of these developmental changes.

Exploring parental social beliefs and ensuing parental management behaviours throughout development may be particularly important for shy children. Dix (1991) suggests that most parents believe that social skills should improve with age. When parents continue to observe their children experiencing social difficulties or exhibiting socially-withdrawn behaviours (when they should be developing competence and autonomy), they may become resigned about the ability to effect change. Rubin and Mills (1992) found that mothers of socially withdrawn preschoolers, in an interview several years later, were more likely to report their children's shyness as more stable and less amenable to change through parental efforts. If parents believe they have less influence over their children's social behaviour, they may be even less willing to value social beliefs and perhaps less willing to act in ways to promote them. This may have important implications for shy children who benefit from the positive and supportive structuring and management of social environments by parents in order to develop mastery and autonomy in social contexts (Rubin & Burgess, 2002).

As well, the items composing the maternal behaviour aggregate variables in this study may not be the best indices of maternal behaviours promoting peer relations. This study relies upon data collected from a broader study with different goals and hypotheses than the current study. As such, the measures included in the larger study were not originally developed to answer the hypotheses of the current study. Future studies should seek to examine the mediating influence of maternal behaviours promoting peer relations using better developed parental management measures that focus not only on the promotion of organized sports, but other forms of peer activities, such as informal peer play, performance arts, community groups, and playgroups.

Future studies should also take into consideration additional parental variables that may influence parental social beliefs and their associations with maternal behaviours promoting peer relations. Previous research has suggested that a parent's beliefs about the stability and modifiability of their children's behaviour and beliefs about their efficacy as parents may influence parental social beliefs (Mills & Rubin, 1990). Additionally, dynamic models of parental belief systems suggest that a number of factors may influence parents' choice of action on a belief, including the context, parental knowledge, praxis beliefs, and demographic, sociocultural, and personal factors (Sigel & McGillicuddy-DeLisi, 2002). Moreover, it is also argued that differences in the quality of expression of a belief are due to individual differences in cognitive competence (Sigel & McGillicuddy-DeLisi, 2002). Parents who are more skilled or who possess certain personality characteristics that enable greater cognitive competence (e.g., emotional stability, reflectivity, flexibility) may be better at putting those beliefs into action. Though parents may be acting in ways that promote children's peer relations, their behaviours may have little impact if their modes of expression are not skilled enough or appropriate to the context or age of the child.

Finally, the present study did not examine paternal social beliefs. Though previous studies have suggested that mothers are more likely to initiate and facilitate peer interactions for their young children (Bhavnagri & Parke, 1991; Ladd & Golter, 1988), as well as possess a more extensive store of contextual knowledge about their children's behaviours (Mills & Rubin, 1990), fathers may still exert a positive influence on their children's social development. Paternal involvement has been associated with social competence, initiative, and maturity, as well as prosocial behaviour, perspective-taking,

and peer liking (see Allen & Daly, 2007 for a review). Consequently, the changing societal expectations around fatherhood in more recent years (Doucet, 2006) may highlight the importance of exploring the unique contributions of paternal social beliefs, paternal behaviours promoting peer interaction, and their cumulative influence on children's peer relationships.

### **Conclusion**

In conclusion, the current study provides evidence to support the validity of the *Revised Social Goals Inventory* as a measure of parental social beliefs in a sample of mothers of young children. Moreover, these findings highlight the importance of taking into consideration maternal personality and child temperament characteristics when seeking to understand possible determinants of social beliefs. Finally, the findings from this study provide empirical support for a theoretical model whereby parental social beliefs are argued to influence children's social outcomes through the mediating role of parental behaviour.

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**Appendix A***Revised Social Goals Inventory (RSGI)*

## TELL US HOW YOU FEEL ABOUT YOUR CHILD'S PEER RELATIONS

Children differ greatly in how sociable they are with other children. Some children may be quite sociable and outgoing, and have many friends. Others may be shy, quiet, and have few friends. We are interested in how important you feel your child's sociability with peers is.

Please indicate how much each of the following statements reflects your feelings regarding young children's experience with peers by circling the corresponding number.

1 Not at all Important	2 Not very Important	3 Somewhat Important	4 Very Important	5 Extremely Important
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1. It is very important for young children to make friends with children their own age.  
1                      2                      3                      4                      5
2. It is important for young children to be sensitive to other's feelings.  
1                      2                      3                      4                      5
3. It is important for young children to be able to solve disagreements without fighting.  
1                      2                      3                      4                      5
4. It is important for young children to be assertive.  
1                      2                      3                      4                      5
5. It is important for young children to get other children to like them.  
1                      2                      3                      4                      5
6. It is important for young children to be able to lead their peers.  
1                      2                      3                      4                      5
7. How important is it to you that your child has playmates?  
1                      2                      3                      4                      5
8. How important is it to you that your child has many, or a wide variety of playmates?  
1                      2                      3                      4                      5
9. How important is it to you that your child develops close friendships with one or two more familiar (or consistent) playmates?  
1                      2                      3                      4                      5



**Appendix B***Ten Item Personality Inventory (TIPI)*

## TELL US ABOUT YOU

Here are a number of personality traits that may or may not apply to you. Please indicate the extent to which you agree or disagree with each statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

Disagree strongly 1	Disagree moderately 2	Disagree a little 3	Neither agree nor disagree 4	Agree a little 5	Agree moderately 6	Agree strongly 7
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I see myself as:

1. \_\_\_\_\_ Extraverted, enthusiastic.
2. \_\_\_\_\_ Critical, quarrelsome.
3. \_\_\_\_\_ Dependable, self-disciplined.
4. \_\_\_\_\_ Anxious, easily upset.
5. \_\_\_\_\_ Open to new experiences, complex.
6. \_\_\_\_\_ Reserved, quiet.
7. \_\_\_\_\_ Sympathetic, warm.
8. \_\_\_\_\_ Disorganized, careless.
9. \_\_\_\_\_ Calm, emotionally stable.
10. \_\_\_\_\_ Conventional, uncreative.

\* Items 2, 4, 6, 8, and 10 are reverse scored.

### Appendix C

#### *Child Social Preference Scale (CSPS)*

#### TELL US ABOUT YOUR CHILD

Please answer the items on this page about the behaviour of your child by *circling* one of the numbers following each item. We know that no item will apply to the child in every situation, but try to consider his/her usual or general behaviour. Please answer all questions—there are no right or wrong answers.

	Not at All ← → A Lot				
1. My child often seems content to play alone.	1	2	3	4	5
2. My child seems to want to play with other children, but is sometimes nervous to.	1	2	3	4	5
3. My child is just as happy to play quietly by his/herself than to play with a group of children.	1	2	3	4	5
4. My child actively avoids play with other children.	1	2	3	4	5
5. My child is happiest when playing with other children.	1	2	3	4	5
6. My child will turn down social initiations from other children because he/she is 'shy'.	1	2	3	4	5
7. My child does not want to play with other children.	1	2	3	4	5
8. My child often approaches other children to initiate play.	1	2	3	4	5
9. My child often goes out of his/her way not to play with other children.	1	2	3	4	5
10. My child 'hovers' near where other children are playing, without joining in.	1	2	3	4	5
11. My child rarely initiates play activities with other children.	1	2	3	4	5
12. If given the choice, my child prefers to play with other children rather than alone.	1	2	3	4	5
13. My child will often turn down social invitations from other children because he/she wants to be alone.	1	2	3	4	5
14. My child often watches other children play without approaching them.	1	2	3	4	5
15. My child is just not interested in initiating play activities with other children.	1	2	3	4	5
16. Although he/she appears to desire to play with others, my child is sometimes anxious about interacting with other children.	1	2	3	4	5

**Appendix D**

*Colorado Child Temperament Inventory (CCTI)*

TELL US ABOUT YOUR CHILD

Please answer the items on this page about the behaviour of your child by *circling* one of the numbers following each item. We know that no item will apply to the child in every situation, but try to consider his/her usual or general behaviour. Please answer all questions—there are no right or wrong answers.

	Not at All ← → A Lot				
1. My child cries easily	1	2	3	4	5
2. When upset by an unexpected situation, my child quickly calms.	1	2	3	4	5
3. Whenever my child starts crying, he/she can be easily distracted.	1	2	3	4	5
4. My child tends to be somewhat emotional.	1	2	3	4	5
5. If talked to, my child stops crying.	1	2	3	4	5
6. My child often fusses and cries.					
7. My child gets upset easily.					
8. My child tolerates frustration well.					
9. My child reacts intensely when upset.					
10. My child stops fussing whenever someone talks to him/her or picks him/her up.					

**Appendix E**

Maternal Behaviours Promoting Peer Relations

**PERSISTENCE:**

Suppose that your child asks you to register him or her for a sport, such as hockey or soccer. Your child is excited about playing with the team and agrees to go to all the practices and games. You pay the league fees for the season and buy the equipment you child needs to participate. After just three weeks, however, your child tells you that he or she hates it and doesn't want to go anymore. How would you most likely respond? Please explain why you chose your answer.

- a. Let your child quit.
- b. Make your child continue the activity for a longer period of time and then quit if your child still wants to.
- c. Insist your child finish the season.

Explanation:
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**ENCOURAGEMENT:**

Please rate the following item based on your behaviours:

	<b>Strongly discourage</b>		<b>Neither encourage nor discourage</b>		<b>Strongly encourage</b>
Encourage child to participate in sports	0	1	2	3	4

**INITIATION:**

What activities does your child do? Please fill in the table below. Leave blank where not applicable.

<b>Activity Type</b>	Whose idea was it for your child to start doing this type of activity? (e.g., mother, child, child's friend)
Organized sports or lessons (e.g., hockey, gymnastics, swimming lessons)	
Play with friends	

**INVOLVEMENT:**

How much of your time was spent on the following (child) activities during the previous week?

	Not at all	Once a week	Two or three times a week	Four or five times a week	Six or seven times a week
Playing organized sports	0	1	2	3	4
Playing sports with friends	0	1	2	3	4

Have you or your spouse coached children's sports teams in the past year?

Mother	<b>No</b>	<b>Yes</b>
Father	<b>No</b>	<b>Yes</b>

**Appendix F**

Child’s Frequency and Engagement in Peer Interactions

**FREQUENCY OF PEER INTERACTIONS:**

What activities does your child do? Please fill in the table below. Leave blank where not applicable.

Activity Type	How often does your child do this type of activity? (1 = not at all; 2 = once or a few times a year’ 3 = about once a month’ 4 = several times a month; 5 = several times a week)	How many years has your child done this type of activity?
Organized sports or lessons (e.g., hockey, gymnastics, swimming lessons)		
Play with friends		

**ENGAGEMENT IN PEER INTERACTIONS:**

Using the scale of 0-4 below, please rate the characteristics of each type of activity by placing the appropriate number on the line next to each item.

0 = Not at all    1 = A little bit    2= A moderate amount    3 = Quite a bit    4 = Very much

Activity	How much fun is this activity for your child?	How stressful is this activity for your child?	How good is your child at this activity?	How important is this activity for your child?	How interesting is this activity for your child?
Organized sports or lessons					
Play with friends					

**Appendix G***Child Behavior Scale (CBS)*

Please consider the descriptions contained in each of the following items below and rate the extent to which each of these descriptions applies to this child, particularly in the context of his/her behavior with peers. For example, circle 3- “Certainly applies” if the child often displays the behavior and circle 1- “Doesn’t apply” if the child seldom displays the behavior. Please circle only one response per item.

	Doesn't apply	Applies sometimes	Certainly applies
1. Squirmy, fidgety child.	1	2	3
2. Fights with other children.	1	2	3
3. Not much liked by children.	1	2	3
4. Is worried. Worries about many things.	1	2	3
5. Appears miserable, unhappy, tearful, or distressed.	1	2	3
6. Tends to be fearful or afraid of new things or new situations.	1	2	3
7. Bullies other children.	1	2	3
8. Cries easily.	1	2	3
9. Kicks, bites, or hits other children.	1	2	3
10. Prefers to play alone.	1	2	3
11. Helps other children.	1	2	3
12. Peers refuse to let this child play with them.	1	2	3
13. Shows a recognition of the feelings of others; is empathetic.	1	2	3
14. Not chosen as playmate by peers.	1	2	3
15. Likes to be alone.	1	2	3
16. Keeps peers at a distance.	1	2	3
17. Peers avoid this child.	1	2	3
18. Seems concerned when other children are distressed.	1	2	3
19. Aggressive child.	1	2	3
20. Taunts and teases other children.	1	2	3
21. Threatens other children.	1	2	3
22. Kind towards peers.	1	2	3
23. Excluded from peers' activities.	1	2	3
24. Is ignored by peers.	1	2	3
25. Cooperative with peers.	1	2	3
26. Argues with peers.	1	2	3
27. Solitary child.	1	2	3
28. Shows concern for moral issues (e.g., fairness, welfare, or others).	1	2	3
29. Ridiculed by peers.	1	2	3
30. Avoids peers.	1	2	3

31. Offers help or comfort when other children are upset.	1	2	3
32. Withdraws from peer activities.	1	2	3

## Appendix H

### *Preference for Solitary Play Interview (PSPI)*

“We’re going to play a game. Let’s pretend this picture is you. Okay? Pretend this picture is you with another child your age. Now let’s pretend this picture is you with a group of children your age. Okay? Do you understand? Good.”

“Some children like to play alone, some like to play with one other child, and some like to play with a group of other children. If you could do whatever you wanted to do, would you like to play most by yourself, with one other child, or with a group of other children? Can you point and show me? [remove picture that child has selected] Now, would you rather play \_\_\_\_ or \_\_\_\_ [name remaining two pictures]”?

*Repeat the following question for every picture of an activity – always start with snack – but vary the order of presentation of the rest of the activities for each child – and vary the order of presentation of “by yourself, with one other child, or with a group of other children” with each child.*

1. Whatever you want
2. Have a snack
3. Play on swings
4. Paint a picture
5. Play games
6. Play dress-up
7. Play on climbers
8. Play with Legos
9. Play with toy animals
10. Play with sand toys
11. Play with blocks
12. Play on the slide
13. Draw pictures